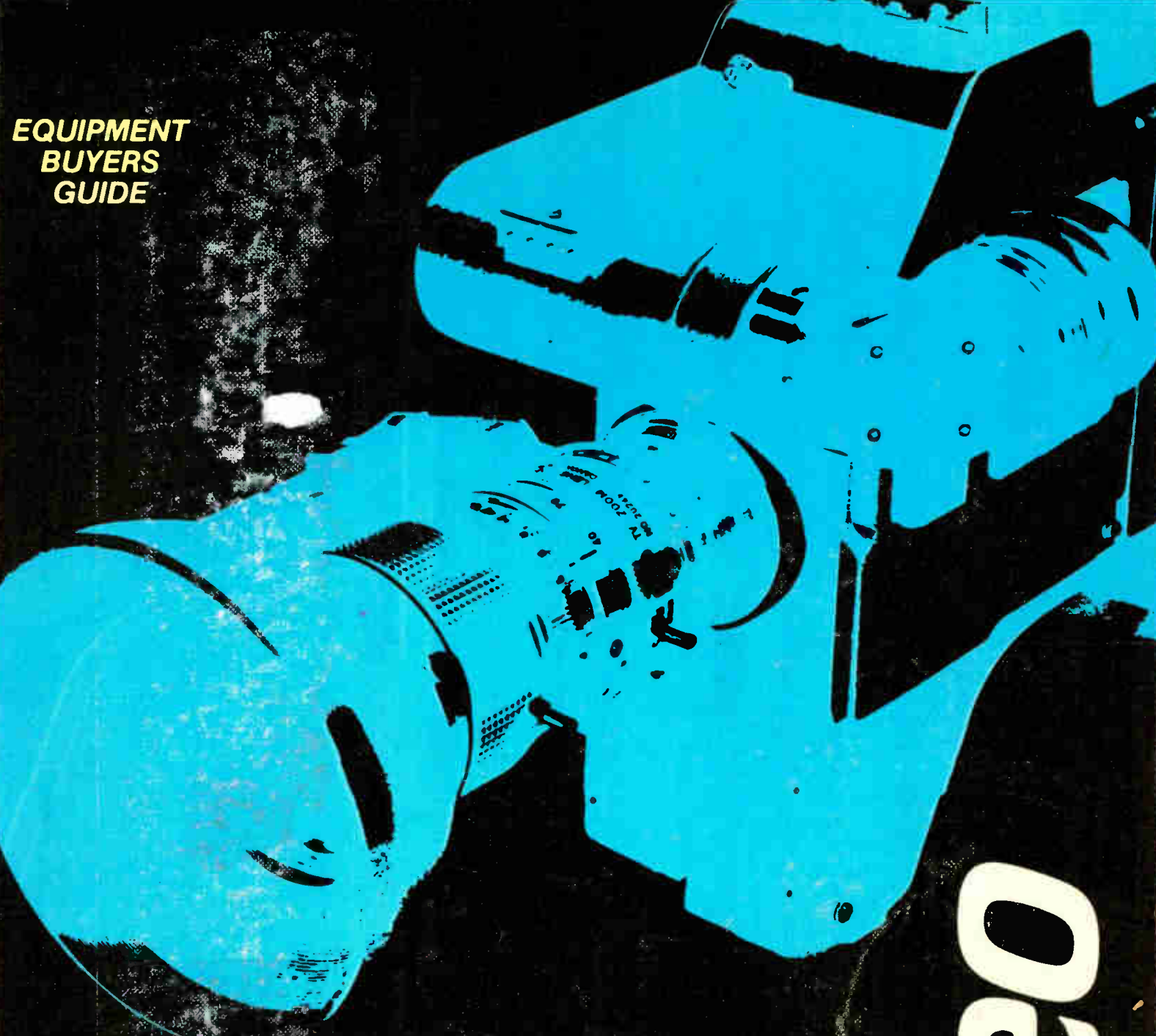


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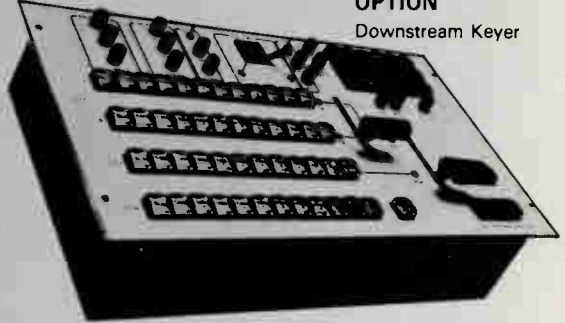
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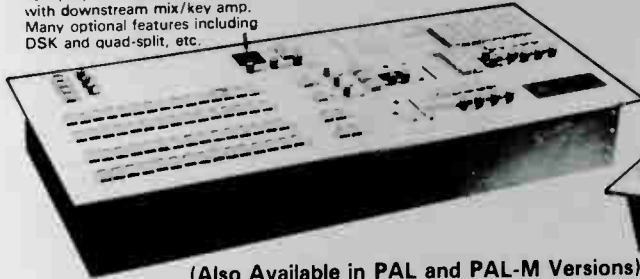
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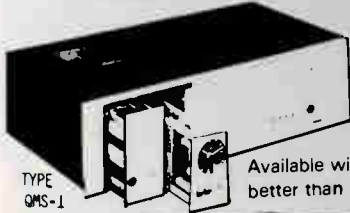
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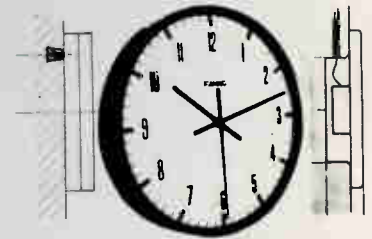


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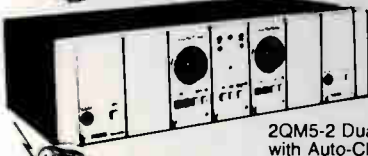
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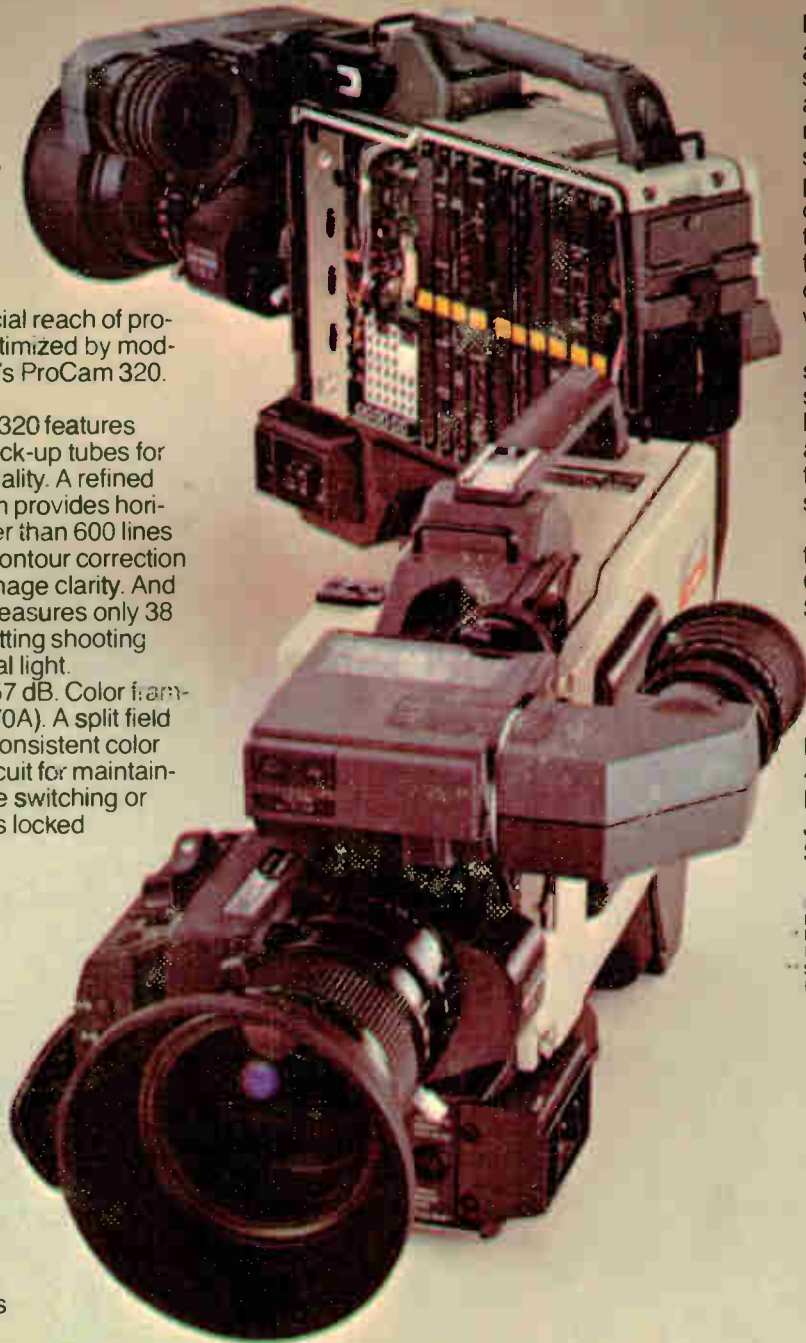
SENSITIVITY. ProCam 320 features three, 2 3" Plumbicon pick-up tubes for incomparable picture quality. A refined f/1.4 prism optics system provides horizontal resolution of better than 600 lines at center. A 2H vertical contour correction circuit further assures image clarity. And minimum illumination measures only 38 lux (3.6 fc) at f/1.7, permitting shooting even in limited or artificial light.

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85/86 VIDEO

EQUIPMENT BUYERS GUIDE

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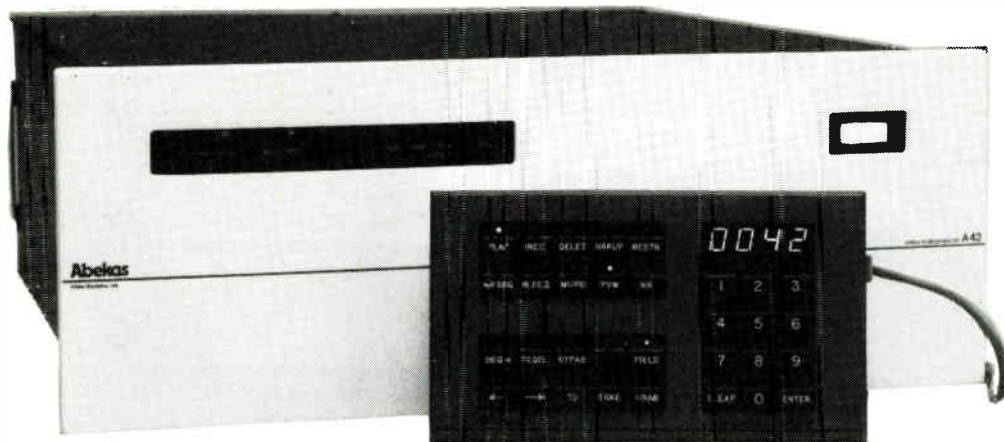
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ABEKAS VIDEO SYSTEMS, INC.

319 Lincoln Centre Drive
Foster City, CA 94404
(415) 571-1711

VIDEO SLIDE PROJECTOR



A42 VIDEO SLIDE PROJECTOR

Dedicated to optimum picture quality and ease of operation, the A42 is the most compact and reliable digital still store system. Advanced digital video processing yields high quality images, and a micro-processor-based control system ensures powerful and easy-to-use features. A built-in 5-1/4" Winchester disk drive provides the safest on-line picture storage available.

FEATURES

Virtual Picture Numbering

The picture numbering scheme employed in the A42 is completely independent of disk storage locations. Pictures are identified by serial numbers ranging from 0 to 9999 regardless of the on-line storage capacity. The user is no longer unnecessarily burdened with keeping track of the actual picture location on disk.

Backup and Off-Line Storage

The A42 offers the most up-to-date, reliable and cost effective means of off-line storage. Utilizing a high speed digital streaming tape drive, it stores pictures on a compact quarter-inch tape cartridge. For the first time, unlimited off-line picture storage is practical due to low media cost and compact size. This facilitates easy transport of pictures from one system to another, or from the studio to the mobile truck. With selective backup, any number of pictures up to 50 frames/100 fields can be transferred to the tape cartridge. In a similar manner, selective restore allows either the entire contents or only selected pictures to be transferred from the cartridge to the disk.

Sequence

Three sequences of 100 pictures each can be created using any of the recorded pictures. A sequence can be edited at any time by inserting, deleting or substituting pictures. The forward and back arrows on the control panel allow a sequence to be played in either direction, and any item in a sequence to be played at random. A sequence can be temporarily exited to perform other functions.

Simple Basic Operation

Regardless of the function selected, operation is always easy. A complete status display is superimposed on the preview video output to provide information to the operator. When a picture is grabbed, it can be recorded as a field or frame, as determined by the field/frame button. When the picture is played back, the system automatically selects field or frame depending on how the picture was recorded.

Independent Output Channels

In the dual channel system, pictures can be recalled to both channels independently. While one channel is displaying a picture, the other channel can be fully used to record, playback or create sequences. Dissolves or vertical interval cuts can be programmed for on-air transitions between the channels. The dissolve rate can be varied from the control panel.

Graphics Compose

The A42 provides excellent multi-generation capability which is essential in the composition of multi-layer graphics. The special graphics compose mode optimizes the use of the two channels for easy graphics creation. Each layer, or the entire graphic, can be



THE A42 LIBRARY TERMINAL

stored on the disk. Unlike most other systems, the A42 makes it possible to recover from mistakes when composing multi-layer graphics, because it automatically saves the previous layer in the other frame buffer.

Built-In Test Signals

The A42 has the ability to generate digitally multiburst, color bars and other useful test signals to aid in the maintenance and troubleshooting of the system.

Digital Interface

An optional digital interface provides composite digital input and output ports. These ports make it possible to interface the A42 to the A52 Digital Special Effects system.

Library System (optional)

The A42 offers the most advanced, yet easy-to-use library system available. Each still on the A42 can be labeled with a title of more than 60 alpha-numeric characters, including an automatic time and date stamp. Flexibility in searching for a picture eliminates the need to set up categories that other systems require. To group certain pictures together, all that is necessary is to include a common word anywhere in their titles. For example, if searching with the word '49ers', any picture that includes '49ers' anywhere in its title would be listed on the screen.

The A42 library system employs an extremely sophisticated searching algorithm to perform complex searches with unequalled speed. When all or part of a title is typed for a search, the system initiates a word-by-word comparison to find the right picture. Even if the operator misspells or changes the order of the words in the title, the system will find the picture that most closely matches what was typed.

Compatibility

The library system is compatible with all A42 systems. Pictures already on the A42 instantly become a part of the library system. Although pictures without titles are recognized by serial number, a title can easily be added.

ACME-LITE MFG. CO.

3401 W. Madison Street
Skokie, IL 60076
(312) 588-2776

HOLLYWOOD TRIPODS

What a Fluid Torq Tripod Head Will Do for You:

Most tripod heads have no control in the panning or tilting action. Their movement is rough and when unlocked the head will just flop loosely. A spring head adds the advantage of spring tension preventing the camera flopping too far. But the new series of Fluid-Torq Heads provide all these added advantages: (1) camera will remain in fixed position even when unlocked; (2) a smoother, controlled movement of the head; (3) brakes the fall of the camera without springy bounce; and (4) tension controlling the head can be adjusted to the weight and size of the camera.

TWO ECONOMY TRIPODS WITH FLUIDTORQ ACTION

It's not necessary to pay high prices to obtain the advantages of FluidTorq action described above. Two models, one tubular leg and one channel both feature the FluidTorq head described at right at virtually the same prices as tripods with ordinary spring heads.

CADET FT: A strong 25mm tubular leg tripod, 3 sections with positive collet locks, leg braces to rigidize legs, and crank and gear elevator column. Also features adjustable tension on elevator column to prevent camera from descending too rapidly. Fluid-Torq head has smoother action and adjustable tension for both panning and tilting.

MASTER FT: A handsome 25mm channel leg tripod, 3 section with fast lever locks, leg braces to rigidize legs, and crank and gear elevator column. Also features adjustable tension on elevator column to prevent camera from descending too rapidly. Fluid-Torq head has smoother action and adjustable tension for both panning and tilting.



THREE DIFFERENT STYLE HEADS PROVIDING FLUIDTORQ FEATURES

FLUIDTORQ: Handsomely styled head with adjusting knob for changing head tension from loose for small cameras to tight for heavier cameras. Adjusts both panning and tilting simultaneously. Extra long handle locks pan and tilt. Balances different size cameras to prevent falling or slipping. Smooth fluid movement. Featured on Vidipod CF and TF models.

Separate locking controls for panning and tilting. Smooth fluid movement. Featured on Vidipod CF and TF models.

FLUIDTORQ SR: Massive, more deluxe head for larger cameras. Adjusting knob changes head tension to balance camera with spring assist to brake camera under loose tension. Telescoping panhandle to adjust to different lengths with adjustable angle and ratchet lock. Quick Disconnect to mount camera quickly. Separate locking controls. Smooth fluid movement. Featured on Vidipod CS and TS and Dollypod III models.

FLUIDTORQ II: Large, heavier duty head with added features. Adjusting knob changes head tension to balance camera weight and size. Long handle can be adjusted to different angles. Quick Disconnect facilitates mounting camera quickly and easily.

VIDIPOD TRIPODS

- Tubular or Channel Legs
- 3 Different Head Styles

VIDIPOD C: Heavy-duty 28mm Channel leg tripod with large 2-way spring head. Includes leg braces, crank and gear elevator, lever locks, retractable leg spikes **\$119.95**

VIDIPOD CP: Same, with 3-way head without spring **\$119.95**

VIDIPOD T: Heavy-duty 30mm Tubular leg tripod with large 2-way spring head. Includes leg braces, crank and gear elevator, collet locks, swivel feet. **\$139.95**

VIDIPOD TP: Same, with 3-way head without spring **\$139.95**

Select from the Vidipod series either channel or tubular leg and which of the two FluidTorq heads to provide the perfect combination for your camera. Then add the optional wheels available on any Vidipod tripod as described lower right.

C-SERIES FLUIDTORQ MODELS

VIDIPOD CF: Same as Vidipod C described above but mounted with FluidTorq II Head **\$159.95**

VIDIPOD CS: Same as Vidipod C described above but mounted with FluidTorq Sr. deluxe fluid head. **\$174.95**

With Wheels: Equipped with heavier race and lock; bubble level.
VIDIPOD CF/R **\$209.95**
VIDIPOD CS/R **\$224.95**

ALL VIDIPOD TRIPOD MODELS AVAILABLE WITH WHEELS

All of the Vidipod models shown on this page can be provided with 3" wheels with individual toe locks, double acting locks, and leg angle adjustment for smoother rolling. Models equipped with wheels have heavier braces with lock, bubble level, and tubular models have grooved leg sections to prevent twist. See left for fluid head models and prices.

C/R: Vidipod C with wheels **\$169.95**

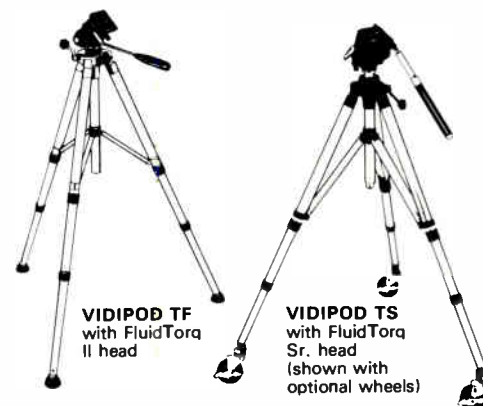
T/R: Vidipod T with wheels **\$189.95**

T-SERIES FLUIDTORQ MODELS

VIDIPOD TF: Same as Vidipod T described above but mounted with FluidTorq II head **\$179.95**

VIDIPOD TS: Same as Vidipod T described above but mounted with FluidTorq Sr. deluxe fluid head. **\$194.95**

With Wheels: Including grooved legs, wider braces with lock, bubble level.
VIDIPOD TF/R **\$229.95**
VIDIPOD TS/R **\$244.95**

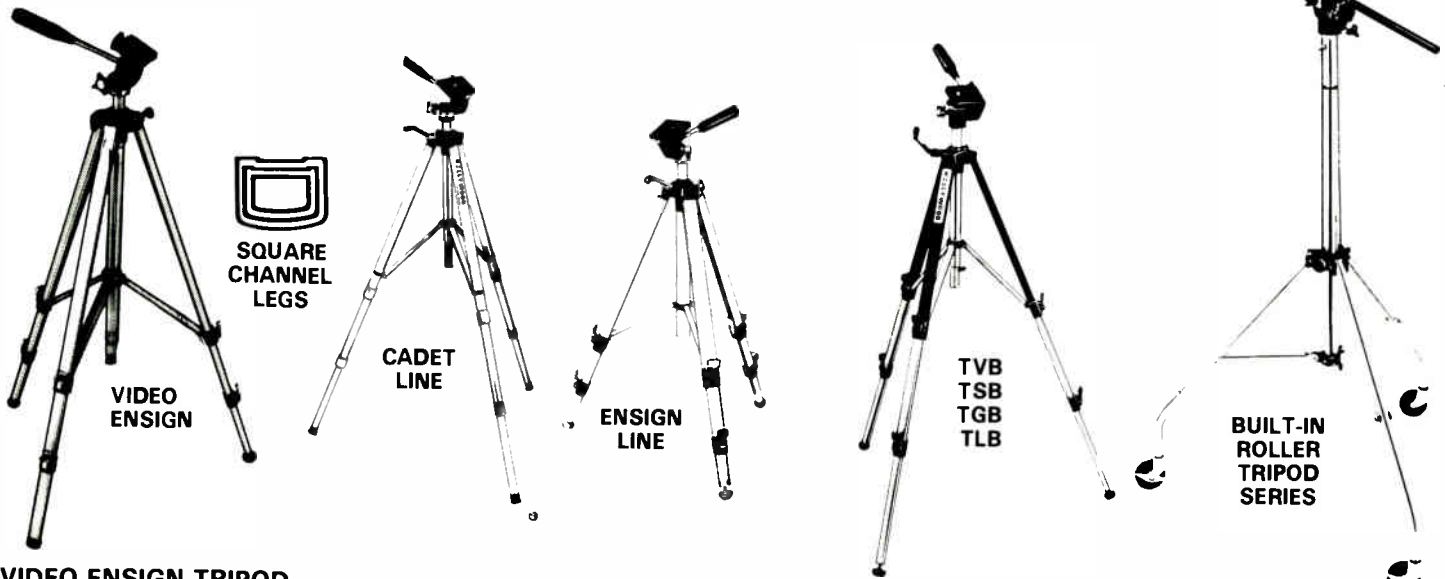


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(312) 588-2776

TRIPODS/ACCESSORIES

HOLLYWOOD TRIPODS



VIDEO ENSIGN TRIPOD

A most unusual tripod and outstanding value. Same construction as all Ensign models but features square channel legs for extra rigidity to hold most video cameras plus a built-in 3-sec. Unipod. Elevator disassembles from tripod to become independent Unipod for using outdoors when you don't want to carry tripod. Use tripod indoors; use Unipod outdoors. Includes spring head which counterbalances camera weight forward and backwards making an ideal tripod for video cameras. **\$99.95**

Square Channel Legs on Video Ensign and TSB are closed in back for extra strength compared to standard channel legs which are open in back making them ideal for heavier cameras.

VIDEO CADET

23mm Tubular leg, 3-sec., 3-way head, crank and gear elevator, positive collet locks. Features spring head to counterbalance camera weight plus leg braces for stability. Can be used for small to medium video cameras **\$69.95**

JET CADET

Same tripod but without spring head **\$49.95**

ENSIGNS: A duo of popular tripods featuring heavy 25mm open channel legs, 3-sec. with lever locks, leg braces, crank and gear elevator column with friction control, leg spikes.

VIDEO MASTER: As above with double action spring head. **\$74.95**

ENSIGN MASTER: As above with standard head without spring. **\$69.95**

TVB: 3-sec., 23mm Square Channel legs, leg braces, crank and gear elevator with friction control, leg spikes and with double action spring head. **\$69.95**

TSB: Same as above with standard head without spring. **\$59.95**

TGB: Same as TVB but open channel legs with standard head without spring. **\$54.95**

DOLLYPOD LINE

DOLLYPOD: Heavy duty tripod with its own built-in dolly. Uniquely designed with low center of gravity with legfulcrum closer to floor to balance weight and facilitate rolling on 3" wheels with locks. Clutch Elevator adjusts height by squeezing grip and locks automatically when released. Head same as Video King with quick-disconnect, leaf spring fluid effect panning, heavy spring tilting tension, long adjustable handle. **\$189.95**

DOLLYPOD II

Same as above but with simpler spring head without precision movement and no disconnect. **\$149.95**

DOLLYPOD III

Same as above but with large FluidTorq Sr. head (described above) for adjustable pan and tilt tension and smoother movement **\$189.95**

TRIPOD ACCESSORIES

VIDEO KADDYKART

Convenient, low priced way to support video camera and VCR. Camera mounts to 3-way panhead on telescoping tubing for adjustable height. VCR mounts on strong base with 3" wheels secured by adjustable strap. Now you can roll your equipment and follow action. Upright tubing disassembles for use as Unipod. **\$69.95**

L. O. DOLLY

Heavy duty dolly with 3" wheels will hold any type or size tripod and provide easy movement of camera and accessories. Adjustable clamps to hold tripod legs; carry handle for portability; each leg spring locks automatically. **\$109.95**

ACCESSORY SHELF: Strong wire shelf mounts to dolly for carrying VTR, accessories. **\$29.95**

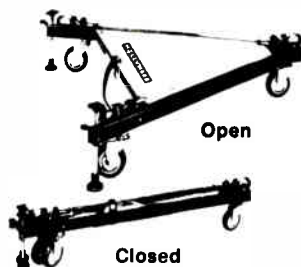
SHELVA-DOLLY

Unique medium weight dolly with its own built-in shelf to hold VTR and accessories. Three 3" wheels each has plunger lock with toe release. Fits any tripod with adjustable clamps. Canvas shelf folds up when dolly collapsed for easy portability. **\$84.95**



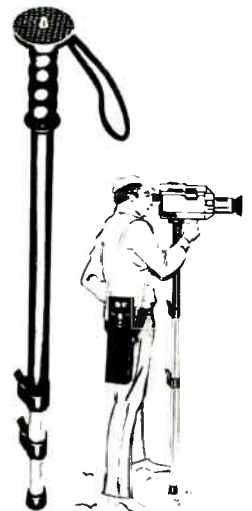
PODRACK

Wire basket which hooks onto legs of any tripod to hold VTR conveniently. Measures 13" wide and 4.5" deep expandable to 8". **\$39.95**



KWIKSTIK

Heavy duty telescoping Monopod with camera platform to hold still or video camera. Provides steady support with lightweight mobility which can be carried easily and change camera position quickly. 3-sec with fast lever lock; complete with wrist strap and rubber tip. **\$29.95**



ACME-LITE MFG. CO.

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Skokie, IL 60076
(312) 588-2776

BATTERY BELTS/LIGHTS



SELECT FROM 3 BATTERY BELT MODELS

Individual battery belts for strapping around the body to connect to and power VCR, cameras, lights, etc. Each cell in separate pockets to distribute weight evenly. All batteries rechargeable sealed lead acid to provide maximum energy for low cost. Cells are sealed to prevent leakage and can be used in any position; can be recharged in 16 hours up to 200 times from zero. Ideally suited for lighting applications because low impedance insures longest effective illumination output as well as extended discharge time for other applications. All belts include shoulder suspenders to lighten battery weight.

MODEL 12BB

Basic Battery belt 12V, 5 amp hour. Will power 100 watt light 20 minutes effectively; VCR or camera 4-5 hours. Has standard receptacle for cigarette lighter plug. Battery circuit fused. Includes 500MA charger and belt suspenders. Weight 5.5 lbs. \$149.95

MODEL 12BL

Long life Battery belt 12V, 10 amp hour. Same as above but powers light 45 minutes; VCR or camera 9-10 hours. Weight 11 lbs. With 1.0 amp charger, suspenders. \$290.00

MODEL 24BB

Heavy duty Battery belt 24V, 5 amp hour. Same construction as above. Includes 500MA charger and suspenders. Weight 11 lbs. \$345.00

BATTERY BELT WITH CHARGER



LOW VOLTAGE VIDEOLITES FOR BATTERY OPERATION

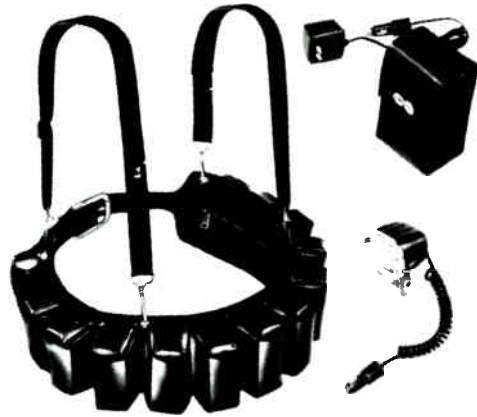
MODEL 7PB

12V 100W Light including quartz lamp for plugging into 12BB or 12BL Battery belt or any 12V battery system with 6 ft. coil cord with cigarette lighter plug. Fitted with 3/8 stand adaptor (see shoe fitting below) \$69.95

MODEL 7DL

24V 250W Light including quartz lamp for plugging into 24BB Battery belt or any 24V battery system with 6 ft. coil cord with cigarette lighter plug. Swivel yoke with 3/8 stand adaptor (see shoe fitting below). Lamp 75 hours, 3200K \$99.95

COMBINATION LIGHT AND BATTERY BELT KITS



PBB KIT

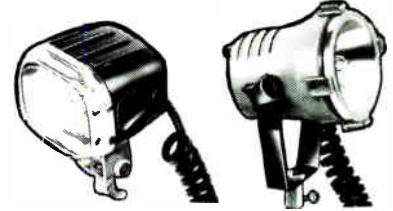
12V 5AH 100W. Includes 12BB Battery belt and 7PB low-voltage light plus 100 watt lamp, 500MA charger, shoe adaptor to mount light to camera, pouch to hold light, charger, suspenders. \$225.00

PLL KIT

12V 10AH 100W. Intended for longer running time. Includes No. 12BL Battery belt and 7PB low-voltage light plus 100 watt lamp, 1.0 amp charger, shoe adaptor, accessory pouch, suspenders. \$360.00

PHD KIT

24V 5AH 250W. Heavy duty kit for greater light output. Includes No. 24BB Battery belt and 7DL low-voltage light plus 250 watt lamp, 500MA charger, shoe adaptor, suspenders. Barndoors and diffusing scrim available for light. \$440.00



MODEL 7PB

MODEL 7DL

HOLSTER STYLE BATTERY KIT

MODEL PML

Combination 7PB light and lamp with holster-style battery for carrying over shoulder. 12V 5AH Battery in leatherette case and shoulder strap includes lamp, 500MA charger, shoe adapter, accessory pouch. Same specs as 12BB Battery belt. \$225.00

MODEL PBL BOOSTER

Separate holster-style battery and case for plugging into PML to double running time. Includes 500MA charger and battery connector. \$160.00



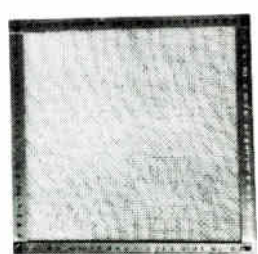
HOLSTER STYLE BATTERY KIT

VIDEOLITE ACCESSORIES



NO. 4VS

Barndoors, 4-leaf Rotating for Model 7DL light \$29.95



NO. VSS

Diffusing Scrim for Model 7DL light \$10.95



NO. 25

Shoe Adapter for 7PB or 7DL to mount light to video camera \$7.95

Prices and Specifications Subject to Change Without Notice.

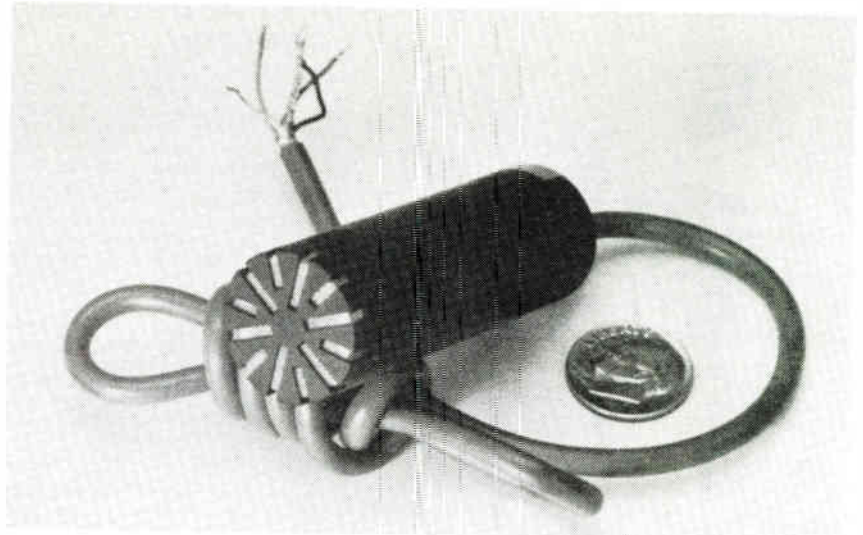
VC-5

Superior Performance

- Flat frequency response — beyond 20 kHz
- Low noise floor
- Wide dynamic range
- Excellent directivity -25 dB (typ)
- High output — (-) 36 dBV/Pa
- Unobtrusive — black chrome housing

Applications

- Analog and digital recording — low noise
- Percussion — wide dynamic range
- Strings — flat frequency response
- Vocal — excellent directivity
- Leslie speakers
- Podiums



Specifications

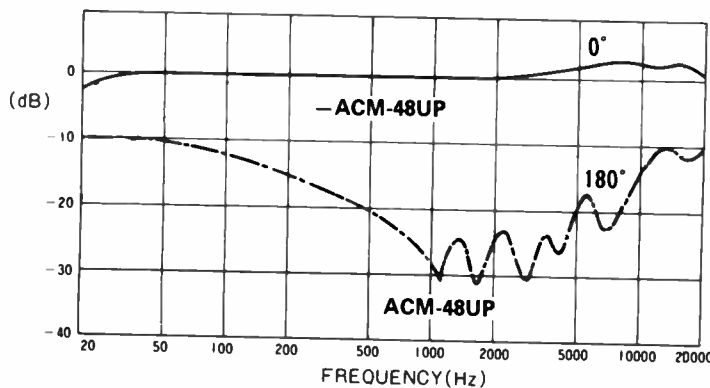
Frequency Response: 30-16kHz ± 3 dB - 20kHz ± 5 dB
Sensitivity: -36 dBV/Pa
Directivity: 180° (-) 20dB at 1kHz
Distortion: 134dBSPL — 1% THD (48VDC polarization)
Noise Floor: 18dBA typical
Preamplifier: 9VDC at 2mA
 Special order voltages are available for OEM and volume end users.
Polarization: 48VDC (100VDC max)
Output Impedance: 1K ohms
S/N Ratio re: 94dBSPL — 76dB
 re: 1% THD — 116 dB
Dimensions: 2.5 x .75 inches
Mounting: 5/8 inch — 27 thread female

Finish: Black chrome

Matching 13" Black Chrome Gooseneck is available — AGN13B — \$19.95 w/Mic Purchase — \$29.95 alone

Hook Up: Underminated cable
 Black — Grnd
 Shield — Grnd
 Red — 9VDC
 Green — Polarization (48VDC)
 White — Signal DC coupled nominal ~ 4VDC

The suggested Pro Net is \$259.95. Substantial volume OEM and End User discounts are available.



ACOustics Begins with ACO

DŠGN — 85
 DS 48UP — 85

The
"ALTERNATIVE"
 Family

of **PRECISION MICROPHONE PRODUCTS**



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7013	4134	1560-9533	1134*
7016	4135	1560-9534	—
7017	4136	1560-9535	—
7022	4145	—	—
7023	4144	—	—
7046	4165	—	—
7047	4166	—	—
7048	4148*	—	—

*Similar — Compare specifications



ACM 48UP
 Only \$259.95

ACM 48UP CARDIOID MICROPHONE

Superior Performance

- Flat frequency response — beyond 20 kHz
- Low noise floor
- Wide dynamic range
- Excellent directivity — 25 dB (typ)
- High output — (-) 36 dBV/Pa
- Unobtrusive — black chrome housing

Applications

- Analog and digital recording — low noise
- Percussion — wide dynamic range
- Strings — flat frequency response
- Vocal — excellent directivity

AGN 13B matching gooseneck in black when purchased with ARM 48UP \$19.95
AGN 13B stand alone 29.95

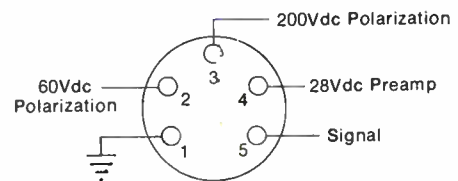


PS 9200

PS 9200

- 3 way operation
- 9V alkaline battery
- AC wall adaptor PS9 — \$19.95
- External 6-18VDC
- Over 40 hours battery operation with 4012 preamplifier
- Input connector 5 pin (Switchcraft D5F) or equivalent
- BNC output connector — AC coupled 10μ F
- **Preamp Supply**
 28V ± 5% unloaded (1.5K source)
 5mA/channel maximum
 Noise: .005% peak (typical)
- **Polarization**
 200VDC ± 2% (20 meg source)
 60VDC ± 5% (20 meg source)

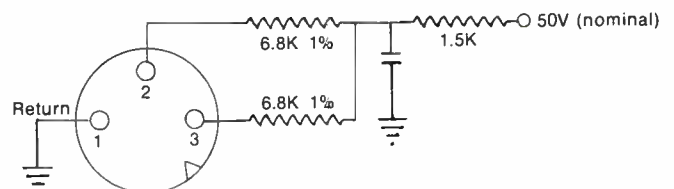
PS 9200 1-9 Pro Net(s) \$325.00



PS 9048

PS 9048

- 3 way operation
 - 9VDC alkaline battery
 - AC wall adaptor PS9 — \$19.95
 - External 6V-18VDC
 - Up to 40 hours operation at 1mA load
 - Output voltage: 50VDC no load ± 5%
 - Maximum current per channel: 5mA
 - Output: 50μ Fd non polarized capacitors
- PS 9048 1-9 Pro Net(s) \$249.95**



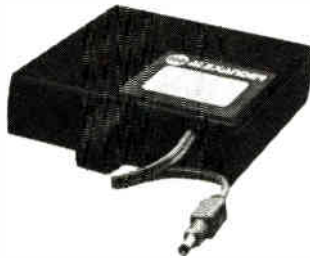
DSGN — 85 DS 48UP — 85

Prices and Specifications Subject to Change Without Notice.

ALEXANDER BATTERY CO.

4410 W. Elm St.
P.O. Box 365
McHenry, IL 60050
(800) 323-3813 (800) 892-2265

If you've ever been on location with portable cameras or VTRs, you probably know the frustration of a dead or defective battery pack. You know what it can cost in wasted dollars and man hours and missed stories and deadlines. Now Alexander Manufacturing can end all that with this line of quality nickel-cadmium rechargeable battery packs.



Alexander BP20A-11. (Top photo) 13.25 volt, 2.3 AH. Improved, with a 5-amp internal fuse and heavy-duty molded plug.

Replaces these packs: Sony BP20A, Christie 10B25A3, Cine BP512FC, Pep V20, Frezzolini FNC-12-2.

Alexander BP60A. (Right photo) 13.75 volt, 2.2 AH.

Replaces these packs: Sony BP60, Cine BP612FC, Pep V60, Paggpac PP-60.



Alexander JVC-1. (Above) 12 volt, 2.3 AH.
Alexander JVC-11 13.25 volt, 2.3 AH. Must be charged by Alexander 20-11 Charger.

Replaces these packs: JVC PBP-1, Panasonic LCR-3012, Christie 10B25C3, ER5, Cine CBP2J5FC, Pep V44, Frezzolini FBP 12-25, Paggpac PP-1.

Alexander BP90. (Right) 12 volt, 4 AH. Newly redesigned, including improved molded plug.

Replaces these packs: Sony BP90, Christie ER6, Cine BP912FC, Pep V90, V90N, Frezzolini FBP-90, FBP-90FC, Penolt PE90.



REPLACEMENTS

EQUIPMENT	ALEXANDER NO.
JVC AV/CS4500 CR400U Recorder CR400LU Recorder GC4800U/CR4400U GC/PV4800U HP4000AU HR4100 Recorder HR4110 Recorder HR4100/GC3350 HR4100/G-71U5 HR4100/G-31U5 TM41AU Monitor	JVC-1 or JVC-11
PANASONIC NV-8400 Camera NV-9400 Recorder PV2000/PK300 PV-2100 Recorder PV-2300 Recorder PV-3000 Recorder	JVC-1 or JVC-11
RCA TH-50 Recorder	BP90

SONY AV-3400 Recorder AV-3450 Recorder AV3400/AVC3450 AV3400/AVC3400 AV8400/AVC3450	BP20A-11
BVH-500 Recorder	BP90
BVP-100 Camera	BP20A-11
BVP-300 Camera BVP-350 Camera BVU-50 Recorder	BP90
BVU-100 Camera	BP20A-11
BVU-110 Recorder BVU-500 Recorder	BP20A-11
DXC-1600 Camera	BP20A-11
DXC-1610 Camera DXC-1640 Camera DXC-1800 Camera DXC-6000 Camera SL-340 Recorder SLO-340 Recorder SL3000/HVC1000	BP60A
SO-3800 Recorder SO-4800 Recorder	BP20A-11
VO-3800 Recorder VP-4800 Recorder	BP20A-11 BP60A
THOMSON MC-601	BP90

BATTERIES/CHARGERS

CHART LOCATES PROPER ON-BOARD PACK

EQUIPMENT	ALEXANDER NO.
AMPEX BCC-14 BCC-20	7600
CINEMA PRODUCTS MNC-71CP	7600 or 7700
HITACHI FP-10 FP-21 FP-22 FP-405	7600-11 or 7700-11
SK-81 SK-91	7600 or 7700
IKEGAMI HL-78A HL-79A	7600 or 7700
ITC-350	7600
JVC KY-1900 KY-2000 KY-2700	7600-10 7600-11 or 7700-11 7700
PANASONIC AK-710 AK-760	7600-10 or 700-11
PHILIPS LDX-14	7600 or 7700
RCA TK-76 TK-76B TK-76C TK-86	7600 or 7700
SONY BVP-300 BVP-350	7600 or 7700
DXC-1610 DXC-1640 DXC-1800 DXC-6000	7600-11 or 7700-11
THOMSON MC601	7600 or 7700
TOSHIBA PK-60	7600



Alexander 7700. Like 7600, except is equipped to mount on QR5V-type bracket.

Replaces: Anton Bauer Pro Pack 14.

Alexander 7700-11. Like 7600-11, except is equipped to mount on QR5V-type bracket.

Replaces: Anton Bauer Pro Pac 13.

Alexander B77 Mounting Bracket. Accommodates 7600 type batteries.

Fits these cameras: RCA TK-76, TK-76B, TK-

CHARGERS FOR EACH BATTERY PACK



ON-BOARD UNITS



Alexander 7600 Ride Behind is a fully rechargeable nickel-cadmium 14.4 volt, 4 AH unit. Equipped with studs for snap-on mounting on any camera equipped with a standard or short power cable to camera.

Replaces these packs: Christie KR2, Cine OB4-14, OB5-14, OB5-145, Frezzolini BP14, PEP H14.

Alexander 7600-11 Ride Behind. Like TR7600, 13.2 volt, 4 AH unit.

Replaces these packs: Christie KR1.

Alexander 7600-10 Ride Behind. Like TR7600, 12 volt, 4 AH unit.

Replaces these packs: Cine OB5-12, Frezzolini BP12, PEP H12.

Alexander CR90-1 Smart Charger. We call it "smart" because it detects when the battery is fully charged and automatically drops to trickle charge. Will charge any 12-15 volt battery with a capacity of at least 4 AH.

Alexander 20-11. Completely recharges three BP20A-11, JVC-1 or JVC-11 packs in ten hours or less. Cannot harm battery by overcharging.

Alexander 20-40. Completely recharges two BP90 packs in ten hours or less.

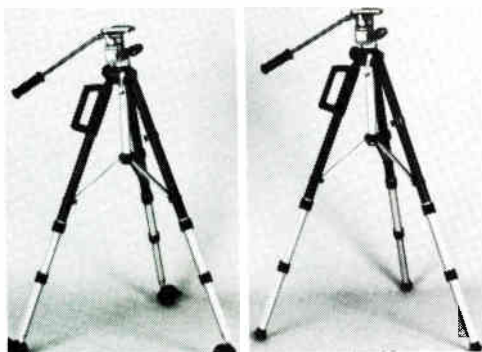
Alexander CR76-2. Completely recharges two 7600 "Ride Behind" packs in ten hours or less. Cannot harm battery by overcharging.

AMBICO, INC.

50 Maple Street
Norwood, NJ 07648-0427
(201) 767-4100

TRIPODS/HEADS/DOLLIES

VIDEO TRIPODS



V-0523

V-0522

Model V-0522 Fluid Head Video Tripod

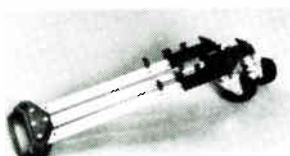
Internationally recognized by video professionals as the best type of head for steady, jitter-free videocamera movement, the specially-designed head housing encases fluid and uses its viscosity to provide the smoothest possible movement throughout a 360° pan or a 180° tilt. Tripod has three-section, channeled tubular legs for maximum stability and portability. Folds to a compact 29 1/2 inches; extends to a full 72 inches.

\$219.95

Model V-0523 Wheeled Fluid Head Video Tripod

All the features of the remarkable Model V-0522 above, including fluid motion control and fluid head. In addition, has large, smooth rolling wheels for following the action virtually anywhere. Includes Sure-Stop brakes on each wheel for steady still shots.

\$259.95



Model V-0599 Video Dolly

For tracking shots and easy movement of the video tripod. Screw adjustable clamps securely hold each tripod leg on dolly. Large size wheels roll smoothly, even on carpeting or tile floor. Built-in, Sure-Stop brakes on each wheel hold steady for still shots. Fits most tripods. Folds compactly for easy carrying. Carrying handle makes transporting easy.

\$69.95

Model V-0502 Video Tripod

Our most economical tripod, yet specifically designed for the video-camera. Continuously adjustable tilt control helps keep camera steady for smooth pans and tilts. Like our more expensive models, includes center leg braces for added stability. Tubular, three-



V-0514

V-0512

V-0502

V-0511

section legs with channels for extra steadiness. Trigger-release, lever-style leg locks are designed to open with one hand, for quick extension of legs with no pinched fingers. No-mar rubber feet will not slide, even on smooth surfaces. Panhead handle also becomes carrying handle. **\$89.95**

Model V-0511 TLC Square-Leg Video Tripod

TLC (Tilt Level Control) means the video-camera cannot tilt forward suddenly. Simple screw adjustment sets large panhead to weight and balance of individual video-camera for steady, smooth shooting. Square leg construction is closed cross-section (not open "U") for strength combined with light weight. **\$129.95**

Model V-0514 Professional Video Tripod w/Wheels

Heavy-duty, tubular legs are channeled for maximum stability. Channels along side of each three-section leg keep each section aligned with next. Large-size wheels for following action. Rolls smoothly, even over shag rugs. Built-in Sure-Stop brakes for still shots. TLC (Tilt Level Control), and extra large panhead for videocameras. **\$189.95**

Model V-0512 (without wheels)

All features are exactly the same as Model V-0514. **\$149.95**



Model V-0325 Quick Release Camera Mount

For quick mounting and removal of video-camera on tripods. Securely attaches to all AMBICO tripods; however, not required with Model V-0522 or V-0523. **\$9.95**

Model V-0524 Videocamera Shoulder Pod

Complete mobility, yet new steadiness for hand-held shots. Weighs just 3 pounds. Any camera can be mounted on the large size mounting bracket; tubes and belt adjust to fit any body size.

- Hands free operation
- Works on left or right side
- Easy on — easy off

\$59.95



Model V-0515

A VCR caddy and camera support, all in one. Video recorder mounts below, held safely in place with heavy web straps (included). Videocamera attaches to built-in three-section monopod with full-function head for pans and tilts. Over-size wheels roll smoothly and have built-in brakes for still shots. Includes wrist strap for easy portability. **\$99.95**

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AMBICO, INC.

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Norwood, NJ 07648-0427
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CAMERA BAGS/TELE-CINE CONVERTERS/ POWER SUPPLY/CABLES/ANALYZER



V-0430



V-0431

Videocamera Bags

Designed for a total video system. Dividers allow ample room for videocamera, plus accessories. Practical, good-looking "caterpillar" tread design cushions equipment and won't slide on smooth surfaces. Nylon fabric outer covering resists moisture, mildew, and abrasion; luxurious, cushioned vinyl nap inner lining is gentle to equipment inside. Accessory pockets for batteries, tapes, and cables. Tripod can be carried under belting. Web straps adjust for convenient hand or shoulder carrying.

V-0430
Videocamera Bag **\$49.95**

V-0431
Videocamera and Equipment Bag **64.95**



Model V-0327 Tele-Slide Converter

Places photo slides on tape without a slide projector. Tele-Slide attaches to videocamera lens mount. Camera is aimed into artificial light source or daylight. Videocamera's zoom lens can crop slides, camera controls can color-correct slides, and sound or music can be added. Converter can also transfer color negative film to positive image if camera is equipped with polarity reversal switch. Includes adapter rings to fit most videocameras. **\$99.95**



Model V-0610 Tele-Cine Converter

Pays for itself after a few tapes, compared with the cost of commercial video transfer services. Image from any 8mm or 16mm movie projector, or slide projector, passes through precision optics to a high-contrast, rear projection screen. Videocamera shoots image on this screen, which can be color-corrected, can have narration, music, or other sound added. If videocamera does not have macro capability, an AMBICO Macro Lens Attachment, V-0314 will adapt camera for use with Tele-Cine. **\$49.95**



Model V-0611 Titling Tele-Cine Converter

Adds another feature to the basic Tele-Cine Model V-0610; titles are superimposed as recording takes place. With Titling model, transfer letters and clear, flexible plastic strips are included. Plastic strips fit into slots in front of screen on Titling converter. Titles are spelled out on plastic strips, and they can be moved horizontally or vertically across screen to place titles on movies or slides as they are recorded by videocamera.

Kit Includes:

- 3 — color marker pens
- Set of Peel-'N'-Stick letters and numbers (all black)
- Set of acetate sheets **\$59.95**



Model V-0605 AC Camera Power Supply Adapter

For use with any VHS recorder not equipped with camera input. Power supply adapter breaks out signal into video, audio and pause. On-off switch has LED indicator light. **\$64.95**



V-0602 V-0603

Videocamera Extension Cables

Thirty-three-foot cables with 10-pin male to 10-pin female connectors. All 10-pin connectors wired for stereo capability.

Model V-0602 Panasonic Extension Cable

Fits all Panasonic and Panasonic-type cameras. **\$69.95**

Model V-0603 JVC Extension Cable **\$69.95**



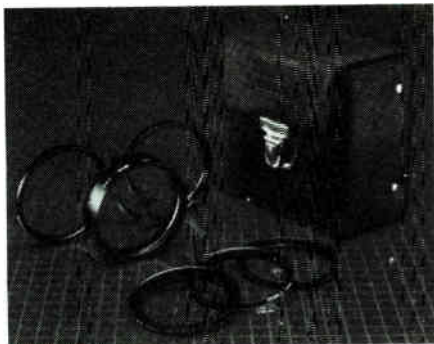
Model V-0329 Cable Analyzer

Solves the problem of finding defective cables in complex cable networks. Checks cables with F, RCA, Mini, and Phone plugs. Each end of cable attaches to tester and any combination of plugs is possible. Test light indicates cable status. Four switch settings test center conductor, outer conductor (ground), and indicate short circuits. **\$24.95**

AMBICO, INC.

50 Maple Street
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(201) 767-4100

VIDEO LENS ATTACHMENTS



Model V-0319 Video Special Effects Kit

Three high-quality, screw-in lens attachments. **\$59.95**

Multi-Imager creates identical multiple images which can be rotated with control arm.

Rainbow-Effect lens turns light sources into dramatic, prismatic effects in all colors of the spectrum.

Starburst lens attachment makes any point of light become a brilliant star. Kit also includes carrying case with protective pouch for each lens attachment, and adapter rings to fit most video cameras. All handsomely gift boxed.



Model V-0990 Lens Guard Kit

Neutral density lens attachment protects camera tube when shooting toward strong light. Prevents "hot spot" burn on camera tube. Also adds contrast for extra-vivid coloring. Kit also includes Clear Optical Lens Shield to protect camera lens from fingerprints, dust, spray, etc., while pictures are shot distortion free. Kit comes in carrying case with protective pouch for each lens attachment, and with adapter rings. **\$15.95**



Model V-0310 Fisheye Lens Attachment

Dramatically widens angle of view. Helpful when shooting in tight quarters. Used close up, it creates those well-known fisheye caricature effects. **\$74.95**

Model V-0341 Hemispheric Lens Attachment

Gives a picture area three times larger than the videocamera's normal wide-angle capability. Tremendous depth-of-field means virtually limitless focal length, from directly in front of lens to infinity. Large precision lens provides distortion free image with no fish-eye effect, no barrel distortion, etc. Works with any videocamera having macro capability. **\$99.95**

Model V-0311 Close-up/Wide View Lens Attachment

A two section attachment. As a close-up allows tight, detail shots; for example, a wedding invitation card. As a wide-view, takes in the entire shot when camera cannot be moved back further. Gives 166 2/3 % greater field of view than standard camera lens. **\$69.95**

Model V-0342 Telephoto Lens Attachment

A lighter-weight, more compact and economical telephoto lens attachment. Adds length to the camera's zoom lens, and allows tight close-ups with a soft focus background that fills entire frame. 1.4X magnification. **\$99.95**

Model V-0312 Telephoto Lens Attachment

Acts as a telescope to make the longest zoom even longer. Great for sports action, wildlife, and travel. Used for close-ups, gives sharp focus on subject with soft focus on background. 1.5X magnification. **\$175.00**

Model V-0314 Macro Lens Attachment

For extreme close-ups, less than six inches from subject. A +4-diopter, high-optical-quality attachment; especially useful for videocameras with no macro capability. Necessary when using AMBICO Tele-Cine Converter with video cameras not designed for close-up work. **\$14.95**

All lens attachments are supplied complete with carrying case and adapter rings to fit most video cameras.

LENS ATTACHMENTS & MAINTENANCE ITEMS

VIDEO SYSTEM MAINTENANCE ACCESSORIES



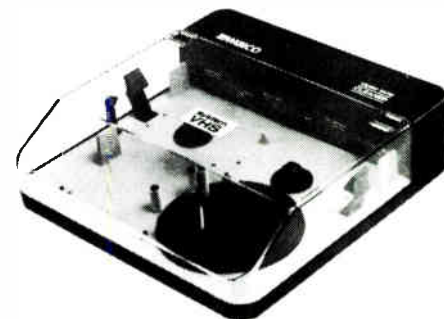
Head-Cleaning Cassettes

Improve picture quality and reduce wear on video heads. Clean entire tape track (audio and video) in a few seconds. Specially formulated cleaning fluid included, along with simple instruction.

V-0732
VHS Head-Cleaning Cassette **\$14.95**
V-0731
Beta Head-Cleaning Cassette **14.95**

Model V-0733 Head-Cleaning Replacement Fluid

For use with Head-Cleaning Cassettes, V-0732 and V-0731. **\$7.95**



Videotape-Cleaning Systems

Cleans a T-120 minute tape in less than fifteen minutes, with automatic shut-off at end of cycle. Includes 3.5-ounce bottle of cleaning fluid. Replacement fluid available in 3.5-ounce and 17.5-ounce bottles.

V-0330
VHS Videotape-Cleaning System **\$149.95**
V-0331
Beta Videotape-Cleaning System **149.95**

Videotape-Cleaning Replacement Fluid

For use with Videotape-Cleaning Systems, V-0330 and V-0331.

V-0333
Tape-Cleaning Fluid (3.5 ounces) **\$ 7.95**
V-0334
Tape-Cleaning Fluid (17.5 ounces) **17.95**

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VC-11

30mm TUBES

XQ1410 Series Plumbicon® Camera Tube

The AmpereX XQ1410 Series is a 1.2" (30mm) diameter Plumbicon television camera tube with high resolution leadoxide photoconductive target, separate mesh construction, magnetic deflection and magnetic focusing and internal light bias. It's intended for highest quality usage in XQ1410L, XQ1410R, XQ1410G and XQ1410B types of color cameras, in broadcast, educational and high quality industrial applications.

The XQ1410 series has increased resolution and internal light bias for reduction of lag under low-key conditions.

XQ1413, XQ1415 Series Plumbicon® Camera Tube

The AmpereX XQ1413 Series is a 1.2" (30mm) diameter Plumbicon camera tube with high resolution lead oxide photoconductive target, with extended red response.

The XQ1413 Series is interchangeable with the XQ1023 Series, however the XQ1413 Series has internal light bias for reduction of lag under low-key conditions.

Tubes of the XQ1415 Series are identical to tubes of the XQ1413 Series but incorporate an infrared reflecting filter on the anti-halation glass faceplate.

1" TUBES

XQ1070 Series Plumbicon® Camera Tube

The AmpereX XQ1070 Series is a 1" (25mm) high resolution Plumbicon television camera tube with low heater power, separate mesh construction, magnetic focusing and deflection.

The XQ1070 Series is intended for use in highest quality broadcast camera equipment.

The XQ1070 Series is also mechanically interchangeable with 1" diameter vidicons with separate mesh construction and has the same base pin connections.

XQ1075 Series Plumbicon® Camera Tube

The AmpereX XQ1075 Series is a 1" (25mm) high resolution Plumbicon television camera tube with extended red response, and is intended for use in high quality broadcast camera equipment where infrared filtering is required but not present in the camera optical system.

The XQ1073 Series is identical to the XQ1075 Series with the exception that it does not have an infrared cutoff filter.

XQ2170 Series Plumbicon® Camera Tube

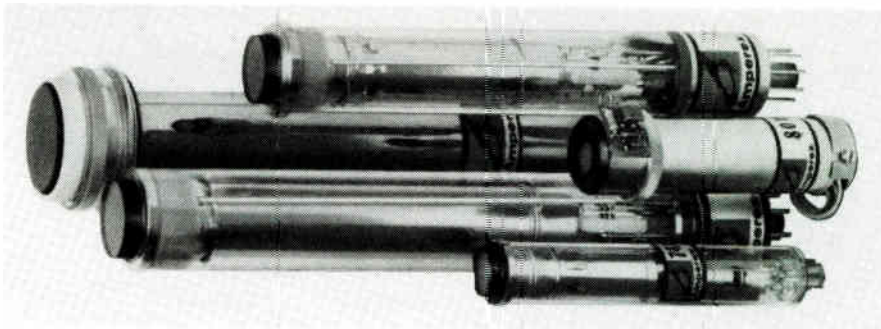
1" (25mm) Diode Gun™ (Patent Pending)
High Resolution Plumbicon® Camera Tube

The XQ2170 Series Plumbicon® Camera Tube is a high sensitivity, high resolution, low lag television pick-up tube with lead-oxide photoconductive layer, separate mesh and all magnetic deflection and focus.

It has a new electron gun assembly designed to significantly improve resolution and lag. The electron gun operates in a diode mode. The beam has a uniform energy distribution, improved beam acceptance and speed of response, and enhanced resolution. The gun also provides very high beam reserve, minimizing comet tailing and blooming in cameras with dynamic beam control.

© T.M. N.V. Philips of Holland

Note that while the XQ2170 Series is mechanically interchangeable with the XQ1070 Series, the "diode gun" requires a positive grid 1 voltage (up to + 20V) and draws a positive grid current of up to 5mA. Cameras designed around XQ1070 then, must be modified to accommodate this.



XQ1500 Series Plumbicon® Camera Tubes

The AmpereX XQ1500 is a 1" (25mm) high resolution Plumbicon television camera tube which features the Anti-Comet Tail (ACT) gun designed to handle high-lights up to four F stops over peak white. The internal light bias reduces lag to a minimum. The XQ1505 extended red Plumbicon tube for best red response incorporates an infrared reflecting filter on the anti-halation glass faceplate.

2/3" TUBES

XQ4187 (85XQ) Plumbicon® Camera Tube

2/3" (17.8mm) diameter Plumbicon television camera tube with Diode Gun™ for dynamic beam control DBC and low output capacitance for best signal-to-noise ratio. The XQ4187 R, G, & B has a high resolution lead oxide photoconductive layer, Electrostatic Focus magnetic deflection with high stability (HS) electrode structure. It requires very low power and has low deflection field damping.

XQ3467 Series Plumbicon® Camera Tube

2/3" (17.8mm) diameter Plumbicon television camera tube with a lead oxide, high resolution layer. The XQ3467 R, G, & B employs a triode gun with Electrostatic Focus and Magnetic Deflection.

XQ3457 (87XQ) Series Plumbicon® Camera Tube

2/3" (17.8mm) diameter Plumbicon television camera tube with high resolution lead oxide layer, Magnetic Focus and Electrostatic Deflection (MS). The XQ3457 R, G, & B incorporates the Diode Gun™ for dynamic beam control DBC, Low Capacitance for high signal-to-noise ratio and is only 87.5mm long for smaller cameras.

XQ2427 Series Plumbicon® Camera Tube

2/3" (17.8mm) diameter Plumbicon television camera tubes with special high resolution lead-oxide photoconductive target, low heater power, magnetic focusing and deflection.

Special features are:

- New photoconductive target for increased resolution
- "Diode" electron gun for DBC (dynamic beam control) to minimize comet tailing and blooming

XQ3427 Series Plumbicon® Camera Tube

2/3" (17.8mm) diameter Plumbicon television camera tubes with special high resolution lead-oxide photoconductive target, low heater power, magnetic focusing and deflection.

Special features are:

- New photoconductive target for increased resolution
- "Diode" electron gun for DBC (dynamic beam control) to minimize comet tailing and highlight blooming
- Low output capacitance for high signal to noise ratio

XQ1427 Series Plumbicon® Camera Tube

The XQ1427 is a 2/3" (17.7mm) Plumbicon television camera tube with high resolution leadoxide photoconductive target, separate mesh construction, low heater power, magnetic deflection and magnetic focusing.

The XQ1427R, XQ1427G, and XQ1427B types are intended for use in color cameras in Field Production, Broadcast Studio, Electronic News Gathering, educational and high quality industrial applications.

1/2" TUBE

XQ4087 (80XQ) Plumbicon® Camera Tube

The XQ4087 is a 1/2" (8mm scan diagonal) Plumbicon television camera tube with low heater power, magnetic deflection and electrostatic focusing, assembled with a DT1120 small lightweight deflection unit.

Special features are:

- Diode electron gun for DBC (dynamic beam control), which minimizes comet tailing and blooming
- Low output capacitance achieved by a special signal plate with contact through the window
- Low deflection field damping by wall electrodes
- Excellent geometry and registration capability
- Reduced line pick-up due to side connection of the mesh
- Low power consumption due to electrostatic focus

The XQ4087 tubes are intended for color and monochrome cameras in broadcast (Electronic News Gathering), educational and high quality industrial applications.

Antimony Trisulfide Vidicons

Type	Length mm/in.	Mesh Construction I - Integral S - Separate	Focusing Method	Deflection Method	Max Image Size mm (Scan diagonal)	Heater		Typical Operation Conditions (2856K Source)					Application Remarks
						Current (mA)	Power (Watts)	Sensitivity		Response (4 x 3 Aspect)			
								At Dark Current (nA)	Output Signal nA at F.C.	At Mesh Voltage	Amp Response at 400 TV Lines/PH (%)	Limiting Resolution (TV-Lines) or (Line Pair/ mm)	
XQ1240	159 6.260	S	M	M	16	95	0.6	20	300 at 0.1	425 950	50 65	750 1000	1" X-Ray (Medical and Industrial)
XQ1241	159 6.260	S	M	M	16	95	0.6	20	300 at 0.1	425 950	50 65	750 1000	1" Industrial
XQ1280	159 6.260	S	M	M	16.2	95	0.6	20	150 at 0.1	425 950	—	60LP/mm	1" Ultra High Resolution
XQ1285	159 6.260	S	M	M	15.8	95	0.6	20	150 at 0.1	425 950	—	50LP/mm	1" with Fiber Optic Face plate for Medical or Industrial X-Ray Equipment
XQ1270/ 20PE11	108 4.235	I	M	M	11	95	0.6	20	200 at 0.1	400	35	500	2/3" Industrial and consumer CCTV applications
XQ1271/ 20PE13	108 4.235	S	M	M	11	95	0.6	20	200 at 0.1	400	35	500	2/3" Industrial and consumer CCTV applications
XQ1272/ 20PE14	108 4.235	S	E	M	11	95	0.6	20	200 at 0.1	600	35	500	2/3" Industrial CCTV applications with electrostatic focus
XQ1600/ S4152	85 3.35	S	E	M	8	105	0.3	10	120 at 0.1	550	> 20	450	1/2" Miniature, electrostatic focus

Newvicons

XQ1440/ S4076	159 6.260	S	M	M	16	95	0.6	—	240 at 0.5	500	50	800	1" Industrial CCTV application
XQ1442/ S4093	160 6.299	S	M	M	16	95	0.6	—	240 at 0.5	500	50	650	1" Industrial CCTV application with fiber optic faceplate
XQ1274/ S4075	108 4.235	S	M	M	11	95	0.6	—	260 at 0.1	400	35	650	2/3" Industrial CCTV application
XQ1275/ S4092	108 4.235	S	E	M	11	95	0.6	—	260 at 0.5	35 to 55	30	600	2/3" Industrial CCTV application with electrostatic focus
XQ1601/ S4162	85 3.35	S	E	M	8	105	0.3	—	110 at 0.1	550	> 20	450	1/2" Miniature electrostatic focus

Deflection and Focusing Coil Units

Type	Max. Out Side Dia. (mm)	Overall Length (mm)	Weight (g)	Inductance (mH)		Resistance (ohms)			Current (mA)			Tube Diameter	Remarks
				Line Deflec- tion Coils	Frame Deflec- tion Coils	Line Deflec- tion Coils	Frame Deflec- tion Coils	Focus Coil	Line Deflec- tion Coils	Frame Deflec- tion Coils	Focus Coils		
AT1116	60.4	136.7	615	0.78	28	2.4	62	149	300 p-p	43 p-p	105	1"	Front load, for B/W and color applications
KV-12S	46	84	300	0.86	28.7	3.2	146	55	160 p-p	25 p-p	120	2/3"	Front load, for B/W applications
KV-19G	30	80	56	0.9	23	4.6	146	—	160 p-p	25 p-p	—	2/3"	Front load, "Electro-Magnetic" for B/W applications

401 Broadway
Redwood City, CA 94063
(415) 367-2011

ARC

1/2" M-Format VTR/Camera System

The Ampex ARC system utilizes the 1/2" M-format to produce broadcast video and audio quality in a portable package that is superior to 3/4" VTRs. The video recording system is the latest technology in separate luminance and chrominance signal recording, producing superb picture quality generation after generation of post-production processing. The two channels of broadcast-quality audio also feature the Dolby C* noise reduction system for low noise, multi-generation performance.

This lightweight, versatile system is ideally suited for EFP applications. You can shoot and record quickly and easily, then edit and go on the air via necessary time base correction but without dubbing to another format. The self-contained camera/VTR unit can be operated by one person and uses readily available, inexpensive VHS cassettes.

The complete ARC system consists of a camera/recorder unit, a portable VTR, a studio editing VTR and an editing controller. All components interface with each other and are compatible with existing studio equipment.

AMPEX ARC-10

Camera/VTR

The Ampex ARC-10 integrated camera/VTR allows one person to cover all the action with comfort, with precision, and with efficiency. It produces 20 minutes of recording time on one VHS cassette. The rechargeable battery gives a full 60 minutes of power.

Weighing less than 22 lbs., the ARC-10 camera and VTR lock together to form a self-contained system with freedom from connecting cables, shoulder straps, and pack frames. The integrated camera/VTR utilizes microprocessor-based circuitry to provide automatic functions. It features a weather-proof, high power, motorized zoom lens with automatic lens cap when the camera is in stand-by or off. Other features include a high sensitivity cardioid microphone that is removable for interviews and a slide-in/out rechargeable battery pack for rapid change in the field.

The camera employed in the ARC-10 is a 3-tube prism optics camera with automatic beam control, 2-line vertical aperture corrector, black stretch, and corner registration circuitry.

Choose from either a 2/3" Plumbicon* or Saticon** tube. The economical Saticon offers high resolution with 550 lines; the Plumbicon offers higher resolution with 600 lines. Signal-to-noise ratio is 59dB for Plumbicon, 58dB for Saticon.



AMPEX FPR-10

Portable VTR

You'll appreciate the flexibility of the FPR-10: it can work as part of the ARC-10 System while directly coupled with the camera; it can be separated for operation as a two-unit system equipped with a multipurpose video adaptor and used with any camera or video source with a composite output.

The FPR-10 comes complete with two audio tracks, a dedicated SMPTE/EBU Time Code Track, a built-in Backspace Record function, and a built-in SMPTE/EBU Time Code Generator. The controls located at the rear of the unit are easily accessed.

ARC-20

Portable VTR

The ARC-20, full-featured portable VTR, weighing under 20 lbs. offers the user built-in confidence, quality replay capabilities, and much more. ARC-20 complements the Ampex ARC-10 Recorder/Camera, and it gives a field director instant color playback in even the remotest locations.

ARC-20 can also function as the primary field recorder, serving as an acquisition VTR as well as offering field replay. ARC-20's light weight and small size make it the ideal match for portable ENG/EFP cameras that operate in a two-piece configuration.

ARC-20 offers uniquely powerful production capabilities in a fully portable VTR.

ARC-40

Studio VTR

After the ARC-10 and ARC-20 have been used for field recording, the ARC-40 provides a full range of post-production capability. With its optional plug-in digital time base corrector, the ARC-40 is ready to play direct to air, or work in a variety of editing situations. Convenient controls, picture-in-shuttle, search and jog provide full stand-up editing capability.

The ARC-40 also fits into all types of editing systems arrangements, from the simplest two-machine system controlled with the optional ARC-30 Editing Controller, to the most powerful multi-machine, multi-format systems. Existing interfaces allow the ARC-40 to work with most popular computerized editing systems.

ARC-30

Editing Controller

The ARC-30 is a low-cost, sit-down editor for a two ARC-40 editing configuration. Control track based, one-event edits keep its operation simple but flexible. It controls edits between the ARC-40s in the dub mode, maximizing the M-format multi-generation video quality.

*T.M. Dolby Laboratories Licensing Corp.

*T.M. N.V. Philips

** T.M. Hitachi

7700 N. Kendall Drive
Suite 303
Miami, FL 33156
(305) 595-1144 Telex 80-8425



15X9 f/1.5-T1.65

This entirely new lens provides unexcelled illumination because of the extremely high aperture of f/1.5 combined with the outstanding photometric factor of 1.1. This feature is also particularly valuable as it allows the use of the built-in turret operated 2x extended in low light conditions.

Despite the larger lens elements needed to achieve this, the overall weight is only 2.1 kg (4.7 lbs.) including range extender turret and servo zoom control.

The image quality is particularly high at infinity as well as at close working distances, to match the improved performance of 2/3" tube cameras.

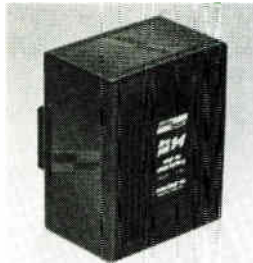
The lens is weather resistant with shower-proof optical and servo units. Performance and features of the lens (such as built-in 2x range extender turret—choice of pistol grip or rocker-switch zoom control—all weather construction etc...) responds completely to end user needs.

Price Upon Request

specifications	15x9		15x9 with retrozoom		15x9 with tele-attachment	
		with 2x extender		with 2x extender		with 2x extender
focal length	9-135 mm	18-270 mm	7.2-108 mm	14.5-216 mm	64-225 mm (note 1)	30-450 mm
zoom range	15x	15x	15x	15x	3.5x (note 1)	15x
maximum aperture (see curves below)	f/1.5-f/1.9 T 1.65-T 2.1	f/3-f/3.8 T 3.3-T 4.2	f/1.5-f/1.9 T 1.7-T 2.2	f/3-f/3.8 T 3.4-T 4.3	f/1.9 T 2.2 (note 2)	f/3-f/3.8 T 3.4-T 4.3
image diagonal	11 mm	11 mm	11 mm	11 mm	11 mm	11 mm
minimum focusing distance	0.80 m 31"	0.80 m 31"	0.50 m 20"	0.50 m 20"	2 m 6 1/2'	2 m 6 1/2'
minimum focusing distance with close-up lens	0.40 m 16"	0.40 m 16"				
horizontal field angle	51°-33.4°	26 1/2°-2°	60 3/4°-43.4°	32 3/4°-21.4°	7 1/2°-2 1/4°	16 3/4°-1°
vertical field angle	39°-23/4°	20°-1 1/2°	47 1/2°-3 1/2°	24 3/4°-13.4°	5 3/4°-1 3/4°	12 1/2°-3 4°
smallest object to fill the screen	36x48 mm 1.4x1.9"	18x24 mm .7x1"	29x38 mm 1.1x1.5"	15x19 mm .6x.8"	59x77 mm 2.3x3"	29x38 mm 1.1x1.5"
smallest object to fill the screen with close-up	18x24 mm .7x1"	9x12 mm .4x.5"				
weight (includes servo zoom, rocker switch control, servo iris, 2x range extender and lens mount)	2.1 kg 4.7 lbs	2.1 kg 4.7 lbs	3.1 kg 6.8 lbs	3.1 kg 6.8 lbs	3.1 kg 6.8 lbs	3.1 kg 6.8 lbs



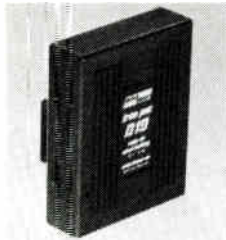
One Controls Drive
Shelton, CT 06484
(203) 929-1100



PRO PAC 14



PRO PAC 13



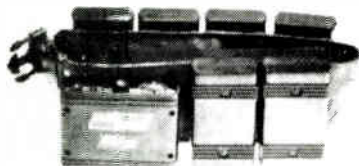
TRIM PAC



PRO PAC 90



PRO PAC 60



30/13 BATTERY BELT

SNAP-ON® NICAD BATTERIES

Anton/Bauer Snap-On batteries are the original equipment power source for virtually every professional video camera manufacturer. Features quick change design for instant camera mounting without cables or connectors. Premium fast charge cells and exclusive all-cell sensing provide 100% reliable charging. Every battery is individually computer tested and shipped with a print-out. Accessories are available for mounting Snap-On batteries on belts, VTRs, monitors, and other portable equipment.

Pro Pac® 14 4 AH, 14.4 Volt Snap-On NiCad Battery.

Fast or slow charge. 4-3/4 lbs. Typical Run Time: 2 hours at 25 watts, 3 hours at 18 watts, 4 hours at 13 watts. **\$495.00**

Pro Pac® 13 4 AH, 13.2 Volt Snap-On NiCad Battery.

Fast or slow charge. 4-1/4 lbs. Typical Run Time: 2 hours at 24 watts, 3 hours at 16 watts, 4 hours at 12 watts. **\$475.00**

Com Pac® 14 2AH, 14.4 Volt Snap-On NiCad Battery.

8 hour charge with Lifesaver 8 Hour Quad Universal only. 3-1/8 lbs. Typical run time: 1 hour at 25 watts, 1-1/2 hours at 18 watts, 2 hours at 13 watts. **\$375.00**

Trim Pac® 2 AH, 12 Volt. Compact Snap-On NiCad Battery.

Fast or slow charge. 2-1/2 lbs. Recommended for applications drawing under 15 watts. Typical Run Time: 1-1/2 hours at 12 watts. **\$225.00**

CA-TP. Trim Pac Charge Adaptor.

Snaps onto 12V Trim Pac and allows 1 hour fast charging with JVC KY-1900 charger. **\$45.00**

Recommended Applications for Pro Pac and Trim Pac Batteries.

The Pro Pac 13 is a universal battery that will power virtually all ENG/EFP cameras, VTRs, and monitors. However, the Pro Pac 14 will yield superior performance and capacity on those cameras that can accept the higher voltage. See table below.

Pro Pac 14/Com Pac 14		Pro Pac 13	Trim Pac	
Ikegami	Thomson	Panasonic	Bosch	JVC KY-1900
RCA	Philips	Hitachi FP 15, 20, 21, 22, 40, Z31		KY-2000
Sharp		JVC		Hitachi FP10, FP7
Hitachi SK81, 91, 97		Sony Betacam, DXC-M3/A, DXC 6000		Sony BVP-110
Sony 300 Series, 110, 250, 8VP3		Harris TC90		

PRO PAC 90 PROFESSIONAL VTR BATTERY

The Anton/Bauer Pro Pac 90 is a premium professional direct substitute for the Sony BP-90 type VTR battery. Unique features include: unique circuit board design, special fast charge premium cells, individual cell sensing system for foolproof charging, special Triconn™ 3-conductor connector (eliminates need for separate fast charge cable), accessible fuse with spare fuse, and heavy duty molded housing. Can be charged directly with all Lifesaver Chargers.

Pro Pac 90 4 AH, 12 Volt NiCad VTR Battery.

Fast or slow charge; 3-1/2 lbs. Typical Run Time: More than 3 hours at 14 watts. **\$330.00**

SO-90. Pro Pac 90 To Snap-On Adaptor.

Allows Pro Pac to fit any Anton/Bauer Snap-On Bracket; i.e., for on camera mounting or for wearing on a belt with UniPac holder. **\$195.00**

Pro Pac 60. 2.5 AH, 13 Volt NiCad VTR/Camera Battery.

Premium professional NiCad replacement for Sony BP-60 VTR/Camera Battery. High voltage design assures full run times under all conditions. Charge with all Lifesaver Chargers in 8 hours **\$195.00**

UNIVERSAL NICAD BATTERY BELT MODEL 30/13.

The ultimate battery belt. Powers virtually all portable equipment, including 30 volt lights and all 13V cameras and VTRs. Unique construction features include leather belt, Lexan® battery modules, quick release military buckle, and anatomical design. Can be worn around the waist, over the shoulder or bandolero style. Exclusive operating features: 30 volts, 4 AH or 13 volts, 8 AH switchable; built-in 115/230 volt overnight charger; voltage display, charge indicator; input and output circuit breakers; multiple charge sensors for 100% safe fast charging.

30/13 Battery Belt

30 volt, 4 AH or 13 volt, 8 AH switchable. Built-in 115/230 volt overnight charger. Can be one hour fast charged. 10 Amp circuit breaker. Waist size: 32" to 48" adjustable. Wgt. 11-1/2 lbs. . . **\$795.00**

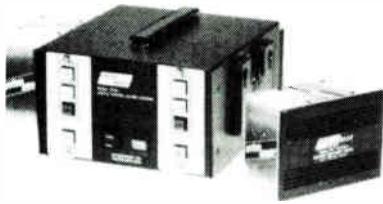
CA-30 Fast Charge Cable

Connects 30/13 belt to Lifesaver 1 Hour Fast Charger (LSFC) . **\$48.00**

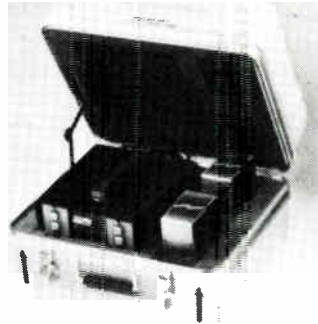


One Controls Drive
Shelton, CT 06484
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BATTERIES



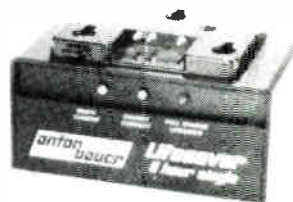
**SILVER SYSTEM.
BATTERY AND CHARGER**



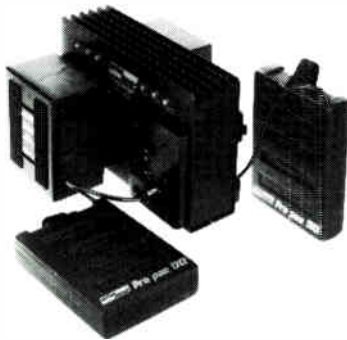
**SVSC SHIPPING CASE
(Shown with Silver System)**



LIFESAVER FAST CHARGER



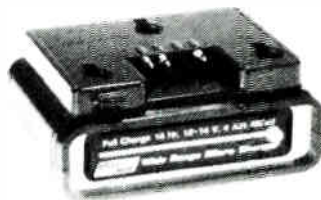
LIFESAVER 8 HOUR SINGLE



LIFESAVER 8 HOUR QUAD



MOBILE FAST CHARGER



WIDE RANGE MICROCHARGER

SILVER BATTERY SYSTEM

Silver Zinc batteries will operate equipment approximately three times longer than NiCad batteries of equivalent size and weight. In many cases an Anton/Bauer SV-13 Silver Battery will operate a camera for an entire day, eliminating battery change interruptions and the need for spare batteries.

The SV-13 Silver Battery is fully compatible with all Anton/Bauer Snap-On accessories and Snap-On mounts, and will power virtually all video cameras and VTRs. It is not recommended for lighting applications. Silver batteries cannot be charged with NiCad battery chargers. They can only be charged with the Anton/Bauer SVDC-13 Silver Battery Charger shown and described below.

SV-13. 12 AH, 13.5V Snap-On Silver Battery
Must be charged with SVDC-13 charger only. Expected life: 80-100 charge/discharge cycles (one year maximum). Typical Run Time: 6 hours at 25 watts. Wgt. 4-1/2 lbs. Individually computer tested and packaged with computer printout. **Call For Price**

SVDC-13 Digital Control Silver Charger
Charges two SV-13 Silver Batteries simultaneously and independently. Overnight or 5 hour charge rate, selectable. Features dual protection circuits, charge rate indicators and green ready lights. Size: 8-1/2" x 5-1/2" x 10-1/2"; Wgt. 14-1/2 lbs; 115/230 volts, 50/60 Hz. **SVDC-13** **\$1595.00**

SVSC Silver System Shipping/Carrying Case
Heavy duty case features custom foam interior that holds one SVDC-13 Charger and two SV-13 Silver Batteries. Rugged hardware and an outer shell of high density polyethylene fully protects battery charger during shipment. Size: 18" x 11" x 16-1/2" **\$250.00**

LIFESAVER® NICAD CHARGERS

The first 100% safe charging systems. Lifesaver circuit safely maintains fully charged battery indefinitely. All Lifesaver chargers feature: 3 automatic charge rates; logic controlled charge monitor circuit; battery coupled cell sensing system. Integral Anton/Bauer Snap-On bracket directly accepts Snap-On type batteries, and special Triconn 3 conductor connector accepts Pro Pac 90 and other BP-90 type VTR batteries.

LSFC Lifesaver Fast Charger
Single position, one hour charger. Accepts all Anton/Bauer 4 AH Snap-On, Pro Pac 90 and Pro Pac 60 NiCad batteries, and all Anton/Bauer battery belts. Size: 7-1/2" x 6-1/4" x 4"; Wgt. 3 lbs.; 115/230V, 50/60Hz **\$495.00**

LSQC Lifesaver 8 Hour Single
Single position, 8 hour quick charger. Accepts all Anton/Bauer 4 AH Snap-On, Pro Pac 90 and Pro Pac 60 NiCad batteries. Charges other brand BP-90 type batteries at the overnight rate. Size: 6-1/2" x 4-1/8" x 3-5/8"; Wgt. 4-3/4 lbs.; 115/230V, 50/60Hz. **\$295.00**

LSQ4 Lifesaver 8 Hour Quad
Four position 8 hour quick charger. Independent charge circuits and LED indicators for each position. Accepts any combination of Anton/Bauer 4 AH Snap-On and Pro Pac 90 NiCad batteries. Charges other brand BP-90 type batteries at overnight rate. Size: 10-1/4" x 3-5/8" x 7"; Wgt. 3-1/4 lbs; 115/230V, 50/60Hz **\$895.00**

LSQ4U. Universal Lifesaver 8 Hour Quad.
Similar to LSQ4 as above but in addition accepts the 2AH Com Pac batteries in any combination with the Anton/Bauer 12-14 volt NiCad batteries listed with the LSQ4. **\$1095.00**

SPECIAL PURPOSE CHARGERS

MFC Mobile Fast Charger
Single position one hour fast or 16 hour overnight charger. Operates from most vehicles with or without engine running. Accepts all 4 AH 12 to 14.4 volt Anton/Bauer Snap-On and Pro Pac 90 NiCad batteries. Features protection circuit that disconnects charger if vehicle voltage becomes too low. Operates on 10-15 volts DC input. Size: 6" x 7-1/2" x 3-1/2"; Wgt. 2-3/4 lbs. **\$495.00**

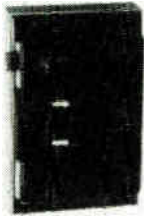
WRMC Wide Range Microcharger
Single position overnight charger. Designed specifically for world travel. Can be plugged into any power source world-wide (95-250 volts AC or DC) and will automatically adjust for proper charging current. Accepts any Anton/Bauer 4 AH Snap-On NiCad battery, as well as a Pro Pac 90 (with SO-90 adaptor). Operates on 95-250 volts AC or DC input. Size: 5-1/4" x 4" x 2-5/8"; Wgt. 1-1/2 lbs. **\$195.00**

Prices and Specifications Subject to Change Without Notice.

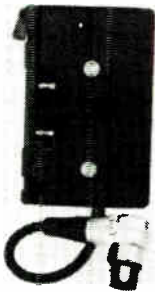


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POWER EQUIPMENT



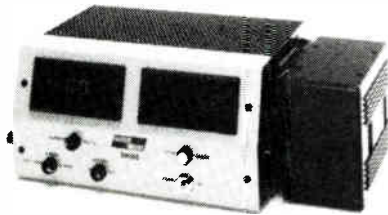
QR-777



QR-DXC-M3A



SPS-3



SNDS



QR-76BC

DIAGNOSTIC AND SERVICE EQUIPMENT

SNDS. Diagnostic Battery Evaluation Unit. This unit can determine a battery's capacity and pinpoint weak cells automatically. This test procedure will actually exercise the battery and enhance its life. This unit features: digital clock, digital voltmeter/ammeter, switchable cutoff voltages switchable loads, Snap-On and Triconn (Pro Pac 90) input, plus external input for camera or VTR as load. Output for chart recorder.

SNDS \$695.00

SCD. Silver Cell Equalizer. This unit is designed to enhance silver cell battery life through equal discharging of the individual cells. Features a digital voltmeter capable of monitoring individual cell voltages as well as a 9 LED display which indicates the discharge status of each individual cell.

SCD \$595.00

EXTEND. Extender Board for servicing SVDC-13 Silver Charger Control Boards \$45.00

WICKIT. Replacement Wicking Kit for SV-13 Silver Battery. ... \$7.00

SNAP-ON II™ QUICK RELEASE BRACKETS

QRX. Universal Snap-On II Quick Release Bracket. This is the basic Anton/Bauer Snap-On bracket that is the standard of the video industry and included as standard equipment with virtually all ENG cameras. Includes electrical contacts, internal wire connections and 4 mounting screws (6x32). Designed to be installed on any portable device allowing use of any Anton/Bauer Snap-On battery. Bracket measures 4-11/16" x 3-3/8".

QRX \$75.00

QRX-C. Universal Snap-On II Compact Bracket. Designed for the new smaller cameras, the QRX-C is fully compatible with all Snap-On products. Includes electrical contacts, internal wire connections and 4 mounting screws (6 x 32). Bracket measures 4-11/16" x 3".

QRX-C \$75.00

QR-BVP-3. Snap-On II Quick Release Bracket with integral power connector and plate for custom mounting on Thomson 601/701, Sony BVP-300 Series cameras and BVP-3 camera with SONY CA-3 Adaptor. No camera modifications required.

QR-BVP-3 \$95.00

QR-BVP-1. Snap-On II Quick Release Bracket with integral power connector and plate for custom mounting on Sony BVP-110. No camera modifications required.

QR-BVP-1 \$95.00

QR-DXC. Snap-On II Quick Release Bracket with integral connector and plate for custom mounting on Sony DXC 1800/1820/1821/6000. No camera modifications required.

QR-DXC (w/trade-in of existing Sony battery bracket) \$95.00

QR-DXC-M3. Snap-On II Quick Release Bracket. As above, but for Sony DXC-M3 camera. Built-in circuit operates low battery level indicator in viewfinder.

QR-DXC-M3 \$130.00

QR-DXC-M3A. Snap-On II Quick Release Bracket with integral power connector and plate for custom mounting on Sony DXC-M3A. No camera modifications required.

QR-DXC-M3A \$95.00

QR-777. Snap-On II Quick Release Bracket with integral power connector for custom mounting on the rear of Panasonic 777, 888, or 555 camera. No camera modifications required. (Same as Panasonic WV-PS355 bracket.)

QR-777 \$95.00

QR-76A. Snap-On II Quick Release Bracket with integral power connector and special plate for custom mounting on the rear of RCA TK-76A cameras. No camera modifications required.

QR-76A \$130.00

QR-76BC. Similar to QR-76A, but for TK-76B and C cameras.

QR-76BC \$130.00

QR-BETA-3. Snap-On II Quick Release Bracket with integral power connector and plate for custom mounting on Sony/Thomson Betacam camera/recorders. No camera modifications required.

QR-BETA-3 \$150.00

QR-BETA-1. (As above but for BVW-1 camera) \$150.00

POWER SUPPLIES

The Anton/Bauer SPS-3 and SPS-5 are advanced switching-type power supplies. Superior filtering techniques and design make these supplies the coolest, most efficient and noise free units available to the video industry. The integral Snap-On mount allows these supplies to be conveniently snapped onto the rear of any camera just like a battery pack.

SPS-3. Advanced Switching type 3 Amp Power Supply with Snap-On mount. Output: 13 volts at 3 amp (max). Input: 115 volts AC only.

SPS-3 \$495.00

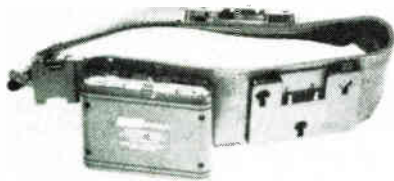
SPS-5. Advanced Switching type 5 Amp Power Supply with Snap-On mount. Output: 13 volts at 5 amp (max). Has auxiliary 5 pin XLR power out connector. Input: 115/230 volts AC.

SPS-5 \$595.00



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(203) 929-1100

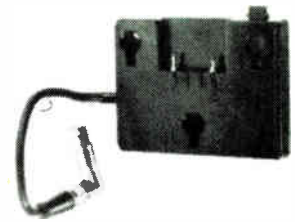
MICRO CHARGERS/ACCESSORIES



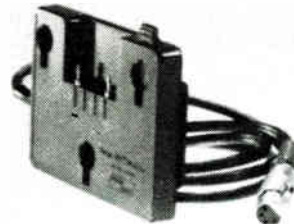
PPSA-D PERPETUAL POWER BELT



CLPA (Mounted on Camera)



QR-BVP-3



UP, UNIPAC



MICRO CONTROL

MICRO CONTROL COMPACT CONTROL UNIT (CCU)

Revolutionary new portable camera control system operates over a standard 3 wire microphone cable, up to 1000 feet long, and is powered by the camera battery.

Micro Control's hand held Compact Control Unit (CCU) weighs only 1-1/3 lbs. and its companion Camera Decoder snaps onto an Anton/Bauer Snap-On battery bracket on the rear of the camera. A standard battery then snaps onto Micro Control's Camera Decoder. The system controls Iris, Master Ped, Red Gain, Blue Gain, Red Ped, Blue Ped, On/Off control for Bars, Auto White Balance, and Auto Iris. In addition, tally/call and a RTS intercom circuit are included. Micro Control draws only 75 milliamps from the camera battery. All control functions, power and intercom operate over a single microphone audio cable with standard 3 pin XLR connectors.

Micro Control

Available for Ikegami HL-79A-DAL, HL79E, Sony/Thomson BVP 300 Series, Hitachi SK81/91, Harris TC 90, Panasonic ReCam, and other cameras. No camera modifications required. Compact Control Unit: Panel size is 6" x 4-3/8", and unit is 2-1/2" deep; weighs 1-1/3 lbs. Camera Decoder: 5-1/3H x 4-1/3"W x 2-1/2"D; weighs 1-1/2 lbs. Call or write for specific application information.
(depending on camera model) \$2995.00 to \$3275.00

Special Twin Cable

Miniature, highly flexible cable consisting of one audio conductor and one coax for video output. Audio terminated with 3-pin XLR male and female; video terminated with standard BNC connectors both ends. These cables may be linked in series for additional length with BNC adaptor.

50 Feet \$ 65.00
100 Feet 95.00
150 Feet 125.00

MICRO CHARGERS

MC-14 Micro Charger 14 Volts

Miniature wall mount overnight (14-16 hours) charger for Pro Pac® 14. Must not be used with 13 volt or 12 volt batteries. For 115 volts AC only \$65.00

MC-13 Micro Charger 13 Volts

Miniature wall mount overnight (14-16 hours) charger for Pro Pac 13. Must not be used with 14 volt or 12 volt batteries. For 115 volts AC only \$65.00

TPMC-12 Trim Pac® Micro Charger

Compact overnight charger for 12 volt Trim Pac battery only. Full charge in 14-16 hours. For 115 volts AC only \$65.00

SNAP-ON ACCESSORIES

UP UniPac Single Snap-On® Battery Holder

Accepts any Anton/Bauer Snap-On battery. Includes loops (for any size pants belt) and integral power cable with XLR-4 DC input connector. Cameras and VTRs not equipped with an XLR-4 DC input require SO/XLR adaptor. \$130.00

SO/XLR Snap-On Bracket to XLR-4 Adaptor

Fits any Anton/Bauer Snap-On Bracket. Provides universal 4 pin XLR DC input connection to any camera or other device with an Anton/Bauer Snap-On Bracket. \$65.00

CLPA Camera Light Power Adaptor

Powers Anton/Bauer LG-U Light from camera battery. Snaps on between battery and bracket at the rear of any camera. Integral cable plugs directly into LG-U Light Head. Requires 14.4 volt 70 watt bulb. \$95.00

SODAP Snap-On Battery to XLR-5 Adaptor

Compact adaptor snaps onto any Anton/Bauer Snap-On battery or power supply converting it to a 5 pin SLR female power output connector. \$40.00

SO-90 Pro Pac 90 to Snap-On Adaptor

Allows Pro Pac 90 to fit any Anton/Bauer Snap-On Bracket; i.e., for on camera mounting or for wearing on a belt with UniPac holder. \$195.00

PPSA-D Perpetual Power Belt-Automatic

Accepts two Snap-On batteries of any type. When the first battery is depleted, the belt automatically draws from the second. The first battery may be replaced and the process be repeated providing uninterrupted power indefinitely. Features leather belt, military quick release buckle and Lexan® control module with voltage display, circuit breaker, and 2 output connectors for powering a camera and a VTR simultaneously. \$265.00

All Snap-On accessories will accept both Anton/Bauer Snap-On NiCad and Silver batteries.



BELDEN
 2200 U.S. Hwy 27 S.
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 Richmond, IN 47375
 (317) 983-5200

COAXIAL & BROADCAST CABLES

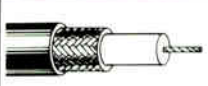








TV Camera Cables AND CCTV CABLES

Belden TV Broadcast and Closed Circuit TV Camera Cables assure reliable circuit isolation thereby reducing AC hum and minimizing cross-talk between circuits. They are made to withstand rugged service and to maintain high conductor insulation resistance regardless of ambient temperature changes.

Major uses for these cables are for controlling, powering and transmitting sound and picture information for monochrome and

color TV cameras as well as for remote control, monitor and cue line systems.

Belden TV Camera Cables are engineered to be lightweight, flexible and easy to terminate. They are manufactured and tested in accordance with Belden's own rigid and time-proven quality control standards in order to assure outstanding reliability, performance and service life.

Description	Trade & UL Type Number	Standard Lengths		Std Pkg Lb ea	AWG (Stranding) [Dia. in mm] Nom D C R	Insulation & Nominal Core D D		Nominal D D		No of Shields and Material Nom D C R	Nom Imp. (ohms)	Nom Vel of Prop	Nominal Capacitance		Nominal Attenuation		
		ft	m			Inch	mm	Inch	mm				pF/ft	pF/m	MHz	db/ 100 ft	db/ 100 m
 59/U TYPE 100% Sweep Tested 5-300 MHz	9259  1354 60C	50	15 2	2 0	22 (7x30)	Cellular Polyethylene 146 | 3 71	242	6	15	1 bare copper 2 6Ω/M 8 5Ω/km 95% shield coverage	75	78%	17 3	56 8	1	4	1 3
		100	30 5	4 0	[76]										5	8	2 6
		U-500	U-152 4	17 0	bare copper										10	1 0	3 3
		500	152 4	18 0	copper										50	2 1	6 9
		U-1000	U-304 8	33 5	15 0Ω/M										100	3 0	9 8
		1000	304 8	35 0	49 2Ω/km												
PRODUCT DESCRIPTION: Recommended for camera to recorder to monitor connections. Stranded center conductor adds the flexibility needed to resist severe twisting, bending and other stresses which occur in many CCTV applications. Black non-contaminating PVC jacket.																	
 59/U TYPE 100% Sweep Tested 5-300 MHz	NEW 9659†  1354 60C	50	15 2	2 0	22 (7x30)	Cellular Polyethylene 146 | 3 7	242	6	15	1 bare copper 2 6Ω/M 8 5Ω/km 95% shield coverage	75	78%	17 3	56 8	50	2 1	6 9
		100	30 5	4 0	[76]										100	3 0	9 8
		U-500	U-152 4	17 0	bare copper										200	4 5	14 8
		500	152 4	18 0	copper										400	6 6	21 7
		U-1000	U-304 8	33 5	15 0Ω/M										700	8 9	29 2
		1000	304 8	35 0	49 2Ω/km										900	10 1	33 1
															1000	10 9	35 8
<i>Black PVC jacket For CCTV applications</i>																	
 124Ω BALANCED VIDEO PAIR	9860†  2448 30V 60C	500	152 4	53 0	16 (Solid)	Cellular Polyethylene Color coded white blue	440	11	18	1 DUODIL + 94% 1 tinned copper braid 1 3Ω/M 4 3Ω/km 100% shield coverage	124	78%	Be- tween Cond 10 9 Shield un- grn d	35 8	1	27	89
		1000	304 8	104 0	[1 29]										20	1 3	4 3
		2000	609 6	209 6	bare copper 4 2Ω/M 13 8Ω/km										50	2 0	6 6
															100	2 9	9 5
															200	4 1	13 5
<i>Black PVC jacket</i>																	
 6/U TYPE 100% Sweep Tested 5-300 MHz	9290 80C	U-500♦	U-152 4	28 6	18 (Solid)	Cellular Polyethylene 180 | 4 57	290	7	37	2 bare copper braids 2 0Ω/M 6 6Ω/km 98% shield coverage	75	78%	17 3	56 8	1	19	62
		500♦	152 4	29 4	[95]										5	45	1 5
		1000♦	304 8	66 2	bare copper 7 5Ω/M 24 6Ω/km										10	64	2 1
		2000♦	609 6												50	1 5	4 9
															100	2 1	6 9
															200	3 1	10 2
															500	5 0	16 4
															900	6 9	22 6
															1000	7 4	24 3
<i>Black PVC jacket</i>																	
 6/U TYPE 100% Sweep Tested 5-300 MHz	9248†  1354 80C	U-500	U-152 4	15 6	18 (Solid)	Cellular Polyethylene 180 | 4 57	270	6	86	1 DUODIL + 61% 1 tinned copper braid 5 2Ω/M 17 1Ω/km 100% shield coverage	75	78%	17 3	56 8	1	19	62
		500	152 4	16 4	[95]										5	45	1 5
		U-1000	U-304 8	30 3	bare copper 7 5Ω/M 24 6Ω/km										10	64	2 1
		1000	304 8	33 3											50	1 5	4 9
															100	2 1	6 9
															200	3 1	10 2
															500	5 0	16 4
															900	6 9	22 6
															1000	7 4	24 3
<i>Black PVC jacket</i>																	

† Passes the VW-1 vertical flame test.

□ One piece ± 10%

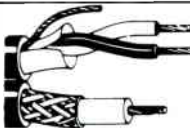




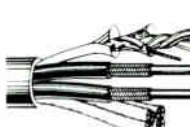
♦ Spools are one piece, but length may vary ± 10% from length shown.



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COAXIAL & BROADCAST CABLES

TV CAMERA CABLES AND CCTV CABLES (cont'd.)

Description	Trade & UL Type Number	Standard Lengths		Std Pkg Lb ea	AWG (Stranding) [Dia in mm] Nom D C R	Insulation & Nominal Core D D		Nominal D D		No of Shields and Material Nom D C R	Nom Imp. (ohms)	Nom Vel. of Prop	Nominal Capacitance		Nominal Attenuation		
		ft	m			Inch	mm	Inch	mm				pF ft.	pF/m	MHz	db/ 100 ft.	db/ 100 m
 9265  20006 60C BELDFOIL* 59/U TYPE 100% SWEEP TESTED 5 to 300 mhz	500 1000	152.4 304.8	30.5 60.4	2 cond 22 (7x30) [.76] tinned copper	PVC 054 137	242 x 445	6.15 x 11.30	1 pair Beldfoil shielded 100% shield coverage	—	—	51.0	167	—	—	—	—	—
<i>SIAMESE TYPE CABLE RG59/U Type with BELDFOIL aluminum-polyester shield+d twisted pair</i>																	
 9165†  20006 60C For Electronic News Gathering (ENG) and CCTV Applications	500 1000	152.4 304.8	46.7 91.3	3 Pairs 22 (7x30) [.76] tinned copper 15Ω/M 49 2Ω/M	PVC 054 137	290 x 561	7.34 x 14.23	3 Pairs individually Beldfoil* shielded 100% shield coverage w drain	—	—	51.0	167	—	—	—	—	—
<i>SIAMESE TYPE CABLE RG59 U Type with BELDFOIL aluminum-polyester shield twisted pairs. COLOR CODING OF PAIRS Red Blk., Org. Brn., Grn. Wht., 100% sweep tested (5-300 MHz)</i>																	
 9166 80C Siamese 7-Conductor EFP & ENG Camera Cable	500 1000 2000	152.4 304.8 609.4	111.9 216.8 485.6	1-Triax 14 (Solid) [1.63] bare copper 2 6Ω/M 8 5Ω/km	Cellular Poly- ethylene 285 7 24	475 x 830	12.07 x 21.1	Two bare copper braids 1.5 Ω/M 4.9 Ω/km Per Shield 93% shield coverage	75	78%	17.3	56.8	50 100 200 500 900	1.0 1.5 2.2 3.7 5.2	3.3 4.9 7.2 12.1 17.1	—	—
<i>CONDUCTOR COLOR CODE: Red Blk., Wht. Grn., Org. Blue.</i>																	
 9170 75C 12-Conductor EFP & ENG Camera Cable	250 500 1000	76.2 152.4 304.8	28.2 60.0 117.0	2 Coax Cables 25 (7x33) [.53] bare copper 31 2Ω/M 102 0Ω/km	Cellular Poly- ethylene 100 2 54	Overall 490 12.4	—	1 tinned copper over each coax 6.0Ω/M 19.7Ω/km 93% shield coverage	75	78%	17.3	56.8	1 10 50 100 300 500	4 1.5 3.8 5.6 10.6 13.8	1.3 4.9 12.5 18.4 34.8 45.3	—	—
<i>Chrome PVC jacket. CONDUCTOR COLOR CODE COAX — Black, Black w White Hash Marks Pairs — Blk. Red, Blk. Wht., Blk. Grn., Blk. Blue, Blk. Yel</i>																	

*Passes the VW-1 vertical wire flame test

Prices and Specifications Subject to Change Without Notice.

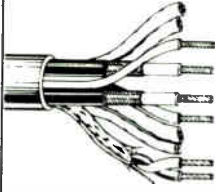





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COAXIAL & BROADCAST CABLES

TV CAMERA CABLES AND CCTV CABLES (cont'd.)

Description	Trade & UL Type Number	Standard Lengths		Std Pkg Lb ea	AWG (Stranding) Dia in mm Nom D C R	Insulation & Nominal Core G D		Nominal O D		No of Shields and Material Nom. D C R.	Nom. Imp. (ohms)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation									
		ft	m			Inch	mm	Inch	mm				pF/ft.	pF/m	MHz	db/100 ft.	db/100 m							
 14-Conductor Electronic Field Production (EFP) Camera Cable	9171 75C	250 500 1000	76.2 152.4 304.8	49.7 97.5 196.7	2 Coax 22 (7x30) | 76 | bare copper 15 Ω M 49.2 Ω km	Cellular Poly- ethylene .146 | 3.71	Overall .585 | 14.86	1 bare copper 2.6 Ω M 8.5 Ω km 95% shield coverage over ea coax	75	78%	17.3	56.8	1 5 10 50 100	.3 .8 1.0 2.3 3.0	1.0 2.6 3.3 7.5 9.8	<i>COLOR CODE OF 2 COAX: Blk., Blk. w/Hash Marks.</i>								
					5 Pairs 22 (7x30) | 76 | tinned copper 15 Ω M 49.2 Ω km	PVC .054 | 1.37 ea										5 Pairs individually Beldfoil shielded 100% shield coverage w drain	51.0	167	—	—	—	<i>COLOR CODE OF SHIELDED PAIRS: Blk. Red, Blk. Wht., Blk. Grn., Blk. Blue, Blk. Yel.</i>		
					2 Cond 16 (26x30) | 52 | tinned copper 4 Ω M 13 Ω km	PVC .094 | 2.39 ea										<i>COLOR CODE OF 2x16: Org., Vio. Chrome PVC jacket.</i>								
 2 Conductor Digital Video Time Code Cable	9180 80C	500 U-500 1000 U-1000	152.4 U-152.4 304.8 U-304.8	5.4 5.7 11.0 10.4	26 (7x34) | 48 | tinned copper 41 Ω M 134.5 Ω km	Datalene .049 | 1.22	144	3.66	1 Beldfoil + 26 (7x34) tinned copper drain wire 23 Ω M 75.8 Ω km	100	78%	13	42.7	<i>Chrome PVC jacket. Conductor Color Code: Black, White.</i>										
 4-Conductor Video Tape Recorder (VTR) Cable	9176  2668 30V 60C	500 1000	152.4 304.8	16.8 33.4	2 Coax 28 (7x36) | 38 | tinned copper 65 Ω M 213 Ω km	Cellular Poly- ethylene .041 | 1.04	Overall .260 | 6.60	1 tinned copper 94% shield coverage over each coax (braid)	50	78%	26	85.3	<i>COAX COLOR CODE: Gray PVC jacket. Blue PVC jacket.</i>											
					1 Cond 24 (10x34) | 61 | tinned copper 26 Ω M 85 Ω km	P C .056 | 1.42 ea							<i>Brown PVC jacket</i>											
					1 Shielded Conductor 28 (7x36) | 38 | 65 Ω M 213 Ω km	PVC .035 | .89 ea							1 tinned copper 94% shield coverage (spiral)	<i>Yellow PVC jacket. Overall Gray PVC jacket.</i>										
 7-Conductor Video Tape Recorder (VTR) Cable	9175†  2502 30V 80C	250 500 1000	76.2 152.4 304.8	22.1 45.9 89.4	4 Coax 24 (7x32) | 61 | bare copper 23.9 Ω M 78.4 Ω km	Cellular Poly- ethylene .051 | 1.30 ea	Overall .401 | 10.19	1 bare copper 94% shield coverage over each coax.	38	78%	35	114.8	<i>COLOR CODE OF PVC JACKETED COAX'S: Red, Yel., Gry., Blue.</i>											
					3 Cond 20 (26x34) 97 tinned copper 10 Ω M 33 Ω km	PVC .069 1.75 ea							<i>COLOR CODE OF 3x20: Wht., Brn., Vio. Gray PVC jacket.</i>											



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COAXIAL & BROADCAST CABLES

75 OHM VIDEO COAXIAL RETRACTILE CABLES

PRODUCT DESCRIPTION: Stranded tinned copper conductor, polyethylene insulation 100% Beldfoil, tinned copper serve shield. Nom. cap. 21 pF/ft. (68.9 pF/m), Nickel gray PVC jacket.

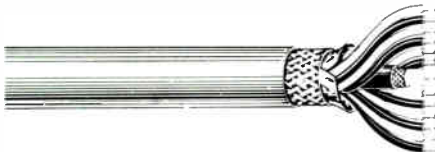


CONTROL, AUDIO, PAN AND TILT

Trade & UL Style Number	Retracted Length		Practical Extended Length		Std. Pkg. Lb. ea.	No. of Cond.	AWG (Stranding) [Dia. in mm]	Insulation Thickness		Jacket Thickness		Nominal O.D.		Nominal Coil O.D.	
	Inch	cm	ft.	m				Inch	mm	Inch	mm	Inch	mm	Inch	mm
9447 60C	6	15.24	2	.61	.18	1	25 (7x33)	.058	1.47	.045	1.14	.242	6.15	1.125	28.6
9448 60C	12	30.48	4	1.22	.35	1	25 (7x33)	.058	1.47	.045	1.14	.242	6.15	1.125	28.6
9449 60C	24	60.96	8	2.44	.68	1	25 (7x33)	.058	1.47	.045	1.14	.242	6.15	1.125	28.6

TV CAMERA CABLES AND CCTV CABLES (cont'd.)

13-Conductor Remote Control and Video Cable



Recommended for use in installations requiring external drive signals, tallies, intercom, switching and video operations.

Trade & UL Style Number

9262†

2594 60C

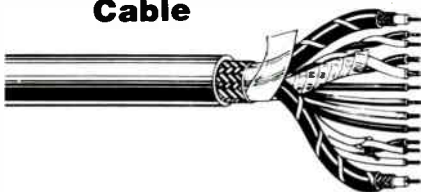
Specifications:

12-20 AWG (7x28) [.97 mm] tinned copper conductors, PVC insulated, color coded 1-75 ohm coax. 22 AWG [.79 mm] stranded bare copper conductor, foam polyethylene insulated. Nom. Core O.D. .146" [3.71 mm], bare copper braid shield, 95% coverage, black PVC jacket. Overall tinned copper braid shield 80% shield coverage. Overall gray PVC jacket, .460" [11.7 mm] nominal O.D. Standard Spool Lengths in ft. 50, 100, 500, 1000 (15.2, 30.5, 152.4, 304.8 m)

Underwriters Laboratories Inc. Listed (Style 2594)

Standard Spool Lengths		Std. Pkg. Lb. ea.
ft.	m	
50	15.2	8.3
100	30.5	16.8
500	152.4	83.2
1000	304.8	163.2

13-Conductor Camera Extension Cable



Recommended for remote control, closed circuit and cue line applications.

STYLE 2497 Specified for the Dage 800 camera and other similar cameras.

9254†

2497 60C

2-20 AWG (10x30) [.95 mm] tinned copper, PVC insulated, color coded, twisted pair, Mylar tape wrapped. 9-22 AWG (7x30) [.76 mm] tinned copper, PVC insulated, 2 conductors cabled, BELDFOIL® shield, 2 conductors cabled unshielded, 5 conductors unshielded. 2-Foam polypropylene insulated coaxial cables Nom. impedance 75 ohms, color coded 97% shield coverage. Overall tinned copper braid shield 83% shield coverage. 550 [14.0 mm] Nom. O.D. Chrome PVC jacket. Standard Spool Lengths in ft. 100, 250, 500, 1000, 1500 (30.5, 76.2, 152.4, 304.8, 457.2 m) Underwriters Laboratories Inc. Listed (Style 2497)

Standard Spool Lengths		Std. Pkg. Lb. ea.
ft.	m	
100	30.5	20.1
250 ♦	76.2	45.4
500 ♦	152.4	89.0
1000 ♦	304.8	178.1
1500 ♦	457.2	269.7

♦ Spools are one piece, but length may vary ± 20%-0 from length shown.

† Passes the VW-1 vertical flame test.

© Belden U.S. Patent 3,032,604.



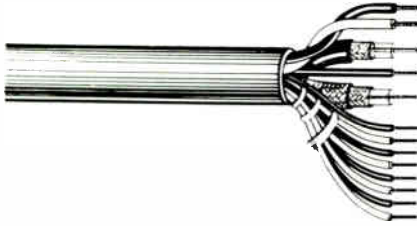
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COAXIAL & BROADCAST CABLES

TV CAMERA CABLES AND CCTV CABLES (cont'd.)

13-Conductor TV Eye Cable

8282[†]
60C



Especially engineered for TV Eye Cameras. Recommended for remote control, monitor and cue line applications.

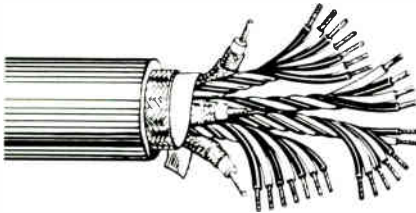
Specifications:
 8-22 AWG (7x30) [.76 mm] tinned copper, PVC insulated, color coded.
 1-22 AWG (7X30) | 76 mm | polyethylene insulated conductor
 2-18 AWG (16x30) | 1.19 mm | tinned copper conductor, PVC insulated, black and red.
 1-RG-58A U cable 50 ohm coax 97% shield coverage
 1-72 ohm coax, stranded conductor, polyester tape wrapped 97% shield coverage
 Chrome PVC jacket, .470" | 11.9 mm | Nom. O.D.
 Standard Spool Lengths in ft. 100, 250, 500, 1000, 1500 (30.5, 76.2, 152.4, 304.8, 457.2 m).

Standard Spool Lengths		Std. Pkg. Lb. ea.
ft.	m	
100	30.5	15.0
250	76.2	36.8
500	152.4	73.1
1000	304.8	148.2
1500	457.2	213.8

28-Conductor TV Camera Cable

9253[†]

2511
60C



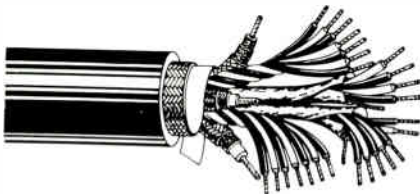
Recommended for transistorized TV cameras.

Specifications:
 4-18 AWG (16x30) | 1.19 mm | tinned copper, PVC insulated, ring band stripe color coded. BELDFOIL[®] aluminum-polyester wrapped shield around 4 conductors with stranded drain wire, polyester tape over this shielded group.
 21-22 AWG (7x30) [.76 mm] tinned copper, PVC insulated, cabled in 3 groups of 7, ring band stripe color coded, one group of 7 has a BELDFOIL aluminum-polyester wrapped shield overall with a stranded drain wire, polyester tape over this shielded group.
 3 coaxial cables Nom. impedance 75 ohms. RG 59 U type with foam polypropylene insulation 85% shield coverage
 Tinned copper braid shield, 86% shield coverage. Chrome PVC jacket, .810" | 20.5 mm | Nom. O.D.
 Standard Spool Lengths in ft. 100, 250, 500, 1000, (30.5, 76.2, 152.4, 304.8 m) 250, 500 & 1000 ft lengths
 ±20% 0 length tolerance

Standard Spool Lengths		Std. Pkg. Lb. ea.
ft.	m	
100	30.5	42.0
250 ♦	76.2	104.4
500 ♦	152.4	212.8
1000 ♦	304.8	411.5

28-Conductor TPE TV Camera Cable

8286
80C



A 75 ohm cable designed to remain flexible in cold weather. Recommended for transistorized TV cameras.

Specifications:
 4-18 AWG (16x30) | 1.19 mm | tinned copper, PVC insulated ring band stripe color coded. BELDFOIL[®] aluminum-polyester wrapped shield around 4 conductors with stranded drain wire, polyester tape over this shielded group.
 21-22 AWG (7x30) [.76 mm] tinned copper, PVC insulated, cabled in 3 groups of 7, ring band stripe color coded, one group of 7 has a BELDFOIL aluminum-polyester wrapped shield overall with a stranded drain wire, polyester tape over this shielded group.
 3 coaxial cables Nom. impedance 75 ohms 95% shield coverage
 Tinned copper braid shield Black thermoplastic elastomer jacket, .730" | 18.54 mm | O.D.
 86% shield coverage
 Standard Spool Lengths in ft. 100, 250, 500, 1000 (30.5, 76.2, 152.4, 304.8 m) 250, 500 & 1000 ft lengths
 ±20% 0 length tolerance

Standard Spool Lengths		Std. P.C. No.
ft.	m	
100	30.5	33.0
250 ♦	76.2	80.5
500 ♦	152.4	162.1
1000 ♦	304.8	318.1

♦ Spools are one piece, but length may vary +20%-0 from length shown.

[†] Passes the VW-1 vertical wire flame test.



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COAXIAL & BROADCAST CABLES







75 OHM PRECISION VIDEO CABLES

The 9231 is a precision 75 ohm video cable manufactured with rigid control of concentricity and all dimensional tolerances offering superior return loss characteristics; a quality Video transmission cable which provides exceptional picture definition and eliminates problems resulting from periodicity. It has a non-contaminating PVC jacket for more flexibility. The double braid 8281 75 ohm Video cable is made to tight tolerances for excellent

return loss performance. Our 8279 miniature 75 ohm Video cable is for applications where space is critical. The gray PVC and black polyethylene jackets are made of non-contaminating, non-migratory compounds.

Typical Application: Video signal transmission in Color and Monochrome TV studios.

100% SWEEP TESTED.

Description	Trade & UL Type Number	Standard Lengths		Std. Pkg. Lb. ea.	AWG (Stranding) [Dia. in mm] Nom. D. C. R.	Insulation & Nominal Core D. O.		Nominal D. O.		No. of Shields and Material Nom. D. C. R.	Nom. Imp. (ohms)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation		
		ft.	m			Inch	mm	Inch	mm				pF/ft.	pF/m	MHz	db/100 ft.	db/100 m
	9231 † 60C	500 1000	152.4 304.8	35.3 74.0	20 (Solid) [.81] bare copper 9.9Ω/M' 32.5Ω/km	Polyethylene 198 5.03	304	7.72	Tinned copper, double braid 1.06Ω/M' 3.5Ω/km 98% shield coverage	75	66%	21	69	.01 .1 1 4.5 10 100	.06 .08 .25 .45 .78 2.70	.2 .3 .8 1.5 2.6 8.9	Gray non-contaminating PVC jacket.
	8281 • 80C	500 1000	152.4 304.8	37.0 75.0	20 (Solid) [.81] bare copper 9.9Ω/M' 32.5Ω/km	Polyethylene 198 5.03	304	7.72	Tinned copper, double braid 1.06Ω/M' 3.5Ω/km 98% shield coverage	75	66%	21	69	.01 .1 1 4.5 10 100	.06 .08 .25 .45 .78 2.70	.2 .3 .8 1.5 2.6 8.9	Black polyethylene jacket.
	9141 80C	500 1000	152.4 304.8	38.2 73.6	20 (Solid) [.81] bare copper 9.9Ω/M' 32.5Ω/km	Polyethylene 200 5.08	305	7.75	Tinned copper double braid 1.06Ω/M' 3.5Ω/km 99% shield coverage	76	66%	20	65.6	.01 .1 1 4.5 10 100	.06 .08 .25 .45 .78 2.70	.2 .3 .8 1.5 2.6 8.9	Clear polyethylene jacket. (For indoor use only)
 Miniature	8279 •• 80C	100 250 500	30.5 76.2 152.4	3.1 7.5 15.0	23 (7x32) [.57] bare compacted copper 23.1Ω/M' 75.9Ω/km	Polyethylene 146 3.71	220	5.59	1 tinned copper 96% 4.5Ω/M' 14.8Ω/km	75	66%	21	69	.01 .1 1 4.5 10 100	.14 .15 .35 .80 1.30 4.98	.5 .5 1.1 2.6 4.3 16.3	Black polyethylene jacket. Compacted conductor combines impedance uniformity of solid conductor and "nick-resistance" of stranded conductor.
	9209 80C	U-500 U-1000	U-152.4 U-304.8	14.2 27.3	23 (7x32) [.57] bare compacted copper 19.1 Ω/M' 62.7 Ω/km	Polyethylene 146 3.71	220	5.59	100% Duobond II + 96% 1 tinned copper 4.5Ω/M' 14.8Ω/km	75	66%	21	69	.01 .1 1 4.5 10 100	.14 .15 .35 .80 1.30 4.98	.5 .5 1.1 2.6 4.3 16.3	Black polyethylene jacket. Compacted conductor combines impedance uniformity of solid conductor and "nick-resistance" of stranded conductor.
	8299	Pkg. wt. ea. .3 lb.		For Use on 9231, 8281, and 9141. Adapter for use with PI-259 connector. 25 in													

REQUEST QUOTATIONS ON RG/U CABLES NOT LISTED

- Request Technical Data Bulletin T-8-16 for connector information
- Request Technical Data Bulletin T-8-17 for connector information

† Passes the VW-1 vertical wire flame test.

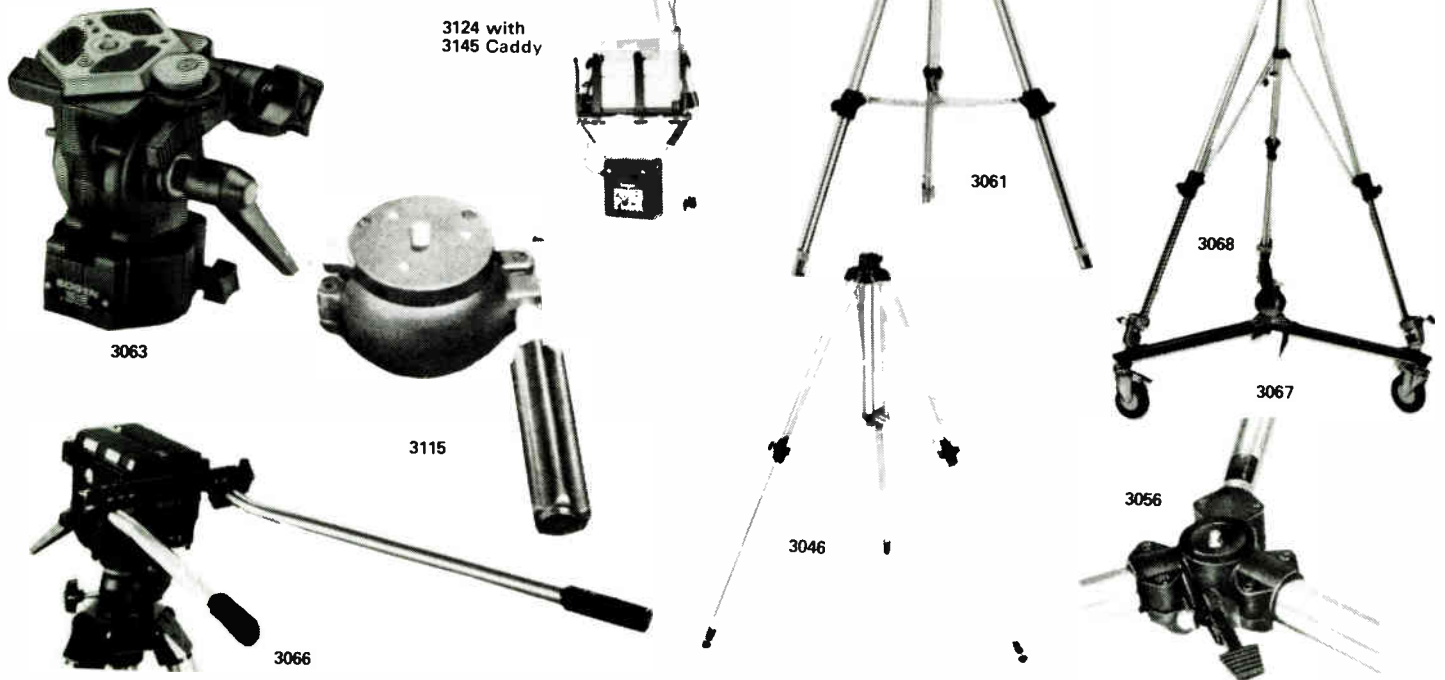
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BOGEN PHOTO CORP.

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Englewood, NJ 07631
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TRIPODS



Mini Fluid Head

Measuring just 5" x 5" x 5" (excluding handle), this lightweight, fluid-type damped tripod head pans smoothly a full 360° and features a camera platform that measures 2 3/4" x 3". For convenience and comfort and to accommodate the widest possible range of cameras, the Mini Fluid Head comes with a versatile handle which is positionable on either side and can be separated into two individual segments, each 9" in length. The Mini Fluid Head can be tilted 45° up and 90° down continuously, with detent at -45°, and has separate pan and tilt locks. Vertical drag is continuously adjustable.

3063 \$109.95

Micro Fluid Head

You'll be amazed at the smooth, fluid effect movement of the Bogen Micro Fluid Head. Only 2 lbs. including an adjustable handle. It's perfect for just about any of the new light-weight (up to 6 lbs.) VCR cameras. It measures 4-1/4" x 5-3/4" x 2-3/4" (excluding handle); pans smoothly a full 360 degrees; can be tilted up or down 90 degrees, has pan and tilt locks, and continuously adjustable drag. Platform has adjustable positioning slot for best camera balance and is designed so that the handle can be on either left or right side.

3126 \$69.95

Fluid Head

This lightweight, professional quality, fluid-damped tripod head is designed for cine and video cameras weighing up to 22 lbs. (10 kg). The large, removable, camera platform has a mounting stud that travels in a 3 1/2" slot and facilitates balancing at the camera's center of gravity. In addition, there are three locking detents for the platform, any of which can be used. The Bogen 3066 Fluid Head pans smoothly 360° and the panning drag can be adjusted by means of a simple adjustment screw. Vertical drag is adjusted by a large pawl-controlled lever. The tilting range is 60° up to 90° down with the camera under perfect control at all times. And there's a detent which can be set to limit the downward movement to 45°. Separate locks, independent of the drag system provide a positive hold in any position.

3066 \$200.00

Ball Camera Leveller

This is an ideal adjunct to the 3063 Mini Fluid Head. It VC-26

3124 with
3145 Caddy

3115

3066

3061

3068

3067

3056

3046

works like a claw ball in that you mount it to your tripod, you can remove the camera and head quickly to mount on another tripod similarly equipped, and you can level your camera even if you haven't levelled the tripod. Ideal for use in the field on uneven terrain.

3115 \$39.95

3124 Tripod w/Micro Fluid Head

A lightweight all-aluminum tripod (our 3011) that's sturdy, stable, versatile, easy to use and easy to carry. It weighs only 7 lbs. with our Micro Fluid Head (Order Code 3126) that features real, fluid-effect action.

3124 \$144.95

3122 Also available in black anodized finish \$159.50

3129 3011 Tripod with 3126 Micro Fluid Head and 3127 Dolly \$199.95

3145 Video Tripod Caddy \$24.95

3149 3126 Micro Fluid Head with 3211 Tripod with black anodized finish and 3127 Dolly \$219.50

3046 Sturdy Tripod

An all aluminum double-braced, two-section design with remarkable rigidity and weighing only 7 lbs. 4 oz. It extends to a full 73" with the Mini Fluid Head. 19" geared center post. Folds to a compact 32 1/2" for travelling. Legs are furnished with convertible cushion/spike tips.

3046 Cine/Video Tripod w/o Head \$144.95

3140/3040 Cine/Video Tripod w/Mini Fluid Head \$234.95

Universal Tripod

The Bogen Universal Cine/Video Tripod weighs less than 12 lbs. yet extends to 66". Legs are furnished with convertible cushion/spike tips. For precise positioning, there is a centerpost which permits 9" of extension. The unique variable-angle center brace system on the tripod allows minimum elevation of the tripod platform as low as 16".

3068 \$189.95

3065 Universal Cine/Video Tripod w/3066 Fluid Head \$379.50

3069 Universal Cine/Video Tripod w/3066 Fluid head and Cine/Video dolly \$529.50

3118 Universal Cine/Video Tripod w/3063 Mini Fluid Head \$299.90

Heavy-Duty Tripod

The Bogen Heavy-Duty Cine/Video Tripod is the ideal field tripod. Closed length, is only 37 1/2" yet it extends to a full 63". It can be set as low as 12". With its built-in claw ball, the camera head can be levelled quickly under all use conditions. The Heavy-Duty Tripod weighs just 17 lbs. 2 oz.

3061 \$229.50

3062 Heavy Duty Cine/Video Tripod w/3066 Fluid Head \$419.50

3064 Heavy Duty Cine/Video Tripod, w/3066 Fluid Head and Cine/Video Dolly \$569.50

Cine/Video Dolly

The Bogen Cine/Video Dolly is designed specifically for use with the Universal and Heavy-Duty tripods. Individually braked wheels measuring 5" in diameter, and a unique leg locking system make it easy to assemble and disassemble for transporting. The tripod legs are captured in a 38" diameter circle and the doorway clearance needed for the fully assembled dolly is only 39 1/2".

3067 \$160.00

Auto Dolly

Some dollies require you to brake and release each leg separately. But the Bogen Auto Dolly has a better way: when you depress the centrally located foot pedal you release all three casters. When you lift the pedal, cam action raises the casters free of the ground and the weight of the dolly and tripod rests on separate feet. The ideal companion for the 3140 combination, the Auto Dolly weighs only 6 lbs. and is easily assemble. Spread from the center to tripod leg socket is 18". Mounting and dismounting the tripod is accomplished by cam operated kick-locks. If you need to support a camera for very low angle shooting, we've thoughtfully provided a European thread stud on the central casting on which you can mount your Mini Fluid Head.

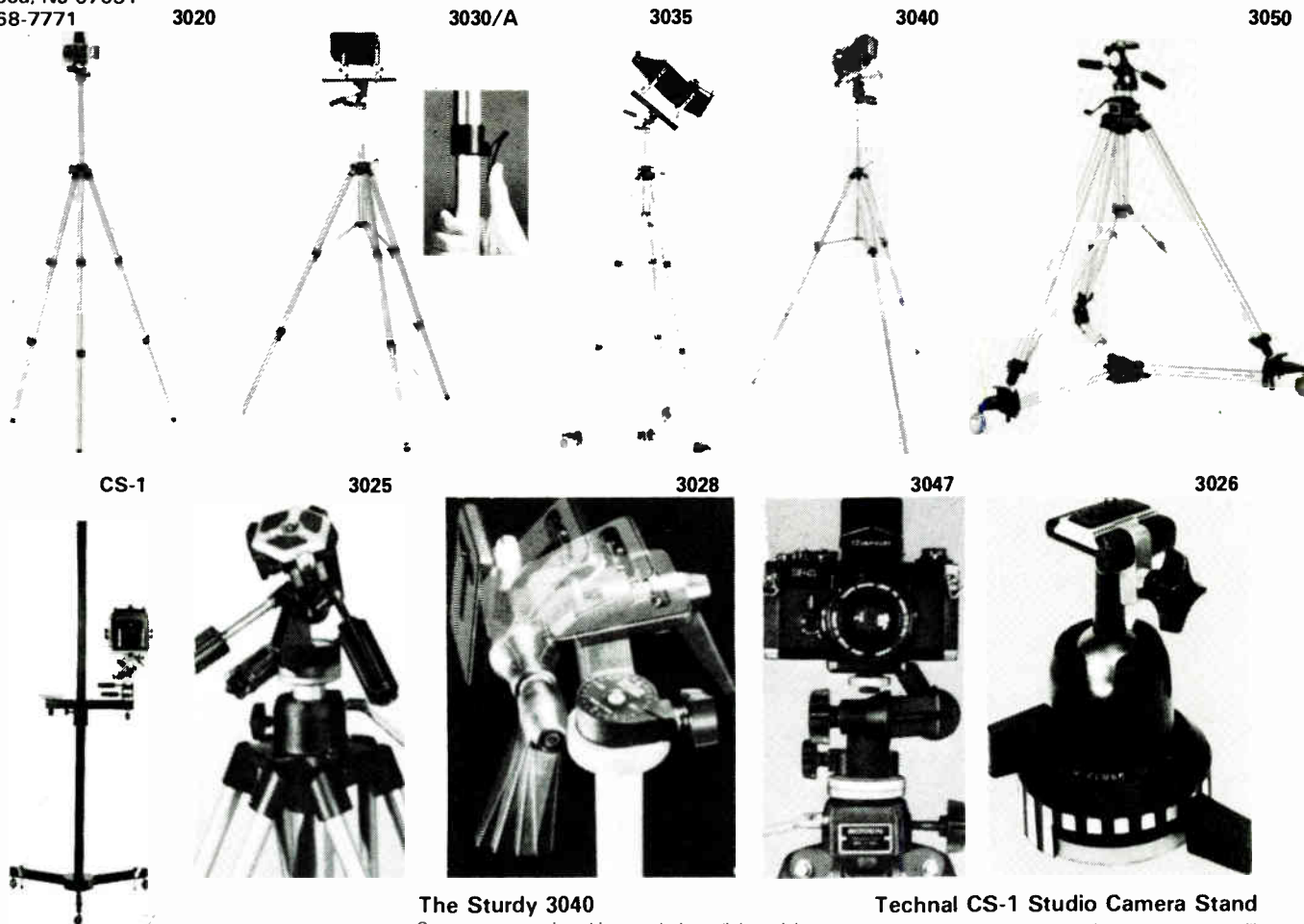
3056 \$99.95

Prices and Specifications Subject to Change Without Notice.

BOGEN PHOTO CORP.

100 South Van Brunt St.
P.O. Box 448
Englewood, NJ 07631
(201) 568-7771

TRIPODS/HEADS



The 3020 Convertible

Maximum shooting height is 74 1/2". The adjustable spread of the legs combined with the reversible center post, which has a removable section, lets you get as low as 14". (Even minus the center post extension, you can go up to 63", with 6 1/4" of center post travel). Of course, for real worm's-eye views, just reverse the center post.

Specifications (with 3025 head): Maximum Elevation: 74 1/2". Minimum Elevation: 14". Closed Length: 30 1/2". Center Post Travel: 17 1/2". Weight: 6 3/4 lbs. **\$114.95**

The Dependable 3030/a

Ideal for location shooting where you need a compact, sturdy tripod (the 3030/a has three-section legs and a geared center post, which means it provides good maximum, working height — over six feet — then telescopes into a really manageable package for carrying). Leg adjustment is fast and easy, even when you're wearing gloves, thanks to our exclusive rocker arm leg lock and a spirit level on the shoulder shows you when you're on the level. Convertible cushioned spike tip legs and rigid center bracing hold everything firm.

Specifications (with 3047 head): Maximum Elevation: 72 1/4". Minimum Elevation: 30 1/4". Closed Length: 33 1/2". Center Post Travel: 11". Weight: 7 lbs. **\$174.95**

The 3035 Work Horse

You can use Tripod at its maximum height of 7 1/2 feet, then lower it to 22 inches or go to virtually ground zero by opening the legs and reversing the geared center column. Most important, the 3035 maintains its stability at all heights. This stability is enhanced by independent, variable-spread leg braces that also allow you to obtain different angles on each leg.

Specifications (with 3047 head): Closed Length with head: 38". (Without head: 32"). Height: (With legs spaced 36" apart) 87 1/2". on Auto Dolly, 7 1/2". Weight: 11 lbs. 12 oz. Minimum Height: (Legs at full spread, retracted) 22". **\$194.95**

The Sturdy 3040

Strong two section bi-post design, light-weight aluminum alloy construction, with exceptional sturdiness built-in. A single, easy to reach locking knob controls extension of each leg. Geared, reversible center post offers 19" of travel, and reverses for low shots or copying. Maximum height is 73", yet it folds to a compact 37". Minimum height without reversing the geared center post is 34 1/2". Legs are equipped with convertible cushion/spike tips.

Specifications (with 3047 head): Maximum Elevation: 73". Minimum Elevation: 34 1/2". Closed Length: 37". Center Post Travel: 19". Weight: 9 lbs., 14 oz. **\$184.95**

The 3050 Automatic

Extension of each leg can be adjusted individually, or all three can be released simultaneously. Triggers let you move from as low as 22" (16" from base of pan head to ground), to 67 1/2" or higher, built-in spirit level on the shoulder, plus two more levels on the 3047 pan/tilt head. Auto Tripod has independent, continuously variable leg braces that set each leg at a different angle. A sturdy geared center post with 9 1/2" of precisely controlled elevation. The legs have convertible, cushioned spike tips. The removable 3047 pan/tilt head doesn't come off until you want it to.

Specifications 3050: (Note: weights and dimensions given are for the 3050, including the model 3047 pan/tilt head, which weighs 2 lbs., 9 oz., and is approximately 6" high). Closed Length with head: 40 1/2". Without head: 36". Height with legs spaced: 40 1/2". With legs apart: 67 1/2". Weight: 14 lbs., 2 oz. Minimum Height (Legs at full spread, retracted): 22". **\$244.95**

ACCESSORIES

- 3041 Adapter Plate for 3047 Pan Head (1/4-20) **\$11.95**
- 3042 Adapter Plate for 3047 Pan Head (Euro Thread) **11.95**
- 3045 Carrying Strap for all Bogen Tripods **9.50**
- 3049 Replacement Mounting Plate (as supplied with 3047 Pan Head) **11.95**
- 3054 Converter Plate to allow any Bogen Tripod to accept heads with 1/4-20 socket **11.00**
- 3059 Side Arm for Bogen Tripods **24.95**

Technal CS-1 Studio Camera Stand

Free-wheeling camera stand gives you great movability for camera placement, then locks into a rock-solid stance for super stability while shooting. Rubber-tipped feet take over from the casters. Fast and easy to adjust, letting you raise the camera to over six feet, or lower it to about a foot above the floor (with the cross arm reversed). Counterbalancing makes the cross arm easy to move, and the stand can handle an 11 1/2 lb. camera with no difficulty. Once the stand is in position, you lock in the rubber-tipped feet for extra stability.

Specifications: Base is on a 36" diameter. Clearance height (for getting through doors fully assembled): 77". Shipping Weight: 45 lbs. Net Weight: 34 lbs. Designed for cameras up to 11 1/2 lbs. See sketch for other dimensions. **\$249.95**

3025 - Lightweight and Sturdy

Separately locked movements on three axes. Perfect for 35mms, and the conical self-adjusting bearing surfaces on the tilt pivots provide more than enough strength to support Hassels and RB's. Thumb-screw movement locks **\$21.95**

3028 - Unique Locking System

Three axes movement system, including a pan lock. Camera platform wider for better support of larger camera bodies and a pair of ratchet-type positive locking handles that give substantial grip, yet can be rotated to any desired position. **\$34.95**

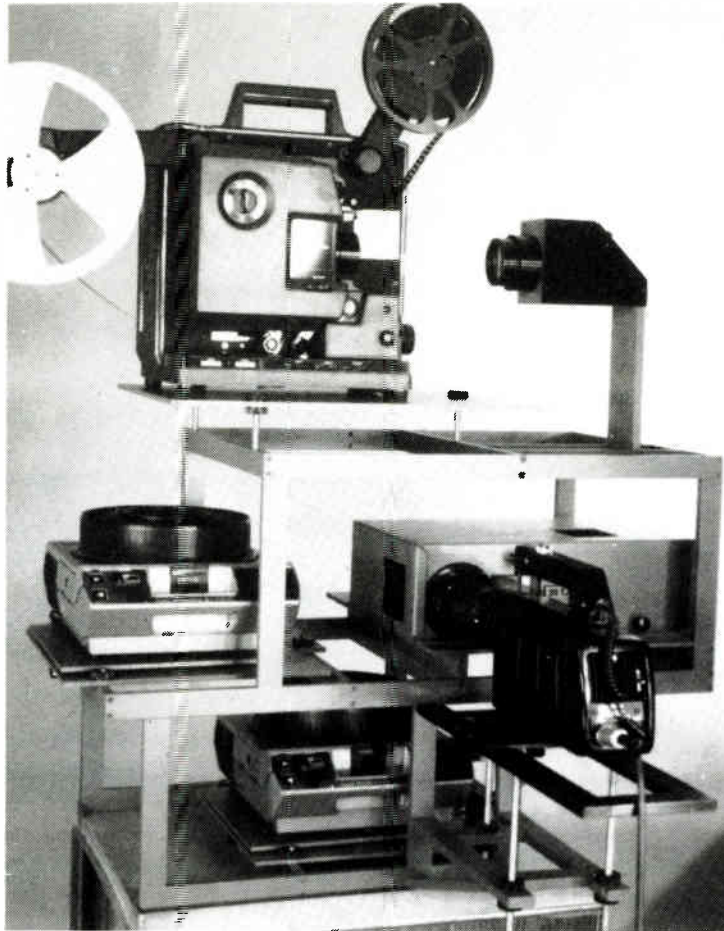
3047 - No Slip, Precise Leveling

New idea in tripod head design: removable camera mounting plates that don't slip. Works like a chuck. Two fixed bosses seat the mounting plate, while the third opens and closes with a quick acting, positive locking knob. In addition to an in-laid friction surface, it also has a positive locking knob. Accessory plates are offered in a choice of U.S. (1/4-20) or European thread, add negligible weight to your camera. Each accessory mounting plate is also socket-tapped for 1/4-20 and Euro thread tripod bushings. Separate spirit levels for each of the two principal tilt axes assure that your camera can be leveled on any terrain. **\$59.95**

3026 - Double Action Ball Joint Head

Separate, quick-acting locks for panning and tilting functions. You can position camera anywhere in a 180° hemisphere. Exclusive feature of this versatile head is quick release mounting which lets you take camera on and off quickly, yet offers positive, slip-proof fastening. **\$29.95**

Prices and Specifications Subject to Change Without Notice.



SERIES II - MOBILE MULTIPLEXER

SERIES II - MOBILE MULTIPLEXER The Film Chain Without A Dedicated Camera

Active image optical system.

The Series II Mobile Multiplexer is a free standing, compact film chain system designed to optically transfer visual dissolve programs to video systems, using two 35mm slide projectors and a 16mm projector.

Non-dedicated camera.

The television camera does not have to be dedicated to film chain use. The camera can be tripod-mounted and used on the Multiplexer with its normal zoom lens. A camera mount and quick release device are available if desired.

Normal zoom lens.

The camera's zoom lens allows precise image sizing. This includes the option of image size adjustments for mixtures of normal 35mm slides and TV format slides. No special lenses or close-up attachments are needed to enable the camera to match-up with the optical components of the Multiplexer.

A high quality, three element collimating lens system optically places the aerial image so that the video camera may be used at normal distance settings.

Built in projector lenses.

All highly corrected objective lenses for the slide projectors and the 16mm projector are built into the Multiplexer. One lens is used for the pair of slide projectors, which eliminates any magnification problems that might arise from using individual objective lenses.

Ektagraphic III slide projectors.

The Multiplexer is designed for use with Ektagraphic Series III E slide projectors. This projector features easy lamp change, is compatible with most electronic dissolve controls and only a minor modification is needed to adapt these projectors for video use.

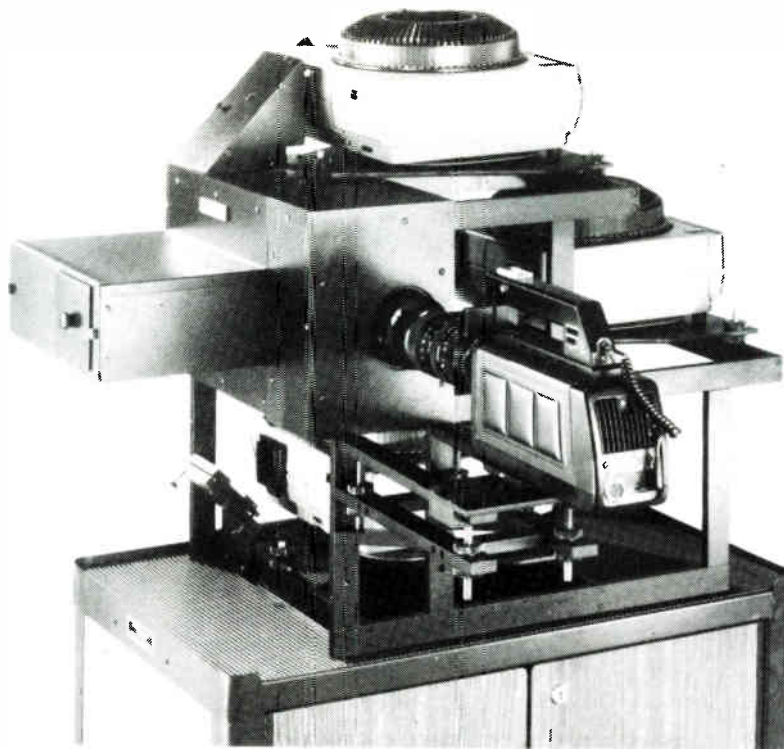
Standard loading slide trays.

The carefully designed folded optical path allows for the 35mm slides to be loaded into the trays as for normal front projection. This eliminates the need to "flip" the slides for correct image orientation.

Because the camera has constant access to all inputs at all times, the slide projectors can be used to provide extra titles for the 16mm film.

620-100	Mobile Multiplexer	\$3000.00
	Basic unit includes mounting plate to hold 16mm projector and the optical system for 16mm films. Does not include projectors. Includes light diffusion device and neutral density filter holder for slide projectors.	
620-150	Camera mount for 620-100 Multiplexer	240.00
620-180	Floor mounting stand for MM II with leveling feet	247.50
620-182	Floor mounting stand for MM II with locking casters	261.00
620-390	Rolling cabinet for MM II, Shipped from Kansas	282.00
620-400	Ektagraphic E III for use on MM II and installed on original equipment	275.00

1009 Beech Ave.
Pittsburg, PA 15233
(412) 321-0076 (800) 245-4574



SERIES III - MULTIPLEXER

SERIES III - MULTIPLEXER

The Mobile Multiplexer III Film Chain

Designed to provide top quality transfers from three 35mm slide projectors onto video.

Space requirements.

The Mobile Multiplexer III is compact in design. Three Ektagraphic III slide projectors are placed in a stacked arrangement. Due to the projector arrangement, the actual footprint of the Multiplexer is only 2 x 3 feet.

Image alignment.

Images from the three projectors are accurately superimposed through the folded optical path. The camera has constant access to all inputs. Beamsplitting prisms are used rather than fragile pellicles or double-image producing beamsplitting plates. There are no double-image problems when using beamsplitting prisms. There are no moving mirrors to worry about.

Slide projectors.

The Mobile Multiplexer III is designed around the Kodak Ektagraphic III slide projectors. These projectors feature easy lamp access and are compatible with most electronic dissolve controls. Brightness modifiers for the three slide projectors are factory installed. Neutral density filter holders are provided should balancing filters be needed.

Alignment controls.

Easy to reach controls for alignment and fine tuning drastically cut down on initial set-up time as well as pre-transfer checking. Alignment and adjustment of each projector is precise and independent of the others.

Objective lens.

A highly corrected objective lens is used for all three slide projectors. The use of only one lens eliminates frustrating magnification problems that arise when more than one lens is used.

Collimating lens system.

A high quality three element collimating lens system optically places the image so that the video camera may be used at normal distance settings. No macro or other special lensing is needed for the video camera. The camera's normal zoom lens allows for precise image sizing. This includes the option of image size adjustments for normal vs TV format slides. The integrity of the optical video relations in the camera design is retained.

630-310 Multiplexer **\$2925.00**
Accepts 3 Ektagraphic III Slide Projectors. No input for 16mm. Does not include projectors.

630-312 Multiplexer **\$3225.00**
Accepts 3 Ektagraphic III Slide Projectors and has a 4th input port for a 16mm projector. Does not include projectors.

630-316 Multiplexer **\$2600.00**
Accepts 2 Ektagraphic III Slide Projectors.

630-150 Camera Mount **\$240.00**
Fits 630-310, 630-312, and 630-316 Multiplexers. Used for mounting the video camera instead of a free standing tripod.

J18 x 9B IE



J13 x 9B IE II



PH13 x 6.6B IE



FOR 2/3" TUBE COLOR TV CAMERAS

SPECIFICATIONS Lens	Application	Zoom Ratio	Range of Focal Length	With Extender	Maximum Relative Aperture	Angular Field of View
J25x11.5B IE	ENG/EFP	25X	11.5-288mm		1:1.6	41.9°x32° at 11.5mm 1.8°x1.3° at 288mm
			23-576mm	2X	1:3.2	21.6°x16.3° at 23mm 0.9°x0.7° at 576mm
J20x8.5B IE	ENG/EFP	20X	8.5-170mm		1:1.6	54.7°x42.4° at 8.5mm 3°x2.2° at 170mm
			17-340mm	2X	1:3.2	29°x22° at 17mm 1.5°x1.1° at 340mm
J18x9B IE	ENG	18X	9-162mm		1:2.4	52.1°x40.3° at 9mm 3.1°x2.3° at 162mm
			18-324mm	2X	1:4.8	27.5°x20.8° at 18mm 1.6°x1.2° at 324mm
J40x9.5B IE	ENG/EFP	40X	9.5-380mm		1:1.4	49.7°x38.3° at 9.5mm 1.3°x1.0° at 380mm
			19-760mm	2X	1:2.8	26.1°x19.7° at 19mm 0.66°x0.5° at 760mm
J15x9.5B	Portable/ENG	15X	9.5-143mm		1:1.8	49.7°x38.3° at 9.5mm 3.5°x2.6° at 143mm
J13x9B IE II	Portable/ENG	13X	9-117mm		1:1.6	52.1°x40.3° at 9mm 4.3°x3.2° at 117mm
			18-234mm	2X	1:3.2	27.5°x20.8° at 18mm 2.2°x1.6° at 234mm

FOR 1/2" TUBE COLOR TV CAMERAS

SPECIFICATIONS Lens	Application	Zoom Ratio	Range of Focal Length	With Extender	Maximum Relative Aperture	Angular Field of View
PH13x6.6B IE	Portable/ENG (Hawk Eye)	13X	6.6-86mm		1:1.4	51.7°x40° at 6.6mm 4.3°x3.2° at 86mm
			13.2-172mm	2X	1:2.8	27.3°x20.6° at 13.2mm 2.1°x1.6° at 172mm

J25X11.5B IE



J20X8.5B IE



J40X9.5B IE



FOR 2/3" TUBE COLOR TV CAMERAS (Cont'd)

Minimum Object Distance (M.O.D.)	Object Dimensions at M.O.D.	Optical Back Focal Distance	Size WxHxL	Weight (Approx.)	Operation System	Remarks
J25x11.5B IE 1.5m	101.9 x 76.5cm at 11.5mm 4.1 x 3.1cm at 288mm	48.2mm in air	190x200x370mm	10kg	Servo/manual control	Built-in extender 2X
	51.3 x 38.4cm at 23mm 2.1 x 1.6cm at 576mm					
J20x8.5B IE 0.6m	82.1 x 60.4cm at 8.5mm 3.9 x 3cm at 170mm	47.9mm in air	180x175x380mm	8kg	Servo/manual control	Built-in extender 2X
	40 x 29.8cm at 17mm 2 x 1.5cm at 340mm					
J18x9B IE 0.9m	80.2 x 60.2cm at 9mm 4.5 x 3.4cm at 162mm	48.6mm	133x90x196.5mm	1.7kg	Servo/manual control	Built-in extender 2X
	40.1 x 30.1cm at 18mm 2.3 x 1.7cm at 324mm					
J40x9.5B IE 2.5m	205 x 154cm at 9.5mm 5.0 x 3.8cm at 380mm	48.9mm	280x309x644.6mm	30kg	Servo/manual control	Built-in extender 2X
	103 x 77cm at 19mm 2.6 x 2.0cm at 760mm					
J15x9.5B 1m	86.2 x 64.7cm at 9.5mm 5.7 x 4.3cm at 143mm	22.1mm in air	140x95x140mm	1.5kg	Zoom & Iris: Servo/manual control Focus: Manual control	
J13x9B IE II 0.8m	72.2 x 54.2cm at 9mm 5.6 x 4.2cm at 117mm	41.7mm in air	131x96x187mm	1.5kg	Zoom & Iris Servo/manual control Focus: manual control	Built-in extender 2X
	36.1 x 27.1cm at 18mm 2.8 x 2.1cm at 234mm					

* 1 in case of B3 type

* 2 in case of B4 type

FOR 1/2" TUBE COLOR TV CAMERAS

Minimum Object Distance (M.O.D.)	Object Dimensions at M.O.D.	Optical Back Focal Distance	Size WxHxL	Weight (Approx.)	Operation System	Remarks
PH13x6.6B IE 0.8m	72.3 x 54.2cm at 6.6mm 5.6 x 4.2cm at 86mm	33mm in air	127.5 x 80 x 168.5 mm	1.3kg	Zoom & Iris Servo/manual control Focus: manual control	Built-in extender 2X
	36.5 x 27.3cm at 13.2mm 2.9 x 2.2cm at 172mm					

Canon

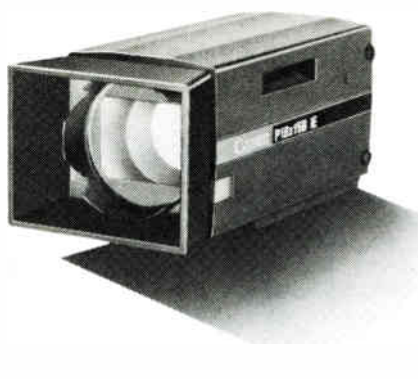
One Canon Plaza
Lake Success, NY 11042
(516) 488-6700

BROADCASTING TV ZOOM LENS

P40X18B IE



P18X15B IE



P12X18B IE



For 1-1/4" Tube Color TV Cameras

Specifications Lens	Application	Zoom Ratio	Range of Focal Length	(With Extender)	Maximum Relative Aperture	Angular Field of View
P40x18B IE	Field	40 ×	18 - 720mm		1 : 2.3	50.7° × 39.1° at 18mm 1.4° × 1° at 720mm
			36 - 1440mm	2 ×	1 : 4.6	26.7° × 20.2° at 36mm 0.7° × 0.5° at 1440mm
P18x15B IE	Field/Studio	18 ×	15 - 270mm		1 : 2.1	60.4° × 47.1° at 15mm 3.7° × 2.7° at 270mm
			22.5 - 405mm	1.5 ×	1 : 3.1	42.4° × 32.4° at 22.5mm 2.4° × 1.8° at 405mm
			30 - 540mm	2 ×	1 : 4.2	32.4° × 24.6° at 30mm 1.8° × 1.4° at 540mm
P12x18B IE	Studio	12 ×	18 - 216mm		1 : 2.1	50.8° × 39.1° at 18mm 4.5° × 3.4° at 216mm
			27 - 324mm	1.5 ×	1 : 3.1	35.1° × 26.7° at 27mm 3° × 2.3° at 324mm
			36 - 432mm	2 ×	1 : 4.2	26.7° × 20.2° at 36mm 2.3° × 1.7° at 432mm

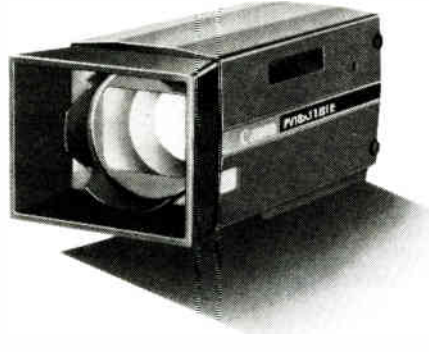
For 1" Tube Color TV Cameras

Specifications Lens	Application	Zoom Ratio	Range of Focal Length	(With Extender)	Maximum Relative Aperture	Angular Field of View
P40x13.5B IE	Field	40 ×	13.5 - 540mm		1 : 1.7	50.7° × 39.1° at 13.5mm 1.4° × 1° at 540mm
			27 - 1080mm	2 ×	1 : 3.4	26.7° × 20.2° at 27mm 0.7° × 0.5° at 1080mm
PV18x11B IE	Field/Studio	18 ×	11 - 200mm		1 : 1.6	60.4° × 47.1° at 11mm 3.7° × 2.7° at 200mm
			16.5 - 300mm	1.5 ×	1 : 2.4	42.4° × 32.4° at 16.5mm 2.4° × 1.8° at 300mm
			22 - 400mm	2 ×	1 : 3.2	32.4° × 24.6° at 22mm 1.8° × 1.4° at 400mm
PV12x14B IE	Studio	12 ×	13.5 - 162mm		1 : 1.6	50.8° × 39.1° at 13.5mm 4.5° × 3.4° at 162mm
			20.3 - 243mm	1.5 ×	1 : 2.4	35.1° × 26.7° at 20.3mm 3° × 2.3° at 243mm
			27 - 324mm	2 ×	1 : 3.2	26.7° × 20.2° at 27mm 2.3° × 1.7° at 324mm

PV40X13.5B IE



PV18X11B IE



PV12X14B IE



For 1-1/4" Tube Color TV Cameras (Cont'd)

Minimum Object Distance (M.O.D.)	Object Dimensions at M.O.D.	Optical Back Focal Distance	Size W×H×L	Weight (Approx.)	Operation System	Remarks
P40x18B IE 2.5m	211 × 158cm at 18mm 53 × 4cm at 720mm	75mm in air	280 × 309 × 648mm	30kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 2 ×
	106 × 80cm at 36mm 27 × 2cm at 1440mm					
P18x15B IE 0.6m	92.2 × 69.2cm at 15mm 4.9 × 3.7cm at 270mm	75.3mm in air	260 × 285 × 636mm	27kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 1.5 ×, 2 ×
	60.9 × 45.7cm at 22.5mm 3.3 × 2.5cm at 405mm					
	45.8 × 34.4cm at 30mm 2.5 × 1.9cm at 540mm					
P12x18B IE 0.9m	75.5 × 56.7cm at 18mm 6.5 × 4.9cm at 216mm	78.27mm in air	284 × 321.5 × 433mm	20kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 1.5 ×, 2 ×
	50.3 × 37.8cm at 27mm 4.3 × 3.3cm at 324mm					
	37.8 × 28.4cm at 36mm 3.3 × 2.4cm at 432mm					

For 1" Tube Color TV Cameras

Minimum Object Distance (M.O.D.)	Object Dimensions at M.O.D.	Optical Back Focal Distance	Size W×H×L	Weight (Approx.)	Operation System	Remarks
PV40x13.5B IE 2.5m	211 × 158cm at 13.5mm 53 × 4cm at 540mm	62.8mm in air	280 × 309 × 648mm	30kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 2 ×
	106 × 80cm at 27mm 27 × 2cm at 1080mm					
PV18x11B IE 0.6m	92.2 × 69.2cm at 11mm 4.9 × 3.7cm at 200mm	62.79mm in air	260 × 277.5 × 710mm	27kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 1.5 ×, 2 ×
	60.9 × 45.7cm at 16.5mm 3.3 × 2.5cm at 300mm					
	45.8 × 34.4cm at 22mm 2.5 × 1.9cm at 400mm					
PV12x14B IE 0.9m	75.5 × 56.7cm at 13.5mm 6.5 × 4.9cm at 162mm	63.22mm in air	284 × 321.5 × 433mm	20kg	Zoom } Servo manual Focus } Iris Servo	Built-in extender 1.5 ×, 2 ×
	50.3 × 37.8cm at 20.3mm 4.3 × 3.3cm at 243mm					
	37.8 × 28.4cm at 27mm 3.3 × 2.4cm at 324mm					

20665 Manhattan Place
Torrance, CA 90501 USA
(213) 320-0808 (800) 421-2955
TWX 910-349-6260

REFLEX-20 BATTERY PACKS & POWER SUPPLY FOR CAMERA EQUIPMENT

EQUIPMENT MODEL		REFLEX-20 SNAP-ON TYPE BATTERY	REPLACES	SNAP-ON TYPE MOUNT	CHRISTIE WEDGE MOUNT	KR SERIES BATTERY	KR SERIES AC ADAPTER	RUN TIME (Minutes)
AMPEX	FPC10	KS12	PROPAC14	BUILT-IN	—	—	—	115
	BCC-20	KS12	PROPAC14	BUILT-IN	KA23	KR2	KS1	80
BOSCH	KCF1	KS12	SAFT	QR-F1	—	—	—	90
HARRIS	TC90	KS12	FBP14	BUILT-IN	—	—	—	110
HITACHI	FP15	KS11	DP40	CB15	—	—	—	120
	FP21/22	KS12	DP40	CB21	KA30	KR2	KS1	105
	SK81/91	KS12	DP40	CB91	KA28	KR2	KS1	115
	SK97	KS12	DP40	CB97	—	—	—	110
	Z31	KS12	DP40	CB31	—	—	—	135
IKEGAMI	HL79D	KS12	QPY-9N	BUILT-IN	KA24	KR2	KS1	100
	HL79E	KS12	QPY-9N	BUILT-IN	KA24	KR2	KS1	100
	HL83	KS12	QPY-9N	BUILT-IN	KA29	KR2	KS1	110
	HL95	KS12	QPY-9N	BUILT-IN	KA24	KR2	KS1	110
	ITC730	KS12	QPY-9N	BUILT-IN	KA24	KR2	KS1	100
	ITC730A	KS12	QPY-9N	BUILT-IN	KA24	KR2	KS1	110
JVC	KY-2000	KS11	B20	Q27 MOUNT	—	—	—	110
	KY-2700	KS11	B20	Q27 MOUNT	KA15	KR1	KS1	135
	KY-1900	KS11	B20	Q19 MOUNT	—	—	—	135
	KY-210	KS12	DC-C50U	Q21 ADAPTER	—	—	—	120
	KY-310	KS12	DC-C50U	Q95 ADAPTER	—	—	—	120
	KY-320	KS12	DC-C50U	Q95 INCLUDED	—	—	—	120
	KY-900	KS12	DC-C50U	Q95 INCLUDED	—	—	—	105
	KY-950	KS12	DC-C50U	Q95 INCLUDED	—	—	—	105
	—	—	—	—	—	—	—	—
NEC	SP3A	KS12	PROPAC14	QR-NEC-3	—	—	—	200
PANASONIC	WV555	KS11	WV-PS36	WV-PS35S	—	—	—	115
	WV888	KS11	WB-PS36	WV-PS35S	—	—	—	105
	AK30	KS12	PROPAC14	BUILT-IN	—	—	—	125
	B100	KS12	PROPAC14	BUILT-IN	—	—	—	110
PHILIPS	LDK14	KS12	FBP14	BUILT-IN	—	—	—	120
RCA	CCD1	KS12	PROPAC14	BUILT-IN	—	—	—	115
	TK76B.C*	KS12	14V BELT	HM76B/C	KA20	KR2	KS1	60
	TK86	KS12	PROPAC14	BUILT-IN	KA21	KR2	KS1	75
SHARP	XC700	KS12	BP14	BUILT-IN	KA27	KR2	KS1	120
	XC800	KS12	BP14	BUILT-IN	KA27	KR2	KS1	120
	XC900	KS12	BP14	BUILT-IN	—	—	—	140
SONY	DXC-M3	KS12	DC-7/BP-60	DC65AN/M3	—	—	—	160
	DXC-M3A	KS12	DC-8/NP1	DC309AN	—	—	—	160
	BVP150	KS12	BP-65AN	DC305AN	KA22	KR2	KS1	140
	BVP300	KS12	BP-65AN	DC305AN	KA22	KR2	KS1	130
	BVP330	KS12	BP-65AN	DC305AN	KA22	KR2	KS1	115
	BVP3	KS12	BP-65AN	DC305AN	KA22	KR2	KS1	125
	BVP30	KS12	BP-65AN	DC305AN	KA22	KR2	KS1	125
	BVW1	KS11	NP-1	DC306AN	—	—	—	115
	BVW3	KS11	NP-1	DC307AN	—	—	—	85
	BVW1/BVW3**	ER6	NP-1	HM90A	—	—	—	75
	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
	THOMPSON	MC601	KS12	—	HM300	KA22	KR2	KS1	130

KS Battery

KA Wedge Mount

KR Battery

KS1 Power Supply
KS1 fits Christie
wedge mount.

* RCA TK-76A, B, C Belt Pack option consisting of one HR1 Battery with BE3 Cable or two HR1 Batteries operated in parallel with Dual BE3 Cable; worn on "B" Belt. Run Time: 60 minutes for one pack; 130 minutes for two packs in parallel.

** With Wireless Mike.

REFLEX-20 BATTERY PACKS FOR PORTABLE LIGHTING

HR Series w/Belt	VOLTAGE	WATTS	REFLEX-20 BATTERY	REPLACES	CABLE	OPERATE TIME (Min.)
	30 VOLT	250	HR1 (TWO)	30V BELT	BE7	24
14 VOLT	80	HR1	14V BELT	BE12	25	

REFLEX-20 BATTERY PACKS FOR VTR'S

EQUIPMENT MODEL	REFLEX-20 BATTERY	REPLACES	RUN TIME (Minutes)
AMPEX VPR20	11BB40A3†	—	60
SONY	ER6	BP90	240
	ER6	BP90	240
	ER6 (TWO)	BP90 (TWO)	100
	ER8	BP60	145

SPECIFICATIONS

Model:	Nom Voltage:	Approx. Weight:	Approx. Dimensions:
ER6	12.5	3 lbs. 8 oz.	6-5/8 x 4-3/4 x 1-5/16"
ER8	12	2 lbs. 7 oz.	2-3/4 x 5 x 2-3/4"
HR1	14.4	5 lbs. 8 oz.	7-1/4 x 8 x 2"
KR1	13.75	4 lbs. 3 oz.	5-1/2 x 4-1/2 x 2-3/4"
KR2	15	4 lbs. 5 oz.	5-1/2 x 4-1/2 x 2-3/4"
KS11	13.75	4 lbs. 1 oz.	5-1/2 x 4-1/2 x 2-3/4"
KS12	15	4 lbs. 3 oz.	5-1/2 x 4-1/2 x 2-3/4"
11BB40A3†	13.7	7 lbs. 14 oz.	8-1/4 x 5-3/8 x 2-7/8"
KS1	N/A	3 lbs.	4-1/4 x 5-1/2 x 4-1/2"



11BB40A3†

ER8

† Available through Ampex Corp.

REFLEX-20® CHARGERS/ SEQUENCER AND SLOW CHARGERS

REFLEX-20 CHARGERS, SEQUENCER & SLOW CHARGERS

REFLEX Battery	CASP I		SMT I		Dual Channel				Charge Cable	Sequencer	REFLEX Charge Time	Slow Charger	Slow Charge Time
	Six-Port 115/230V 50/60Hz	Charge Cable	Single Channel 115/230V 50/60Hz	Charge Cable	115V 60Hz	115V 50/60Hz	230V 50/60Hz	115/230V 50/60Hz					
									115/230V 50/60Hz	115/230V 50/60Hz			
KS11	CASP 1	CCKS11	SMT	—	DMB	DMBZ1	DMBZ2	DMCZ	CBB24	RS1A	20 MIN MAX	TC1	16 HRS MAX
KS12	"	CCKS12	"	CSB12	"	"	"	"	CBB26	"	"	TC1	"
KR1	"	CCKR1	"	—	"	"	"	"	CBB14	"	"	TC1	"
KR2	"	CCKR2	"	BUILT-IN	"	"	"	"	CBB16	"	"	TC1	"
HR1	"	CCHR1	"	CSB8	"	"	"	"	CBB8	"	"	TC1	"
HR2	"	CCHR2	"	—	"	"	"	"	CB5	"	40 MIN MAX	TC1	"
ER6	"	CCER6	"	BUILT-IN	"	"	"	"	CBB11	"	20 MIN MAX	TC1	"
ER8	"	CCER8	"	—	"	"	"	"	CBB1	"	"	TC23	"



CASP 1 - Six-Port

CASP 1 - Six-Port
Universal charger-analyzer-sequencer-power supply for any rechargeable battery.
12 lbs.
8 1/2" x 14 1/2" x 3 1/2"
Contact factory for non-Christie battery charge cables.



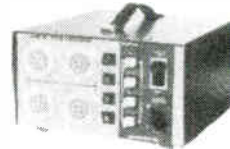
"SMT" Charger

Single Channel
Will charge one ER6, KR2, HR1***, or KS12*** battery pack in less than 20 minutes.
15 lbs.
9 1/2" x 8 1/2" x 11 1/8"
***Requires CSB8 for HR1; CSB12 for KS12 batteries.



"DM" Series Charger

Dual Channel, Multi-Purpose
Will charge any two similar ReFLEX-20 batteries above 21-25 lbs.
9 1/2" x 8 1/2" x 11 1/8"



RS1A Sequencer

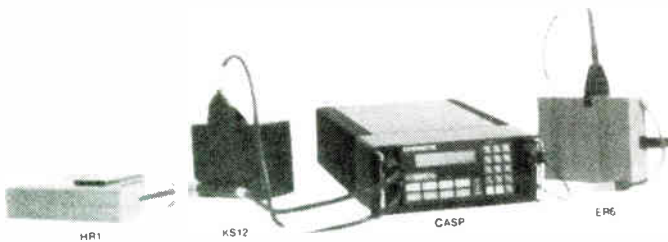
RS1A Sequencer
Will charge up to 8 intermixed ReFLEX-20 batteries automatically in sequence in less than 4 hours. The Sequencer must be used together with DMB, DMBZ1, or DMBZ2 only.
11 lbs. 8 oz.
10 1/4" x 5 1/4" x 9 1/2"



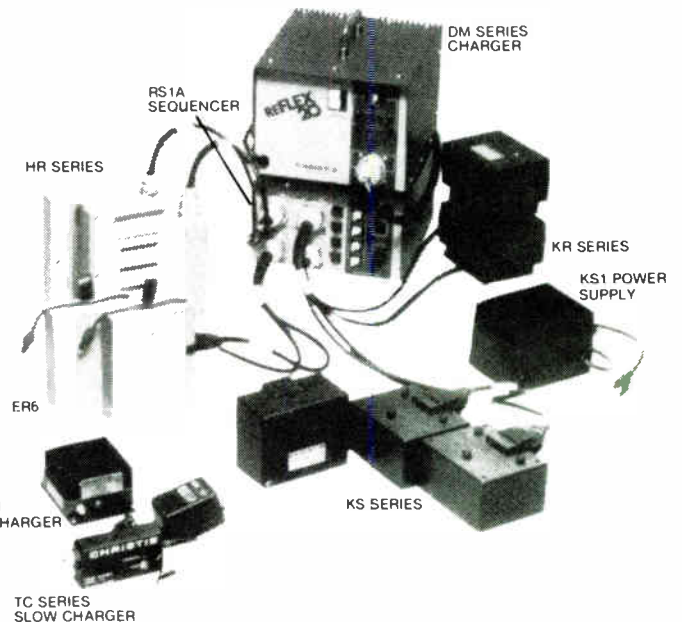
TC1/TC23 Timed Slow Charger

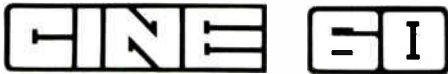
TC1/TC23 Timed Slow Charger
TC1 will charge ER6, HR1, HR2, KR1, KR2, KS11, KS12.
TC23 will charge ER8.
20 oz.
4 1/2" x 2 1/2" x 1 1/4"
excluding wall-mount transformer.

REFLEX-2000 FAMILY



REFLEX-20 FAMILY





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Newspak Nickel-Cadmium Battery Systems

Newspaks combine the best features of Cine 60 Battery Belts in an On-Board Battery to provide a high quality battery for video applications. Built-in Lifeguard Cell Sensors, 50% more accurate than the commonly employed sensors, monitor temperature of the custom-matched premium quality cells more efficiently, prevent overcharge and undercharge. This exclusive design assures a longer, more powerful battery life and makes the Cine 60 Newspak the most practical high reliability battery on the market.

The Newspak mates with the standard battery bracket on the rear of most ENG cameras. It connects via an integral banana jack 'shorty' connector. As a direct replacement for OEM supplied On-Board Batteries, it is fully compatible with the OEM's Fast, Quick, or Slow Chargers. No cables, adaptors, or modifications are required. It also has an auxiliary 5-pin XLR for powering a battery light when required and which may also be used for charging with Cine 60 Chargers.

Newspak U-14

14.4V / 4 Amp.-Hr. / 4 1/2 lbs. For all Ikegami, Sony BVP Series, RCA, Thomson, Philips, CP, Harris, Ampex, and Hitachi SK81/91/97, FP-21, FP-22 Cameras. Direct Replacement for Ikegami QPY9N, Sharp XC-70/80/90 BAT On-Board Batteries.

U-14 \$435.00

Newspak U-13

13.2V / 4 Amp.-Hr. / 4 1/2 lbs. For Panasonic (except Recam), JVC, Sony DXC-M3, Sony Betacam, and all other Hitachi Cameras. Direct Replacement for Hitachi DP-40, JVC B-20, Sony BP-65AN, Panasonic SQ13F On-Board Batteries.

U-13 \$425.00

NICKEL CADMIUM BATTERIES/CHARGERS

Cine 60 VTR Batteries

The Professional Direct Replacements for Sony BP-90 and BP-60 VTR Batteries. Feature custom-matched premium quality NiCad cells and the exclusive 'Lifeguard Cell Sensors' as used in Cine 60 Newspaks and Battery Belts.

BP-912FC & BP-912S Sony BP-90 Replacements

12V / 4 Amp.-Hr. VTR Battery in heavy-duty molded case with non-shorting type connector and replaceable fuse to guard against external shorts. Both Fast and Slow Charge models compatible with Sony BC-210 and all overnite chargers for BP-90 type Batteries.

BP-912FC \$255.00

(For fast or quik charging with all Cine 60 Fast Chargers use BPA Charger Adaptor)

BP-912S Standard Charge Model \$230.00

BP-612FC & BP-612S Sony BP-60 Replacements

13.2V / 2 Amp.-Hr. rating for maximum power. Delivers up to ten times more power over its life than Sony's BP-60. Can be stored in discharged condition indefinitely. Both Fast and Slow Charge models can be charged overnite with Cine 60's BP-25C 2-position Overnite Charger.

BP-612FC \$195.00

(With Cine 60 Lifeguard Fast or Quik Chargers, use BPA Adaptor)

BP-612S Standard Charge Model \$180.00

Cine 60 Betacam Battery NP-4

12V/4 Amp.-Hr./4 lbs. The Professional Replacement for Sony's NP-1 Battery. Provides more than three times the power. Features premium quality NiCad Cells and Cine 60's exclusive Lifeguard Cell Sensors. Has automatic reset circuit breaker to guard against external shorts, 4-pin XLR for direct connection to the Betacam's D.C. input. Mates with the Cine 60 MB-4 Battery Bracket which can be mounted on the rear of the Betacam with existing screws. Run Time: 2.5 Hrs. for BVW-1, 1.6 Hrs. for BVW-3 Betacam. Can be charged fast, quik or slow with Cine 60 Chargers.

NP-4 \$275.00

(Supplied with Overnite Charger, Shoulder Strap and Belt Clip for use off the Betacam)

MB-4 Battery Bracket \$ 75.00

(For the Betacam)

LC4-914 Lifeguard 4-Hour, 4-Position Fast Charger

Has 4 independent 1 Amp Charging Channels. Each can be changed to provide single position charge rates of 2, 3, or 4 Amps. Use as a single position 1 Hour Fast Charger for 4 Amp. Newspak, OEM On-Board Battery, BP-912FC, BP-612FC VTR Batteries, Betacam Battery...or...as a 4-position, 4-hour Fast Charger for any combination of these Batteries. Requires BP3XF Charge Adaptors for OEM Batteries, BPA Adaptor for VTR Batteries, 4P-5P Charge Adaptor for Betacam Battery. Excellent line and load regulation assures a full charge. 115/220V switchable. Compact 4 1/2" x 6 5/8" x 7 1/2". Lightweight 4 lbs.

LC4-914 \$695.00

LC-914 Lifeguard 4-Hour, Single-Position Quick Charger

Compact 1 Amp. single-channel version of LC4-914 Fast Charger. Weighs 10 ozs. Charges Newspak, OEM On-Board Batteries, etc. in 4 hours. Requires same Charge Adaptors for OEM & VTR Batteries as LC4-914 above. 115/220V switchable. Size: 4 1/4" x 2 7/8" x 1 1/2".

LC-914 \$210.00

BP-2C 2-Position Overnight Charger For BP-90 Batteries

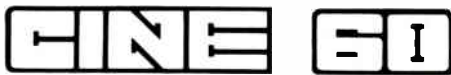
Accepts all types. Charges two overnight. Size: 4 1/4" x 2 7/8" x 1 1/2". Weighs 10 ozs. BP-2C 115V, BP-2C-220 220V.

BP-2C ea. \$105.00

BP-25C 2-Position Overnight Charger for BP-612 Batteries

Same size and weight as BP-2C. BP-25C 115V, BP-25C-220 220V.

BP-25C ea. \$105.00

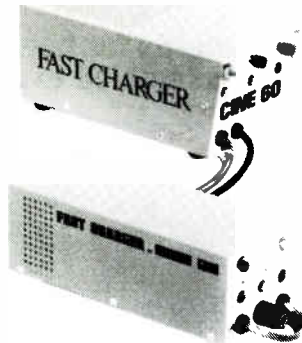


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NICKEL-CADMIUM BATTERY CHARGERS

"Pro" Universal Fast Chargers

Provide safe fast charging without overcharging of 6 to 30 volts (5 to 25 cell) Fast Charge type batteries. Will recharge a 4AH Battery in one hour, 7AH in 2 hours. Sensing circuits are utilized and visual indicators on the Chargers provide continual monitoring of Battery status. Manual "Start", automatic cut off at end of charging cycle. Two charge rates, Fast/Slow.

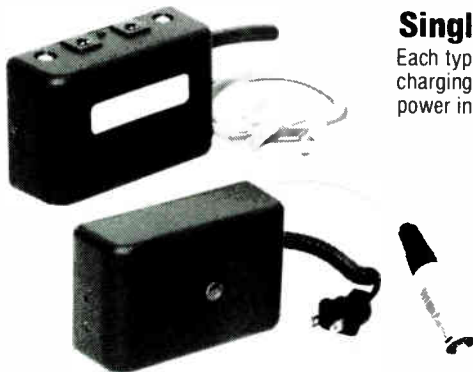
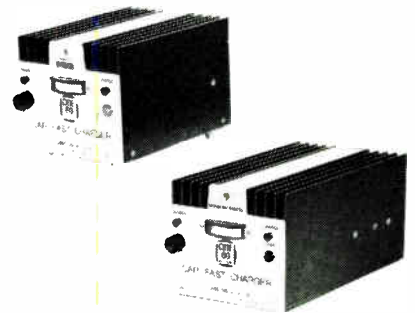


Model No.	Input Voltage	Cell Types	Charge Rates	Charge Conn.	Size	Weight
9400	115V 50/60Hz	D or F	4A/350mA	5-pin XLR	2 ³ / ₄ " x 3 ¹ / ₂ " x 8"	3 lbs.
9400B	"	"	"	4-pin XLR	"	"
9422	220V 50/60Hz	"	"	5-pin XLR	"	"
9422B	"	"	"	4-pin XLR	"	"
BP2500	115V 50/60Hz	1/2D, 2/3D, D, F	2.5A/250mA	3-pin XLR	"	"
BP2522	220V 50/60Hz	"	"	"	"	"
9400-U	115/220V 50/60Hz	D or F	3A/350mA	5-pin XLR	3 ³ / ₄ " x 4 ¹ / ₂ " x 8 ³ / ₄ "	"
9400-UB	"	"	"	4-pin XLR	"	"

Mobile 12VDC Fast Chargers

Using the vehicle's electrical system, these models provide safe fast charging without overcharging 12 to 30 volt Fast Charge type batteries. Equipped with Charge Current Ammeter, LED Indicators for DC input & Charge Mode, "Start" Charge Pushbutton, On-Off Switch and sensing circuits to provide continual monitoring of battery status. Automatic cut off at end of charging cycle. DC Input Cord 3 ft. long terminated in AMP lugs for connection to Car Battery or Fuse block. Will recharge a 4AH battery in 1 hr., a 7AH battery in 2 hrs.

Model No.	DC Input Volts/Amps	Cell Types	No. of Cells	Charge Rate	Charge Conn	Size	Weight
94DC12A	12-13.5V-7 Amps	D or F	10, 11 or 12 cells (12V - 14.4V)	4A	5-pin XLR	4 ³ / ₄ " x 4 ³ / ₄ " x 7"	4 lbs.
94DC12B	"	"	"	"	4-pin XLR	"	"
94DC16A	"	1/2D, 2/3D, D, F	10 to 14 cells (12 to 16.8V)	2.5A	5-pin XLR	"	"
94DC30	12-13.5V-17 Amps	D or F	20 to 24 cells (30V-4A, 7A) (12-14.4V-8A, 14A)	4A	5-pin XLR	4 ³ / ₄ " x 4 ³ / ₄ " x 9"	5 lbs.



Single and Dual 14 - 16 Hour Overnight Chargers

Each type occupies an area 4³/₈" x 2⁷/₈" and is 1¹/₂" high. The dual type will charge two batteries simultaneously. Each charging circuit includes an indicator lamp and flush-mounted charge receptacle. Both types come with 3 ft. long power input cord, polarized plug and are fused.

Dual Types Model No.	Input Voltage	Cell Types	No. of Cells	Charge Connector	Charge Rate
BP-2C	115V 50/60Hz	D or F	2 to 24 cells	2.1mm DC pin plug	350mA
BP-2C/220	220V 50/60Hz	"	"	"	"
BP-25C	115V 50/60Hz	1/2D, 2/3D	2 to 24 cells	"	250mA
CBP-2J	"	"	"	3.0mm DC pin plug	"
CBP-2J/220	220V 50/60Hz	"	"	"	"

Single Overnight Chargers

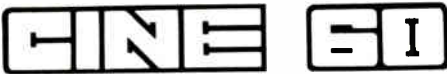
These line-isolated desk type chargers are available for replacing inefficient Nickel-Cadmium Battery Chargers. Each provides a full charge in 14 to 16 hours at the C10 charge rate. Each is equipped with a LED Charge Indicator, 5-pin XLR Charge Cable. C10 Chargers for different Battery Voltages, Charging Rates, and/or Charge Connectors can be made up on special order. To denote a 4-pin XLR Charge Cable for any charger listed below, add the letter "B" to the end of the model number. Charger input is 115V/V 50/60Hz. For 220 V Chargers add suffix -220V to Model No.

Single Overnight Charger Model Nos.

No. of Cells	7 Cells	10 Cells	12 Cells	14 Cells	20 Cells	24 Cells
Battery Voltage	8.4V	12V	14.4V	16.8V	24V	28.8V
Cell Size/Capacity	↓	↓	↓	↓	↓	↓
1/2A 450mAH	450-7	450-10	450-12	450-14	450-20	450-24
AA 500mAH	500-7	500-10	500-12	500-14	500-20	500-24
2/3SC 600mAH	600-7	600-10	600-12	600-14	600-20	600-24
2/3C 900mAH	900-7	900-10	900-12	900-14	900-20	900-24
SC 1200mAH	1200-7	1200-10	1200-12	1200-14	1200-20	1200-24
C 1800mAH	1200-7	1800-10	1800-12	1800-14	1800-20	1800-24
1/2D 2.0 AH	2.0-7	2.0-10	2.0-12	2.0-14	2.0-20	2.0-24
2/3D 2.5 AH	2.5-7	2.5-10	2.5-12	2.5-14	2.5-20	2.5-24
D 4.0 AH	4.0-7	4.0-10	4.0-12	4.0-14	4.0-20	4.0-24
F 7.0 AH	7.0-7	7.0-10	7.0-12	7.0-14	7.0-20	7.0-24
SF 10.0 AH	10.0-7	10.0-10	10.0-12	10.0-14	10.0-20	10.0-24

Prices and Specifications Subject to Change Without Notice.

VC-37

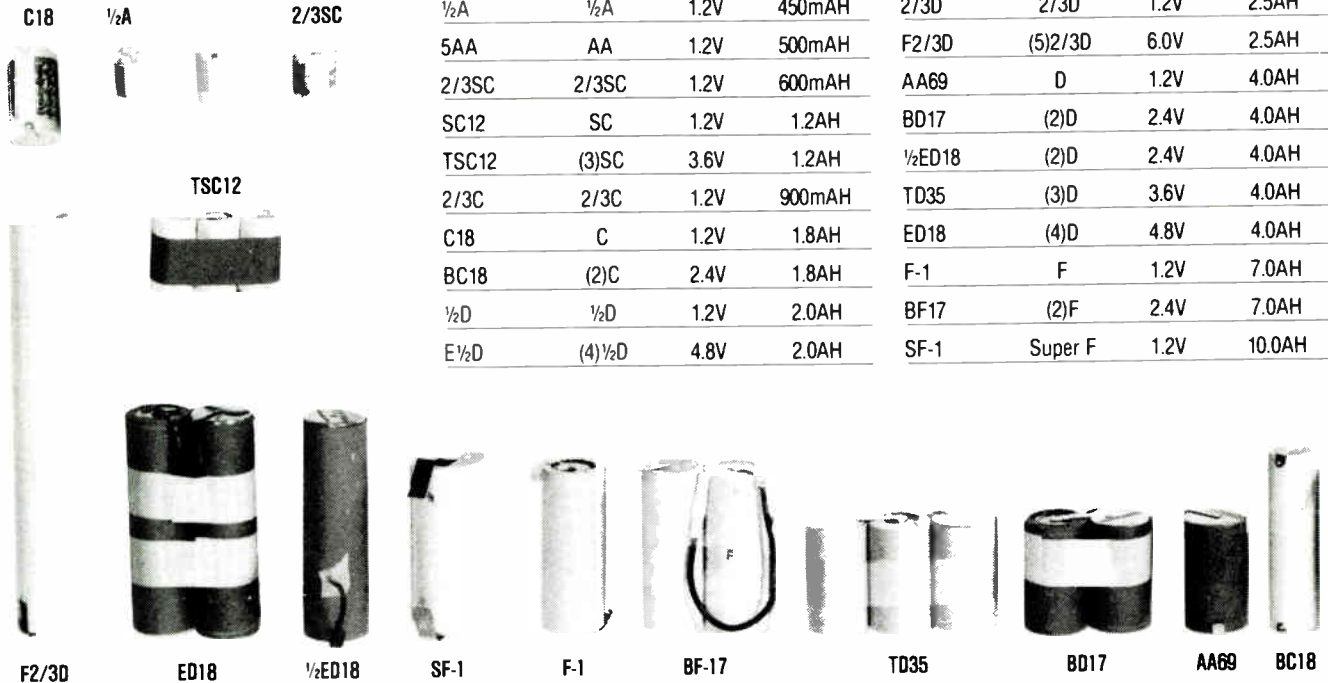


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NICKEL-CADMIUM CELLS/ BATTERY MODULES

All Cells meet or exceed Cine 60 standards for heavy duty commercial use. Cell arrays can be assembled to any size or shape to fit your application.

Model No.	Size	Volts	AH (Capacity)	Model No.	Size	Volts	AH (Capacity)
1/2A	1/2A	1.2V	450mAH	2/3D	2/3D	1.2V	2.5AH
5AA	AA	1.2V	500mAH	F2/3D	(5)2/3D	6.0V	2.5AH
2/3SC	2/3SC	1.2V	600mAH	AA69	D	1.2V	4.0AH
SC12	SC	1.2V	1.2AH	BD17	(2)D	2.4V	4.0AH
TSC12	(3)SC	3.6V	1.2AH	1/2ED18	(2)D	2.4V	4.0AH
2/3C	2/3C	1.2V	900mAH	TD35	(3)D	3.6V	4.0AH
C18	C	1.2V	1.8AH	ED18	(4)D	4.8V	4.0AH
BC18	(2)C	2.4V	1.8AH	F-1	F	1.2V	7.0AH
1/2D	1/2D	1.2V	2.0AH	BF17	(2)F	2.4V	7.0AH
E1/2D	(4)1/2D	4.8V	2.0AH	SF-1	Super F	1.2V	10.0AH

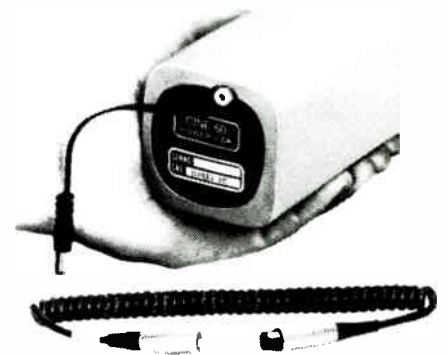


Custom Packaging and Assembly

Cine 60 packages and assembles Nickel-Cadmium Cells and Battery Chargers into special Packs or Belts to meet your specific requirements. Complete services are available.

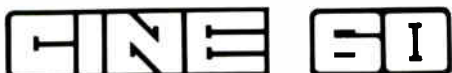
Battery Dememorizer

Nickel—Cadmium battery 'memory' is created by the build-up of excess crystals in the cell. Repetitive long periods of overcharging and shallow discharging can bring about this condition of apparent loss of capacity. The Dememorizer, properly used, will break down the excess crystals in the cell thereby restoring the apparent capacity loss. In the process it will also rebalance the cells to improve the battery's performance. Model No. DM-1214: equipped with solid-state constant current drain device, voltage sensor, automatic voltage cut off circuit, voltmeter, voltage selector, pushbutton 'start' switch. It will dememorize 12V and 14.4V 1.5 Amp to 20 Amp Batteries.



Battery Cables

Elasticity and rugged hard use is assured by the quality of these cables. Coiled types retracted are 11 inches long, extended 6 ft. They are supplied with OEM connectors. When the equipment's DC input connector is of the non-locking type, straight 6 ft. long cables are specified.



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LIFEGUARD SOFBELTS/PACKS/ STANDARD SOFBELTS

Features

- 115/230 Volt built-in Lifeguard switchable charger. Fully charges 4A or 8A Lifeguard Sofbelts or Packs in 4 hours, 7A or 14A units in 7 hours. Automatically switches to Lifeguard mode to keep battery fully charged.
- Thick-walled, cell-fitted, injection-molded, Sofbelt battery modules protect cells and intercell connections against harsh field abuse.
- Agelessly flexible, soft body-molded, foam-cushioned belt assures lifetime comfort. Soft rounded edges extend beyond mounted battery modules to conform to body contours.
- Individually calibrated precision ceramic cell sensors prevent overcharge, insure full charge.
- Switchable models, 14 volt for Camera, 30 volt for Light

Lifeguard Sofbelt/Battery Pack Data

All Lifeguard Battery Packs utilize the same components used in the 'Lifeguard' Sofbelt.

Battery Protection:

Precision cell sensing system assures full charge without overcharge. Automatically discontinues charge mode when full charge is reached.

'Lifeguard' rate prevents self-discharge, heat build-up.

Automatic reset circuit breaker disconnects battery from load in case of an external short.

Non-resettable thermal fuse.

All 'Lifeguard' Sofbelts, Packs, and Standard Sofbelts may be fast charged with Cine 60's 'Lifeguard' Fast Chargers Models LC4-914, LC4-930, or 'Pro' Chargers Models 9400, 9400-U, Car Chargers Models 94DC12A, 94DC30. Standard Sofbelts have same features and construction of 'Lifeguard' Sofbelts except that the built-in charger is a 14 hour overnite charge type and operates from 115VAC. 220 Volt operation is optional.



Built-in 'Lifeguard' Charger

Charge Time: 4 hours for 4 Amp & 8 Amp Batteries, 7 hours for 7 Amp & 14 Amp Batteries.

Charge Rate: 1 Amp, 'Lifeguard' Rate: 150mA

Regulation: Line and load regulation

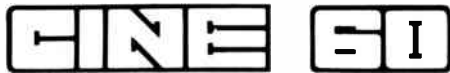
Construction: Line-isolated, High Frequency System

Charger Cord: Integral

Operating Voltage: 95-135V/190-250V Switchable

Volts/Amps	Output Connector Arrangement	Sofbelt Lifeguard Cat.#	Sofbelt Standard Cat.#	Weight	Lifeguard Battery Pack	Case Style Size/Weight
12V 4A	XLR5-31	LS1204	S1204	5½ lbs.	LP9107*	'B' 4 lbs.
12V 7A	XLR5-31	LS1207	S1207	7½ lbs.	LP9707*	'C' 6 lbs.
12V 14A	XLR5-31. Charge Switch	LS1214	S1214	14 lbs.	LP9727	'E' 13 lbs.
13.2V 4A	XLR5-31	LS1304	S1304	5½ lbs.	LP9108*	'C' 5½ lbs.
13.2V 7A	XLR5-31	LS1307	S1307	6 lbs.	LP9708	'D' 8 lbs.
13.2V 8A	XLR5-31. Charge Switch	LS1308	S1308	11 lbs.	LP9128	'D' 10 lbs.
13.2V 14A	XLR5-31. Charge Switch	LS1314	S1314	15 lbs.	LP9728	'E' 15 lbs.
14V 4A	XLR5-31	LS1404	S1404	6 lbs.	LP9106*	'C' 5½ lbs.
14V 4A	XLR4-31	LS1404TK	S1404TK	6 lbs.	LP9106TK*	'C' 5½ lbs.
14V 7A	XLR5-31	LS1407	S1407	8 lbs.	LP9706	'D' 8 lbs.
14V 7A	XLR4-31	LS1407TK	S1407TK	8 lbs.	LP9706TK	'D' 8 lbs.
14V 8A	XLR5-31. Charge Switch	LS1408	S1408	11 lbs.	LP9126	'D' 10 lbs.
14V 8A	XLR4-31. Charge Switch XLR5-31 Charge Connector	LS1408TK	S1408TK	11 lbs.	LP9126TK	'D' 10 lbs.
14V 14A	XLR5-31. Charge Switch	LS1414	S1414	15 lbs.	LP9726	'E' 15 lbs.
14V 14A	XLR4-31. Charge Switch XLR5-31 Charge Connector	LS1414TK	S1414TK	15 lbs.	LP9726TK	'E' 15 lbs.
30V 4A	Amp AN3102-12S-3S XLR5-31 Charge Connector	LS3004	S3004	11½ lbs.	LP9004TK	'D' 11 lbs.
30V 7A	Amp AN3102-12S-3S XLR5-31 Charge Connector	LS3007	S3007	15 lbs.	LP9007	'E' 14 lbs.
30V 4A/14V 8A	Amp AN3102-12S-3S (30V) XLR5-31 (14V) Selector Switch	LS3014	S3014	11½ lbs.	LP9014	'D' 11 lbs.
30V 7A/14V 14A	Amp AN3102-12S-3S (30V) XLR5-31 (14V) Selector Switch	LS3017	S3017	15 lbs.	LP9017	'E' 15 lbs.

*Lifeguard Charger is separate. It is not built-into these Battery Packs



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BATTERY BELTS & CHARGERS FOR PANASONIC & JVC CAMERAS

Why . . . Cine 60's Battery Belt?

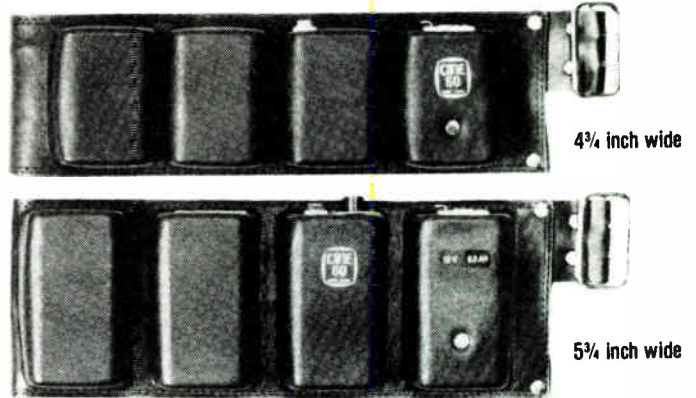
- You wear it. It's not carried. More comfort. Better balance.
- More power than attached equipment batteries
- Longer life. It will outlive any Pack style nickel-cadmium battery because of extremely low cell-to-cell heat transfer.
- Always full battery power in cold weather by wearing it under clothing.
- Equipment becomes easier to carry by eliminating attached battery's weight.
- Unimpeded freedom of movement assured by uniform weight distribution.
- Versatility. A Battery Belt can be used to run any equipment that is battery-powered. It never becomes obsolete.
- It can live forever. As battery parts wear out, they can be replaced from the most complete Battery Parts Inventory ever maintained by a battery manufacturer.

Battery Belt Specifications

There are two types of Battery Belts, the Standard Battery Belt (cannot be fast charged), and the Fast Charge Battery Belt. Both have 115 volt built-in overnite chargers and are equipped with circuit breakers. Fast Charge Battery Belts, Series 'FC', are equipped with precision ceramic 'Lifeguard' cell sensors for fast charging 'FC' Battery Belts.

Panasonic Run Time (In Hours)

Model No.	Battery Cable		BATTERY CAPACITIES			
	coiled(c).	straight(s)	4 Amps	7 Amps	8 Amps	14 Amps
AK710, 750, 760 (12V)	6478(c)	59.00	2.0	3.0	4.0	6.0
NV-8400 (12V)	6400JVC(s)	49.00	3.5	5.6	7.0	12.0
NV-8410 (12V)	6400JVC(s)	49.00	4.1	7.0	8.2	14.0
NV-8420 (12V)	6400NV2(s)	49.00	3.8	6.0	8.0	12.0
NV-9400 (12V)	6400JVC(s)	49.00	3.0	4.7	6.0	9.4
NV-9450 (12V)	6408(c)	59.00	2.5	3.75	5.0	7.5
CT-700 (12V)	6401TS2(s)	49.00	1.0	1.8	2.0	3.6
PV2100, 2300, 3000 (12V)	6401PV2(s)	49.00	3.5	5.6	7.0	12.0
WV555, WV888 (13.2V)	64WV5(s)	72.00	2.8	4.6	5.7	9.2
WV777 (13.2V)	64WV7(s)	72.00	2.3	3.8	4.7	7.6
WV3085/NV3085 (12V)	6400JVC(s)	49.00	2.0	3.5	4.0	7.0
WV3060/70/NV8420 (12V)	6400NV2(s)	49.00	2.8	4.6	5.7	9.2
WV3180/3230/NV8420 (12V)	6400NV2	49.00	2.7	4.3	5.3	8.4
WV3400/NV8420 (12V)	6400NV2	49.00	2.7	4.3	5.3	8.4
WV3600/WV3890/WV3990 (13.2V)	6478(c)	59.00	4.0	6.0	8.0	12.0
WV3700/WV3800/WV3900 (12V)	6478(c)	59.00	2.8	4.6	5.7	9.2



JVC Run Time (In Hours)

JVC Model No.	Battery Cable		12 Volt Battery Capacities			
	coiled(c).	straight(s)	4 Amps	7 Amps	8 Amps	14 Amps
KY-310-U	6408(c)	59.00	2.2	3.4	4.5	6.8
KY-900-U	6408(c)	59.00	1.8	2.7	3.3	5.3
KY-950-U	6408(c)	59.00	1.8	2.7	3.3	5.3
KY-1900-U	6408(c)	59.00	2.8	4.8	5.6	9.6
KY-2000-U	6408(c)	59.00	2.0	3.5	4.0	7.0
KY-2700-U	6408(c)	59.00	2.5	4.0	5.0	8.0
CY-8800-U	6408(c)	59.00	1.25	2.0	2.5	4.0
S-62-U	6401PV2(s)	49.00	3.1	5.0	6.3	10.0
S-100-U	6401PV2(s)	49.00	3.1	5.0	6.3	10.0
CR-4400-U/LU	(U) 6400JVC(s)	49.00	3.0	4.7	6.0	9.4
	(LU) 6411(c)	59.00				
CR-4700-U	6408(c)	59.00	2.2	3.6	4.5	7.2
HR-2200-U	6401J7(s)	59.00	4.5	7.0	8.8	13.3
HR-2650-U	6401J8(s)	59.00	4.5	7.0	8.8	13.3
BR-6200-U	6401J8(s)	59.00	4.5	7.0	8.8	13.3
HR-4100-U	6400JVC(s)	49.00	4.5	7.0	8.8	13.3
HRC-3U/GZ-S3	6401J3(s)	59.00	2.4	4.1	4.8	8.1
TM-41A-U	6400JVC(s)	49.00	3.0	5.4	6.0	10.8
TM-22-U	6401J7(s)	59.00	1.6	2.6	3.3	5.3

Battery Belt Catalog Numbers & Prices (connecting cables listed above)

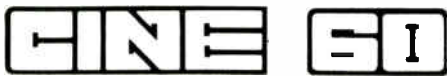
Read down column for Cat. No.	12 Volt Battery Capacities							
	4 Amps		7 Amps		8 Amps		14 Amps	
Standard Charge Battery Belt	#6307	\$412.00	#7007	\$555.00	#6327	\$628.00	#7027	\$ 979.00
2-Output Std. Chge. Battery Belt	#B-124S	465.00	#B-127S	611.00	#B128S	680.00	#B-1214S	995.00
Fast Charge Battery Belt	#8307FC	456.00	#7007FC	596.00	#8327FC	672.00	#7027FC	1010.00
Fast Charge Sofbelt.	#S-1204	522.00	#S-1207	687.00	#S-1208	731.00	#S-1214	930.00
F.C. Lifeguard Sofbelt	#LS-1204	612.00	#LS-1207	777.00	#LS-1208	820.00	#LS-1214	1020.00

Fast Charger Catalog Numbers & Prices (for the FC belts listed above)

	4 Amps	PRICE	7 Amps	PRICE	8 Amps	PRICE	14 Amps	PRICE
1 Hour Fast Charger:	#9400	\$315.00			#9400	\$315.00		
	#9400-U	395.00			#9400-U	395.00		
	#LC4-914	695.00			#LC4-930	850.00		
Mobile 12VDC 1 Hr. Fast Charger:	#94DC12A	395.00			#94DC30	495.00		
2 Hour Fast Charger:			#9400	\$315.00			#9400	\$315.00
			#9400-U	395.00			#9400-U	395.00
			#LC4-914	695.00			#LC4-930	850.00
Mobile 12VDC 2 Hr. Fast Charger:			#94DC12A	395.00			#94DC30	495.00

Prices and Specifications Subject to Change Without Notice.

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JVC ON-CAMERA & VTR BATTERIES

OB5-KY19

OB5-12JVC

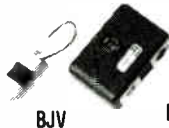
CBP2J5FC



OB5-KY19 BATTERY ON KY1900 CAMERA



CBPA-2J
CBPA-5



BJV

BP3XF



BF3XM



BAC-19



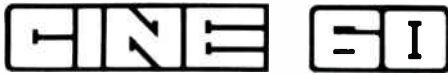
OBHRC

JVC Battery & Battery Charger Selector

These Cine 60 batteries are designed specifically for running JVC Cameras and VTRs. On-Camera Batteries for JVC's KY310, KY900, KY950 and KY1900 Cameras are equipped with an integral T-fitting that permits mounting directly on the Camera. No bracket is needed. On-Camera Batteries for the KY2000 and KY2700 Cameras come with 3 studs for snap mounting on the keyhole accessory bracket furnished by JVC. Connection to the camera's DC input is made with a short XLR pigtail cable included with the battery. In addition they are equipped with an auxiliary 5-pin XLR connector which can be used to power a 12 Volt Sun-Gun or battery light at the same time the camera is being powered. Alternately, when the camera is operating off the VTRs battery, this feature permits the use of the On-Camera Battery to run the Sun-Gun exclusively. All camera batteries are 12 Volts 4 Amp-Hours and

with the appropriate Cine 60 battery cable may be used off the camera to run other 12 Volt equipment. Because of the precision ceramic 'LifeGuard' cell sensors used in these batteries, they may be safely and fully charged with various types of Nickel-Cadmium Battery Chargers including JVC's AC Adaptor Chargers #AA-C50-U and #AA-C19-U. Cine 60's Battery Chargers with Charging Adaptor may also be used to safely and fully charge JVC's Nickel-Cadmium Batteries. When in areas where AC power is not available for battery charging, Cine 60's 12 VDC Mobile Car Fast Chargers can be used for charging JVC's and Cine 60's Nickel-Cadmium Batteries. JVC's #AA-C50-U and #AA-C19-U AC Adaptor Chargers can be used for charging Cine 60's Batteries. #BAC-19 Charge Adaptor is required. Charge Time: For Cine 60 OB Batteries — 1½ Hrs. with #AA-C50-U; 2 Hrs. with #AA-C19-U.

JVC Equip. Model #	Run Time Hrs.	Battery Cat. #	1 Hr. Fast Charger Cat. #	4 Hr. Quik Charger Cat #	14 Hr. Charger Cat. #	1 Hr. 12 VDC Mobile Fast Charger Cat. #
KY-310-U	2.25	OB5-KY3	9400, 9400-U LC4-914	LC4-914 (4 Batteries) LC-914 803-4/7	4.0-10	94DC12A
KY-900-U	2.0	OB5-KY3	NOTE: For charging Cine 60's OB5-KY3, OB5-KY19 & OB5-12JVC w/ JVC's F-20 Fast Charger. #BF3XM Charge adaptor is used.	803-4/7	4.0-10	94DC12A
KY-950-U	2.0	OB5-KY3				
KY-1900-U	3.2	OB5-KY19				
KY-2000-U	2.0	OB5-12JVC				
KY-2700-U	2.5	OB5-12JVC				
CR4400U/LU	2.1	CBP2J5FC	BP2500	LC4-914 (4 Batteries) LC-914	CBP-2J (2 Batteries)	94DC16
HP4000AU	3.5	CBP2J5FC	LC4-914	803-4/7	4.0-10	94DC12A
GC/PV4800U	1.0	CBP2J5FC	NOTE: Use CBPA-2J Charge adaptor for BP2500. For remaining Cine 60 chargers use CBPA-5 Charge Adaptor.			
AV/GS4500	1.5	CBP2J5FC				
HR4100	3.0	CBP2J5FC				
TM41AU	2.1	CBP2J5FC				
HRC-3U/GZS3	2.7	OBHRC	9400, 9400-U LC4-914	LC4-914 (4 Batteries) LC-914 803-4/7	4.0-10	94DC12A
BATTERY CHARGERS FOR JVC's BATTERIES	JVC DCC-50-U		9400, 9400-U LC4-914	803-4/7, LC4-914 (4 Btrys.) LC-914	4.0-10B	94DC12A
	JVC DCC-19-U		LC4-914	803-4/7, LC-914 LC-4-914 (4 Btrys/2 Hrs.)	2.0-10B	94DC16
	JVC B-20		9400, 9400-U, LC4-914	LC4-914 (4 Btrys) LC-914, 803-4/7	4.0-10	94DC12A
			NOTE: For 1 Hr. or 4 Hr charging JVC's B-20 battery. #BP3XF Charge adaptor is used			



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AMPEX/PANASONIC BATTERIES/CABLES

Ampex/Panasonic Battery Data

These batteries, with the specified battery cables, will operate the Ampex and Panasonic equipment listed below. The run time figures given are based upon the manufacturer's power ratings. Temperature, state of charge, and other factors vary these figures. The Battery and Cable Data for the Ampex ARC-10 and Panasonic AU/AK100 Recams is the same. Later versions of Panasonic's WV-777, WV-888, WV-555 cameras may have a 4-pin XLR DC input connector. If so, use Cine 60's #6408 Battery Cable for these cameras, not those listed below.



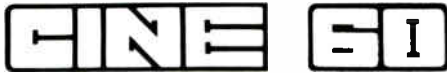
Ampex/Panasonic Run Time (In Hours)

Model No.	Battery Cable coiled(c), straight(s)	BATTERY CAPACITIES				
		4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
BCC14, BCC20 (14.4V)	6473(c)	1.5	2.5	3.0	5.0	8.5
AU/AK100, ARC-10 (13.2V)	6408(c)	1.0	1.7	2.0	3.4	5.7
VPR-5 (14.4V)	6477(c)	1.3	2.1	2.6	4.3	7.2
VPR-20 (14.4V)	6431(c)	0.7	1.1	1.4	2.3	3.8
FPC-10 (14.4V)	6408(c)	3.2	5.2	6.4	10.0	16.0
FPR-10 (13.2V)	6408(c)	4.0	6.0	8.0	12.0	20.0
BCC-4 (9.6V)	6404AMP(c)	For Run Time Refer to NEC MNC61A Battery Data				
AK710, 750, 760 (12V)	6478(c)	2.0	3.0	4.0	6.0	10.8
NV-8400 (12V)	6400JVC(s)	3.5	5.6	7.0	12.0	20.0
NV-8410 (12V)	6400JVC(s)	4.1	7.0	8.2	14.0	23.5
NV-8420 (12V)	6400NV2(s)	3.8	6.0	8.0	12.0	20.0
NV-9400 (12V)	6400JVC(s)	3.0	4.7	6.0	9.4	17.2
NV-9450 (12V)	6408(c)	2.5	3.75	5.0	7.5	12.5
CT-700 (12V)	6401TS2(s)	1.0	1.8	2.0	3.6	6.1
PV2100, 2300, 3000 (12V)	6401PV2(s)	3.5	5.6	7.0	12.0	20.0
WV555, WV888 (13.2V)	64WV5(s)	2.8	4.6	5.7	9.2	14.2
WV777 (13.2V)	64WV7(s)	2.3	3.8	4.7	7.6	11.7
WV3085/NV3085 (12V)	6400JVC(s)	2.0	3.5	4.0	7.0	11.7
WV3060/70/NV8420 (12V)	6400NV2(s)	2.8	4.6	5.7	9.2	14.2
WV3180/3230/NV8420 (12V)	6400NV2	2.7	4.3	5.3	8.4	13.4
WV3400/NV8420 (12V)	6400NV2	2.7	4.3	5.3	8.4	13.4
WV3600/WV3890/WV3990 (13.2V)	6478(c)	4.0	6.0	8.0	12.0	20.0
WV3700/WV3800/WV3900 (12V)	6478(c)	2.8	4.6	5.7	9.2	14.2

Cine 60 Ampex/Panasonic On-Camera Batteries

Cine 60 On-Camera batteries feature battery belt style construction. This results in substantially less cell heat generation as compared to conventional battery packs or blocks, thus providing considerably longer battery life. All On-Camera, CC types are equipped with a 5-pin auxiliary power output plug that can directly power Cine 60's 14.4 Volt Sun-Gun at the same time the camera is being powered from an integral pigtail which mates with the Panasonic or Ampex DC input connector. Batteries will mount on Panasonic's or Ampex's OEM keyhole brackets and may be recharged with the OEM banana plug equipped battery chargers using Cine 60's #BF3XM Charge Adaptors. On-Camera battery #OC-14, 14.4V is used on the Ampex FPC-10 and Panasonic AK100 Cameras. #OC-13P, 13.2V is used on all other Panasonic cameras equipped with the #WV-PS35S Battery Bracket. Refer to 4 Amp column above for run time.





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SONY BATTERY BELTS/ PACKS/CABLES

Sony Battery Belt/Pack Data

The various batteries listed below provide a long-lived reliable source of power for Sony equipment. The battery cables specified provide connection of all Cine 60 batteries to the DC inputs of the Sony equipment. Run time (per charge) is based upon Sony's operating voltages and power ratings. Temperature, state of charge, and other factors may vary these figures.

In place of the 12 Volt and 13.2 Volt batteries listed below, a new device, Cine 60's Model No. VR-X in-line Voltage Adaptor permits using 14.4 Volt batteries instead. Connected in-line, it converts 14.4 Volts to 13.5 Volts. With it, a 14.4 Volt battery can be running a Betacam at 13.5 Volts while simultaneously powering the new low-drain camera-mounted 14.4 Volt Sun-Gun with 14.4 Volts

Use of the VR-X minimizes the need for 12 Volt or 13.2 Volt battery power in the facility to run Sony equipment rated at 36 Watts or less; enhances the use of 14 Volt Sun-Guns (drain 4.86 Amps vs. 8.33 Amps for 12 or 30 Volt Sun-Guns, a power savings of over 3.4 Amps...enough power to run a Betacam an extra 2 hours); broadens the application of Cine 60's switchable 30V/14V Batteries for most battery power requirements.

This Cine 60 concept of using 14.4 Volts for all Sony Cameras, VTR, and lighting power needs provides a practical approach to reducing the cost of battery power while maintaining the high standard of reliability and long life.

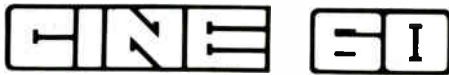


Sony Run Time (in hrs.) w/Battery Belts & Packs

Sony Model No.	Oper. Volt.	BATTERY CAPACITIES						Btry. Cable coiled(c) straight(s)
		4 Amps Hrs.	7 Amps Hrs.	8 Amps Hrs.	10 Amps Hrs.	14 Amps Hrs.	20 Amps Hrs.	
BVP-110	14.4	4.0	6.5	8.0	10.0	13.0	20.0	#6475(c)
BVP-250	14.4	2.7	4.4	5.4	6.8	8.5	13.7	#6475(c)
BVP-300	14.4	2.7	4.4	5.4	6.8	8.5	13.7	#6475(c)
BVP-330	14.4	2.7	4.4	5.4	6.8	8.5	13.7	#6475(c)
BVP-1/CA3	14.4	4.0	6.5	8.0	10.0	13.0	20.0	#6475(c)
BVP-3/CA3	14.4	2.7	4.4	5.4	6.8	8.5	13.7	#6475(c)
BVV-1/VA-1	13.2	4.8	7.8	9.5	12.0	15.0	24.0	#6475(c)
BVH-500	12	0.8	1.3	1.6	2.0	2.6	4.0	#6475(c)
BVW-1	13.2	2.4	3.8	4.7	6.0	7.5	12.0	#6475(c)
BVW-3	13.2	1.7	2.7	3.3	4.2	5.3	8.5	#6475(c)
BVW-20	12	1.7	2.7	3.3	4.2	5.3	8.5	#6475(c)
BVM-4050	12	2.6	4.3	5.3	6.6	8.6	13.3	#6400W(s)
PVM-4000	12	2.6	4.3	5.3	6.6	8.6	13.3	#6400W(s)
PVM-8000	12	1.0	1.8	2.0	2.9	3.6	5.7	#6400KV(G)s
RSC/SVM-1010	12	1.3	2.1	2.6	3.2	4.2	6.5	#6400G(s)
RSC-1010	12	3.6	5.9	7.2	9.1	11.8	18.2	#6400H(s)
SVM-1010	12	2.0	3.1	3.8	4.8	6.2	9.6	#6400G(s)
SEG-2000	12	2.4	3.9	4.8	5.9	7.7	11.8	#6400J(s)
AV-3400/AVC	12	2.0	3.4	4.0	5.7	6.8	11.4	#6400DXC(s)
AV-8400/AVC	12	2.0	3.4	4.0	5.7	6.8	11.4	#6400DXC(s)
DXC-M3	12	2.6	4.3	5.3	6.6	8.6	13.3	#6400M3(s)
DXC-1600	12	2.0	3.4	4.0	5.7	6.8	11.4	#6400DXC(s)
DXC-1610	12	3.8	6.5	7.6	10.9	13.0	21.7	#6400VOB(s)
DXC-1640	12	3.8	6.5	7.6	10.9	13.0	21.7	#6400VOB(s)
DXC-1800	12	3.8	6.5	7.6	10.9	13.0	21.7	#6400M3(s)
DXC-6000	12	2.0	3.2	4.0	5.0	6.5	10.0	#6400M3(s)
BVP-200	12	2.0	3.2	4.0	5.0	6.5	10.0	#6428(c)
BVU-50	12	3.5	6.0	7.0	10.0	13.0	20.0	#6475(c)
BVU-100	12	1.8	3.0	3.6	5.1	6.0	10.2	#6400VOB(s)
BVU-110	12	3.5	6.0	7.0	10.0	13.0	20.0	#6475(c)
VO-3800	12	1.6	2.6	3.2	4.6	5.2	9.1	#6400VOB(s)
VO-4800	12	3.5	6.0	7.0	10.0	13.0	20.1	#6400DXC(s)
SL-2000	12	4.7	7.6	9.4	11.7	15.2	23.5	#6400DXC(s)
SL-3000/HVC	12	2.0	3.4	4.0	5.7	6.8	11.4	#6400DXC(s)
SL0-340	12	2.0	3.4	4.0	5.7	6.8	11.4	#6400DXC(s)
KV-8000G	12	1.0	1.8	2.0	2.9	3.6	5.7	#6400KV(G)s

Sony Battery Catalog Nos.

Read down column for Cat. No.	4 Amps	7 Amps	8 Amps	10 Amps	14 Amps	20 Amps
Std Chge Btry Belt	12V #6307	#7007	#6327		#7027	
"	13.2V #6308	#7008	#6328		#7028	
"	14.4V #6306	#7006	#6326		#7026	
2-Output						
Std Chge Btry Belt	12V #B-124S	#B-127S	#B-128S		#B-1214S	
FC Battery Belt	12V #8307FC	#7007FC	#8327FC		#7027FC	
"	13.2V #8308FC	#7008FC	#8328FC		#7028FC	
"	14.4V #8306FC	#7006FC	#8326FC		#7026FC	
FC Softbelt	12V #S-1204	#S-1207	#S-1208		#S-1214	
"	13.2V #S-1304	#S-1307	#S-1308		#S-1314	
"	14.4V #S-1404	#S-1407	#S-1408		#S-1414	
FC Lifeguard Softbelt	12V #LS-1204	#LS-1207	#LS-1208		#LS-1214	
"	13.2V #LS-1304	#LS-1307	#LS-1308		#LS-1314	
"	14.4V #LS-1404	#LS-1407	#LS-1408		#LS-1414	
Std Chge Btry Pack	12V #9107	#9707	#9127		#9727	#20-120
"	13.2V #9108	#9708	#9128		#9728	#20-130
"	14.4V #9106	#9706	#9126		#9726	#20-140
2-Output						
Std Chge Btry Pack	12V #P-124S	#P-127S	#P-128S	#P-1210	#P-1214S	#20-120/2
FC Battery Pack	12V #9107FC	#9707FC	#9127FC		#9727FC	
"	13.2V #9108FC	#9708FC	#9328FC		#9728FC	
"	14.4V #9106FC	#9706FC	#9126FC		#9726FC	
FC						
Lifeguard Btry Pack	12V #LP-9107	#LP-9707	#LP-9127		#LP-9727	
"	13.2V #LP-9108	#LP-9708	#LP-9128		#LP-9728	
"	14.4V #LP-9106	#LP-9706	#LP-9126		#LP-9726	



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RCA BATTERIES/CABLES/ POWER SUPPLY/ACCESSORIES

RCA Battery Belts/Packs/On-Camera/VTR Battery Data

These Battery Belts, Packs and On-Camera Battery are for operating RCA's cameras, camera/recorders, and HR-1020 recorder on 14.4 Volts. Original RCA battery cables will mate these batteries' power output connector. RCA's Charger MI-557117B1 (Cine 60's #9400B) can be used to charge the 4A and 7A Belts and Packs as well as the OB4-14 Camera Battery. It can also be used to recharge the 8A and 14A batteries (which utilize an XLR 5-pin charge connector) by converting the Charger's 4-pin XLR to a 5-pin XLR with Cine 60's connector adaptor #4P-5P. Similarly Cine 60's Cat. No. 9400 Charger's 5-pin XLR connector can be adapted to 4-pin with the Cat. No. 55P-44P connector adaptor to permit its use with RCA's batteries. The Run Time (per charge) figures given below are based upon RCA's power ratings. Temperature, state of charge, and other factors may vary these figures. Cine 60's Cat. No. 94AC14 AC Power Supply is designed to operate the RCA equipment listed below using the specified power supply cable.

RCA RUN TIME (In Hours)

RCA MODEL #	BATTERY CABLE Coiled(c) Straight(s)	BATTERY CAPACITIES						POWER SUPPLY CABLE (straight 8 ft.) Model#
		4A	7A	8A	10A	14A	20A	
TK-76	6476(c)	1.5	2.4	3.0	4.29	4.8	8.58	PS6476
TK-76B	6476(c)	1.2	1.9	2.4	3.44	3.8	6.87	"
TK-76C	"	1.0	1.6	2.0	2.9	3.2	5.7	"
TK-86	6486(s)	1.7	2.6	3.26	4.3	5.2	8.7	PS6486
TK-710	6478TK(c)	2.6	3.9	4.9	6.6	7.9	13.2	PS6478TK
HCR-1/HCR-2	6400R(s)	1.4	2.1	2.7	3.5	4.3	7.1	PS6400R
HC-1/HC-2	6486(s)	2.1	3.1	3.7	5.2	6.3	10.5	PS6486
HR-1	6408B(c)	4.4	6.6	8.3	11.1	13.3	22.2	PS6408
HR-1020	6411B(c)	3.0	4.7	6.0	8.6	9.4	17.2	PS6411

RCA BATTERY SELECTOR

Read down column for Cat. #

BATTERY CATALOG NUMBERS

	4A	7A	8A	10A	14A	20A
Standard Charge Battery Belt	6306B	7006B	6326B		7026B	
Fast Charge Battery Belt	8306BFC	7006BFC	8326BFC		7026BFC	
Fast Charge Softbelt	S-1404TK	S-1407TK	S-1408TK		S-1414TK	
F.C. Lifeguard Softbelt	LS-1404TK	LS-1407TK	LS-1408TK		LS-1414TK	
Standard Charge Battery Pack	9106B	9706B	9126B	P-1410B	9726B	20-140B
Fast Charge Battery Pack	9106BFC	9706BFC	9126BFC		9726BFC	
F.C. Lifeguard Battery Pack	LP-9106TK	LP-9706TK	LP-9126TK		LP-9726TK	

RCA BATTERY F.C. SELECTOR

Read down column for Cat. #

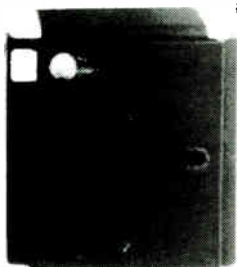
BATTERY CHARGER CATALOG NUMBERS

	4A	7A	8A	10A	14A	20A
1 Hour Fast Charger	9400B		9400			
	9400UB		9400U			
	LC4-914B		LC4-930			
Mobile 12VDC 1 Hr. Fast Charger	94DC12B		94DC30			
2 Hour Fast Charger		9400B			9400	
		9400UB			9400U	
		LC4-914B			LC4-930	
Mobile 12VDC 2 Hour Fast Charger		94DC12B			94DC30	



On-Camera Battery, #OB4-14

For all RCA Cameras. Mounts on any key-hole type battery bracket. Equipped with 4-pin XLR connector for power output. Requires shorty cable from battery to camera's DC input. Battery Belt style modular construction for maximum cell cooling provides longest life. Reliable XLR connection for trouble-free operation. Refer to 4A column above for Run Time and Battery Chargers. Use #LC4-914B for recharging 4 batteries in 4 hours; #9401-4 for 14 hour overnite charging. Shorty Cable #SHB-6476 for TK-76 Cameras. #SHB-6486 for TK-86. HC-1, HC-2 Cameras, #SHB-6478TK for TK710 Camera.



#NMB-76

On-Camera Battery Bracket for TK-76 Cameras. All metal type. Supplied complete with hardware. No camera modification required.

#94AC14 Power Supply

Switching type, line/load regulated, remote sensing, well-filtered. Input: 110/220V 50/60Hz. DC Output: 13.5V 4 Amps continuous; 5 Amps intermittent; 8 Amps momentary. Output Cable: Plug-in 8 ft. long. Dimensions: 4 3/4" x 3 1/2" x 8 1/2". Weight: 5 lbs. with 12 ft. input cable.



Prices and Specifications Subject to Change Without Notice.

VC-45

Battery Belt/Pack Data

These batteries provide a long-lived, reliable, trouble-free, and economical source of power for the Hitachi, Sharp, and Thomson equipment. Run Time (per charge) is based upon the manufacturer's power ratings. Temperature, state of charge, and other factors may vary these figures. The battery cables specified provide connection of all Cine 60's batteries to the external DC inputs of the listed equipment. Cine 60's Switchable Battery Belts or Packs in lieu of those listed below. The Switchables provide 8/14 Amps of power for camera/VTR, and 14.4V Sun-Guns as well as 30V 4/7 Amps of power when needed for 30V Sun-Gun operation.



#3014, #3014FC
Switchable Battery Belt

Battery Catalog Numbers

Read down column for Cat. No.	4 Amps	7 Amps	8 Amps	10 Amps	14 Amps	20 Amps
Std Chge Btry Belt	12V =6307 13.2V =6308 14.4V =6306	=7007 =7008 =7006	=6327 =6328 =6326		=7027 =7028 =7026	
2-Output Std Chge Btry Belt	12V =B-124S	=B-127S	=B-128S		=B-1214S	
F C Battery Belt	12V =8307FC 13.2V =8308FC 14.4V =8306FC	=7007FC =7008FC =7006FC	=8327FC =8328FC =8326FC		=7027FC =7028FC =7026FC	
F C Solbelt	12V =S-1204 13.2V =S-1304 14.4V =S-1404	=S-1207 =S-1307 =S-1407	=S-1208 =S-1308 =S-1408		=S-1214 =S-1314 =S-1414	
F C Lifeguard Solbelt	12V =LS-1204 13.2V =LS-1304 14.4V =LS-1404	=LS-1207 =LS-1307 =LS-1407	=LS-1208 =LS-1308 =LS-1408		=LS-1214 =LS-1314 =LS-1414	
Std Chge Btry Pack	12V =9107 13.2V =9108 14.4V =9106	=9707 =9708 =9706	=9127 =9128 =9126		=9727 =9728 =9726	=20-120 =20-130 =20-140
2-Output Std Chge Btry Pack	12V =P-124S	=P-127S	=P-128S	=P-1210	=P-1214S	=20-120/2
F C Battery Pack	12V =9107FC 13.2V =9108FC 14.4V =9106FC	=9707FC =9708FC =9706FC	=9127FC =9128FC =9126FC		=9727FC =9728FC =9726FC	
F C Lifeguard Btry Pack	12V =LP-9107 13.2V =LP-9108 14.4V =LP-9106	=LP-9707 =LP-9708 =LP-9706	=LP-9127 =LP-9128 =LP-9126		=LP-9727 =LP-9728 =LP-9726	

Hitachi, Sharp, Thomson Run Time (In Hours)

Hitachi Model No.	Battery Cable colled(c), straight(s)	4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
FP-10 (13.2V)	6406(c)	3.06	5.26	6.13	10.5	17.6
FP-11 (13.2V)	6406(c)	3.06	5.26	6.13	10.5	17.6
FP-15 (13.2V)	6406(c)	2.56	4.4	5.1	8.8	14.67
FP-20S (12V)	6406(c)	2.0	3.2	4.0	6.4	11.4
FP-21 (14.4V)	6406(c)	2.3	3.9	4.6	7.85	13.0
FP-22 (14.4V)	6406(c)	2.0	3.46	4.0	6.9	11.5
FP-40S (12V)	6406(c)	2.2	3.5	4.4	7.0	12.5
FP-1020 (12V)	6406(c)	1.8	2.8	3.6	5.6	10.2
FP-1030 (12V)	6407(c)	3.5	5.6	7.0	11.2	20.0
FP-3060A (12V)	6406(c)	2.7	4.3	5.4	8.6	15.3
FP-3060G (12V)	6406(c)	3.5	5.6	7.0	11.2	20.0
HR-100 (12V)	6421(c)	0.625	1.0	1.25	2.0	3.6
SK-80 (14.4V)	6405(s)	2.0	3.2	(Requires No. CA-80)		
SK-80A (-12V)	6405(s)	2.3	3.7	(Requires No. CA-80)		
SK-81 (14.4V)	6406(c)	2.2	3.4	4.3	6.8	11.6
SK-90 (12V)	6434(c)	1.1	1.9	2.2	3.8	6.7
SK-91 (14.4V)	6434(c)	2.0	3.3	4.0	6.6	11.7
SK-97 (14.4V)	6406(c)	2.0	3.3	4.0	6.6	11.7
SR-1 (12V)	64SR1(s)	3.4	5.1	6.8	10.2	17.0
SR-10 (12V)	64SR1(s)	2.5	3.75	5.0	7.5	12.5
SV-340 (12V)	6400JVC(s)	3.0	4.7	6.0	9.4	17.0
V-059B (12V)	6459(s)	5.0	8.0	10.0	15.6	25.0
V-089 (12V)	6489(s)	1.6	2.6	3.2	5.0	8.0
V-099 (12V)	6489(s)	1.6	2.6	3.2	5.0	8.0
Sharp XC300/500 (12V)	6418(s)	1.4	2.2	2.8	4.4	8.0
Sharp XC320/520/530 (12V)	6409(c)	1.6	2.6	3.2	5.2	9.1
Sharp XC700 (14.4V)	6XC700(c)	2.0	3.4	4.0	6.8	11.4
Sharp XC800 (14.4V)	6408(c)	3.0	4.5		6.0	9.0
Sharp XC900 (14.4V)	6408(c)	2.4	3.4	4.8	6.9	11.5
Sharp XA600 (12V)	6460(s)	4.0	6.0	8.0	12.0	20.0
Sharp XA900 (12V)	6469(s)	4.0	6.0	8.0	12.0	20.0
Thomson MC-602 (14.4V)	6412(c)	2.3	3.4	4.6	6.9	11.5
Thomson MC-301 See JVC KY-2700		MC-501 See Sony BVP-250, MC-601 See Sony BVP-300, MC-701 See Sony BVP-330.				
Thomson MC-611		MC-613 See Sony BVP-3 BVW-3				

FOR IKEGAMI/PHILIPS/ASACA/CEI/CROSSPOINT/FERNSEH/HARRIS/NEC/TOSHIBA/TEKTRONICS/VIDEOTEK

Why... Cine 60's Battery Belt?

- You wear it. It's not carried. More comfort. Better balance
- More power than attached equipment batteries
- Longer life. It will outlive any Pack style nickel-cadmium battery because of the extremely low cell-to-cell heat transfer
- Always full battery power in cold weather by wearing it under clothing
- Equipment becomes easier to carry by eliminating attached battery's weight
- Unimpeded freedom of movement assured by uniform weight distribution
- Versatility. A Battery Belt can be used to run any equipment that is battery-powered. It never becomes obsolete.
- It can live forever. As battery parts wear out, they can be replaced from the most complete Battery Parts Inventory ever maintained by a battery manufacturer.



#3014, #3014FC
Switchable Battery Belt

Equipment Run Time (In Hours)

Run Time (per charge) is based upon the manufacturer's power ratings. Temperature, state of charge, and other factors may vary these figures. The battery cables specified provide connection of all Cine 60 batteries to the external DC inputs of the listed equipment. Those having the letters 'OE' in the catalog number signify that the cable is open ended and requires the manufacturer's mating DC cable connector.

EQUIPMENT MODEL NO.	Battery Cable	4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
ASACA ASW-100 (12V)	64020E(c)	0.5	0.86	1.0	1.7	2.86
ASACA ACC-2000 (±7.2V)	64030E(c)	1.6	2.5	3.2	5.0	9.1
ASACA ACC-3000 (±14.4V)	64030E(c)	1.4	2.4			
CEI 310/330 (14.4V)	6412(c)	0.5	0.8	1.0	1.6	2.8
CEI 340 (14.4V)	6412(c)	0.7	1.1	1.4	2.2	4.0
Crosspoint 6104A (14.4V)	6419(s)			1.0	1.6	3.0
Fernseh KCA-90 (±7.2V)	6423(c)	1.6	2.5	3.2	5.0	8.0
Fernseh KCA-100 (12V)	6424(c)	1.6	2.5	3.2	5.0	8.0
Fernseh KCN (±14.4V)	6400KCN(s)	0.75	1.25			
Fernseh KBF-1 (14.4V)	6400KBF(s)	1.6	2.5	3.2	5.0	8.0
Fernseh BCN-5 (12V)	6422(s)	1.4	2.24	2.8	4.5	7.4
Fernseh BCN-20 (12V)	6430(s)		1.0	1.4	2.0	3.8
Fernseh BCN-21 (12V)	6400BCN(s)	1.7	2.85	3.3	5.7	9.5
Harris TC-90 (14.4V)	6488(s)	2.0	3.3	4.0	6.6	11.7
Ikegami HL-33/35 (±12V)	6410(c)	1.0	1.6			
Ikegami EC-35 (14.4V)	6471(c)	2.0	3.1	4.0	6.2	10.5
Ikegami HL-37 (±7.2V)	6400IKE(c)	1.0	1.6	2.0	3.2	5.7
Ikegami HL-51 (±12V)	6472(c)	1.0	1.6			
Ikegami HL-77 (±7.2V)	6400IKE(c)	1.0	1.6	2.0	3.2	5.7
Ikegami HL-78 (14.4V)	6471(c)	2.0	3.1	4.0	6.2	10.5

EQUIPMENT MODEL NO.	Battery Cable	4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
Ikegami HL-79 (14.4V)	6471(c)	2.0	3.1	4.0	6.2	10.5
Ikegami HL-83 (14.4V)	6483(s)	2.2	3.4	4.3	6.8	12.0
Ikegami ITC-240 (±12V)	64030E	1.75	2.8			
Ikegami ITC-350 (14.4V)	6425(c)	3.1	5.0	6.3	10.0	16.0
Ikegami HL-351 (±12V)	6410-1	1.0	1.6			
Ikegami ITC-730 (14.4V)	6471(c)	2.1	3.3	4.2	6.7	12.0
NEC MNC-60/61A (±9.6V)	6404AMP(c)	1.4	2.24			
NEC MNC-71CP (±7.2V)	6417-4(c)	1.6	2.5	3.2	5.0	9.1
NEC MNC-80/81A (12V)	6420(c)	1.75	2.8	3.5	5.6	10.0
NEC SPC-3 (12V)	64SP3(s)	3.4	5.1	6.8	10.2	17.0
Philips LDK-11 (±12V)	BCAM(s)	1.5	2.4			
Philips LDK-14 (14.4V)	6473(c)	1.5	2.5	3.0	5.0	8.5
Philips VDO-80 (-12V)	6414-4(c)	1.9	3.1			
Tektronics 1740 (13.2V)	T1740(s)	1.7	2.6	3.5	5.2	8.8
Toshiba PK-36 (-12V)	64PK(s)	0.9	1.33			
Toshiba PK-39 (±14.4V)	6474(c)	1.5	2.5	3.0	5.0	8.5
Toshiba PK-60 (14.4V)	6474B(c)	2.8	4.2	5.6	8.3	14.0
Vdotek VM8/RM8 (12V)	6400KVG(s)	1.2	2.0	2.4	4.0	6.7
Vdotek VM5A/RM5A (12V)	6401KVG(s)	2.7	4.0	5.4	8.5	14.3

Battery Selector	Battery Catalog Numbers				
	4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
Standard Charge Battery Belt	12V #6307	#7007	#6327	#7027	
"	13.2V #6308	#7008	#6328	#7028	
"	14.4V #6306	#7006	#6326	#7026	
"	±7.2V #6314	#7014	#6324	#7024	
Fast Charge Battery Belt	12V #8307FC	#7007FC	#8327FC	#7027FC	
"	±7.2V #8314FC	#7014FC	#8324FC	#7024FC	
"	13.2V #8308FC	#7008FC	#8328FC	#7028FC	
"	14.4V #8306FC	#7006FC	#8326FC	#7026FC	
Fast Charge Softbelt	12V #S-1204	#S-1207	#S-1208	#S-1214	
"	13.2V #S-1304	#S-1307	#S-1308	#S-1314	
"	14.4V #S-1404	#S-1407	#S-1408	#S-1414	

Battery Selector	Battery Catalog Numbers				
	4 Amps	7 Amps	8 Amps	14 Amps	20 Amps
Fast Charge Lifeguard Softbelt	12V #LS-1204	#LS-1207	#LS-1208	#LS-1214	
"	13.2V #LS-1304	#LS-1307	#LS-1308	#LS-1314	
"	14.4V #LS-1404	#LS-1407	#LS-1408	#LS-1414	
Standard Charge Battery Pack	12V #9107	#9707	#9127	#9727	#20-120
"	13.2V #9108	#9708	#9128	#9728	#20-130
"	14.4V #9106	#9706	#9126	#9726	#20-140
"	±7.2V #9114	#9714	#9124	#9724	
Fast Charge Battery Pack	12V #9107FC	#9707FC	#9127FC	#9727FC	
"	13.2V #9108FC	#9708FC	#9128FC	#9728FC	
"	14.4V #9106FC	#9706FC	#9126FC	#9726FC	
"	±7.2V #9114FC	#9714FC	#9124FC	#9724FC	
FC Lifeguard Battery Pack	12V #LP-9107	#LP-9707	#LP-9127	#LP-9727	
"	13.2V #LP-9108	#LP-9708	#LP-9128	#LP-9728	
"	14.4V #LP-9106	#LP-9706	#LP-9126	#LP-9726	

Prices and Specifications Subject to Change Without Notice.

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Compact, well-designed and built batteries providing reliable power, convenience and durability for 'commercials' production, TV, Theatrical Feature Film Production, and scientific on location recording. Most common types are set forth below, for other models refer to Battery Belt and Battery Pack pages in this catalog.



#P-124S



#9108/2FC



#9712FC



#6312

12 Volt Double-Duty Battery Packs

Equipped with two (2) 5-pin XLR power output connectors to provide the convenience of two batteries in one. Supplied with the charger built-in the 8, 10, 14, and 20A models, external with the 4A and 7A models which also feature battery belt style construction for longer life. A built-in 15 Amp Automatic Reset Circuit Breaker protects the equipment and the battery in case of an 'external' short. Available in standard charge only. The 20A model has a handgrip. All other models come with a shoulder strap and handgrip.

Battery Rating	Catalog #	Dimensions	Weight
12V 4A	P-124S	3 1/8" x 4 1/2" x 5 3/4"	4 1/2 lbs.
12V 7A	P-127S	3 1/8" x 4 1/2" x 8 1/2"	7 1/2 lbs.
12V 8A	P-128S	4 1/2" x 6" x 10"	9 lbs.
12V 10A	P-1210	4 1/2" x 6" x 10"	10 lbs.
12V 14A	P-1214S	4 1/2" x 8" x 10"	13 lbs.
12V 20A	20-120/2	6 1/2" x 6 3/4" x 14 3/4"	22 lbs.

Arri 35-3/35BL-3 13.2V High Voltage Battery Packs

Equipped with two (2) 5-pin XLR power output connectors to provide the convenience of two batteries in one. Higher voltage assures high speed operation. More power. When used with BL-3, 2nd output connector may be used to power an accessory, heater Barney, etc. Has a built-in overnite charger, charger cord, automatic reset circuit breaker and is available in a range of capacities from 4 Amps to 20 Amps. All models, except the 10 Amp and 20 Amp units may be fast charged.

Battery Rating	Catalog No.	Style/Wt Size/Lbs.	Use Fast Charger Model No.	For 12VDC, F.C. from Vehicle, Use Model No.	F. C. Time
13.2V 4A	9108/2FC	'C'/6	9400, 9400-U, LC4-914	94DC12A	1 hour
13.2V 7A	9708/2FC	'E'/6	" " "	" "	2 hours
13.2V 8A	9128/2FC	'E'/10	" " LC4-930	94DC30	1 hour
13.2V 10A	P-1310	'E'/10	" " "	" "	" "
13.2V 14A	9728/2FC	'D'/13	9400, 9400-U, LC4-930	94DC30	2 hours
13.2V 20A	20-130/2	'F'/24	" " "	" "	" "

28 Volt Photo-Instrumentation Battery Belts & Packs

Provide 28 Volts at 4, 7 or 10 Amps depending on model. Equipped with built-in Overnite Charger, Charger Cord, Circuit Breaker, and AN-3102-12S-

3S power output connector. Belt types are available in 4 or 7 Amps. Pack types in 4, 7 or 10 Amps. Both, except the 10 Amp Pack, may be obtained with fast charge capability as well as standard charge. A coil-cord battery cable with one end open for adding the equipment

Battery Rating	Std. Chge. Battery Pack Cat. No.	Fast Chge. Battery Pack Cat. No.	Style/Wt. Size/Lbs.	Std. Chge. Battery Belt Cat. No.	Fast Chge. Battery Belt Cat. No.	Use Fast Charger Model No.	For Fast Charging From Vehicle, Use#	Fast Charging Time
28V 4A	9112	9112FC	E / 10	6312	8312FC	9400, 9400-U	94DC30	1 Hour
28V 7A	9712	9712FC	D / 13	7012	7012FC	9400, 9400-U	94DC30	2 Hours
28V 10A	10-228							

manufacturer's mating DC input connector is also available. Cat. No. 6422MW.

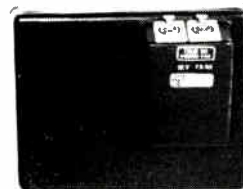
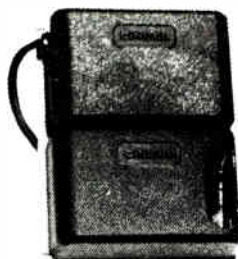
Moviemcam 24V Battery Belts and Packs

Built to Moviemcam specifications. Equipped with 4-pin XLR wired for Moviemcam. 12/24V Selector Switch, Built-in Overnite Charger Charger Cord, Automatic Reset Circuit Breaker. Comes with shoulder strap and handgrip.

Battery Rating	Battery Pack	Pack Style/Wt. Size/Lbs.	Battery Belt	Use F.C. Model#	For Fast Charging Use Model#	From Vehicle, F. C. Time
24V 4A/12V 8A	9116BFC	'C'/9	8316BFC	9400B, 9400-UB	94DC30B	1 Hour
24V 7A/12V 14A	9716BFC	'D'/13	7016BFC	9400B, 9400-UB	94DC30B	2 Hours
24V 10A/12V 20A	12-224B	'F'/22				

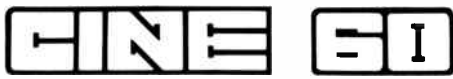
Swintek Communicator Battery Pack

Swintek Communicator Battery Pack. Will run Swintek 12 hours on one charge. Has built-in Overnite Charger, Charger Cord, Automatic Reset Circuit Breaker. Comes with integral 2 ft. long battery cable terminated in 5-pin XLR which mates with Swintek connector. 12 Volt 1200 mAH rating. Weighs 2 lbs. Measures 1 3/8" x 4 1/2" x 5 3/4". With built-in Belt Loop, it can be worn on pantsbelt. Catalog No. S-1200.



Canon Lens Battery Pack

Permits remote servo focus lens operation using battery power. Will operate Lens for approximately 5 hours on one charge. Has built-in Overnite Charger, Charger Cord, Automatic Reset Circuit Breaker. Battery-to-Lens power cables available. One for remote servo focus operation from a distance of 4 ft.; the other, from a maximum distance of 12 ft. Comes with shoulder strap and waistbelt loops. Weighs 2 lbs., measures 2" x 5 1/2" x 6". Battery Power Cable Cat. No. 4LCA ft. length; No. 12LCA 12 ft. length. For J13X9B & J15X9S Lens. Cat. No. PP13/15.



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MOTION PICTURE EQUIPMENT BATTERIES & ACCESSORIES

Battery Belts and Packs

The following listing provides a guide for most of the film cameras. Battery Belts and Packs for use with Aaton, Bolex, Canon, etc. are also available.



UNIVERSAL BATTERY BELTS AND PACKS:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6305	Belt	8.4V-8AH/12V/16.8V-4AH, Standard Banana Jacks, 3 & 4-pin Canons, Selector Switch	7
9105	Pak.	8.4V-8AH/12V/16.8V-4AH, Standard 5-pin Canon, Selector Switch	6
7005	Belt	8.4V-14AH/12V/16.8V-7AH, Standard Banana Jacks, 3 & 4-pin Canons, Selector Switch	10
9705	Pak.	8.4V-14AH/12V/16.8V-7AH, Standard 5-pin Canon, Selector Switch	9

Universals can be supplied with 5 and 4-pin connectors in lieu of the 3 and 4-pin. Add -S to the above catalog numbers.

FOR BEAULIEU R-16B:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6300	Belt,	7.2V-4AH, Standard, 5-pin Cannon connector	4
6300FC	Belt,	7.2V-4AH, Fast Charge, 5-pin Cannon connector	4
9100	Pak,	7.2V-4AH, Standard, 5-pin Cannon connector	3
9100FC	Pak,	7.2V-4AH, Fast Charge, 5-pin Cannon connector	3

FOR ARRI 16S, 16M:

Cat. #	Type	Capacity & Features	Wt. Lbs.
8425	Pak,	8.4V-2.5AH, Standard, 5-pin Cannon connector (No Charger)	2
9401SM	Overmite Charger for #8425 Pak,	High Frequency Type, 115 Volts	10 Oz.
6301	Belt,	8.4V-4AH, Standard, Banana Jacks	4½
6301FC	Belt,	8.4V-4AH, Fast Charge, 5-pin Cannon connector	4½
7001	Belt,	8.4V-4AH, Standard, Banana Jacks	6
7001FC	Belt,	8.4V-4AH, Fast Charge, 5-pin Cannon connector	6
9101	Pak,	8.4V-4AH, Standard, 5-pin Cannon connector	3
9101FC	Pak,	8.4V-4AH, Fast Charge, 5-pin Cannon connector	3
9701	Pak,	8.4V-7AH, Standard, 5-pin Cannon connector	5
9701FC	Pak,	8.4V-4AH, Fast Charge, 5-pin Cannon connector	5

FOR ARRI 16S, 16M, 35-2C:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6302	Belt,	8.4V-8AH/16.8V-4AH, Standard, Banana Jacks, Selector Switch	7
8302FC	Belt,	8.4V-8AH/16.8V-4AH, Fast Charge, 5-pin Cannon, Selector Switch	7
7002	Belt,	8.4V-14AH/16.8V-7AH, Standard, Banana Jacks, Selector Switch	10
7002FC	Belt,	8.4V-14AH/16.8V-7AH, Fast Charge, 5-pin Cannon, Selector Switch	10
9102FC	Pak,	8.4V-8AH/16.8V-4AH, Fast Charge, 5-pin Cannon connector	6

FOR ARRI 16S, 16M, 16SR, 16BL, 35BL, 35-III:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6307	Belt,	8.4V/12V-4AH, Standard, 5-pin Cannon, Banana Jacks	5½
7007	Belt,	8.4V/12V-7AH, Standard, 5-pin Cannon, Banana Jacks	7½
9107	Pak,	8.4V/12V-4AH, Standard, 5-pin Cannon connector	4
9707	Pak,	8.4V/12V-7AH, Standard, 5-pin Cannon connector	6

FOR ARRI 16SR, 16BL, 35BL, 35-III:

Cat. #	Type	Capacity & Features	Wt. Lbs.
8307FC	Belt,	12V-4AH, Fast Charge, 5-pin Cannon connector	5½
7007FC	Belt,	12V-7AH, Fast Charge, 5-pin Cannon connector	7½
6327	Belt,	12V-8AH, Standard, 5-pin Cannon, Charge Switch	10
8327FC	Belt,	12V-8AH, Fast Charge, 5-pin Cannon, Charge Switch	10
7027	Belt,	12V-14AH, Standard, 5-pin Cannon, Charge Switch	14
7027FC	Belt,	12V-14AH, Fast Charge, 5-pin Cannon, Charge Switch	14
9107FC	Pak,	12V-4AH, Fast Charge, 5-pin Cannon connector	4
9707FC	Pak,	12V-7AH, Fast Charge, 5-pin Cannon connector	6
9127	Pak,	12V-8AH, Standard, 5-pin Cannon, Charge Switch	9
9127FC	Pak,	12V-8AH, Fast Charge, 5-pin Cannon, Charge Switch	9
9727	Pak,	12V-14AH, Standard, 5-pin Cannon, Charge Switch	13
9727FC	Pak,	12V-14AH, Fast Charge, 5-pin Cannon, Charge Switch	13

FOR ECLAIR NPR, ACL, ARRI 16BL, 35BL, 16SR, 16S, 16M:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6303	Belt,	8.4V/12V-4AH Standard, 3-pin Cannon, 4-pin Cannon, Banana Jacks	5½
7003	Belt,	8.4V/12V-7AH Standard, 3-pin Cannon, 4-pin Cannon, Banana Jacks	7½

FOR ECLAIR NPR, ACL, ARRI 16SR, 16BL, 35BL, 35-III:

Cat. #	Type & Desc.	Wt. Lbs.
8303FC	Belt, 12V-4AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	5½
7003FC	Belt, 12V-7AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	7½
9103	Pak, 12V-4AH, Standard, 3-pin Cannon, 4-pin Cannon	4
9103FC	Pak, 12V-4AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	4
9703	Pak, 12V-7AH, Standard, 3-pin Cannon, 4-pin Cannon	6
9703FC	Pak, 12V-7AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	6

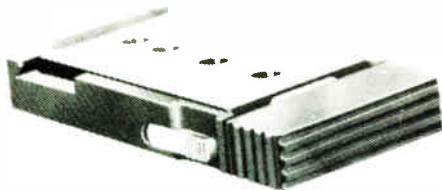
FOR ARRI 35BL TYPE I, 16SR, 16BL:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6306	Belt,	14.4V-4AH, Standard, 5-pin Cannon	6
6306B	Belt,	14.4V-4AH, Standard, 4-pin Cannon	6
8306FC	Belt,	14.4V-4AH, Fast Charge, 5-pin Cannon	6
8306BFC	Belt,	14.4V-4AH, Fast Charge, 4-pin Cannon	6
7006	Belt,	14.4V-7AH, Standard, 5-pin Cannon	8
7006B	Belt,	14.4V-7AH, Standard, 4-pin Cannon	8
7006FC	Belt,	14.4V-7AH, Fast Charge, 5-pin Cannon	8
7006BFC	Belt,	14.4V-7AH, Fast Charge, 4-pin Cannon	8
6326	Belt,	14.4V-8AH, Standard, 5-pin Cannon, Charge Switch	11
6326B	Belt,	14.4V-8AH, Standard, 4-pin Cannon, Charge Switch	11
8326FC	Belt,	14.4V-8AH, Fast Charge, 5-pin Cannon, Charge Switch	11
8326BFC	Belt,	14.4V-8AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	11
7026	Belt,	14.4V-14AH, Standard, 5-pin Cannon, Charge Switch	15
7026B	Belt,	14.4V-14AH, Standard, 4-pin Cannon, Charge Switch	15
7026FC	Belt,	14.4V-14AH, Fast Charge, 5-pin Cannon, Charge Switch	15
7026BFC	Belt,	14.4V-14AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	15
9106	Pak,	14.4V-4AH, Standard, 5-pin Cannon	5½
9106B	Pak,	14.4V-4AH, Standard, 4-pin Cannon	5½
9106FC	Pak,	14.4V-4AH, Fast Charge, 5-pin Cannon	5½
9106BFC	Pak,	14.4V-4AH, Fast Charge, 4-pin Cannon	5½
9706	Pak,	14.4V-7AH, Standard, 5-pin Cannon	8
9706B	Pak,	14.4V-7AH, Standard, 4-pin Cannon	8
9706FC	Pak,	14.4V-7AH, Fast Charge, 5-pin Cannon	8
9706BFC	Pak,	14.4V-7AH, Fast Charge, 4-pin Cannon	8
9126	Pak,	14.4V-8AH, Standard, 5-pin Cannon, Charge Switch	10
9126B	Pak,	14.4V-8AH, Standard, 4-pin Cannon, Charge Switch	10
9126FC	Pak,	14.4V-8AH, Fast Charge, 5-pin Cannon, Charge Switch	10
9126BFC	Pak,	14.4V-8AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	10
9726	Pak,	14.4V-14AH, Standard, 5-pin Cannon, Charge Switch	14
9726B	Pak,	14.4V-14AH, Standard, 5-pin Cannon, Charge Switch	14
9726FC	Pak,	14.4V-14AH, Standard, 5-pin Cannon, Charge Switch	14
9726BFC	Pak,	14.4V-14AH, Fast Charge, 4-pin Cannon, 5-pin Cannon, Charge Switch	14

FOR CP-16, GSMO, MITCHELL S-35R, HULCHER, PANAFLEX & Other 24V. Cameras:

Cat. #	Type	Capacity & Features	Wt. Lbs.
6310	Belt,	24V-4AH, Standard, 5-pin Cannon connector	10
8310FC	Belt,	24V-4AH, Fast Charge, 5-pin Cannon connector	10
7010	Belt,	24V-7AH, Standard, 5-pin Cannon connector	14
7010FC	Belt,	24V-7AH, Fast Charge, 5-pin Cannon connector	14
9110	Pak,	24V-4AH, Standard, 5-pin Cannon connector	9
9110FC	Pak,	24V-4AH, Fast Charge, 5-pin Cannon connector	9
9710	Pak,	24V-7AH, Standard, 5-pin Cannon connector	13
9710FC	Pak,	24V-7AH, Fast Charge, 5-pin Cannon connector	13
10-224	Pak,	24V-10AH, Standard, 5-pin Cannon connector	22

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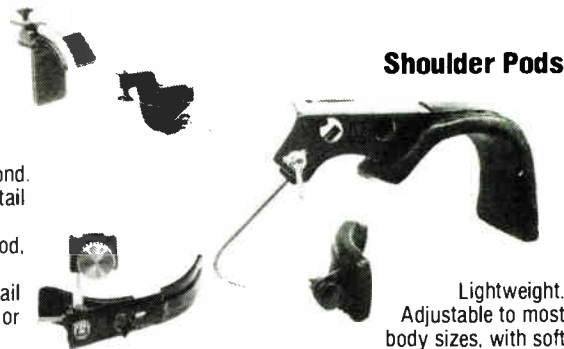


SPECIFICATIONS:

Camera or Equipment Plate	CAT. NO. 6700 2" x 3" x 1/2" Weight 4 ozs	CAT. NO. 6701 1 1/2" x 2" x 1/2" Weight 2 ozs
Mounting Provision	2 x Long Channel	1 x Long Channel
Mounting Construction	(3) 1/4-16 & 1/20 9/16 dia flat head screws supplied for both models Both models are precision machined aluminum alloy black anodized cork non-slip surface	
Interlocking Base Assembly	3" x 5" x 1/2" Weight 15 ozs	2" x 4" x 1/2" Weight 8 ozs
Mounting Provision	1/4-16 & 1/20 Mounting Holes	1/4-16 & 1/20 Mounting Holes
Locking Mechanism	Both Models machined nickel steel dovetail with double pushbutton safety release	
Construction	Both Models are precision machine aluminum alloy complete Snaplok Mount Cat. No. 6700 or Cat. No. 6701	
Camera/Equipment Plate Only	Cat. No. 6700A or 6701A	
Mounting Screws	1/4-20 Cat. No. 67551 1/4-16 Cat. No. 67552	

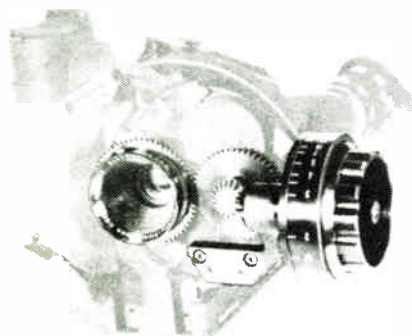
Snaplok Mount

Mount your camera or device in a second. Consists of a precision machined dovetail plate for the camera or device and an interlocking base assembly for the tripod, shoulder pod or support. Allows quick mounting and removal. Once the dovetail plate has been attached to the camera or device and the interlocking base to the support, tripod or shoulder pod, no screws, cranks or levers are required to instantly mount or demount the camera or device. Two models are available, Cat. No. 6700 for medium to heavy weight equipment and Cat. No. 6701 for lightweight equipment.



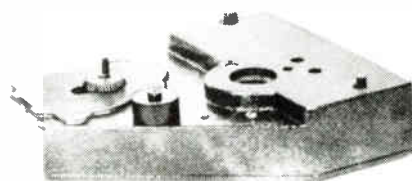
Shoulder Pods

Lightweight. Adjustable to most body sizes, with soft cushioned shoulder and body supports. Fully adjustable to keep camera in perfect shooting position. Easily removable between takes. Cat. No. 6758-BL for Arri 16BL, 16SR & most flat base video cameras. Requires Arri Offset Eye Piece. Cat. No. 6758TK Same as 6758-BL except that body pad comes down to abdomen. For TK76 and similar Video Cameras. Cat. No. 6750 for Arri 16 and similar flat base cameras. Cat. No. 6751 for Arri 35.



Focusing Device

Cat. No. 6504. For uninterrupted easy follow focusing by camera man or assistant. Includes 3 interchangeable lens scales and 3 lens gears.



Offset Motor Base

A gear box providing a flat camera base and low center of gravity for Arri 35. Essential for professional tripod mounting. Cat. No. 6900 - Mounts constant or variable speed motors next to camera eliminating need for hi-hat. Cat. No. 6900A - Same as #6900. But with built-in contacts for automatic clapstick on Arri 35IIC-GS.



Zoom Drives

Remarkably compact zoom motors. Provide smooth, economical, variable speed zooming at the touch of a button. Complete with transistorized, rechargeable power supply/hand control unit.

Cat. No. 6601 for Angenieux 12-120
Cat. No. 6602 for Angenieux 12-240
Cat. No. 6603 for Angenieux 25-250
Cat. No. 6604 for Angenieux 9.5-95
Cat. No. 6605 for Angenieux 9.5-57
Cat. No. 6606 for Canon 12-120
Cat. No. 6607 for Zeiss 10-100
Cat. No. 6608 for Angenieux 10-150
Cat. No. 6354 Replacement Charging Cord for power supply
Cat. No. 6355 Replacement Zoom Cable

Cat. No. 6910 'C' Lens Mount Adaptor
Cat. No. 6910B 'Bayonet' Lens Mount Adaptor



Lens Mount Adaptors

Precision machined lens mounts permitting the use of Arri mounted lens on cameras with 'C' mounts and 'Bayonet' mounts.

Bealieu Battery Pack

Direct replacement for Bealieu battery. 1200mAh capacity provides approximately 2000 ft. pr charge. Compact 4 1/2" x 1 1/2" x 3". Weight 1 lb. Equipped with built-in charger, charging cable, camera power cable and carrying pouch permitting wearing it on the waistbelt. Cat. No. 9000-B



2AH 16SR On-Board Battery

Custom-designed with special 2AH Cells providing a 30% increase in run time per charge. Totally compatible with Arri SR system. No adaptor, special mounting, or special connections required. Double Charger will recharge two batteries in 7 to 8 hours. At end of full charge, the charging channel cuts off automatically. Battery Cat. No. 12V/2A Weight: 2 lbs. Dimensions: 2 1/2" x 3 5/8" x 4 1/2" Dual Charger Cat. No. D-NC2000 Input: 110/220V Automatic Controls: (per channel) LED/Start Button, Automatic Cut Off Weight: 1 1/2 lbs. Dimensions: 2" x 3 1/2" x 4 1/2"



6 Ft. Coil-Cord Battery Cables

6401S For Arri 16S with 2-pronged molded plug
6401S-5 For Arri 16S with 5-pin battery connector
6401M For Arri 16M with 2-pronged molded plug
6401M-5 For Arri 16M with 5-pin battery connector
6401BL For Arri 16BL with 4-pin battery connector
6401BL-5 For Arri 16BL with 5-pin battery connector
6401SR For Arri 16SR, 35BL 35-III Cameras
6402V For Arri 35 for variable speed motor
6402V-5 For Arri 35 with 5-pin battery connector
6402C For Arri 35 for constant speed motor
6402C-5 For Arri 35S with 5-pin battery connector
6403 With 5-pin Canon on 1 end, with other end open for equipment mating connector

Cables not listed can be made to special order.

Prices and Specifications Subject to Change Without Notice.

Clear-Com has everything you need to put together a reliable, versatile intercom system...there's no other that can match the results of our 15 years experience providing multi-channel communications to theatre, television, musical, commercial and industrial facilities.

HARD-WIRED INTERCOMS

- 1-8 channels
- portable, console and rack-mount stations
- circuit breaker-protected, no-fail power supplies
- volume and sidetone controls at every station
- interconnect with standard mic cable
- 4-channel intercom with 12 x 4 assignment matrix
- pre-settable talk and listen monitor functions
- visual "call" signalling
- stage announce and remote paging

BATTERY-POWERED INTERCOMS

- ideal for ENG, EFP, and other remote applications, indoors or out
- portable system runs on 12-32 volts DC
- rugged, lightweight belt-packs; 1- or 2-channels

SYSTEM INTERFACES

- rack-mount and portable
- interfaces Clear-Com with any 2-, 3-, or 4-wire cameras and lines
- individual "transmit" and "receive" controls
- headset test tones for system balancing
- AC-10H holding coil lets you answer telephone without lifting receiver
- RTS-type system interface

INTERCOM HEADSETS

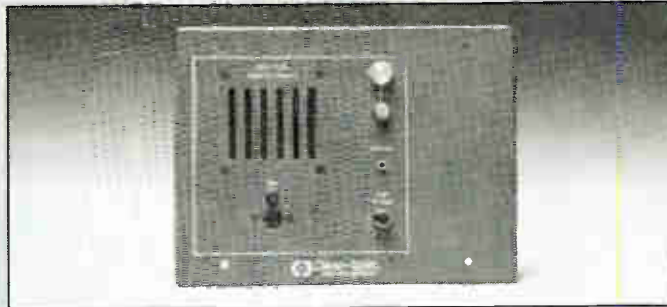
- complete range of styles for all low- or high-noise environments
- lightweight and rugged
- built-in mic switches in flexible booms
- binaural or monaural headphones

WIRELESS INTERCOM INTERFACE

- partial full-duplex base station
- 1/4 mile range
- "call" signalling
- interfaces with hard-wired intercoms

IFB SYSTEM (PROGRAM INTERRUPT)

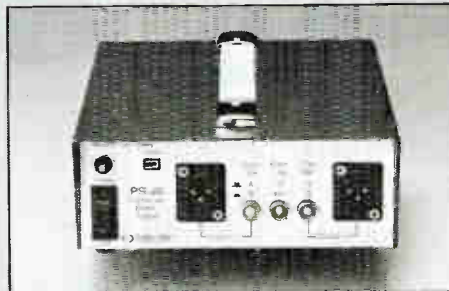
- designed for studio or remote applications
- perfect for sportscasters, news commentators, musicians
- accesses up to 8 talent
- one or two channels of program, select between continuous or interrupted feed
- compact Talent Receiver with miniature earphone
- "split-feed" Talent Receiver with binaural headset output
- rack-mount IFB Controller
- works with all Clear-Com Intercoms



KB-112 "Push-to-Talk" Speaker Station



CP-300 Belt Pack



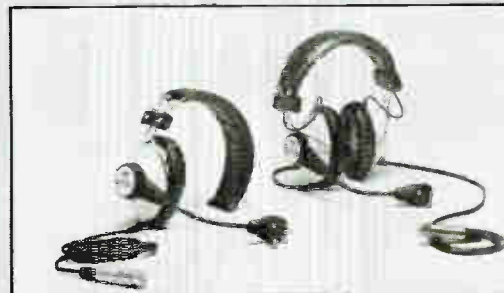
PS-20 Two-Channel Power Supply



CS-210 Two-Channel Main Station



AC-10H Telephone Interface



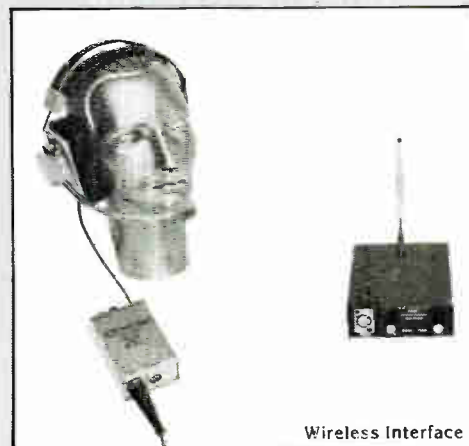
Intercom Headsets (CC-35 & CC-55)



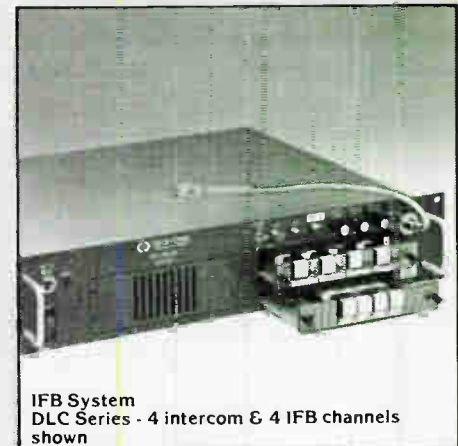
CC-75B



PH-7



Wireless Interface



IFB System
 DLC Series - 4 intercom & 4 IFB channels shown



2850C

MODEL 2850C LOW LIGHT, SELF CONTAINED ENVIRONMENTAL TV CAMERAS

- Fully Automatic Operation —
Automatic 640,000 to 1 Light Range, Beam Control, Black Level, Gain Control with 20 dB Range and Bandwidth Reduction, plus Remote Control Capability
- Gamma Correction —
Selectable 0.35, 0.5, 0.7 or 1.0
- 700 TV Lines Horizontal Center Resolution
Resolves 10-Shade Gray Scale with 0.05 Lumens/ft² Highlight Illumination on Image Tube Faceplate
- Underscan and Overscan Capability . . . White Peak Clipping . . . Internal EIA RS-170 or CCIR Sync, Jumper Selectable
- Peak to Average Detector for Automatic Light Control
- Dual 75-Ohm Selectable 1 or 1.4 Volt Video Outputs
- Environment-Resistant, Sealed Housing with Purge Fitting, Operates under Adverse Conditions and Down to -40°C
- Genlock
- Bright Light Limiter to Prevent Camera Being "Blinded"
- Options —
Screen splitter for Multiple Camera Display
Cable Pre-Equalizer for Output No. 1 Gives 4.5 dB of Signal Increase

The Cohu Model 2850C Low-Light Television Camera is designed for reliable, unattended, continuous-duty operation in a wide variety of day and night monitoring or surveillance applications such as encountered in airports, factories, parking lots, gates, tunnels, bridges, and traffic areas. The cameras will operate automatically in light levels ranging from bright sunlight to moonlight. A camera can be aimed at direct sunlight, without damage to the tube target, and then aimed at a low-light level area and produce a clear, crisp picture.

A Bright Light Limiter circuit allows full camera performance under conditions where blooming from intense scene highlights would otherwise make the picture unsatisfactory. The level and amount of scene highlights affected are adjustable. Highlight level can be set from black to maximum white for best contrast and resolution. This feature makes the 2850C well suited for nighttime applications where automobile headlights, a bright light being turned on, or a flashlight or spotlight can cause accidental or deliberate "blinding" of the camera.

Adverse environments (wet or dry, and hot or cold) do not affect the operation of the cameras; they are self-contained and enclosed in environment-resistant housings. In addition to being environment-resistant, 2850C camera housings are tamper-proof; they have no exposed controls.

The camera has a fully automatic black level compensation system to provide high contrast video over the light level range. Maximum accuracy of picture black level and white level is maintained with a keyed clamp that compensates for image tube dark current variations as a function of the ambient temperature. An adjustable white peak clipper limits video amplitude.

Automatic operation and remote control capability are standard features on 2850C cameras. An automatic sensitivity control adjusts a motorized iris on the lens and adjusts the video gain for an optimum picture over a wide range of scene illuminations. The iris can also be remotely controlled for manual operation in specific applications. A peak-to-average detector allows the automatic sensitivity circuitry to be set at full peak detection or full scene average detection, or any point in between. Optional remote controls are available for variable focal length (zoom) lenses and accessories such as pan and tilt units.

SYNC OPERATION (factory installed)

- 2800C-200 EIA RS-170
- 300 CCIR
- 500 Crystal Controlled EIA RS-170
- 600 Crystal Controlled CCIR

ACCESSORY OPTIONS (factory installed)

- 2800C-700 Screensplitter
- 900 Cable Pre-Equalizer
- 071 Front Removal Kit

COHU, INC.

5755 Kearny Villa Road
 P.O. Box 85623
 San Diego, CA 92138
 (619) 277-6700 TWX 910-335-1244

HIGH-RESOLUTION TV/ CAMERA SYSTEMS

8000 Series

Designed for reliable, unattended, continuous-duty operation, the Cohu 8000 series High Resolution Television Camera System provides maximum stability, detailed video information, superior corner resolution, and optimum flatness of field. This versatile system has a separate lightweight camera head and modularized camera control unit.

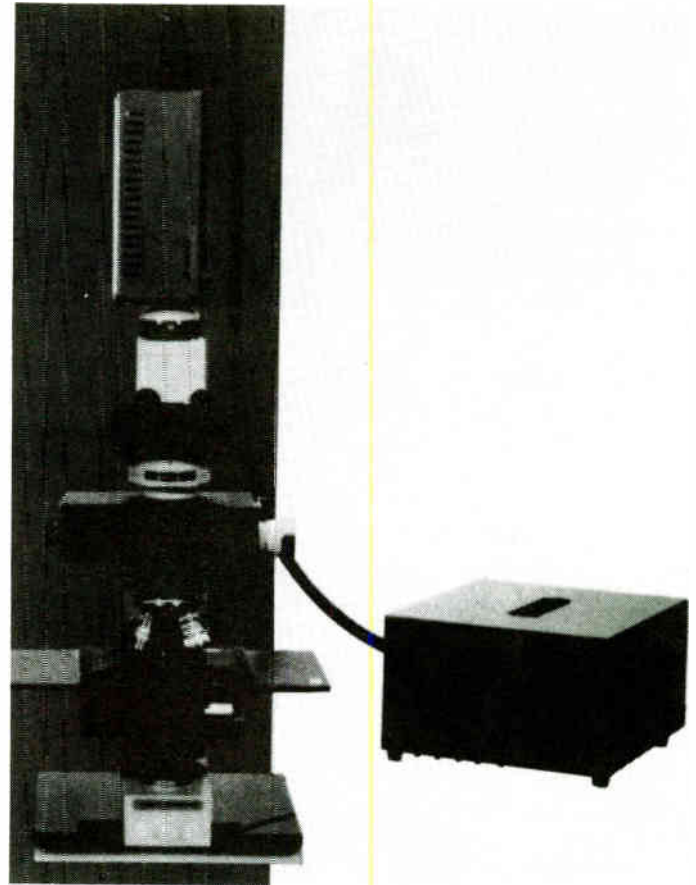
Typical applications which are ideal for use of the 8000 High Resolution System include virtually any instrumentation or monitoring need in medical, scientific, and industrial fields. The convenient small size and weight of the camera head allows interface with delicate instruments, such as laboratory microscopes. This "go-anywhere" convenience of the camera head, plus the ability to remotely locate the control unit through a single cable connection, suits numerous industrial closed-circuit television applications including inspection, measurement, and test chamber monitoring purposes.

FEATURES:

- **1" IMAGE TUBE** for superior resolution quality.
- **AUTOMATIC SENSITIVITY** over 10,000:1 light range.
- **FULLY SOLID-STATE**, with exception of image tube.
- **FET INPUT** for clear, crisp, low-noise video.
- **CHOOSE:** Up to 1749 lines/frame.
- **8, 16, or 32 MHz BANDWIDTHS**, selectable.
- **FRONT PANEL CONTROL** of target, beam, focus, black level, and power.
- **RENDERS ALL 10 EIA GRAY SHADES** with only 0.05 footcandle illumination on image tube faceplate.
- **LESS THAN 1.5% PICTURE DISTORTION.**
- **ADJUSTABLE** Overscan and Underscan, White Peak Clipper, Gamma/Black Compressor, and Output Video.
- **CCU CAN BE UP TO 2000 FEET** from camera head.
- **FULLY PROTECTED** with regulated power supplies and automatic beam cut-off in the event of sweep failure.
- **TWO BNC VIDEO OUTPUT CONNECTORS.**
- **OPERATES ON 115/230 VAC, 50/60 Hz.**

OPTIONS:

- **VARIABLE SCAN RATE GENERATOR MODULE** with jumper selectable line-locked or crystal controlled synchronization.
- **BLANKING GENERATOR MODULE** operates from external sync pulse or EIA RS-170, 330, or 343 video signal.
- **SHADING CIRCUIT** corrects for non-uniform response of lens and image tube.



ORDERING INFORMATION

NOTE: When ordering, specify EIA RS-170 or CCIR sync.

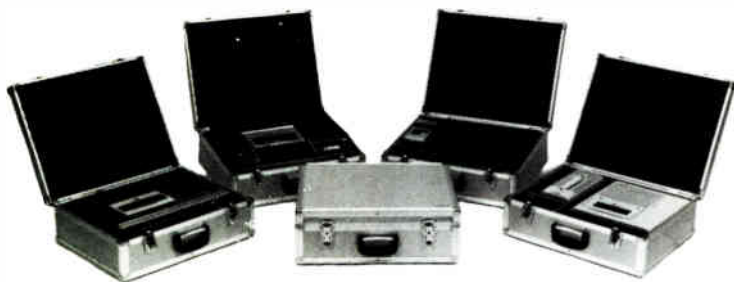
CAMERA CONTROL UNIT CONFIGURATIONS				
Mounting	8 MHz	16 MHz	32 MHz	WITH Shading
Portable Cabinet	8008-030	8016-030	8032-030	NO
Portable Cabinet	8008-031	8016-031	8032-031	YES
Single Rackmount	8008-010	8016-010	8032-010	NO
Single Rackmount	8008-011	8016-011	8032-011	YES
Dual Rackmount	8008-020	8016-020	8032-020	NO
Dual Rackmount	8008-021	8016-021	8032-021	YES

OPTIONAL MODULES	
8000-200	Variable Scan Synchronization Generator
8000-300	Blanking Generator
8000-001	Shading Circuit

CABLE from CCU to Camera Head (Specify length)	
CA 218	Standard Cable
CA 218B	Standard Cable with right-angle connector at camera head
CA 219	Superflex Cable
CA 219B	Superflex Cable with right-angle connector at camera head



VIDEO CARRYING CASES



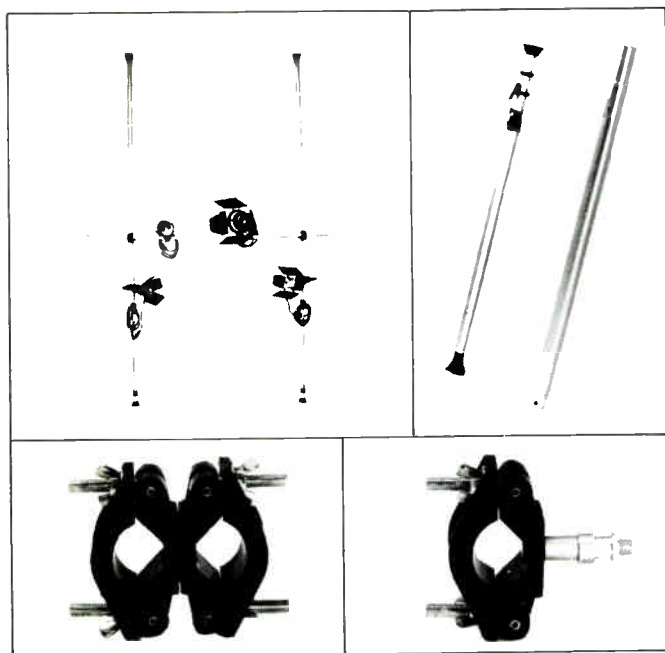
Aluminum-covered wood carrying cases provide maximum protection at the lightest weight and lowest cost.

CVC-300-B1 For all portable Beta and VHS recorders with AC adaptor. Comes with partition that allows using the case with many different video units. **\$139.95**

CVC-400-VHS For all VHS and Beta Series II. **\$135.95**

CVC-500E THE EVERYTHING CASE. Comes with layers of foam that allow you to cut out and custom fit cameras, decks, lenses, etc. to suit your needs. **\$139.95**

Outside dimensions of above cases (not including hardware): 21" L x 16-1/2" W x 7-1/4" H. Weight 16 lbs. Inside dimensions: 19-3/4" L x 15" W x 4-1/2" H.



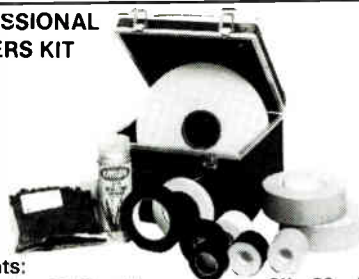
UNIVERSAL-POLE SYSTEM

Unique lightweight pole system that offers unlimited possibilities for supporting lights, backgrounds or cameras. Poles and special clamps set up quickly and can be used floor to ceiling or horizontally between two walls.

Model No.		Closed	Fully Extended	Price
CUP-1	Set of two Universal-Poles	47"	70"	\$ 99.00
CUP-3	Set of two Universal-Poles	8'8"	11'	119.00

Extensions interconnect for longer lengths.

PROFESSIONAL GAFFERS KIT

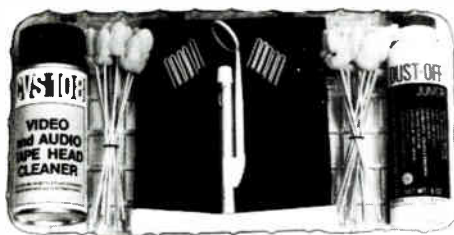


Contents:

- 2 rolls Silver Gaffers Tape 2" x 60 yds.
- 1 roll Silver Gaffers Tape 2" x 10 yds.
- 1 roll Black Gaffers Tape 2" x 10 yds.
- 1 roll White Gaffers Tape 2" x 10 yds.
- 1 roll Masking Tape 3/4" x 60 yds.
- 1 roll Black Masking Tape 3/4" x 60 yds.
- 1 roll Electrical Tape (Vinyl) 3/4" x 66 ft.
- 1 roll Friction Tape 3/4" x 60 ft.
- 1 roll Double Stick Foam Tape 1/2" x 36 yds.
- 1 roll Cold Shrink Tape 1" x 10 ft.
- 1 each Professional Electrician's Knife
- 1 each Dulling Spray
- 1 pkg. Reusable Cable Tie (100/pkg)

PGK-1 \$99.95

VCR/VTR MAINTENANCE KIT



Kit contains all the items necessary to maintain VCRs/VTRs to professional standards. Supplied in convenient carry-along storage box.

Contents:

- 1 each CVS-108 8 oz. can Professional Video Head Cleaning Fluid
- 1 each FGJB 6 oz. Dust-Off
- 25 each CVS-505 Cellular-Foam VCR Cleaning Swabs
- 10 each CVS-504 Professional Video Head Cleaning Tools
- 10 each CVS-508 Lint-Free Cloth Wipes
- 1 each CVS-506 Inspection Mirror with Light
- Instructions

CVS-10K \$49.95

COMPREHENSIVE POWER BELT



High-quality battery belts for industrial and educational video users. Economically priced alternative to broadcast-type power belts, while still maintaining high performance standards.

- Features:**
- Extremely durable leather
 - Highest-quality NiCad cells
 - Built-in safety features
 - Flexible loom cell-to-cell continuity
 - Simple trouble-free operation

Model No.	Voltage	Rating	Price
CPB-127	12V	7AH	535.50

Prices and Specifications Subject to Change Without Notice.

COMPU=PROMPT™

Color Computerized Prompting Systems

OPERATOR'S CONSOLE

Microcomputer—8 bit, 6502 based, 2MHz, 64K RAM, (CP-1000 series) 128K RAM (1130XM series), certified to comply with FCC class B limits, Part 15, silent operation.

Operator's Monitor—7" full color with tuner and video inputs and outputs.

Controller—Hand-held, cable may be extended, continuous speed control, speed ranges from 1/2 line to 30 lines per second, forward or reverse, start, stop, reset stopwatch.

Software—COMPU=PROMPT: disk, ROM cartridge, instruction manual, training guide. Word Processor: ROM cartridge, instruction manual.

Text Buffer—CP-1000 series: holds over 1000 lines of text, approximately 20 minutes reading time before needing to reload additional text from disk. CP-1130 XM series: 5500 lines of text, 1 hr. 40 minutes reading time.

Floppy Disk Storage—Disk drive (for text storage) 5-1/4" single sided, double density, 96 or 180 kilobytes.

Automatic Text Formatting—Formats 20 character lines, will not break up words, choice of left-justified or centered text.

Character Set Editor—Operator can create original fonts to be saved to disk and loaded as needed. Several prepared fonts are included, such as Spanish, French, Japanese and several English-style fonts.

On-Screen Indicators—Stopwatch/timer to 1/10 second, line counter, relative position indicator.

Editing—COMPU=PROMPT: On-screen line editor, insert/delete/replace. Word Processor: insert/delete/replace characters, move, duplicate, delete blocks of text, and search and replace.

Random Access—Instant reset to beginning of text, instant access for up to 35 pre-set text locations.

Find—Enter up to 20 characters and instantly find the first occurrence in the script.

Printer (optional)—Several models available, print speed up to 160 characters per second.

Printer Interface—Centronics standard parallel with 4K buffer.

Modem Communications (optional)—Standard ASCII code. 300 or 1200 baud optional.

RS232C Serial Interface (optional)—for use with modem.

Video Distribution Amplifier (optional)—Provides clean video signal to additional monitors (one input, four outputs). If more than four outputs are necessary, additional amplifiers can be cascaded.

Power Requirements—110V AC 60 Hz.

Power Consumption—139W

Video Output—1V p/p, noninterlaced NTSC compatible color composite video.

Case—ATA-rated with wheels, converts to operator console.

Dimensions: 26"H x 14.5"D x 19.5"W

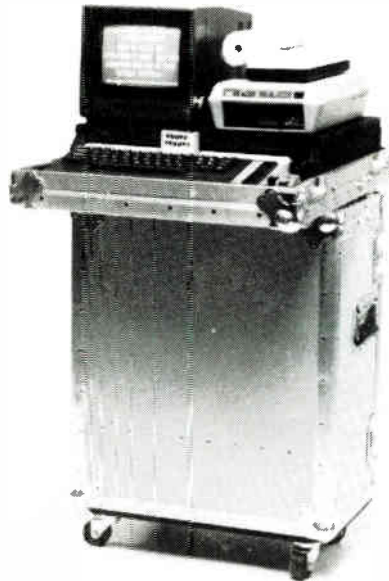
(66cmH x 36cmD x 49.5cmW)

Weight: 37 lbs., (16.8 kg)

System Weight (in cases)

CP-1000: 75.5 lbs., (34.2 kg)

CP-2000: 151 lbs., (68.4kg)



COMPU = PROMPT
OPERATOR'S CONSOLE



COMPU = PROMPT
DELUXE COLOR CAMERA
MOUNT SYSTEM

DELUXE COLOR CAMERA MOUNT SYSTEM

Quick Setup—The COMPU=PROMPT Camera Mount System was designed with a small 7" x 6" baseplate which can conveniently be left on the camera when the prompter is not in use. Once the plate is attached, mounting or removing the system is done in 2-3 minutes.

Compatible With Virtually All Camera Systems—COMPU=PROMPT's mount is completely adjustable on all axes, allowing a wide variety of cameras and lenses to be accommodated.

Balanced Mounting System—Every size camera will remain perfectly balanced thanks to the ingeniously adaptable counter-weight system created by COMPU=PROMPT.

Easy Access To Lens—COMPU=PROMPT's swing-away mirror allows access to the lens for lens changes or cleaning.

Compact Design For Easy and Safe Storage—COMPU=PROMPT's specially designed beamsplitter assembly and anti-glare hood fold flat for storage.

MONITOR

- 14" full color, 24.4 lb., (11.1 kg.)
- Modified to increase contrast and enhance readability.
- Normal or mirror-image display controlled by rear-mounted switch.
- Overscan switch vertically enlarges text on the display screen by 30%.
- Power and video supplied to monitor via duplex cable consisting of 18 gauge grounded power cable and Beldon RG59 video cable attached every 18".
- Power requirement: 110V 60 Hz.
- Power Consumption: 58W
- Video Input: 1V p/p NTSC compatible color composite video.

BEAM-SPLITTER ASSEMBLY

- Anti-glare Hood: Made of black Velcro cloth and aluminum, adjustable on three axes.
- Reflective Glass: Negligible optical distortion, 1/2 stop light loss, 70% transmission, 30% reflectance.
- Weight: 5.75 lbs., (2.6 kg.)

COUNTERWEIGHTS

- Lead weights with lockdown knob.
- Weight: 22 lbs. each (10 kg.)

CASES (optional)

COMPU=PROMPT Deluxe Camera Mount System is contained in two ATA-rated cases.

Large case has wheels and contains monitor, steel rods, cables, hood and mirror assembly.

Dimensions: 22.5"W x 20.5"D x 23.5"H

(57cmW x 52cmD x 60cmH)

Small case contains brass rods, camera mount baseplate and counterweights.

Dimensions: 13.5"W x 11"D x 10.5"H

(34.5cmW x 28cmD x 26.5cmH)

SHIPPING WEIGHT

Large Case: 84 lbs., (38.1 kg.)

Small Case: 79 lbs., (35.8 kg.)

National Sales and Rental

COMPU = PROMPT PODIUM MONITOR
SYSTEM ALSO AVAILABLE



COMPU = PROMPT

FIRST IN COMPUTERIZED PROMPTING

940 N. Orange Dr.

Suite 209

Los Angeles, CA 90038

(213) 461-3113

TORONTO — CIDNEY

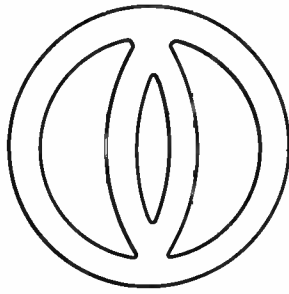
440 West 47th Street

Suite 2-B

New York, NY 10036

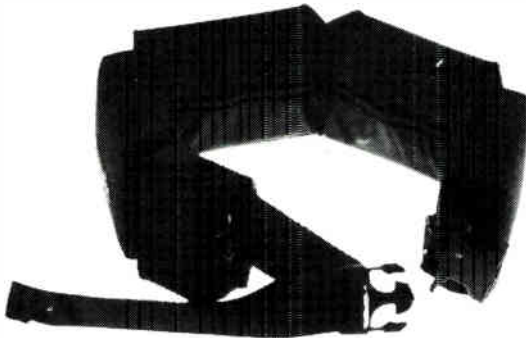
(212) 333-7595

VC-55



OLYMPIC

BATTERY BELTS (With Built-In Chargers)



**OLYMPIC L-13 12V, 13 AMPERE-HOURS
(C4457) \$279.95**



**OLYMPIC L-20 12V, 20 AMPERE-HOURS
(C4459) \$329.95**

These are the Finest Portable Power Sources available, with extra capacity for extended on-location use. They are made of top quality materials throughout, are very comfortable to wear and are extremely easy to operate and to recharge. Batteries are New Advanced-Technology Cells, made by Panasonic, which provide more running time per ampere-hour than batteries previously available. All components are Zipper-Accessible, and zipper has double closure devices so you can operate it from either end. Inner surfaces of belt are lined with a "Silky" material, for wearing comfort and to prevent friction damage to clothing. Two alternately-flashing

LED Indicator Lights tell you when batteries need recharging. Older belts rely on mechanical-movement meters, which are easily damaged by dropping. Our Solid-State Electronic System is virtually shock-proof. Output receptacle is cigarette-lighter type. Battery charger is built into the belt, you can't misplace it or forget it! Use these belts to power your light (or lights) alone, or to power your video camera and VCR, along with your light. You can power a 75-watt lamp for almost three hours with the Olympic L-20, and for almost two hours with the L-13 Model.

VIDEO AND PHOTO LIGHTING GUIDE



*There are many more accessories available for the Mini-Cool than those shown on these three pages. Our complete line is illustrated in the **Cool-Lux Professional Lighting Guide**, a unique introduction to Video Lighting and the Mini-Cool System. This informative document (16 pages, full color) can save you many times its modest cost. To get your copy, send \$3.50 to the address below. We will include a **FREE Certificate** worth \$5.00 on any purchase of Mini-Cool Lights or Accessories.*

COOL-LUX

lighting ind. inc.

5723 AUCKLAND AVE
N. HOLLYWOOD, CA 91601-2207
(818) 761-8181



205 BVH UNIVERSAL FLUID HEAD

- Positive Tilt lock - Tilt Tension Control in addition to a full fluid system.
- Autoslip[®] provides self-adjusting breakaway free pan (no knobs to adjust). Allows smooth starts and stops on all pans, even fast "swish" pans.
- Extremely smooth pan and tilt movements.
- Camera platform 5 1/4" x 3 3/4"
- Leakproof and dustproof sealing.
- 3/8" - 16 camera screw
- Head weight 8 pounds.
- Hydralok[®] concentric, hydraulic tilt lock/tension device insures safe locking in any position.
- Designed to accept dual handles, second handle optional

\$1164.00



F-10 FLUID HEAD

Load Capacity 10 lbs.
 Tilt Angle 90° Up-90° Down
 Pan Rotation 360°
 Height 4 1/2"
 Width Overall 3 1/2"
 Length 2"
 Weight 1-1/3 lbs.
 Platform Size 2" x 2 1/2"
\$59.00



MODEL FM-25 FLUID HEAD

Load Capacity 25 lbs.
 Side Tilt 90° either side
 Pan Rotation 360°
 Height 5"
 Weight 5 lbs.
 Platform Size 4" x 4 1/4"
 Features • 2 yr. warranty
 • Dual handle capability
 • Easily visible bubble level gauge
 • Extremely smooth pan & tilt movements w/2 handles
\$215.00

MODEL FM-15

Same as FM-25 but with lighter viscosity fluid for cameras under 15 lbs. **\$215.00**



MODEL H-4 SPRING HEAD

Load Capacity 25 lbs.
 Tilt Angle ± 60°
 Pan Rotation 360°
 Height 4 1/2"
 Width 2 1/2"
 Length 4 1/2"
 Weight 3 1/2 lbs.
 Material & Finish Black Anodized Alum.
 Features • 1/4"-20 Camera Screw
 • Dual Counterbalancing Springs
 • Pan Handle locks both tilt and pan

\$99.00



MODEL CC CRADLE HEAD

Load Capacity 25 lbs.
 Tilt Angle ± 45°
 Pan Rotation 360°
 Height 6 1/4"
 Width 8"
 Length 9"
 Weight 5 lbs.
 Material & Finish Black Anodized Alum. and Plated Steel Cradle

- Features • Removable and adjustable camera platform for easy installation and perfect balance. Holds tilt without camera dumping

\$84.00



MODEL DSLA LEVELING ADAPTOR

Load Capacity 50 lbs.
 Leveling adjustment +5°
 Height 3 1/2"
 Diameter 6 1/2"
 Weight 2 lbs.
 Material & Finish Black anodized aluminum

Quick and easy action. Locks securely. **\$140.00**



MODEL MH-1-S SPRING HEAD

Load Capacity 30 lbs.
 Tilt Angle 60° Up-90° Down
 Pan Rotation 360°
 Height 6"
 Width 3 1/2"
 Length 6"
 Weight 4 1/2 lbs.
 Material & Finish Black Anodized Alum.

- Spring loaded tilt to prevent camera dumping
- Pan and tilt lock independently of each other
- Pan handle with adjustable angle fits either side
- Leveling base allows 5° tilt in all directions
- Bubble level
- Friction drag adjustment of pan and tilt by spring loaded control knobs

\$148.00



MODEL MH-2S SPRING HEAD

Load Capacity 20 lbs.
 Tilt Angle 60° Up-90° Down
 Pan Rotation 360°
 Height 5 1/2"
 Width 3 1/4"
 Length 6"
 Weight 2 1/2 lbs.
 Material & Finish Clear Anodized Alum.

MODEL MH-2

Same as above except without spring

\$86.00



MODEL CM CRADLE HEAD

Load Capacity 50 lbs.
 Tilt Angle 20° Up-30° Down
 Pan Rotation 360°
 Height 6"
 Width 5"
 Length 14"
 Weight 7 lbs.
 Material & Finish Black Anodized Alum.

\$218.00

MODEL CS CRADLE HEAD

Same as above except
 Load Capacity 40 lbs.
 Length 10"
 Weight 6 lbs.

\$218.00



MODEL HD-46 SPRING HEAD

Load Capacity 50 lbs.
 Tilt Angle 70° Up-90° Down
 Pan Rotation 360°
 Height 7 1/2"
 Platform Size 4" x 6"
 Weight 6 lbs.
 Material & Finish Black Anodized Alum.
 Internal Torsion Spring to prevent camera dumping

\$162.00



MODEL Q SPRING HEAD

Load Capacity 10 lbs.
 Tilt Angle ± 60°
 Pan Rotation 360°
 Height 3"
 Width 4"
 Length 4"
 Weight 1 lb.
 Material & Finish Black Anodized Alum.

- Features • Counterbalancing spring to prevent camera dumping
 • Two camera screw locations

\$42.00



MODEL RTH TWO-WAY TILT HEAD

Load Capacity 10 lbs.
 Tilt Angle 30° Up-90° Down
 Pan Rotation 360°
 Height 5"
 Width 2"
 Length 2 1/2"
 Weight 1 lb.
 Material & Finish Clear Anodized Alum.

- Features • Quick Change Camera Screw
 • Friction drag screw to prevent camera dumping

\$65.00



**THE CHALLENGER
MODEL DG/H4
TRIPOD/HEAD**
Load Capacity 25 lbs
Minimum Height 34"
Maximum Height 70"
Elevation Adjustment 16"
Geared Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 1 1/4"
Head Tilt Angles 60° Up-
90° Down
Spring Loaded Head 2 Springs
Head Pan Rotation 360°
Weight 8 lbs
Material & Finish Clear and Black
Anodized Alum
Self-Locking Gear Mechanism

MODEL DG
Same as above except without
head **\$130.00**

**DOLLYPOD
GEARED ELEVATION
TROLLEY**
Load Capacity 25 lbs
Minimum Height 48"
Maximum Height 66"
Elevation Adjustment 18"
Geared Center Post 1 1/4" Dia
One Section Leg 1 1/2" Dia
Wheels 5" Dia
Weight 15 lbs
Material & Finish Clear and Black
Anodized Alum **\$315.00**



**MODEL ETVG-W
GEARED ELEVATION TRIPOD**
Load Capacity 75 lbs
Minimum Height 40"
Maximum Height 68"
Base Spread at Max Ht 60"
Base Spread at Min Ht 36"
Elevation Adjustment 18"
Geared Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 2"
Wheel Diameter 5"
Weight 15 lbs
Material & Finish Clear and Black
Anodized Alum
Available with wheels, wheels
and spikes, or points
Split-collar lock for
leg extension **\$520.00**



**MODEL D/O
LIFT COLUMN
TRIPOD/SPRING HEAD**
Load Capacity 15 lbs
Minimum Height 30"
Maximum Height 64"
Elevation Adjustment 18"
Lift Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 1 1/4"
Head Tilt Angle 70° Spring
Loaded
Head Pan Rotation 360°
Weight 5 lbs
Material & Finish Clear and Black
Anodized Alum
• Two camera screw locations



MODEL DRG/Q
Same as above except with gear
elevating post **\$130.00**

**REDITILT MODEL RTG
GEARED ELEVATION
TRIPOD/HEAD**
Load Capacity 15 lbs
Minimum Height 28"
Maximum Height 65"
Elevation Adjustment 20"
Geared Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 1 1/4"
Two-Way Tilt Head 90°
Head Pan Rotation 360°
Weight 4 1/2 lbs
Material & Finish Clear and Black
Anodized Alum
Head Features • "Quick Change"
Camera Screw
• Friction Drag
Screw
• One handle locks pan and tilt
simultaneously
• Removable Head **\$182.00**



**THE COMPAC
MODEL CG GEAR ELEVATION
TRIPOD**
Load Capacity 30 lbs
Minimum Height 32"
Maximum Height 67"
Elevation Adjustment 16"
Geared Center Post 1 1/4" Dia
Outer Leg Section 3/4" x 1 1/2"
Inner Leg Section 3/4" x 1"
Weight 7 lbs
Material & Finish Clear and Black
Anodized Alum
Adjustable Flat or Pointed Feet
Accepts CW-1 Slip-On Wheels **\$120.00**

MODEL C
Same as above except with lift
column center post **\$97.00**

**MODEL AG
GEARED ELEVATION TRIPOD**
Load Capacity 50 lbs
Minimum Height 27 1/2"
Maximum Height 58"
Elevation Adjustment 20"
Geared Center Post 1 1/4" Dia
Outer Leg Section 2 1/4" x 1 1/2"
Inner Leg Section 1" Dia
Weight 10 lbs
Material & Finish Clear and Black
Anodized Alum
Freeze-proof and stick-proof leg
clamps **\$258.00**



MODEL A
Same as above except with
"Floating Action" spring loaded
center post **\$181.00**

**MODEL PSG-34
GEARED ELEVATION
PEDESTAL**
Load Capacity 100 lbs
Minimum Height 34"
Maximum Height 55"
Elevation Adjustment 18"
Geared Center Post 1 1/4" Dia
Weight 30 lbs
Steel Center Column 4" Dia
Base Spread 32"
All Swivel Wheels 5" Dia
Material Cast Alum base
steel tube
center post
Finish Black Baked Enamel **\$469.00**

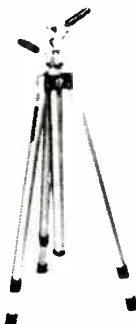


MODEL PS-34
Same as above except with
"Floating Action" spring loaded
center post and central wheel
brake control **\$409.00**

**TABLE OR CART
COLUMN/HEAD
MODEL DG/H4/TM**
Load Capacity 25 lbs
Elevation Adjustment 16"
Geared Center Post 1 1/4" Dia
Head Tilt Angles 60° Up-
90° Down
Spring Loaded Head 2 springs
Head Pan Rotation 360°
Weight 5 lbs
Material & Finish Clear and Black
Anodized Alum **\$150.00**



**REDITILT SUPER MODEL RTS
LIFT COLUMN TRIPOD/HEAD**
Load Capacity 15 lbs
Minimum Height 28"
Maximum Height 65"
Elevation Adjustment 20"
Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 1 1/4"
Two-Way Tilt Head 90°
Head Pan Rotation 360°
Weight 4 1/2 lbs
Material & Finish Clear and Black
Anodized Alum
• "Quick Change" Camera Screw
• Friction Drag Screw
• One handle locks pan and tilt
simultaneously
• Reversible Center Post **\$99.00**



**MARK II
GEARED ELEVATION
TRIPOD**
Load Capacity 40 lbs
Minimum Height 40"
Maximum Height 84"
Elevation Adjustment 18"
Geared Center Post 1 1/4" Dia.
Two-Section Leg Dia. 1 1/2" x 1 1/2"
Weight 11 lbs
Material & Finish Clear and Black
Anodized Alum **\$257.00**



**MODEL BG
GEARED ELEVATION TRIPOD**
Load Capacity 60 lbs
Minimum Height 40"
Maximum Height 90"
Elevation Adjustment 30"
Geared Center Post 1 1/4" Dia
Upper Leg Section 2 1/4" x 1 1/2"
Lower Leg Section 1" Dia
Weight 14 lbs
Material & Finish Clear and Black
Anodized Alum
Freeze-proof and stick-proof leg
clamps **\$295.00**

MODEL B
Same as above except with
"Floating Action" spring loaded
center post **\$205.00**



**MODEL DS-GS
GEARED ELEVATION
TRIPOD/SPRING HEAD**
Load Capacity 7 lbs
Minimum Height 24"
Maximum Height 58"
Elevation Adjust 16"
Geared Center Post 7/8" dia
Channel Legs 3 Sections
Head Tilt ±70°
Side Tilt 0° to 90°
Head Pan Rotation 360°
Weight 4 1/2 lbs
Material & Finish Clear and Black
Anodized Alum

Features
• New toggle leg-lock
• Center braced legs
• Bubble level
• Reversible center post **\$75.00**



**TABLE OR CART
COLUMN/HEAD
MODEL MARK II/H4 TM**
Load Capacity 30 lbs
Elevation Adjustment 18"
Geared Center Post 1 1/4" Dia.
Weight 6 lbs
Material & Finish Clear and Black
Anodized Alum **\$284.00**

MODEL MARK II/TM
Same as above except without
H4 Head. **\$206.00**

**REDITILT MOVIE MODEL RTM
LIFT COLUMN TRIPOD/HEAD**
Load Capacity 15 lbs
Minimum Height 28"
Maximum Height 65"
Elevation Adjustment 20"
Center Post 1 1/4" Dia
Leg Diameters 1 1/4" x 1 1/4"
One-Way Head Tilt 90°
Head Pan Rotation 360°
Weight 4 1/2 lbs
Material & Finish Clear and Black
Anodized Alum
Head Features • "Quick Change"
Camera Screw
• Friction Drag
Screw
• One handle locks
pan and tilt
simultaneously
• Reversible Center
Post **\$100.00**



TRIPODS/DOLLIES/CAMERA AND MONITOR MOUNTS



**REDITILT PRO MODEL RTP
LIFT COLUMN TRIPOD/HEAD**
 Load Capacity 10 lbs.
 Minimum Height 28"
 Maximum Height 65"
 Elevation Adjustment 18"
 Center Post 3/4" Dia.
 Leg Diameters 3/4" x 3/4"
 Two-Way Tilt Head ± 90°
 Head Pan Rotation 360°
 Weight 3 1/2 lbs.
 Material & Finish Clear and Black Anodized Alum.
 • "Quick Change" Camera Screw
 • Friction Drag Screw
 • One handle set pan and tilt simultaneously
 • Reversible Center Post

\$73.00



**REDITILT JUNIOR
MODEL RTJ
LIFE COLUMN TRIPOD/HEAD**
 Load Capacity 10 lbs.
 Minimum Height 23"
 Maximum Height 50"
 Elevation Adjustment 16"
 Center Post 3/4" Dia.
 Leg Diameters 3/4" x 3/4"
 One-Way Tilt Head ± 90°
 Head Pan Rotation 360°
 Weight 2 1/2 lbs.
 Material & Finish Clear and Black Anodized Alum.
 • "Quick Change" Camera Screw
 • Friction Drag Screw
 • One handle locks pan and tilt simultaneously
 • Reversible Center Post

\$52.00



**REDITILT MINI-20
MODEL RTM-20
LIFT COLUMN TRIPOD/HEAD**
 Load Capacity 10 lbs.
 Minimum Height 20"
 Maximum Height 52"
 Elevation Adjustment 12"
 Center Post 3/4" Dia.
 Three Section Leg Diameters 3/4" x 3/4" x 3/4"
 One-Way Tilt Head ± 90°
 Head Pan Rotation 360°
 Weight 2 1/2 lbs.
 Material & Finish Clear and Black Anodized Alum.
 • "Quick Change" Camera Screw
 • Friction Drag Screw
 • One handle sets pan and tilt simultaneously
 • Reversible Center Post

\$59.00

**UNIVERSAL DOLLY
MODEL W-4**
 Load Capacity 50 lbs.
 Folds to 10" x 21"
 Circle Diameter 42"
 Wheel Diameter 5" & 3" x 13/16" tread
 Weight 7 lbs.
 Material & Finish Clear and Black Anodized Alum.
 For all D & S Tripod except C and CG

\$94.00



**SLIP ON DOLLY FOR
COMPACT TRIPOD
MODEL CW-1**
 Load Capacity 20 lbs.
 Wheel Diameter 5"
 Weight 6 1/2 lbs.
 Material & Finish Nickel Plated Steel
 Easy on—Easy off
 Screw On Wheels
 No tools required
 Available with 3" Wheels & Deluxe Wheels

\$46.00



**DOLLY FOR A & B TRIPODS
MODEL W-3**
 Load Capacity 60 lbs.
 Diameter Open Same as tripod spread
 Rubber Wheels 5" x 13/16" tread
 Weight 6 lbs.
 Material & Finish Anodized Alum.
 Dolly folds with tripod
 • Easily attached to tripod legs and center post

\$119.00



**MONOPOD
MODEL MONOPOD/
FRICTION HEAD**
 Load Capacity 10 lbs.
 Minimum Height 31"
 Maximum Height 72"
 Leg Diameters 3/4" x 1"
 RTH Head ± 90° One Way Tilt
 Pan Rotation 360°
 Weight 1 1/2 lbs.
 Material & Finish Clear Anodized Alum.
 • "Quick Change" Camera Screw
 • Extension made secure with toggle lock instead of collet for strong support

\$39.50



**DOLLY SHELF
MODEL SD-3**
 Load Capacity 30 lbs.
 Shape Equilateral Triangle
 Length of Sides 29"
 Rubber Wheel 3" Dia.
 Weight 9 1/2 lbs.
 Material Steel
 Finish Baked Metallic Alum.
 Plugs on and off the legs of tripod.
 Fits all D & S tripods except A, B & C series

\$79.00



MODEL SD-5
 Same as above but with 5" Wheels **\$79.00**

**WHEEL DOLLY
MODEL WD-3**
 Load Capacity 20 lbs.
 Folds to 5" x 6" x 22"
 Circle Dia 36"
 Wheel Dia 3"
 Weight 4 1/2 lbs.
 Material Steel
 Finish Baked Metallic Alum.
 For all D model tripods

\$45.00



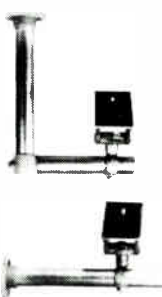
**MODEL WB-8
CAMERA MOUNT**
 Camera Load Capacity 10 lbs.
 Height 5"
 Tilt Angle ± 90°
 Pan Rotation 360°
 Tubing Length 12"
 Tubing Diameter 1"
 Mounting Screw 3/4"-20
 Material & Finish Black Anodized Alum.
 Special Features • "Quick Change" Camera Screw can quickly convert to tamper-proof unit
 MAY BE MOUNTED ON CEILING, WALL OR TABLE

\$38.00



**MODEL UM-1
CAMERA MOUNT**
 Camera Load Capacity 25 lbs.
 Tilt Angle ± 90°
 Pan Rotation 360°
 Height 15"
 Width 00"
 Material & Finish Clear Anodized Alum.
 Options: Additional tube length and brace supports may be ordered
 MAY BE MOUNTED ON CEILING, WALL OR TABLE

\$73.00



**MONITOR CEILING MOUNT
MODEL RCM-1**
 Test Load Capacity 500 lbs.
 Tilt Angle ± 30°
 Rotation 360°
 Size 3 in. larger than monitor
 Weight 30 lbs.
 Material Steel
 Finish Brown Baked Enamel
 Ceiling plate may be custom made to attach to existing ceiling

\$125.00




**MONITOR WALL MOUNT
MODEL RWM-3**
 Test Load Capacity 500 lbs.
 Tilt Angle ± 30° Down
 Rotation 360°
 Size 3 in. larger than monitor
 Weight 30 lbs.
 Material Steel
 Finish Brown Baked Enamel

\$125.00



DELUXE WHEELS DX
 Four inch double Ball Bearing Wheels with combined 360° Swivel Lock and Wheel Break, Step on locking lever for Positive lock and release
 Add \$50.00 to List of any D & S Dolly



D.O. INDUSTRIES, INC.

317 E. Chestnut St.
East Rochester, NY 14445
(716) 385-4920 (800) 828-6778

VIDEO LENSES

VIDEO LENSES FOR 2/3" & 1" VIDICON CAMERAS

Rugged — for long, hard use. Lightweight — for handling ease. D.O. combines both in a compact lens built to the most exacting standard in the optical industry.

MANUAL LENSES FIXED WIDE ANGLES LENSES

Catalog Number	Use	Focal Length	Aperture	Price
FE-518 Fisheye	2/3"	5.5mm	f/1.8	\$707.00
DO-3818	2/3"	3.8mm	f/1.8	164.50
DO-4818	2/3"	4.8mm	f/1.8	142.00
DO-515	2/3"-1"	5.5mm	f/1.5	162.00
DO-618	2/3"-1"	6.5mm	f/1.8	119.50
DO-813	2/3"	8mm	f/1.3	72.00
DO-813 w/o iris	2/3"	8mm	f/1.3	65.00
DO-1018	2/3"-1"	10mm	f/1.8	157.00
DO-1213	2/3"-1"	12.5mm	f/1.3	98.50

Normal Lenses

DO-1616	2/3"	16mm	f/1.4	\$ 46.50
DO-2514	2/3"-1"	25mm	f/1.4	68.00
DO-2518	2/3"-1"	25mm	f/1.8	55.00

Telephoto Lenses

DO-5013	2/3"-1"	50mm	f/1.3	\$100.00
DO-7513	2/3"-1"	75mm	f/1.3	150.00
DO-15038	2/3"-1"	150mm	f/3.8	250.00
DO-20035	2/3"-1"	200mm	f/3.5	450.00

High Speed

DO-1795	2/3"	17mm	f/0.95	\$270.70
DO-2595	2/3"	25mm	f/0.95	250.00
LM-38C1	2/3"-1"	37.5mm	f/1.1	485.70
DO-4212	2/3"-1"	42mm	f/1.2	160.00
DO-5095	2/3"-1"	50mm	f/0.95	364.50

Zoom

DOZ-820	2/3"	8X zoom 11.5-90mm	f/2.0	\$275.50
DOZ-518	2/3"-1"	5X zoom 20-100mm	f/1.8	425.00
DOZ-13M	2/3"	6X zoom 12.5-75mm	f/1.8	179.00
DOZ-1019	2/3"-1"	10X zoom 15-150mm	f/1.8	716.00
DOZ-1528	2/3"-1"	15X zoom 15.225mm	f/2.8	1664.50

Pinhole

PH-935	2/3"	9.5mm Pinhole	f/3.5	\$285.00
PH-935R	2/3"	9.5mm right angle Pinhole	f/3.5	335.70

Auto Iris Fixed Lenses

AI-9	2/3"	8.5mm	f/1.3	\$265.00
AI-12	2/3"-1"	12.5mm	f/1.3	276.00
AI-16	2/3"	16mm	f/1.3	242.00
AI-25	2/3"-1"	25mm	f/1.4	256.00
AI-50	2/3"-1"	50mm	f/1.8	250.00

Accessories

2XE	2/3"-1"	2X extender		\$ 78.00
540E	2/3"-1"	extension tube set		47.25



MOTORIZED LENSES FOR CCTV CAMERAS

1" Image Format "C" Mount
Servo Neutral Density Variable Focal Length

Catalog Number	Focal Length mm	Max. f/stop	MOD M	Price
DOC5X20A-SND*	20-100	1.8-T/1500	2.0	\$1661.00
DOC6X17.5B-SND*	17.5-105	1.8-T/1500	1.3	1101.00
DOC10X16A-SND*	16-160	1.8-T/1500	1.8	2896.00
DOC10X16B-SND*	16-160	2.5-T/1500	2.0	2111.00

* Model Description: Auto Iris, 12V DC motorized zoom & focus.

12V DC Motorized Variable Focal Length

DOC5X20MD3*	20-100	1.8	2.0	\$1040.00
DOC6X17.5BMD3*	17.5-105	1.8	1.3	961.00
DOC10X16AMD3*	16-160	1.8	1.8	2576.00
DOC10X16BMD3*	16-160	2.5	2.0	1991.00
DOC14X25BMD3*	25-350	3.5	1.7	4002.00

* Model Description: Motorized Iris, zoom and focus.

2/3" IMAGE FORMAT "C" MOUNT

Servo Neutral Density Variable Focal Length

Catalog Number	Focal Length mm	Max. f/stop	MOD M	Price
DOH6X12.5G-SND*	12.5-75	1.4-T/1500	1.0	\$ 878.00
DOH10X11B-SND*	11-110	1.6-T/1500	1.0	1456.00

Auto Iris, 12V DC motorized zoom and focus.

12V DC Motorized Variable Focal Length

DOH6X12.5GMD-3*	12.5-75	1.4	1.0	\$ 794.00
DOH10X11BMD-3*	11.110	1.6	1.0	1260.00

* Motorized Iris, zoom and focus.



B0-001 BOOSTER ONE

B0-002 BOOSTER TWO

B0-001 BOOSTER ONE

Features

- Amplify a standard carbon intercom headset up to 800%
- No battery
- No modifications
- Independent volume
- Talk switch
- New 1/4" male plug

B0-001 amplifies standard carbon head-sets using existing voltage. It senses the proper wiring in most 2 and 3 wire Carbon Intercom Systems. Communications are always maintained without constant ambient noise in the System. A newly engineered 1/4" male, 3-circuit plug seats snugly and does not intermit in most jacks. A removable belt clip adds to its convenience.

A Booster at each headset will improve total system performance with a minimum of effort.

The little black box that makes a big difference. Lightweight, rugged aluminum 3-1/4" x 2-1/8" x 1-1/8" with a 12 ft. retractable cord. Shp. Wt. 7 oz.

B0-001 \$79.00

B0-002 BOOSTER TWO

Features

- Amplified Dynamic Headsets on a Carbon Intercom System
- No battery
- No modifications
- Talk switch
- Dynamic or Carbon Headsets

B0-002 achieves putting a Dynamic or Carbon headset on a 2-or 3-wire Carbon Intercom System without shielded wiring or additional power supplies. Like B0-001, no modifications in wiring are required. The mic output is also increased in Booster Two, along with hearing level increases as in Booster One.

Achieving the quality of Dynamic with the reliability of Carbon, expands the life and viability of the Carbon System. At 7.5 oz., this rugged, black aluminum case w/12 ft. cord and plug is a winner.

B0-002 \$99.00

M-100 BOOSTER COMMAND

Features

- Operates on inexpensive wiring up to 1000 ft.
- On/Off switch with LED power indicator
- Isolated program audio input source
- Portable, lightweight - under 12 ozs.
- 1/4" ring, tip, sleeve intercom jacks
- Operates 6 common Carbon Intercom Headsets or more advanced Booster products using professional Dynamic Headsets
- Interconnects with most other intercom systems for expansion

Requirements

Power In: 9-35 VDC/500 m a. 2 conductor 1/8" mini phone plug

Carbon Headset: Mic 50 ohms/Ear 250 ohms

Dynamic Headset: Mic 150 ohms/Ear 275-600 ohms

Headsets In: 1/4" phone plug. Ring-positive (+). Tip-negative (-). Sleeve - N.C.

Program Feed: RCA - type phono plug

Weight: 11.5 ozs.

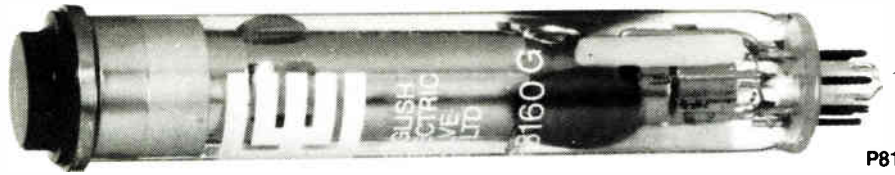
Case: Molded Styrene, Black

Dimensions: 6 x 3.15 x 1.84"

M-100 \$145.00



Electret Headset for use with the BOOSTER TWO .. \$39.00



P8160

EEV TELEVISION CAMERA TUBES — 2/3" LEDDICONS®

Photoconductive camera tubes with high sensitivity lead oxide target, for high definition pick-up in monochrome and color broadcast cameras. Features of these tubes include very short lag, low dark current and unity gamma. All types have separate mesh connections.

Type Series	Suffix Letters *	Description	Direct Replacement For
P8160	B, G, R, M	Broadcast quality, designed for ENG, EFP and studio cameras.	XQ 1427
P8161	B, G, R, M	Standard quality, designed for ENG, EFP and studio cameras.	XQ 1428
P8460	B, G, R, M	Broadcast quality, diode gun, high resolution photolayer.	XQ 2427
P8461	B, G, R, M	Standard quality, diode gun, high resolution photolayer.	XQ 2428
P8462	B, G, R, M	Broadcast quality, diode gun. Low output capacitance (L.O.C.) contact permitting improved signal-to-noise ratio.	XQ 3427
P8463	B, G, R, M	Standard quality, diode gun. Low output capacitance (L.O.C.) contact permitting improved signal-to-noise ratio.	XQ 3438

EEV TELEVISION CAMERA TUBES — 1/2" LEDDICONS®

Type Series	Suffix Letters *	Description
P8470	B, G, R, M	Broadcast quality, diode gun magnetic focus, magnetic deflection, high resolution photolayer for new generation of ENG cameras with integral video recorder.

EEV TELEVISION CAMERA TUBES — 1" LEDDICONS®

All Types Have Separate Mesh Connections.

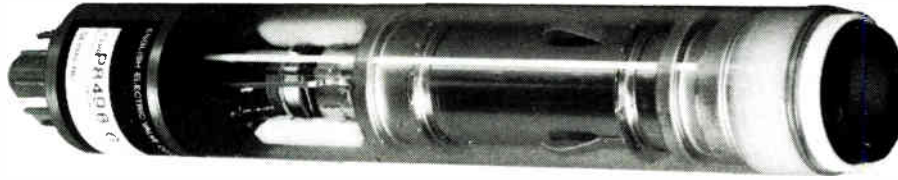
Type Series	Suffix Letters *	Description	Direct Replacement For
P8022	B, G, L, R, M, X	Variable light bias from light source in socket, front loading.	XQ 1070
P8024	RF	Similar to P8022 but with extended red response and infrared filter.	XQ 1075
	AR	Similar to P8022 but with extended red response and no infrared filter.	XQ 1074
P8142	B, G, L, R, M	Rear loading version of P8022 Series, with variable light bias from light source in socket.	XQ 1070/02
P8144	RF	Rear loading version of P8024RF, with variable light bias from light source in socket; extended red response and infrared filter.	XQ 1075/02
	AR	Similar to P8190 but with extended red response and no infrared filter.	XQ 2073/03
P8145	B, G, L, R, M	Rear loading version of P8025 Series, with variable light bias from light source in socket; high-light overload protection (H.O.P.) facilities.	XQ 1080
P8146	RF	Rear loading version of P8026RF. Variable light bias from light source in socket, highlight overload protection (H.O.P.) facilities; extended red response and infrared filter.	XQ 1085
	AR	Rear loading version of P8026AR. Variable light bias from light source in socket, highlight overload protection (H.O.P.) facilities; extended red response and no infrared filter.	XQ 1083
P8147	B, G, L, R, M	Similar to P8145 but with improved resolution and 190(mA) heater.	XQ 1500
P8148	RF	Similar to P8147 but with extended red response and infrared filter.	XQ 1505
	AR	Similar to P8147 but with extended red response and no infrared filter.	XQ 1503

* The complete type number comprises the Series number with appropriate suffix letter/letters as follows:

B Blue Channel L Luminance Channel R Red Channel The letters IG added to the above indicate Industrial Grade
G Green Channel M Monochrome X Medical In the case of monochrome tubes, the letter M is usually omitted from the type number.

® Registered EEV Trademark

Prices and Specifications Subject to Change Without Notice.



P8496

EEV TELEVISION CAMERA TUBES — 1" LEDDICONS®

All Types Have Separate Mesh Connections

Type Series	Suffix Letters *	Description	Direct Replacement For
P8190	B, G, L, R, M	Diode gun tube with variable light bias from light source in socket. Front loading.	XQ 2070/02
P8191	RF	Similar to P8190 but with extended red response and infrared filter.	XQ 2075/03
P8196	B, G, L, R	Rear loading version of P8190. Diode gun and variable light bias from light source in socket.	XQ 2070/02
P8197	RF	Similar to P8196 but with extended red response and infrared filter.	XQ 2075/02
	AR	Similar to P8196 but with extended red response and no infrared filter.	XQ 2073/02
P8442	B, G, L, R	Diode gun tube with variable light bias from light source in tube base. Rear loading. Low output capacitance (L.O.C.) version of P8196.	XQ 3070
P8443	RF	Similar to P8442 but with extended red response and infrared filter.	XQ 3075
	AR	Similar to P8442 but with extended red response and no infrared filter.	XQ 3073
P8490	B, G, L, R, X	Improved diode gun tube with 190(mA) heater. Variable light bias from a lamp in the tube base. Front loading. P8490X optimized for digital fluoroscopy.	XQ 2170/03
P8491	RF	Similar to P8490X but with extended red response and infrared filter.	XQ 2175
	AR	Similar to P8490 but with extended red response and no infrared filter.	XQ 2173
P8496	B, G, L, R, X	Improved diode gun tube with 190(mA) heater. Variable light bias from a lamp in the tube base. Rear loading. P8496X optimized for digital fluoroscopy.	XQ 2170/02
P8497	RF	Similar to P8496 but with extended red response and infrared filter.	XQ 2175
	AR	Similar to P8496 but with extended red response and no infrared filter.	XQ 2173

EEV TELEVISION CAMERA TUBES — 30mm LEDDICONS®

All Types Except P8000 Series Have Separate Mesh Connections

Type Series	Suffix Letters *	Description	Direct Replacement For
P8000	B, G, L, R, M, X	30mm diameter, integral mesh.	55875
P8130	B, G, L, R, M, X	Coaxial construction, fixed internal light bias.	XQ 1020
P8130H	G, L, R, M	High resolution version of the P8130 Series.	XQ 1020
P8131	B, G, L, R, M	Coaxial construction, variable internal light bias.	XQ 1410
P8131H	G, L, R, M	High resolution version of the P8131 Series.	XQ 1410
P8132	RF	Similar to P8130 but with extended red response and infrared filter.	XQ 1025R
	AR	Similar to P8130 but with extended red response and no infrared filter.	XQ 1023R
P8133	RF	Similar to P8131 but with extended red response and infrared filter.	XQ 1415R
	AR	Similar to P8131 but with extended red response and no infrared filter.	XQ 1413R

* The complete type number comprises the Series number with appropriate suffix letter/letters as follows:

B Blue Channel L Luminance Channel R Red Channel The letters IG added to the above indicate Industrial Grade.
G Green Channel M Monochrome X Medical In the case of monochrome tubes, the letter M is usually omitted from the type number.

® Registered EEV Trademark

Prices and Specifications Subject to Change Without Notice.

VC-63



EEV, INC. 7 Westchester Plaza
Elmsford, NY 10523
(914) 592-6050 Telex 6818096

TELEVISION CAMERA TUBES



EEV TELEVISION CAMERA TUBES — 30mm LEDDICONS®

All Types Except P8000 Series Have Separate Mesh Connection

Type Series	Suffix Letters *	Description	Direct Replacement For
P8135	B, G, L, R, M	Coaxial construction with variable light bias. Highlight overload protection (H.O.P.) facilities.	XQ 1520
P8136	B, G, L, R, M	Coaxial construction with fixed light bias. Highlight overload protection (H.O.P.) facilities.	XQ 1520
P8137	RF	Similar to P8135 but with extended red response and infrared filter.	XQ 1525
	AR	Similar to P8135 but with extended red response and no infrared filter.	XQ 1523R
P8138	RF	Similar to P8136 but with extended red response and infrared filter.	XQ 1525
	AR	Similar to P8136 but with extended red response and no infrared filter.	XQ 1523R
P8400	B, G, L, R, M	Coaxial construction, variable light bias controlled by an integral potentiometer in the tube base.	XQ 1410
P8400H	G, L, R, M	High resolution version of the P8400 Series.	XQ 1410
P8401	RF	Similar to P8400 but with extended red response and infrared filter.	XQ 1415
	AR	Similar to P8400 but with extended red response and no infrared filter.	XQ 1413
P8420	B, G, R	Coaxial diode gun tube with light bias lamp controlled by an integral potentiometer in the tube base. Reduced area scan for improved geometry, registration and noise. Dynamic beam control (D.B.C.) facilities.	XQ 3410
P8421	RF	Similar to P8420 but with extended red response and infrared filter.	XQ 3415
	AR	Similar to P8420 but with extended red response and no infrared filter.	XQ 3413
P8436	B, G, L, R	Tetrode gun tube with highlight overload protection (H.O.P.) facilities. Light bias lamp controlled by an integral potentiometer in the tube base. High resolution photolayer.	
P8438	RF	Similar to P8436 but with extended red response and infrared filter.	
	AR	Similar to P8436 but with extended red response and no infrared filter.	
P8440	B, G, L, R, M	Diode gun tube with light bias lamp controlled by an integral potentiometer in the tube base. Dynamic beam control (D.B.C.) facilities.	
P8441	RF	Similar to P8440 but with extended red response and infrared filter.	
	AR	Similar to P8440 but with extended red response and no infrared filter.	
P8450	B, G, L, R	Coaxial, diode gun tube with light bias lamp controlled by an integral potentiometer in the tube base. Low output capacitance (L.O.C.)	
P8451	RF	Similar to P8450 but with extended red response and infrared filter.	
	AR	Similar to P8450 but with extended red response and no infrared filter.	
P8452	B, G, L, R, X	Similar to P8450 but with improved diode gun and 190(mA) heater. P8452X is a medical quality tube, optimized for digital fluoroscopy.	
P8453	RF	Similar to P8452 but with extended red response and infrared filter.	
	AR	Similar to P8452 but with extended red response and no infrared filter.	

* The complete type number comprises the Series number with appropriate suffix letter/letters as follows:

B Blue Channel L Luminance Channel R Red Channel
G Green Channel M Monochrome X Medical

The letters IG added to the above indicate Industrial Grade.

In the case of monochrome tubes, the letter M is usually omitted from the type number.

® Registered EEV Trademark

VC-64

Prices and Specifications Subject to Change Without Notice.



EEV, INC. 7 Westchester Plaza
Elmsford, NY 10523
(914) 592-6050 Telex 6818096

TELEVISION CAMERA TUBES

Ruggedized Vidicons for Difficult Environments



EEV TELEVISION CAMERA TUBES — 1" VIDICONS

Separate Mesh, Magnetic Focus and Deflection For Telecine Applications

Type Series	Application	Characteristics	Blemish Standard	Heater Current at 6.3V (mA)	Photo-Surface	Direct Replacement For
8507A (P841)	Broadcast, educational and high quality industrial.	Color response similar to human eye. High sensitivity at all light levels. Moderate sensitivity to red up to 900nm. Short lag.	1st Grade	600	ii	
8541A (P842)	Broadcast, educational and high quality industrial.	Color response similar to human eye. High sensitivity at all light levels. Moderate sensitivity to red up to 900nm. Short lag.	1st Grade	95	ii	XQ 1042 XQ 1240 XQ 1291
8572A (P843)	Color or monochrome telecine and caption scanning. Can be selected for use in PE24 and PE240 cameras. Available with anti-halation faceplate stud.	High sensitivity but very short lag at high light levels. Resistant to image retention.	1st Grade	600	i	
P8038	Color telecine, selected for use in TK28 and similar cameras.	High sensitivity and short lag. Signal output and resolution uniform over whole raster.	1st Grade	95	ii	XQ 1240 4809

EEV TELEVISION CAMERA TUBES — 1" VIDICONS

Electrostatic Focus and Magnetic Deflection

Type Series	Application	Characteristics	Blemish Standard	Heater Current at 6.3V (mA)	Photo-Surface	Direct Replacement For
8134	Broadcast and industrial, compact monochrome.	Industrial grade tube.	†	95	ii	
8134V1/4811	Broadcast, color, telecine. Can be supplied in matched sets for RCA TK27 camera.	Uniform sensitivity and geometry for multi-tube color cameras. It can be selected for use in the red, blue or green channels.	1st Grade	95	ii	BC 8134

EEV TELEVISION CAMERA TUBES — 1½" VIDICONS

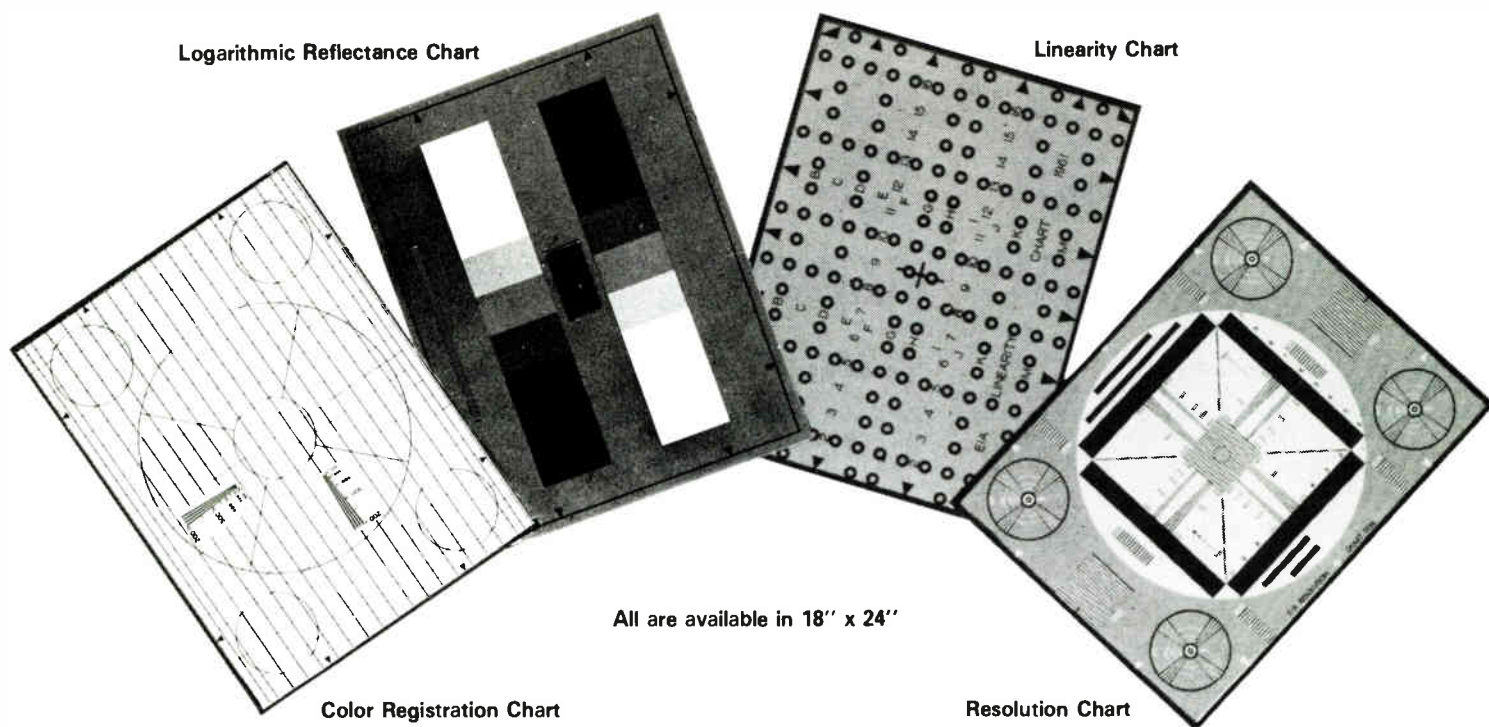
Electrostatic Focus and Magnetic Deflection

Type Series	Application	Characteristics	Blemish Standard	Heater Current at 6.3V (mA)	Photo-Surface	Direct Replacement For
8480	Color or monochrome cameras, telecine and high grade industrial.	Low deflection power, negligible electrostatic focusing power. Reduced camera size by eliminating focus coil. High resolution.	1st Grade	95	i	BC 8480
8480V1/4810	High quality color cameras such as RCA TK27.	Similar to 8480 but tested to closer limits for signal uniformity, beam astigmatism and other characteristics.	Selected	95	i	BC 8480

† Specific tube grades and electrical parameters can be negotiated.

Prices and Specifications Subject to Change Without Notice.

VC-65



All are available in 18" x 24"

Color Registration Chart

(Formerly RETMA Registration Chart). This 18" x 24" Color Registration Chart is used to aid in the alignment and test of the accuracy of registration of triple-pickup color television cameras. The fine horizontal and vertical lines on a white background permit accurate alignment of the optical and electrical systems of three pickup cameras. The Chart is mounted on 100 mil heavy paper board to provide stand-alone stiffness for studio and field use.

Color Registration Chart \$45.00

Linearity (Ball) Chart

This Linearity Chart is used to help test geometric distortion of a television camera chain. This is done by comparing on a suitable picture monitor two super-imposed patterns; one generated by an electrical pattern generator, the other by a television chart with the equipment to be checked. The electrical pattern grating frequencies required to match the chart pattern are 315 kHz for horizontal, 900 cycles for vertical linearity tests. The Chart is mounted on 100 mil heavy paper board to provide stand-alone stiffness for studio and field use.

Linearity (Ball) Chart \$45.00

Linear Reflectance Chart

This Linear Reflectance Chart is similar to the Logarithmic Reflectance Chart described above except that the nine gray scale steps have a linear relationship to each other, rather than a logarithmic relationship. (not shown)

Linear Reflectance Chart \$60.00

Logarithmic Reflectance Chart

This Logarithmic Reflectance Chart consists of two gray scales of nine steps each on 4" x 18" mounted on 100 mil heavy paper board to provide stand-alone stiffness for studio and field use. This Chart, with its two gray scales of logarithmic relationships, is used in the alignment and measurement of transfer characteristic of television camera systems. This is of particular importance in color television systems where departure from the correct characteristics may result in color error.

Logarithmic Reflectance Chart \$60.00

Resolution Chart

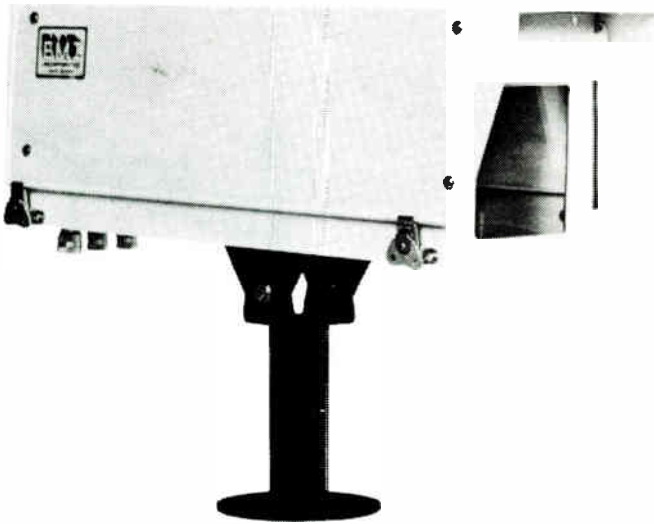
(Formerly RETMA Resolution Chart). This 18" x 24" Resolution Chart is used to help measure the resolving power of a television system, or part of it, such as a television camera chain. The Chart is televised by the studio facility under test, and reproduced on a suitable picture monitor. Horizontal and vertical resolution wedges cover the range from 200 to 800 lines. This Chart was revised slightly in 1956 and the present printing is on high quality heavy paper board which is extremely "white". Gray Scale Overlay Strips (10" x 1" - 4 each) are provided over the indicated section of this Resolution Chart. These highly accurate gray scales are designed to provide a logarithmic reflectance relationship. The Chart is mounted on 100 mil heavy paper board to provide stand-alone stiffness for studio and field use.

Resolution Chart \$70.00



11411 Bradley Avenue
 Arleta, CA 91331
 (818) 896-6700

CAMERA ENCLOSURES



The Model EVH-22

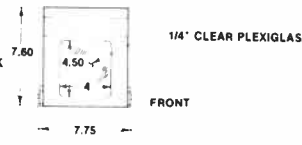
The Model EVH-22 is a compact, aluminum, environmental enclosure designed to protect a CCTV camera from adverse weather conditions. The EVH-22 will accommodate most 2/3" and 1" format cameras with fixed, auto iris, and zoom lenses. The unique collapsible-hinged top allows for easy access to the inside without completely removing the cover. A convection air flow system provides air circulation for cooling and anti-fogging.

A thermostatically controlled heater and a positive pressure, filtered, blower system are available as accessories. The blower exhaust flows down across the window to provide both cleaning and weather protection for the window.

SPECIFICATIONS

Mechanical

- Construction: aluminum
- Weight: 7 lbs. (approximate)
- Window opening size: 4" W x 4.5"H
- Camera mounting: adjustable sliding track
- Power requirements: 120VAC-60Hz
- Optional: 24 VAC or 240 VAC package available
- Cable entry: 3 water-tight gland fittings
- Maximum inside clearance: 5.5"W x 5.25"H x 18.5"L
- Standard finish: white textured enamel

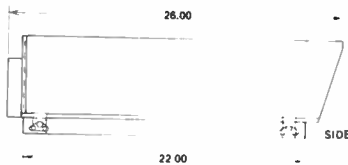


ACCESSORIES

Heater

Model EVH-22H

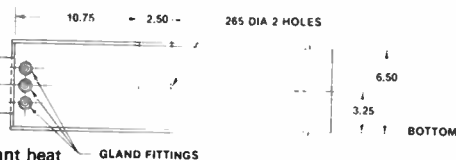
- Blanket type, thermostatically controlled (closes at 40°F)
- Provides 30-80 Watts of heat
- Available in the following voltages (specify when ordering): 24 VAC, 120 VAC and 240 VAC



Blower

Model EVH-22B

- Provides 38 CFM positive airflow
- Thermostatically controlled (closes at 90°F)
- Available in the following voltages: (specify when ordering): 24 VAC, 120 VAC and 240 VAC



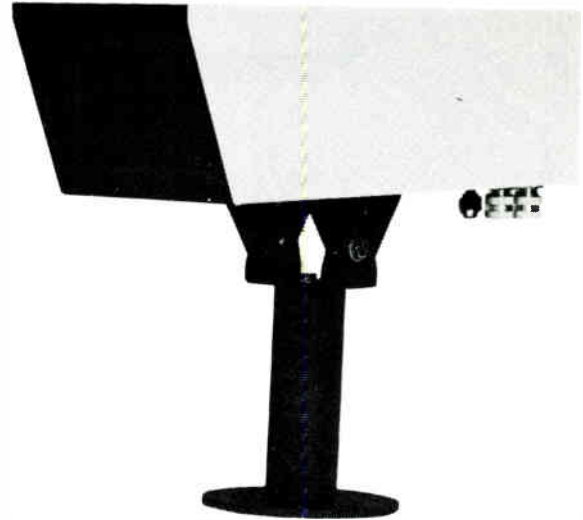
Sun Shield

Model SS-22

- Lightweight
 - White texture enamel finish
 - Protects enclosure from radiant heat
 - Provides cooling by allowing air to flow over the exterior of the enclosure
- NOTE: Will lower internal temperature of housing 10°F-15°F

Additional Options Available

- Tamper proof latches
- Extreme low temperature insulation kit



The Model SCH-4 Security Camera Housing

The Model SCH-4 Security Camera Housing is a "tamper-proof" environmental enclosure, designed to protect a TV camera from vandalism as well as the environment. The enclosure, constructed from heavy gauge sheet metal, can only be opened with the proper key. Once opened, complete access to the camera is obtained for easy maintenance. A track is provided to permit a camera to be positioned and secured in the housing. There are three louvers at the back of the housing for ventilation, and two water tight gland fittings are provided at the bottom rear of the housing for cable entry.

Maximum inside dimensions: (15"L x 5-1/8"W x 4-1/4"H)

Approximate weight: 7 lbs.

Finish: White enamel outside, satin black inside

The enclosure is also available with a Sun Shield model SS-4 which should be specified when ordering.

Additional weight: 3-1/2 lbs.

Finish: White enamel

CAMERA ENCLOSURES

MODEL	DESCRIPTION	PRICE
EVH-16	Environmental Camera Enclosure, Inside Dimensions: 13-1/4"L x 5-1/2"W x 5-1/4"H	\$154.00
EVH-22	Environmental Camera Enclosure, Inside Dimensions: 18-3/4"L x 5-1/2"W x 5-1/4"H	187.00
EVH-26	Environmental Camera Enclosure, Inside Dimensions: 23-1/4"L x 8-3/8"W x 8"H	258.50
EVH-32	Environmental Camera Enclosure, Inside Dimensions: 29-1/4"L x 8-3/8"W x 8"H	343.20
SCH-4	Tamper-proof Camera Enclosure, Inside Dimensions: 15"L x 5-1/8"W x 4-1/4"H	104.48
MCSH	Mini Camera Security Housing	73.50
EH-100	Tamper-proof Elevator Housing	321.50
ITCH-1	Tamper-proof Ceiling Housing	114.00

ENCLOSURE ACCESSORIES

MODEL	DESCRIPTION	PRICE
EVH-22B-120	Blower for EVH-16 or 22 (120VAC-38 CFM)	\$62.50
EVH-22B-24	Blower for EVH-16 or 22 (24VAC-38 CFM)	63.00
EVH-26 & 32B	Blower for EVH-26 or 32 (120VAC-105 CFM)	71.40
EVH-16/22H-120	Heater for EVH-16 or 22 (120VAC-75 Watts)	55.13
EVH-16/22H-24	Heater for EVH-16 or 22 (28VAC-30 Watts)	63.00
EVH-26 & 32H	Heaters for EVH-26 or 32 (120VAC-150 Watts)	56.70
SS-4	Sunshield for model SCH-4	32.50
SS-22	Sunshield for model EVH-22	45.00
SS-26	Sunshield for model EVH-26	56.00
SS-32	Sunshield for model EVH-32	58.00
TPL	Tamper-proof latch for all EVH Enclosures	ea. 5.00
TFX-1	Transformer for EVH-22H-24 (28VAC-40VA) Class-II	16.00
EVH-1K	Ins. Kit for Extreme High or Low Temp.	24.28
ITCH-1RK	T-Bar Ceiling Mounting Rails for ITCH-1	20.00

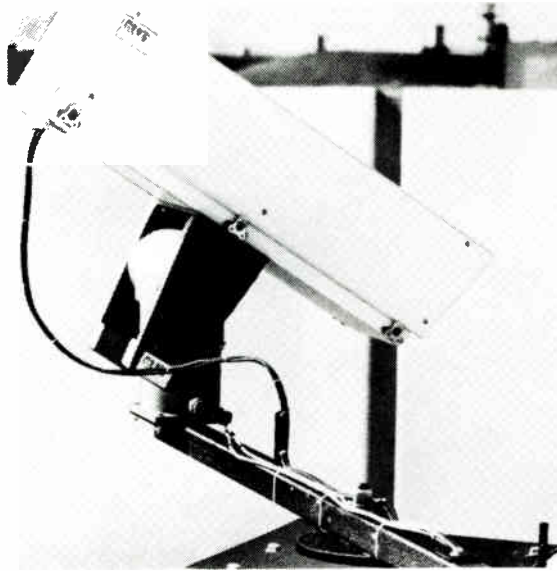
Prices and Specifications Subject to Change Without Notice.

VC-67



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MOUNTS



SCB-1

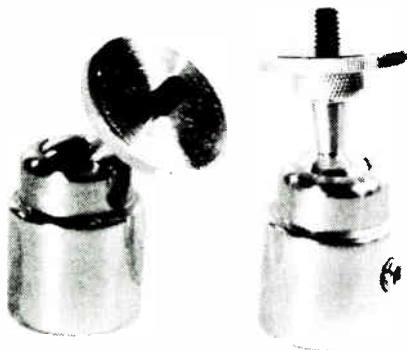
The Model SCB-1 Swivel Corner Building Mount

The Model SCB-1 is designed specifically for mounting a heavy duty scanner or pan and tilt unit to the corner of a "building cap." This unique design includes two adjustable gussets to allow for variations in the thickness of the building cap, and is constructed in such a way so that it can be installed from the roof of the building rather than outside. To facilitate "ease of service", simply remove one Bolt and "Swing" the entire P/T unit over the roof for safe and secure servicing. When the adjustments are made, simply swing the unit out into its original position and re-install the locking Bolt. It's just that easy.

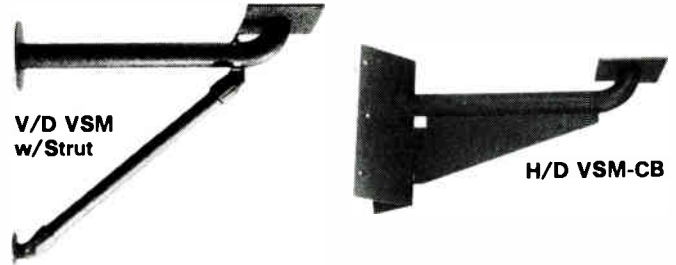
SPECIFICATIONS

- Extension: 24" from face of building to the center-line of Pan/Tilt
- Construction: All Steel, Heli-Arc welded and Zinc plated prior to painting
- Finish: Black Texture Enamel
- Weight: 57 lbs.
- Maximum load: 150 lbs.

SCANNER AND PAN-TILT MOUNTS		PRICE
H/D VSM	Heavy Duty VICON scanner & p/t mount w/strut	\$ 95.55
H/D VSM-CB	Same as H/D VSM but for mounting on a bldg. corner	161.18
H/D VSPM-6	6" Heavy Duty VICON scanner, p/t pedestal mount	37.00
SM-1V	Wall Mount for L/D VICON scanners & pan-tilts	29.00
L/D VSPM-6	6" Light Duty VICON scanner & p/t pedestal mount	29.00
SC-100 & SC-124	Light Duty indoor scanner (120VAC & 24VAC)	114.50
SA-1 & 2	Scanner Adaptors for 2/3" & 1" cameras	16.00
SCB-1	Swivel Corner building mount	420.00
CBPM-9	Control Box pole mount	36.00
CBPM-12	Control Box pole mount	42.00



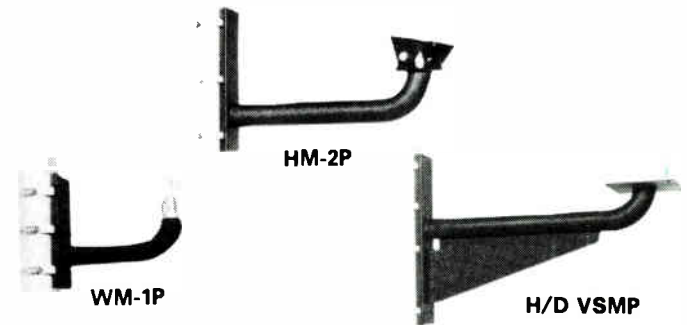
SCANNER AND PAN-TILT MOUNTS



V/D VSM
w/Strut

H/D VSM-CB

POLE MOUNTS



WM-1P

HM-2P

H/D VSMP

The Model H/D VSM-P Heavy Duty Vicon Scanner Pole Mount

The Model H/D VSM-P Heavy Duty Vicon Scanner Pole Mount is designed specifically for mounting a heavy duty scanner or pan and tilt on a 2-1/4" minimum diameter pole. This unique one-piece design includes an integral strut for added stability and greater load capacity. This mount is designed for use with the Vicon scanner or pan and tilt models: V300PT, V310AP, V350PTV, V353APT, V355APT, V380PTX, V390APT, and V3000PT.

The scanner mounting plate extends 20" out from the pole and is 6" square, with four holes for scanner or pan and tilt mounting. Four 5/16" bolts are supplied with each mount making an easy attachment of the scanner or pan and tilt to the mount. This all steel heli-arc welded mount is constructed from 2" diameter tubing with a 2-1/4" wide by 14" high pole mounting plate, that has eight 3/4" long slots for the mounting straps (not supplied).

- Maximum recommended load: 125 lbs.
- Approximate weight: 7-1/2 lbs.
- Standard finish: Black Texture

POLE MOUNTS		PRICE
WM-1P	8" Camera Pole Mount w/universal head	\$ 53.55
HM-1P	12" Medium Duty Housing Pole Mount	64.58
HM-2P	16" Heavy Duty Housing Pole Mount	77.70
SM-1V-P	12" Light Duty Scanner Pole Mount	49.88
H/D-VSMP	Heavy Duty VICON Scanner Pole Mount	106.53
MM-1P	9" to 12" Monitor Pole Mount w/pan-tilt head	65.10

PARTS AND ACCESSORIES		PRICE
MODEL	DESCRIPTION	
BS-3	Ball Socket - universal head for camera mounts	\$ 14.30
Mini P/T-Head	P/T Head for camera mounting	5.25
HM-Head	P/T Head for all housing mounts	15.75
SHM-Head	HM-Head with Tamper-proof screws	19.43
SHM-1 Kit	To convert an HM-1 to an SHM-1	33.60
SHM-2 Kit	To convert an HM-2 to an SHM-2	33.60
MM-Plate	Monitor Plate for 9" to 12" Monitor Mounts	26.40
Strut	Strut for all H/D wall mounts	35.00
SHM-Wrench	Allen Wrench for Tamper-proof screws	5.50
SHM-Screws	Tamper-proof 5/16-18 x 1/2" Button Head	1.76
Key	SCH-4 Cam-lock key	4.00
CP-10	10 Ft. Clamp Pack for Pole Mounting	20.00
CP-100	100 Ft. Clamp Pack for Pole Mounting	100.00

CAMERA MOUNTS



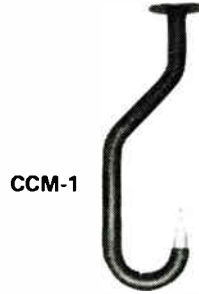
EM-1



CPM-3



WM-2



CCM-1

The Model WM-2 Camera Wall/ Ceiling Mount

The Model WM-2 CAMERA WALL/CEILING MOUNT is a dual purpose mount.

WALL MOUNTING: When mounted on a wall the universal swivel head extends 9 1/2" from the mounting surface and can be adjusted from a level position to a tilt angle of 90 degrees; will rotate 360 degrees and lock in any position with an Allen Set Screw.

CEILING MOUNTING: When mounted to a ceiling the mounting surface of the swivel head extends down 8" from the ceiling.

POLE MOUNTING: See pole mount section.

This all steel heli-arc welded mount is constructed from 1 1/2" diameter tubing with a 3/16" flange that has three 5/16" holes for mounting purposes.

Maximum recommended load 20 lbs.

Approximate weight 2 lbs

Standard finish is black or beige texture. Please specify when ordering.

CAMERA MOUNTS

WM-2	9 1/2" Wall Mount with universal head	33.60
CPM-3	6" Pedestal Mount with universal head	30.98
CPM-6	9" Pedestal Mount with universal head	32.00
CCM-1	Camera Ceiling Mount with universal head	47.78
EM-1	9" Wall Mount with pan-tilt head	12.50

HOUSING MOUNTS



HPM-6



HM-1

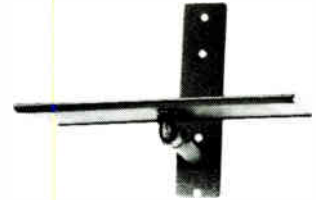


SHM-1

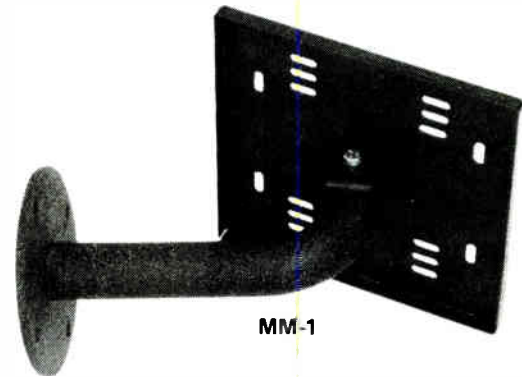


HCM-3

MONITOR MOUNTS



MM-15 and 19



MM-1

The Model MM-1 Monitor Mount

The Model MM-1 MONITOR MOUNT is designed to support a 9" or 12" monitor on a vertical mounting surface. The monitor support plate is 8 1/2" square. Slots are provided for securing the monitor to the plate and screws are supplied with each mount to make an easy attachment of the monitor to the plate.

The plate extends 8" out from the mounting surface and is adjustable from a level position to a straight down position and can rotate horizontally 360 degrees.

This all steel heli-arc welded mount is constructed from 1 1/2" diameter tubing with a 5 1/2" diameter 1/4" thick flange that has four 3/8" holes for mounting purposes.

Maximum recommended (balanced) load 40 lbs.

Approximate weight 4 lbs.

Standard finish is black or beige texture. Please specify when ordering.

HOUSING MOUNTS

MM-1	9" to 12" Monitor wall mount with pan-tilt head	48.95
MCM-2	9" to 12" Monitor ceiling mount with pan-tilt head	66.55
MPM-6	9" to 12" Monitor pedestal mount w/pan-tilt head	48.95
MM-15 & 19	15" or 19" Monitor wall mount	95.55
MCM-15 & 19	15" or 19" Monitor ceiling mount	95.55

MONITOR MOUNTS

HM-1	12" Medium Duty wall mount w/pan-tilt head	43.58
HM-2	16" Heavy Duty wall mount w/pan-tilt head	62.48
SHM-1	Same as HM-1, w/Tamper-proof cover & screws	71.40
SHM-2	Same as HM-2, w/Tamper-proof cover & screws	87.68
HCM-3	Housing Ceiling Mount with pan-tilt head	65.00
HPM-6	8 1/2" Housing Pedestal Mount with pan-tilt head	40.95



CCD1200R
CCD1000 SERIES

CCD Industrial Line Scan Cameras

- Charge Coupled Device Image Detectors • All solid state • Small, compact sealed enclosure • Ideal for use in hostile industrial environments • Remote operation (up to 200 cable feet) • Data rates to 20M pixels per second • Line scan rates to 40K lines per second

The Fairchild CCD1000 series are small, rugged, solid-state line scan cameras designed for incorporation into non-contact electro-optical measurement and process control systems. System design and implementation using the CCD1000 series cameras are simplified due to the requirement of only two clock input signals to completely control operation of the cameras. The sealed enclosure and remote operation capability make these cameras ideally suited for operation in hostile environments.

The camera can be installed in a water jacket when necessary for environmental protection and located more than 200' away from a control unit/power supply.

The cameras are available in resolutions of 512, 1024, or 2048 elements.

CCD1200R	\$1200.00
CCD1300R	1300.00
CCD1500R	1500.00



CCD COMMERCIAL LINE SCAN CAMERA

CCD Commercial Line Scan Camera Systems

Small, rugged solid-state camera. Line scan contains a CCD line scan of 256, 512, 1024, 2048 elements of resolution. A timing control module, sequential processing module and a rugged housing that can be tripod, front faceplate or dovetail mounting.

Complete with Camera Control Unit; CCU provides video output control, video data rate control, exposure control and camera power supply.

CCD1100C	\$2500.00
CCD1200C	2750.00
CCD1300C	3000.00
CCD1500C	4500.00



CCD3000
CCD4001
AUTOMATION CAMERA SERIES

CCD3000 Automation Camera Series

Self-contained camera which makes it easy for industrial users to take advantage of the inherent geometric accuracy, wide dynamic range, and reliability of a buried-channel charge coupled device image sensor. It can be used as a relatively small single-component camera, or be separated into a camera control unit plus a cable-connected sense head which is robust enough to be mounted onto a robot arm.

The CCD3000 camera is available in 488X380 NTSC resolution. The CCD3000F includes a fiber optic faceplate over the sensor. These cameras are also available with an especially high quality 488X380 sensor and are referred to as the CCD3100 and CCD3100F respectively.

CCD3000	\$3500.00
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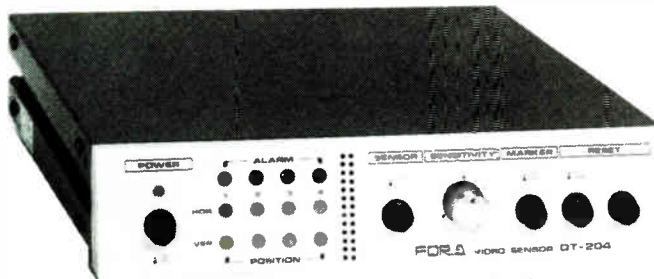
CCD4001 Robotics Camera

The Robotics camera incorporates a 256X256 element non-interlaced sensor with a square pixel pitch format. It can be efficiently utilized by a CPU for automatic inspection, recognition and robot guidance. The camera image output may also be displayed on standard monitors.

CCD4001	\$1750.00
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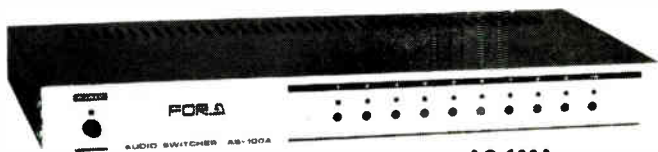
SVS-660



DT-204



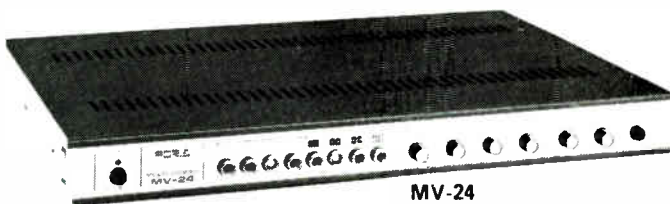
MC-310



AS-100A



ACS-100A



MV-24

SVS-660 Digital Video Sensor

- Accurate super video sensor for in and outdoor surveillance application
- Free channel selection from 1 to 6 channels by plug-in module
- 6 camera inputs and 6 outputs
- 64 x 64 (4096) sensor markers for CCIR; 64 x 52 (3328) markers for EIA
- Each sensor marker can be set for write-in/erase by using the lightpen for each channel
- Track function (triggered sensor markers are automatically displayed on the monitor so that movement of the intruding object can be traced)
- Sensor markers are not affected by environmental light change (from day time to night time), flash light, intrusion of fly, use of auto iris camera, etc.—only activated by intruders, intrusion of cars, etc., which invade in the camera scene with target speed and sizes
- Sensitivity controls for picture level and size
- The ACS-100A with the AS-100A and SC-100 is compatible
- Dimensions: 16.92"W x 5.20"H x 13.78"D (430 x 132 x 350 mm) (19" rack type)

SVS-660 Digital Video Sensor Main Frame \$3600.00
DM-660 Channel PC Board (1 per channel required) 900.00

DT-204 1-Channel Video Sensor

- Compact low price 1-channel Video Sensor for one camera input
- Four sensor markers detect the object intruded into the picture scene
- Size and position of each sensor marker can be varied independently
- Sensor markers display on/off
- Sensitivity control
- Automatic/manual reset function
- Dimensions: 8.46"W x 1.75"H x 9.84" (215 x 44.5 x 250 mm) (half 19" rack type)

DT-204 Video Sensor \$575.00

MC-310 Multi-Channel Video Sensor

- Simultaneous sensing capability for up to 10 cameras
- Selected channel number shown on TV screen
- Built-in sequential switcher with manual over-ride
- Separate alarm relays for each channel plus general alarm relay
- Wide sensitivity setting with built-in test signal
- Connect with ordinary coaxial cable; compatible with nearly all TV equipment

MC-310 Multi-Channel Video Sensor \$1600.00
DM-310 Channel PC Board (1 per channel required) 250.00

ACS-100A Autocode Switcher

- 10 video inputs (from camera, VTR, etc.) and one output
- Automatic/manual sequential channel switch
- Automatic sequential time control (1-60 seconds)
- Spot channel function
- Up to 16 characters can be freely selected and superimposed onto the picture scene by way of the built-in character generator, so that each picture scene is distinguishable and recognizable at a glance
- Two units interconnection providing 20 input channels
- The AC-100A and SC-100 are compatible
- Dimensions: 16.92"W x 1.75"H x 10.63"D (430 x 44 x 270 mm) (19" rack type)

ACS-100A Autocode Switcher \$1100.00

AS-100A Audio Switcher

- Direct-relay type Audio Switcher used with the ACS-100A
- Up to 10 audio sounds (up to 20 if 2 units are interconnected) can be controlled and switched with the camera scene by the switching function of the ACS-100A
- Adjustable audio sound of each channel
- Audio sound with its appropriate picture scene provides extensive surveillance more effectively
- Dimensions: 16.92"W x 1.75"H x 8.46"D (430 x 44 x 215 mm) (19" rack type)

AS-100A Audio Switcher \$1100.00

MV-24 Multi-Viewer

- Pictures from up to 4 cameras can be displayed on one monitor
- Adjustable position of the split borders and of each divided camera scene horizontally and vertically

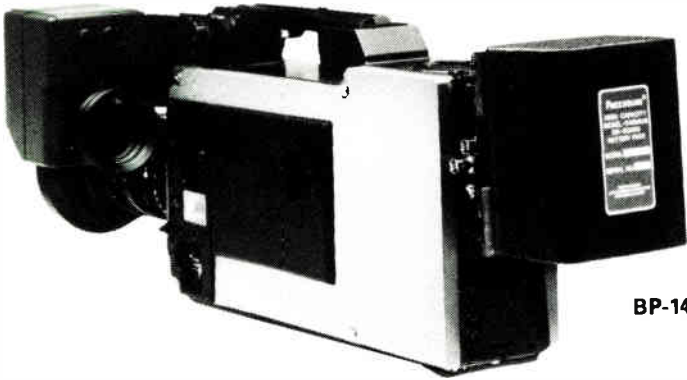
MV-24 Multi-Viewer \$1300.00



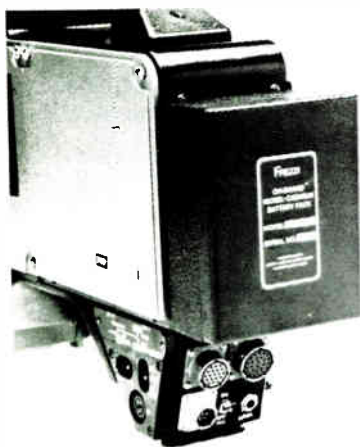
Frezzolini Electronics Inc.

7 Valley St.
Hawthorne, NJ 07506 USA
(201) 427-1160 TWX 710-988-4142

POWER SUPPLIES



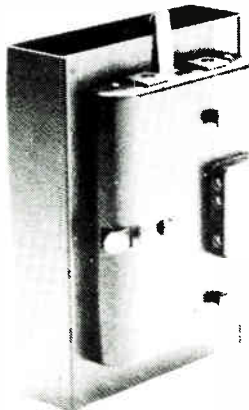
BP-14



BP-142
14.4 VOLT



FBP90/90FC



HM 90

FREZZI ON BOARD™ BATTERY PACKS

"Superior To Camera-Manufacturer-Supplied"

FEATURES:

- Battery mounts direct to camera-manufacturer-supplied Anton/Bauer bracket or optional Frezzolini® camera battery mounting bracket.
- No cables or modification required.
- Full 4AH capacity—only premium selected nickel-cadmium cells used.
- Custom-designed mounting brackets available.
- Rugged welded aluminum case.
- Lightweight 2AH models available.
- Internal fuse & thermal protection—internal spare fuse included for field replacement.
- Complete charge compatibility with camera-factory-supplied charge systems, or Frezzolini® fast, overnight or multiple battery chargers available.

Frezzi On-Board™ BP-12 4AH, 12 volt	\$455.00
Frezzi On-Board™ BP-13 4AH, 13.2 volt	475.00
Frezzi On-Board™ BP-14 4AH, 14.4 volt	495.00
Frezzi On-Board™ BP-122 2AH, 12 volt	275.00
Frezzi On-Board™ BP-132 2AH, 13.2 volt	285.00
Frezzi On-Board™ BP-142 2AH, 14.4 volt	295.00

All battery packs have fast charge (1 Hr.) capability.

Frezzi™ Premium-Grade Direct Replacement for Sony BP-90 Battery Packs

Models: FBP-90 and Fast Charger Model FBP-90 FC

- Full 4AH capacity using premium-grade selected nickel-cadmium cells.
- Rugged & serviceable plastic case.
- Fuse & thermal protection
- Internal spare fuse for field replacement.
- High discharge capability to power 100W lightheads.
- Weight 3.5 lbs.
- Complete charge compatibility with:
 - Sony BC-210 charger.
 - Frezzi BC-124S overnight charger.
 - Frezzi MBC-5 8-battery overnight charger
 - Frezzi BC-77UB 1 hr. fast charger w/HV fast-charge adaptor cable.
 - Plus other Frezzi fast/slow multi-battery charging stations.

Model FBP-90	\$275.00
Model FBP-90 FC	330.00

Frezzi™ Custom-Designed BP-90/FBP-90 Mounting Brackets

BATTERY PACK MOUNTING BRACKETS

Model	
HM 90	Brackets mount to Anton/Bauer or Frezzolini® \$198.00 battery bracket

Betacam Battery Mounting Bracket (Not Shown)

Model: HMBVV1
Bracket mounts to the upper rear portion of the recorder, and accepts BP13/BP132 batteries or BP90 when used with HM90.
Model HMBVV1



Frezzolini Electronics Inc.

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CHARGERS

Frezzi™ Dual Channel AC Adaptor and Fast Charger

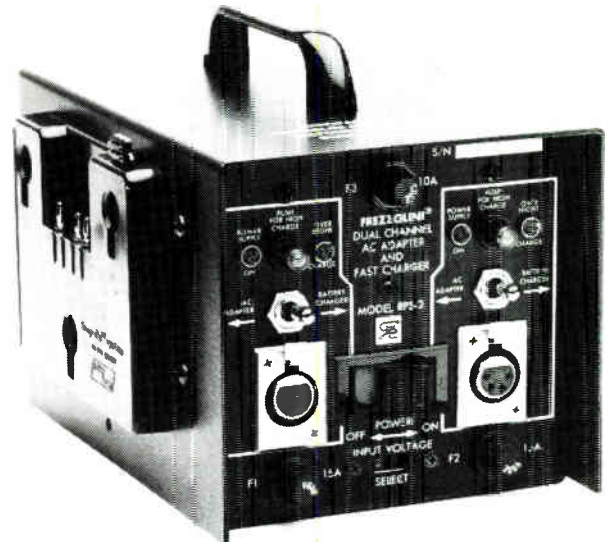
General:

The new Frezzolini® Model RPS-2 Dual-Channel combination power supply/fast charger consists of two (2) totally independent power sources. Each power source has the capability of either functioning as a precise regulated power supply for ENG Camera/VTR Power or switching over to a ni-cad battery fast charger. Either one or two battery packs are simultaneously fast charged with automatic high-charge termination when the battery packs reach full charge.

SPECIFICATIONS

AC Input	115/230 VAC +/- 10% 50/60Hz
Regulated DC Output	13.25 VDC (3.0 Amps Max. each channel)
Line Regulation	+/- .05% for 10% line change
Load Regulation	+/- .05% for 50% load change
Output Ripple	5.0mV Pk-Pk maximum
Overload Protection	Automatic current limit/foldback
Fast Charge Time	12.0V battery-75 minutes 14.4V battery-180 minutes
Size	8 1/2" x 5" x 5 1/2"
Weight	8.5 lbs.

Model RPS-2 \$ 895.00



RPS-2



BC-77UB

Frezzi™ Single-Battery Universal Fast Chargers

MODEL BC-77U/MODEL BC-77UB SINGLE-BATTERY UNIVERSAL FAST CHARGERS

General:

The new line of Frezzolini® Universal fast chargers were specifically designed to fast-charge (1 Hr.) all models of Frezzolini® 12V and 14.4V 2-6AH battery packs. The Frezzi™ chargers also have the capability to safely fast-charge Anton/Bauer 12V and 14.4V nickel-cadmium on-board battery packs. All chargers are transformer-type line-isolated and designed per European IEC-65 safety code specifications. The chargers are constructed of heavy-gauge aluminum in a compact size to withstand abuse in the field. The universal feature of this charger enables operation anywhere in the world.

Model BC-77U/BC-77UB..... \$395.00



RPS-3

Frezzi On Board™ AC Adaptor

MODEL RPS-3 AC ADAPTOR

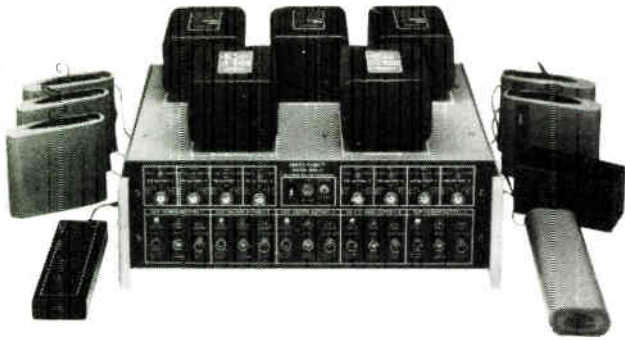
General:

The Frezzolini® Model RPS-3 AC Adaptor is specifically designed to power ENG/EPF cameras consuming up to 50 watts of power. Model RPS-3 is a "State-Of-The-Art" switcher power supply with additional RFI/EMI line suppression filters. AC adaptors mount directly to the Frezzolini® or Anton/Bauer Battery Brackets with no modifications or adaptor cables required.

SPECIFICATIONS

AC Input	117/234 VAC 50/60Hz +/-10%
DC Output	RPS-3 13.25VDC at 4A
Line Regulation (10% line change)	RPS-3 +/- .10%
Load Regulation (50% load change)	RPS-3 +/- .2%
Output Ripple (Pk-Pk Max.)	RPS-3 10mV
Overload Protection	Automatic current limit/foldback
Weight	RPS-3 2lbs.
Size	5.0" x 4.0" x 3.4"

Model RPS-3 \$595.00



Intermixed or same packs

FREZZI™ MULTIPLE BATTERY CHARGING STATIONS "We custom-design per your specific charging requirements"

MODEL MBC-2 (All Feature Model)

Fast-charges five (5) Frezzolini® or Anton/Bauer 12-14.4V nickel-cadmium battery packs in less than one (1) hour while simultaneously charging eight (8) additional Frezzolini®, Sony, JVC or Panasonic VTR battery packs overnight. Universal AC inputs. Deluxe shipping case available. Weight: 45 lbs.

MBC-2 \$2400.00

MODEL MBC-4A

Fast charges (5) Frezzolini® or Anton/Bauer 12-14.4V battery packs.

MBC-4A \$1595.00

MODEL MBC-5, Charges Eight (8) BP-90 Type Batteries Simultaneously

- Universal AC inputs
- Compact size
- Line-isolated
- Current-sensing LED's
- Other models available for all VTR or camera battery packs

Charge eight (8) BP-90 type battery packs simultaneously in 14 hours with Frezzolini® Model MBC-5 Charging Station. Universal AC Inputs. Weight: 8 lbs.

MBC-5 \$495.00

MODEL MBC-4

Fast charges (1 Hr.) five (5) Frezzolini® or Anton/Bauer 12-14.4V nickel-cadmium battery packs while simultaneously charging eight additional Sony BP-90 type battery packs in 14 hours. Universal AC Inputs. Deluxe shipping case available. Weight: 45 lbs.

MBC-4 \$2090.00

OVERNIGHT TRICKLE CHARGERS

BC-122S (For FBP-20/44/60) \$ 80.00

BC-124S (For BP-90) 80.00

CR-1 (Current Regulated For BP-90 & BP-12/13/14) 115.00

FTC-12/13/14 (For BP-12/13/14) 80.00

Frezzi™ Power Belts for 30 Volt Sun Gun

30 Volt DC Operation With Frezzi™ Model F-30-EC And F-30-EXFA High-Capacity Battery Belts

- Full 4AH capacity using selected nickel-cadmium cells.
- Operates 30V 250W DYG lamp for 30 minutes.
- Batteries housed in rugged aluminum cassettes which are mounted on a genuine leather belt.
- Built-in overnight charger (14 Hrs.)
- Model F-30-EXFA has fast-charge capability (1 Hr.) w/optional Frezzi™ BC-30C fast charger.
- Fuse and circuit-breaker protection.
- Weight: 10 lbs.

Model F-30 EC \$545.00

Model F-30-EXFA 595.00

FL250 Lighthead 195.00

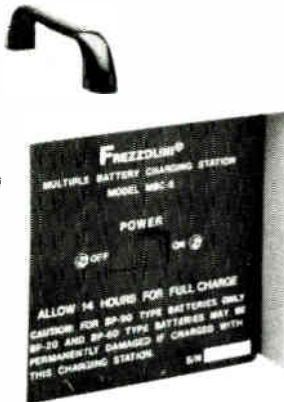
FLDF-101 Swing-Away Dichroic Filter 88.00

30 Volt DC Operation With Model EC-30 High-Capacity Battery Packs

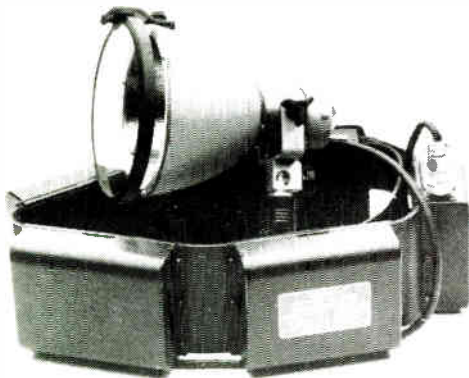
- 30VDC at 4AH
- Operates 30V 250W DYG lamp 30 minutes.
- Fast charge capability (1 Hr.)
- Built-in overnight charger (12 Hrs.)
- Rugged steel case.
- Weight: 10 lbs.
- Premium-grade selected nickel-cadmium cells used.

Model EC-30 \$595.00

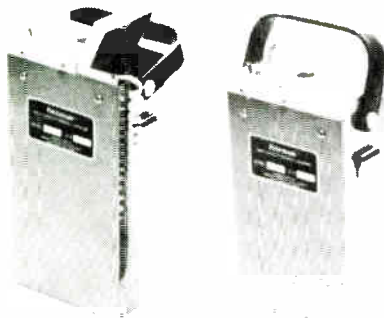
OPTIONAL: BC-30 One (1) Hour Fast Charger 395.00



MBC-5



Model F-30 EC power belt powering Frezzi-Lite™ Model FL-250 with optional swing-away dichroic filter



EC-30



FUJINON

672 White Plains Rd.
Scarsdale, NY 10583
(914) 472-9800

ZOOM LENSES/ ACCESSORIES

2/3-Inch Format Zoom Lenses and Accessories for ENG/EFP, Studio and Field Productions



A14x8ESM



A3.5x6.5RM



A14x9ERM w/ PJ



A30x11ESM

2/3" Format Zoom Lenses

Model No.	F	Focal Length	Built-in Extension	MOD	Horizontal Field of View	Filter Size	Optional Converters		Weight Weight	Optional Pattern Projector
							Wide	Tele.		
A3.5x6.5RM	1.7	6.5 ~ 23mm	—	0.3m	68°11' ~ 21°39'	82mm	—	—	1.4kg	
A7x7RM	1.7	9 ~ 108mm	—	0.3m	64°18' ~ 10°03'	86mm	0.8X	1.6X	1.6kg	
A10x10RM	1.6	10 ~ 100mm	—	1.0m	47°30' ~ 5°03'	72mm	0.8X	1.85X	1.3kg	
A12x9ERM	1.7	9 ~ 108mm	—	0.95m	52°06' ~ 1°45'	72mm	0.8X	1.85X	1.5kg	
A14x9ERM	1.7	9 ~ 126mm	2X	0.8m	52°06' ~ 4°00'	77mm	0.8X	1.85X	1.5kg	X
A16x9.5ERM	1.8	9.5 ~ 152mm	—	0.95m	49°42' ~ 3°19'	77mm	0.8X	1.85X	1.36kg	
A17x9ERM	1.7	9 ~ 153mm	2X	0.9m	52°06' ~ 1°39'	86mm	0.8X	1.6X	1.84kg	X
A22x12.5ERM	2.0	12.5 ~ 275mm	2X	1.8m	38°47' ~ 0°55'	107mm	—	—	3.8kg	
A14x8ESM	1.5	8 ~ 112mm	2X	0.7m	57°37' ~ 4°30'	—	—	—	10.6kg	X
A17x8.5ESM	1.5	8.5 ~ 145mm	2X	0.7m	56°44' ~ 1°44'	—	—	—	10.6kg	X
A30x11ESM	1.6	11 ~ 330mm	2X	1.7m	43°36' ~ 0°35'	—	—	—	9.1kg	X
A44x9.5ESM	1.2	9.5 ~ 420mm	2X	2.5m	50°44' ~ 0°28'	—	—	—	25.5kg	X
A44x9.5ESM	1.4	9.5 ~ 420mm	2X	2.2m	49° 7' ~ 1° 5'	—	—	—	14.6kg	X
A44x9.5ESM	1.7	9.5 ~ 420mm	2X	1.7m	49°42' ~ 1°12'	—	—	—	11kg	X

Accessories:

Servo Zoom:

Extension Cable
Grip Zoom Demand
Mounting Clamp

Manual Zoom:

Zoom Manual Module
Flexible Cable
Zoom Handle
Mounting Clamp

Servo Focus:

Focus Servo Module
Extension Cable
Focus Servo Demand
Mounting Clamp

Manual Focus:

Focus Manual Module
Flexible Cable
Focus Handle
Focus Manual Demand
Mounting Clamp



S14x6.6ERM

New 1/2" Format Zoom Lenses

Model No.	F	Focal Length	Built-in Extension	MOD	Horizontal Field of View	Filter Size	Optional Converters		Weight
							Wide	Tele.	
S3.5x6.5RM	1.4	4.8 ~ 17mm	—	0.3m	67°22' ~ 21°19'	72mm	—	—	1.50kg
S12x6.6RM	1.4	6.6 ~ 80mm	—	0.95m	62°26' ~ 5°43'	72mm	0.8X	1.85X	1.35kg
S12x6.6ERM	1.4	6.6 ~ 80mm	2X	0.95m	62°26' ~ 5°43'	72mm	0.8X	1.85X	1.40kg
S14x6.6ERM	1.4	6.6 ~ 92mm	2X	0.8m	51°44' ~ 3°59'	77mm	0.8X	1.85X	1.48kg
S16x7RM	1.4	7 ~ 112mm	—	0.95m	49°42' ~ 3°19'	77m	0.8X	1.85X	1.36kg

Prices and Specifications Subject to Change Without Notice.

VC-75



FUJINON

672 White Plains Rd.
Scarsdale, NY 10583
(914) 472-9800

ZOOM LENSES

1-Inch and 1-1/4-Inch Zoom Lenses for Studio and Field Productions



P17x16.5ESM



R44X



P14x16.5ESM

1-Inch Format Zoom Lenses

Model No.	F	Focal Length	Built-in Extender	MOD	Horizontal Field of View	Pattern Proj.	Iris	Operation Zoom	Focus	Weight
R14x2.5ESM	1.6	12.5 ~ 175mm	2X	0.75m	54°13' ~ 2°06'	OPT	Servo	Manual/ Servo	Manual/ Servo	25kg
R17x12.5ESM	1.6	12.5 ~ 212mm	1.5X, 2X	0.75m	54°13' ~ 1°17'	OPT	Servo	Manual/ Servo	Manual/ Servo	24kg
R20x10.5ESM	1.6	10.5 ~ 210mm	1.5X, 2X	0.75m	62°44' ~ 3°29'	OPT	Servo	Manual/ Servo	Manual/ Servo	20.5kg
R30x16ESM	1.8	16 ~ 500mm	2X	2.5m	43°36' ~ 0°44'	OPT	Servo	Manual/ Servo	Manual/ Servo	27kg
R44x13.5ESM	1.8	13.5 ~ 350mm	2X	2.5m	50°44' ~ 0°28'	OPT	Servo	Manual/ Servo	Manual/ Servo	25.5kg

1-1/4-Inch Format Zoom Lenses

Model No.	F	Focal Length	Built-in Extender	MOD	Horizontal Field of View	Pattern Proj.	Iris	Operation Zoom	Focus	Weight
P14x16.5ESM	2.1	16.5 ~ 230mm	2X	0.75m	54°50' ~ 2°08'	OPT	Servo	Manual/ Servo	Manual/ Servo	25kg
P17x16.5ESM	2.1	16.5 ~ 280mm	1.5X, 2X	0.75m	54°50' ~ 3°30'	OPT	Servo	Manual/ Servo	Manual/ Servo	21kg
P20x14ESM	2.1	14 ~ 280mm	1.5X, 2X	0.75m	62°53' ~ 3°20'	OPT	Servo	Manual/ Servo	Manual/ Servo	20.5kg
P30x20ESM	2.2	20 ~ 620mm	2X	2.5m	46°20' ~ 0°47'	OPT	Servo	Manual/ Servo	Manual/ Servo	28kg
P44x18ESM	2.4	18 ~ 800mm	2X	2.5m	50°44' ~ 0°28'	OPT	Servo	Manual/ Servo	Manual/ Servo	25.5kg



FUJINON

672 White Plains Rd.
Scarsdale, NY 10583
(914) 472-9800

CCTV LENSES

CCTV LENSES



H6x12.5D



H10X11B

2/3" Image Format 'C' Mount

Manual Fixed Focal Length

HF5 5A	5.5	1.6	0.2	Manual iris and focus	77°19'	52φ P = 0.75mm	55φ x 41mm	0.2kg
HF9A	9	1.4	0.3	Manual iris and focus	52°06'	46φ P = 0.75mm	49φ x 47mm	0.2kg
HF16A	16	1.4	0.4	Manual iris and focus	30°45'	43φ P = 0.75mm	46φ x 37mm	0.15kg
HF35A	35	1.7	0.3	Manual iris and focus	14°20'	49φ P = 0.75mm	52φ x 59.5mm	0.24kg

Manual Variable Focal Length

H6X12.5D	12.5-75	1.4	1.0	Manual iris, zoom and focus	38°47' ~ 6°43'	52φ P = 0.75mm	54φ x 126mm	0.4kg
H8X12.5A	12.5-100	2.0	1.0	Manual iris, zoom and focus	38°47' ~ 5°02'	62φ P = 0.75mm	65φ x 145.5mm	0.8kg
H10X11B	11-110	1.6	1.0	Manual iris, focus and geared zoom ring	43°36' ~ 4°45'	67φ P = 0.75mm	72φ x 145mm	0.75kg

Servo Neutral Density Fixed Focal Length

HF5 5A-SND	5.5	1.6 to T 1500	0.2	Auto iris, manual focus	77°19'	77φ P = 0.75mm	88φ x 53mm	0.35kg
HF9A-SND	9	1.4 to T 1500	0.3	Auto iris, manual focus	52°06'	62φ P = 0.75mm	88φ x 64.8mm	0.40kg
HF16A-SND	16	1.4 to T 1500	0.4	Auto iris, manual focus	30°45'	52φ P = 0.75mm	88φ x 66.8mm	0.40kg

Servo Neutral Density Variable Focal Length

H6X12.5G-SND	12.5-75	1.4 to T 1500	1.0	Auto iris, 12V DC motorized zoom and focus	38°47' ~ 6°43'	52φ P = 0.75mm	110φ x 122mm	1.3kg
H10X11B-SND	11-110	1.6 to T/1500	1.0	Auto iris, 12V DC motorized zoom and focus	43°36' ~ 4°45'	67φ P = 0.75mm	114φ x 142mm	1.32kg

12V DC Motorized Variable Focal Length

H6X12.5GMD-3	12.5-75	1.4	1.0	Motorized iris, zoom and focus	38°47' ~ 6°43'	52φ P = 0.75mm	110φ x 122mm	1.3kg
H10X11BMD-3	11-110	1.6	1.0	Motorized iris, zoom and focus	43°36' ~ 4°45'	67φ P = 0.75mm	114φ x 142mm	1.32kg

Lens Accessories

Tele and Wide Angle Converters (Front End Screw-In Type)

Model	Type	Lens To Be Used On	Focal Length mm	Magnification Factor	Usable Focal Length With Converter
TCV-52	Tele	H6X12.5D	12.5-75mm	1.5X	46-112.5mm
WCV-52	Wide	H6X12.5D	12.5-75mm	0.8X	10-60mm
TCV-70	Tele	H10X11B	11-110mm	1.6X	75-176mm
WCV-70	Wide	H10X11B	11-110mm	0.8X	8.8-88mm

Model No. Range of Use cm Mounting Diameter and Pitch — mm Lens to Be Used On

1" Lens Format Close-up Lens

CL12072	73-120	72 φ P = 0.75	C5x20
CL21072	100-210	72 φ P = 0.75	C5x20
CL16086	78-160	86 φ P = 0.75	C8x17.5
CL5082	40-50	82 φ P = 0.75	C10x16B
CL6082	46-60	82 φ P = 0.75	C10x16B
CL8082	57-80	82 φ P = 0.75	C10x16B
CL12082	75-120	82 φ P = 0.75	C10x16B
CL23082	105-230	82 φ P = 0.75	C10x16B
CL190101	92-190	101 φ P = 1.0	C10x16A
CL100101	64-100	101 φ P = 1.0	C10x16A

1" Range Extender

CE15	1.5x	'C' Mount
CE20	2.0x	'C' Mount

2/3" Close-up Lens

CL8662	50-86	67 φ P = 0.75
CL14062	66-140	67 φ P = 0.75

2/3" Range Extender

HE-15	1.5x	'C' Mount
HE-20	2.0x	'C' Mount

Prices and Specifications Subject to Change Without Notice.

VC-77

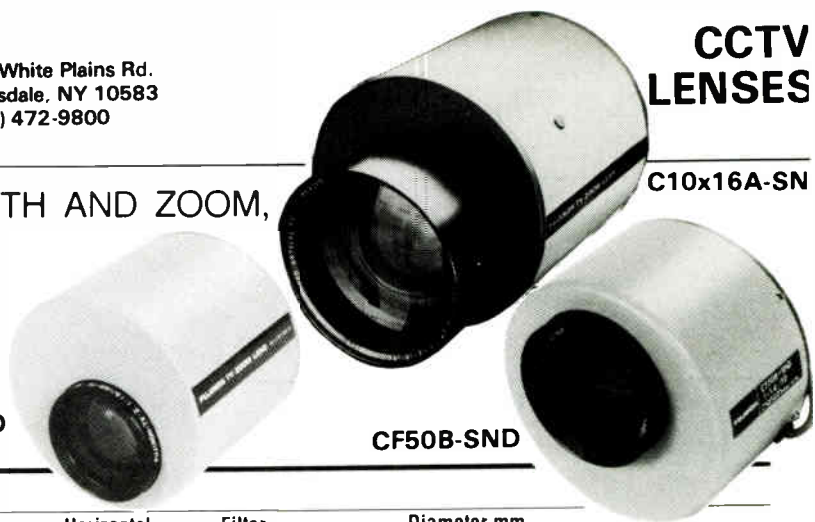


FUJINON

672 White Plains Rd.
Scarsdale, NY 10583
(914) 472-9800

CCTV LENSES

CCTV LENSES — FIXED FOCAL LENGTH AND ZOOM,
MANUAL AND MOTORIZED,
NEUTRAL DENSITY
AND NON-BROWNING
(RADIATION-RESISTANT).



H6x12.5D

CF50B-SND

C10x16A-SN

1" Image Format 'C' Mount

Model	Focal Length mm	Max. f. Stop	M.D.D. M	Description	Horizontal Field of View	Filter Size	Diameter mm x Length mm	Weight
Manual Fixed Focal Length								
CF8A	8	1.8	0.2	Manual iris and focus	77°19'	52 ϕ P = 0.75mm	55 ϕ x 43mm	0.25kg
CF12 5A	12.5	1.4	0.3	Manual iris and focus	54°13'	52 ϕ P = 0.75mm	54 ϕ x 67mm	0.21kg
CF25B	25	1.4	0.3	Manual iris and focus	28°43'	40.5 ϕ P = 0.5mm	43 ϕ x 46.5mm	0.13kg
CF25L	25	0.85	0.6	Manual iris and focus	28°43'	52 ϕ P = 0.75mm	54 ϕ x 46.8mm	0.25kg
CF50B	50	1.4	1.0	Manual iris and focus	14°35'	49 ϕ P = 0.75mm	52 ϕ x 74.5mm	0.3kg
CF50L	50	0.7	3.0	Manual iris and focus	14°35'	82 ϕ P = 0.75mm	88 ϕ x 75.5mm	1.1kg
CF75A	75	1.8	1.0	Manual iris and focus	9°45'	49 ϕ P = 0.75mm	52 ϕ x 74.5mm	0.33kg
Manual Variable Focal Length								
C5X20A	20-100	1.8	2.0	Manual iris, zoom and focus	35°29' 7°19'	72 ϕ P = 0.75mm	82 ϕ x 171.5mm	1.3kg
C6X17.5B	17.5-105	1.8	1.3	Manual iris, zoom and focus	38°44' 7°07'	58 ϕ P = 0.75mm	60 ϕ x 142mm	0.5kg
C8X18A	18-144	2.0	1.5	Manual iris, zoom and focus	39°09' 5°05'	86 ϕ P = 1.0mm	90 ϕ x 218mm	1.8kg
C10X16A	16-160	1.8	1.8	Manual iris, zoom and focus	43°36' 4°35'	101 ϕ P = 1.0mm	105.5 ϕ x 215mm	22.4kg
C10X16B	16-160	2.5	2.0	Manual iris, zoom and focus	43°36' 4°35'	82 ϕ P = 0.75mm	86 ϕ x 188.5mm	1.5kg
C14X25B	25-350	3.5	1.7	Manual iris, zoom and focus	28°30' 2°05'	92 ϕ P = 1mm	95 ϕ x 307mm	2.4kg
Servo Neutral Density Fixed Focal Length								
CF8A-SND	8	1.8 to T 1500	0.2	Auto iris, manual focus	77°19'	77 ϕ P = 0.75mm	88 ϕ x 53mm	0.35kg
CF12 5A-SND	12.5	1.4 to T 1500	0.3	Auto iris, manual focus	54°13'	55 ϕ P = 0.75mm	88 ϕ x 69mm	0.49kg
CF25B-SND	25	1.4 to T 1500	0.3	Auto iris, manual focus	28°43'	49 ϕ P = 0.75mm	88 ϕ x 66mm	0.48kg
CF50B-SND	50	1.4 to T 1500	1.0	Auto iris, manual focus	14°35'	49 ϕ P = 0.75mm	88 ϕ x 70mm	0.51kg
CF75A-SND	75	1.8 to T 1500	1.0	Auto iris, manual focus	9°45'	49 ϕ P = 0.75mm	88 ϕ x 85mm	0.58kg
Servo Neutral Density Variable Focal Length								
C5X20A-SND	20-100	1.8 to T 1500	2.0	Auto iris, 12V DC motorized zoom and focus	35°29' 7°19'	72 ϕ P = 0.75mm	116 x 110 x 171.5mm	2.4kg
C6X17.5B-SND	17.5-105	1.8 to T/1500	1.3	Auto Iris 12V DC motorized zoom and focus	38°44' 7°07'	58 ϕ P = 0.75mm	113 ϕ x 142mm	1.3kg
C10X16A-SND	16-160	1.8 to T 1500	1.8	Auto iris, 12V DC motorized zoom and focus	43°36' 4°35'	101 ϕ P = 1.0mm	130 x 120 x 213mm	4.0kg
C10X16B-SND	16-160	2.5 to T 1500	2.0	Auto iris, 12V DC motorized zoom and focus	43°36' 4°45'	82 ϕ P = 0.75mm	123 x 113 x 188.5mm	2.3kg
Electronic Eye Auto Iris Fixed Focal Length								
CF12.5C-EE	12.5	2.4	0.3	Auto iris, manual focus	54°13'	82 ϕ P = 0.75mm	85 ϕ x 66.5mm	0.5kg
CF25B-EE	25	1.4	0.3	Auto iris, manual focus	28°43'	77 ϕ P = 0.75mm	84 ϕ x 52.5mm	0.34kg
CF50D-EE	50	2.8	1.0	Auto iris, manual focus	14°35'	77 ϕ P = 0.75mm	84 ϕ x 76.2mm	0.47kg
Non-Browning Radiation Resistant								
CF12 5N	12.5	2.0	0.3	Manual iris and focus	54°13'	46 ϕ P = 0.75mm	40.2 ϕ x 45.3mm	0.18kg
CF25N	25	2.0	0.5	Manual iris and focus	28°43'	43 ϕ P = 0.75mm	46 ϕ x 34.7mm	0.13kg
CF50N	50	2.0	0.9	Manual iris and focus	14°35'	46 ϕ P = 0.75mm	49.2 ϕ x 56.8mm	0.19kg
C5X30N-MD3	30-150	2.5	1.8	12V DC motorized iris, zoom and focus	24°03' 4°54'	72 ϕ P = 0.75mm	122 ϕ x 226mm	2.0kg
12V DC Motorized Variable Focal Length								
C5X20MD3	20-100	1.8	2.0	Motorized iris, zoom and focus	35°29' 7°19'	72 ϕ P = 0.75mm	116 x 110 x 171.5mm	2.4kg
C6X17.5MD3	17.5-105	1.8	1.3	Motorized iris, zoom and focus	38°44' 7°07'	58 ϕ P = 0.75mm	113 ϕ x 142mm	1.3kg
C10X16AMD3	16-160	1.8	1.8	Motorized iris, zoom and focus	43°36' 4°35'	101 ϕ P = 1.0mm	130 x 120 x 213mm	4.0kg
C10X16BMD3	16-160	2.5	2.0	Motorized iris, zoom and focus	43°36' 4°35'	82 ϕ P = 0.75mm	123 x 113 x 188.5mm	2.3kg
C14X25BMD3	25-350	3.5	1.7	Motorized iris, zoom and focus	28°30' 2°05'	92 ϕ P = 1.0mm	95 ϕ x 307mm	3.0kg

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Prices and Specifications Subject to Change Without Notice.

GENERAL ELECTRIC COMPANY

Intelligent Vision Systems Operation
 890 7th North Street
 Liverpool, NY 13088
 (315) 456-2615

SOLID STATE CID CAMERA

TN2200/TN2201 Solid-State Automation Camera

- 100% Solid State Reliability
- Small Size
- Low Power Consumption
- Precise Spatial Geometry
- Variable Pixel Data Rate to 350 kHz
 Standard and to 500 kHz if Specified
 at Time of Order Placement
- Flexible Interfacing
- No Image Burn and/or Lag
- Drift Free Scanning
- Integrating Detectors

BLEMISH SPECIFICATION

Maximum 8 black or white pixels at 30 frames/second 25°C (77°F) ambient.

LENS SELECTION

Lens selection for the TN2200 is a function of matching the scene observed to the active area of the micro-sensor. Pixels are located on 0.0018 inch centers and generally may be considered contiguous. Thus, the image size is $128 \times 0.0018 = 0.2304$ inch per side. Applying the normal lens formula,

$$\frac{\text{Object Size (OS)}}{\text{Object Distance (OD)}} = \frac{\text{Image Size (IS)}}{\text{Focal Length (FL)}}$$

will yield the proper lens selection.

The TN2200 is designed to accept C-mount lenses which have a fixed back mounting flange length of 0.69 inch. The viewing angle can be selected by choosing standard lenses. The following chart lists the ratio of distance from an object to the size of an object for available lenses.

TN2200 (128 x 128 ARRAY)

Focal Length		Object Size/Object Distance
mm	inches	
4.5	0.18	1.3
6.5	0.26	0.89
9	0.35	0.65
12.5	0.50	0.46
16	0.63	0.37
17	0.67	0.34
25	1.0	0.23
35	1.4	0.17
50	2.0	0.12
75	3.0	0.08
100	4.0	0.06

For example, to view a 6-inch object at a 4-foot distance, the object size/distance ratio is $0.5/4 = 0.125$. Therefore, a 50 mm lens is appropriate for this application.



TN2200 Series Automation Cameras, featuring a patented CID Microsensor, compact, rugged design, variable scan rate, and square pixel spacing. Coupled to microprocessor or minicomputer controlled signal processing and controlled lighting, these cameras can provide visual inputs to control quality of small parts, monitor machine operations, sort produce, guide robot arms, gather scientific data, and a host of other applications.

TECHNICAL SPECIFICATIONS

Electrical	
Power Source +15V at 50 ma	
Mechanical	
Weight:	Fixed Head Cameras 24 oz (670 gr)
	Removable Head Cameras 27 oz (680 gr)
	Remote Head Only 8 oz (227 gr)
	Remote Body Only 19 oz (539 gr)
Lens Mount:	Standard "C" Mount
	1 inch (25.4 mm) 32 Thread
Camera	1/4 x 20 Tapped Hole
Mount:	
Connector:	Amphenol 67-03-E-14-12-P
Case:	Dust Tight Aluminum Extrusion
Environmental	
Ambient Temperature:	0° to 50°C (32° to 123°F)
Altitude:	50,000 ft (15,240 m)
Signal-to-Noise Ratio	
Temporal SNR	256:1 typical
Spatial SNR	25:1 typical

GENERAL ELECTRIC COMPANY

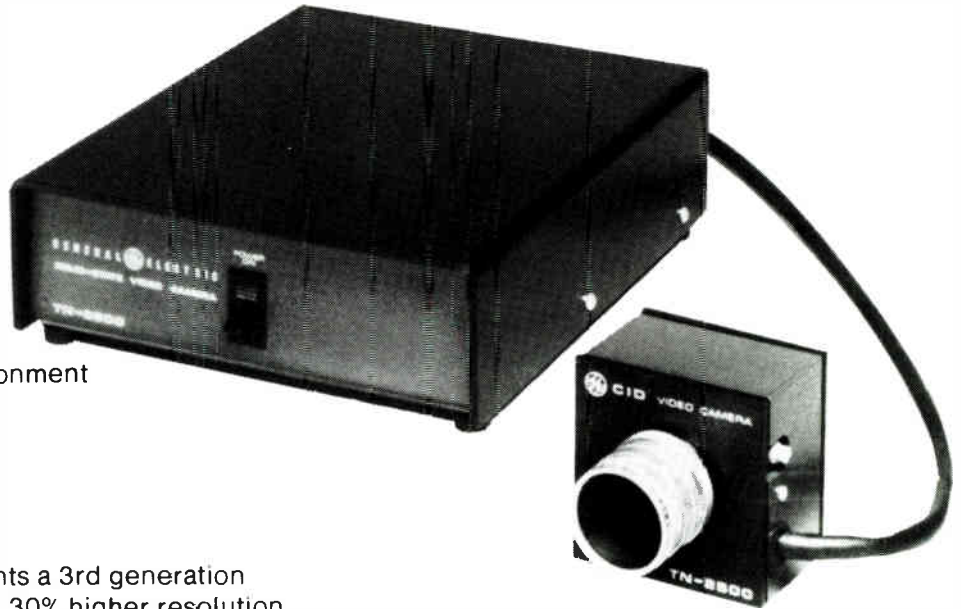
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 890 7th North Street
 Liverpool, NY 13088
 (315) 456-2615

SOLID STATE CID CAMERAS

TN2500 CID Solid-state Video Camera

FEATURES:

- Analog and Digital Outputs
- Interlaced or Sequential Scan
- Antiblooming
- No Image Burn or Lag
- Non Microphonic
- No Operating Adjustments
- Operable in High Magnetic Environment
- Low Voltage Operation
- Two Unit Versatile Construction



General Electric's TN2500 represents a 3rd generation CID solid-state television camera with 30% higher resolution than provided by CID imagers used in previous GE solid-state cameras. This camera provides both ANALOG and DIGITAL outputs, with several user selectable features; making it an extremely versatile unit appropriate to many applications.

ELECTRICAL CHARACTERISTICS

Line Voltage:	117 VAC \pm 10% 12 VDC (Optional)
Imager Elements:	244 Vertical x 248 Horizontal
Pixel Size:	1.4 x 1.8 Mil (36 x 46 Micrometers)
Blemish Content:	Less than 10 Blemishes Total (White and/or Black)
Composite Video Output:	1 Volt p-p into 75 ohms
Synchronization Outputs:	Horizontal, Vertical and Element Rate Clock
Element Rate Clock Frequency:	4.5 MHz
Digital Output:	TTL Compatible 8 Bit Parallel Output
SNR:	43 dB Nominal (Peak Signal to RMS Noise)
ALC Range:	60,000 to 1 with Optional Auto Iris Lens
AGC:	10:1 with Automatic Bandwidth Compression

MECHANICAL CHARACTERISTICS

Weight:	Remote Head Approx 12 Oz. (341 gms) Camera Control Unit Approx 57 Oz. (1619 gms)
Lens Mount:	Standard "C" Mount (1"—32 Thread)
Lens:	25 mm, f 1.4 (Standard)
Remote Head Mount:	1/4—20 Tapped Hole
Connectors:	Lens Power—Winchester—SM 2 SN Video Out—BNC Video In (Gen-Lock)—BNC Remote Head—Amphenol HDP20 Series Digital & Control Interface —Amphenol HDP20 Series
Remote Head Cable:	Standard 5 foot Length Optional—Extender Cable 10 ft, 20 ft, 45 ft long

REMOTE HEAD



CAMERA CONTROL UNIT



GENERAL ELECTRIC COMPANY

INTELLIGENT VISION SYSTEMS OPERATION

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(315) 456-2615

SOLID STATE CID CAMERAS



TN2505

SOLID-STATE CID CAMERAS

PERFORMANCE FEATURES

- Display Format: 11
- Sensor Format: 244 x 388
- CID Saturation S/N: 50
- Sensitivity S/N: a) 50 lux (4.5 FC) scene illumination 46; b) 11 lux (1 FC) scene illumination 34
- Modulation Transfer Function is Better than 90%
- Integral Power Supply: Power Consumption 2 Watts (nominal)
- Operating Voltage: 12-35 VDC or 120 Volt with Separate AC Adaptor
- Ambient Temperature is 0° - 50°C

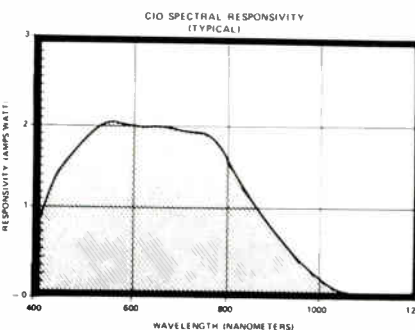
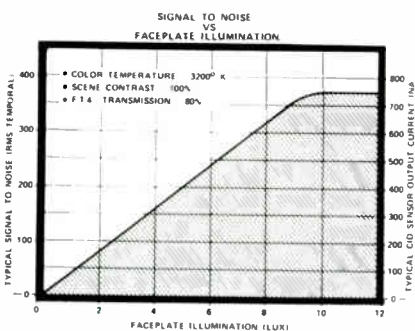
The General Electric TN2505 Security and Surveillance camera provides its user with exceptional performance, solid-state reliability and flexibility for security, surveillance and industrial CCTV applications.

The TN2505 is VLSI/LSI based, utilizing an LSI Scan Generator, LSI Pre-amplifier, and CID (Charge Injection Device) imager with a horizontal resolution of 388 elements. The performance of this unique camera is quantified by a signal to noise ratio of 50dB. The camera also provides its user with a wide range ALC and selectable 0, +6, +12dB gain boost.

The GE TN2505 has a built-in power supply which consumes less than 2 watts of power. Its operating voltage is 12-35 VDC or 110/220 volts with its separate AC adaptor.

All of this, and more, has been neatly packaged in a rugged case, only 3" x 3" x 2 1/2" and weighs less than one pound.

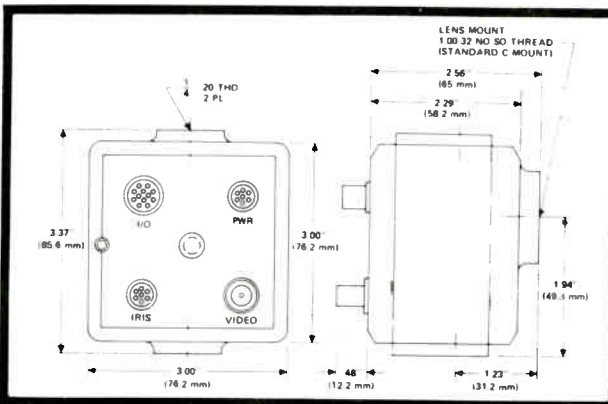
- TN2505 CID Imager 244 x 388 pixels (RS-170 Compatible)



What The TN2505 With VLSI/LSI Means:

• CID IMAGER	No geometric distortion or microphonics	Virtually no blooming or lag	No performance degradation over time
• CIRCUITRY	High reliability performance	Virtually maintenance free operation	Resistant to shock and vibration
• COMPACT SIZE	Easier installation and concealment	Can be used with smaller housings	Retrofits to existing optics
• LIGHTWEIGHT	Installation on lighter support structures and poles	Reduced wind load with smaller enclosures	Permits faster pan and tilt motion
• VERY LOW POWER	Permits battery operation for portability	Little temperature rise in confined space	Low energy costs

New Dimensions In CCTV



Mechanical

- Weight: 13.5 oz.
- Lens Mount: Standard C-Mount 1.00-32 Thread
- Lens: 25mm Standard
- Camera Mount: 1/4-20 Thread (top and bottom)
- Video Connectors: BNC
- Power, I/O and Irisc Connectors
- Thorkum Circular Connectors

4TN2505A1	Solid-State Camera	244 x 388 Sensor	Line Lock	\$2,100.00
4TN2505A2	Solid-State Camera	244 x 388 Sensor	Crystal Control	2,100.00
4TN2505A3	Solid-State Camera	244 x 388 Sensor	RS170 Sync Lock	2,200.00
4TN2505A4	Solid-State Camera	244 x 388 Sensor	RS170 H & V Drive	2,200.00
4TN2505B1	Remote Head Solid-State Camera	244 x 388 Sensor	Line Lock	2,700.00
4TN2505B2	Remote Head Solid-State Camera	244 x 388 Sensor	Crystal Control	2,700.00
4TN2505B3	Remote Head Solid-State Camera	244 x 388 Sensor	RS170 Sync Lock	2,800.00
4TN2505B4	Remote Head Solid-State Camera	244 x 388 Sensor	RS170 H & V Drive	2,800.00
4TN2506A1	Solid-State Camera	290 x 416 Sensor	Line Lock	2,100.00
4TN2506A2	Solid-State Camera	290 x 416 Sensor	Crystal Control	2,100.00
4TN2506A3	Solid-State Camera	290 x 416 Sensor	Sync Lock	2,200.00
4TN2506A4	Solid-State Camera	290 x 416 Sensor	H & V Drive	2,200.00
4TN2506B1	Remote Head Solid-State Camera	290 x 416 Sensor	Line Lock	2,700.00
4TN2506B2	Remote Head Solid-State Camera	290 x 416 Sensor	Crystal Control	2,700.00
4TN2506B3	Remote Head Solid-State Camera	290 x 416 Sensor	Sync Lock	2,800.00
4TN2506B4	Remote Head Solid-State Camera	290 x 416 Sensor	H & V Drive	2,800.00

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SOLID STATE CID CAMERAS

TN2507 SOLID STATE CID CAMERA

The TN2507 monochrome video camera contains an imager of 488 x 388 pixels and is RS170 compatible for domestic applications.

The new camera employs custom LSI circuitry with limited discrete parts, enabling it to be smaller (3" x 3" x 2-1/2"), lighter (less than one pound) and more rugged than previously marketed monochrome cameras.

An advanced "safeguard" process and differential readout gives CID imagers several performance attributes, including higher signal output and significant noise reduction. An anti-reflective coating allows absorption of incident light rays to a greater degree, therefore gaining more signal current. This contributes to a significantly higher signal-to-noise ratio for optimum imaging performance.

The TN2507 accepts standard C mount, auto iris lenses for flexibility. There is virtually no camera adjustment required for operation.

The internal power supply is a highly efficient design with excellent regulation that allows operation from a 12 to 35V DC source. Separate miniature adaptors allow operation from either 120V AC or 220V AC, 60 Hz.

4TN2507A1 Solid State Camera, 488 x 388 Sensor, Line Lock	\$2700.00
4TN2507A2 Solid State Camera, 488 x 388 Sensor, Crystal Control	2700.00

TN2509 SOLID STATE AUTOMATION CID CAMERA

For machine vision applications that require square pixel, 256 x 256 x 8 bit image data, the TN2509 Monochrome Camera utilizes an imager having 28 micron square pixels which are structured to provide contiguous relationship. A unique electrode structure provides a wide dynamic range with each pixel having a storage capacity of 1,800,000 carriers.

This camera makes extensive use of custom LSI circuitry with limited discrete parts thereby allowing it to be physically small (3" x 3" x 2-1/2") and light in weight (less than 1 pound).

The camera is fully enclosed and accepts standard C mount lenses. There is virtually no camera adjustment required for operation.

The internal power supply is a highly efficient design with excellent regulation that allows operation from a 12 to 35V DC source. Separate miniature adaptors allow operation from either 120V AC, 60/50 Hz. or 220V AC, 50 Hz.

Synchronization of the camera is with 5 Volt TTL level, 75 ohm impedance signals consisting of horizontal reset, vertical reset, and input clock. The model 4TN2509A7A requires a 10 MHz clock which produces a 5.0 MHz element rate. The 4TN2509A7B requires a 14.318 MHz clock which results in a 7.159 MHz element rate.

Inject/Inhibit control is also included for implementation of stop action or image integration. The source of these signals or control points may be remoted by several hundred feet.

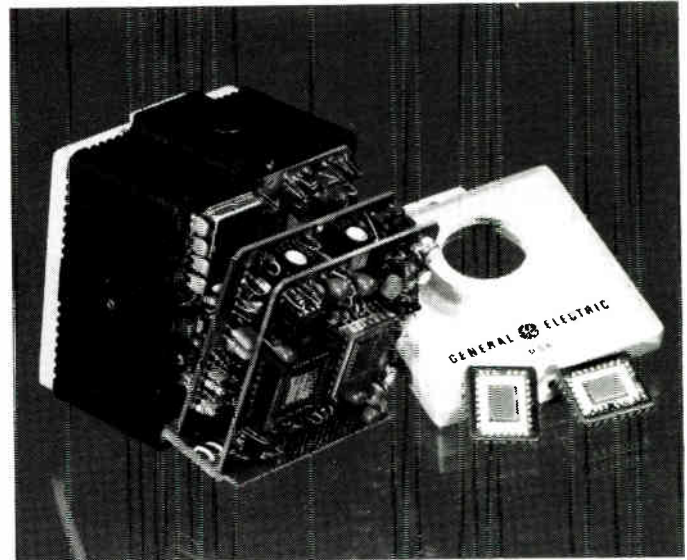
SYSTEM INTEGRATION

The TN2509 camera as it is received from General Electric is complete with a 120 Volt 60 Hz AC adaptor which supplies 24 Volts DC to the camera through its 10 foot interconnecting cable. A standard coaxial cable (RG59/U) with BNC connectors is used to provide video signals to modified 525 line rate monitors. Some monitors may need horizontal frequency adjustment in order to synchronize to camera video.

The TN2509 is intended to be locked to an external clock, horizontal reset, and vertical reset signals which can be generated in the timing and control module.

OPTICAL VERSATILITY

The TN2509 has a unique optics centering feature. A machined lens adaptor is mounted to the front camera casting and provides precision optical centering or bore sighting of the CID sensor. A threaded "C" mount lens adaptor and locking ring provides close-up lens adaptation.



TN2507

4TN2507A3 Solid State Camera, 488 x 388 Sensor, RS170 Sync Lock	2800.00
4TN2507A4 Solid State Camera, 488 x 388 Sensor, RS170 H&V Drive	2800.00



TN2509

TIMING AND CONTROL MODULE

An accessory module which generates appropriate timing for external clock, H-reset, V-reset, and Inject/Inhibit is available for the TN2509. The Input/Output signals for the timing and control module are:

INPUTS

AC to 5V DC Supply
 Inject/Inhibit (BNC)

OUTPUTS

Element Rate Clock (TTL)
 H-Video Flag (TTL)
 V-Video Flag (TTL)
 Sync to Monitor
 H-Reset (BNC)
 V-Reset (BNC)
 10 MHz or
 14.318 MHz Clock (BNC)

Variations to the standard timing are available for a nominal setup charge. When ordering, refer to TN2509 Timing and Control Module.

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CCTV CAMERAS

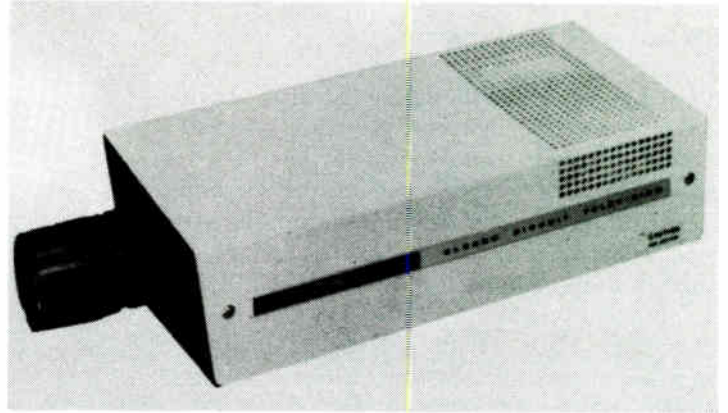
4TE-44 Series CCTV Cameras

General Electric's 4TE-44 CCTV cameras are designed to provide optimum performance, reliability and flexibility in a variety of surveillance and industrial imaging applications, at a moderate price. Quartz crystal controlled, random interlace or line locked RS-170 sync, high quality components used in design proven circuits, together with a wide selection of one-inch vidicons insure the adaptability of these cameras to most video installations. The 4TE-44 model is intended for indoor applications.

- Patented automatic beam current regulator circuit automatically compensates for normal vidicon aging eliminating the need for manual adjustment.
- Automatic black level clamp precisely maintains setup level over varying temperature and lighting conditions.
- Wide ALC range for automatic operation at varying light levels.
- Superior GE designed and manufactured deflection yoke eliminates need for image tube alignment.
- VTR compatible.
- Completely solid state (except vidicon).
- Single, high quality glass epoxy circuit board with plated through holes for greater reliability.
- Component locations are printed on circuit board to facilitate servicing.
- Cable compensator circuit provides improved performance on long cable runs.
- Full sweep failure protection.
- Light averaging circuit to enhance background information.

OPTIONS

- External H & V drives (B models only)
- Input voltages
 - 24 VAC
 - 117 VAC
 - 230 VAC 50 Hz
- Wide range auto iris lens options
 - 12.5mm f/1.4
 - 25mm f/1.4
 - 50mm f/1.8
- Vidicons
 - Integral Mesh
 - Silicon Target
 - Separate Mesh
 - Newvicon®
- Sync
 - Crystal controlled random interlace
 - 2:1 interlace RS-170



STANDARD

INPUT VOLTAGE (OPTIONAL)	117 VAC 60 Hz (10° - 15°)
INPUT POWER	230 VAC 50 Hz 12 watts @ 117V
HORIZONTAL SWEEP	15 750 Hz
VERTICAL SWEEP	60 Hz
COMPOSITE VIDEO OUTPUT	1.4 p.p. into 75 ohms
SYNC	Quartz crystal controlled random interlace
VIDEO BANDWIDTH	9 MHz
SIGNAL TO NOISE RATIO	Better than 40db (weighted)
GEOMETRIC DISTORTION	± 2% of picture height
GRAY SCALE REPRODUCTION	10 shades
SCAN RATE	525 line 60 Hz (standard) 625 line 50 Hz (optional)

CONTROLS

EXTERNAL	None
INTERNAL	Electric Focus, Beam Setup, V Size, H Size, V Center, Scene Averaging, Target (limit or set), Low Peaker (streaking), Internal Frequency (horizontal hold)

ENVIRONMENTAL

AMBIENT TEMPERATURE	-30°C to +60°C
HUMIDITY LIMITS	95%

MECHANICAL

LENGTH	12.34 in (31.34cm)
WIDTH	6.00 in (15.24cm)
HEIGHT	3.16 in (8.02cm)
WEIGHT	6.0 lbs (2.7kg)
LENS MOUNT	"C"
CAMERA MOUNT	4" x 30 (1)
CONNECTORS	BNC
SHIPPING WEIGHT	8.5 lbs (3.8kg)
SHIPPING VOLUME	0.8 cu ft

ORDER MODEL NUMBER	TE44A TE44B	TE44ASA TE44BSA	TE44ASM TE44BSM	TE44ANV TE44BNV
IMAGE TUBE DESCRIPTION	1 inch Standard Vidicon	1 inch Silicon Target Vidicon	1 inch Separate Mesh Vidicon	1 inch Hetero Junction (Newvicon®)
Type Number	7735	4532	8541	54076
Sensitivity*				
Faceplate Illumination	3lc	015lc	3lc	02lc
Full Video	01lc	005lc	01lc	007lc
Useable Picture	725 lines	700 lines	800 lines	700 lines
Resolution	10,000 l	1,250,000 l	10,000 l	800,000 l
Automatic Light Control Range		with f 4 1.460 auto iris lens		with f 4 1.360 auto iris lens
SPECIAL CIRCUITS				
Peak White Clipper	✓	✓	✓	✓
Automatic Beam Current Regulator	✓	✓	✓	✓
Automatic Black Level Clamp	✓	✓	✓	✓
High Frequency Peaker	B	✓	✓	✓
Full Sweep Failure Protection	B	✓	B	B
External Drive Capability	Optional	Optional	Optional	Optional
Light Averaging Control (Scene)	✓	Not Req'd	✓	Not Req'd
Auto Target	✓	Not Req'd	✓	Not Req'd
Target Voltage Limiter	✓	Not Req'd	✓	Not Req'd

*Traceable to National Bureau of Standards.

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CCTV CAMERAS

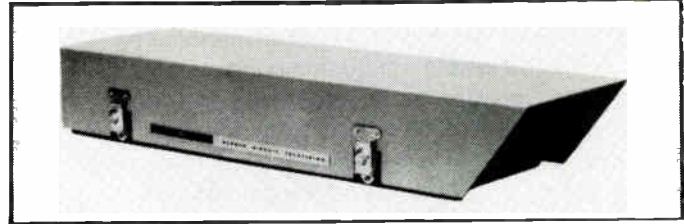
4TE45 Series CCTV Camera

General Electric's **4TE45** CCTV cameras provide exceptional performance, reliability and flexibility in most surveillance and industrial imaging applications. A wide selection of one-inch vidicons, combined with the use of high quality components, design proven circuits, including quartz crystal controlled, random interlace or line locked RS-170 sync, insure compliance with most demanding specifications. The **4TE45** camera is integrally housed in a weather resistant, tamper resistant housing.

- Patented automatic beam current regulator circuit automatically compensates for normal vidicon aging eliminating the need for manual adjustment.
- Automatic black level clamp precisely maintains setup level over varying temperature and lighting conditions.
- Wide ALC range for automatic operation at varying light levels.
- Superior GE designed and manufactured deflection yoke eliminates need for image tube alignment.
- VTR compatible.
- Completely solid state (except vidicon).
- Single, high quality glass epoxy circuit board with plated through holes for greater reliability.
- Component locations are printed on circuit board to facilitate servicing.
- Cable compensator circuit provides improved performance on long cable runs.
- Full sweep failure protection.
- Light averaging circuit to enhance background information.

OPTIONS

- External H&V drives (B models only)
- Input voltages
 - 24 VAC
 - 117 VAC
 - 230 VAC 50Hz
- Wide range of auto-iris lens options
- Vidicons
 - Integral Mesh
 - Silicon Target
 - Separate Mesh
 - Newvicon®
- Sync
 - Crystal controlled random interlace
 - 2:1 interlace RS-170



STANDARD SPECIFICATIONS

INPUT VOLTAGE	117 VAC, 60Hz (+10%, -15%) (Optional): 24 VAC, 60Hz (Optional): 230 VAC, 50Hz
INPUT POWER	12 watts @ 117V
HORIZONTAL SWEEP	15,750Hz
VERTICAL SWEEP	60Hz
COMPOSITE VIDEO OUTPUT	1.4 p-p into 75 ohms
SYNC	Quartz crystal controlled random interlace
VIDEO BANDWIDTH	9 MHz
SIGNAL TO NOISE RATIO	Better than 40db (weighted)
GEOMETRIC DISTORTION	± 2% of picture height
GRAY SCALE REPRODUCTION	10 shades
SCAN RATE	525 line, 60Hz (standard) 625 line, 50Hz (optional)

CONTROLS

EXTERNAL	None
INTERNAL	Electric Focus, Beam, Setup, V Size, H Size, V Center, Scene Averaging, Target (Limit or Set), Low Peaker (Streaking), Internal Frequency (Horizontal Hold)

ENVIRONMENTAL

AMBIENT TEMPERATURE	-30°C to +60°C
HUMIDITY LIMITS	100%

MECHANICAL

LENGTH	25.38 in. (64.5cm)
WIDTH	8.50 in. (21.5cm)
HEIGHT	5.38 in. (13.7cm)
WEIGHT	12.5 lbs. (5.7kg)
LENS MOUNT	1"
CAMERA MOUNT	¼" + 20 (2)
CONNECTORS	BNC
SHIPPING WEIGHT	15.0 lbs. (6.8kg)
SHIPPING VOLUME	1.7 cu. ft.

ORDER MODEL NUMBER	Random Interlace RS170	TE45A TE45B	TE45ASA TE45BSA	TE45ASM TE45BSM	TE45ANV TE45BNV
IMAGE TUBE DESCRIPTION		1-inch Standard Vidicon	1-inch Silicon Target Vidicon	1-inch Separate Mesh Vidicon	1-inch Hetero Junction Vidicon (Newvicon®) S4076
Type Number		7735	4532	8541	
Sensitivity*					
Faceplate Illumination					
Full Video		.3lc	.015lc	.3lc	.02lc
Useable Picture		.01lc	.005lc	.01lc	.007lc
Resolution		725 lines	700 lines	800 lines	700 lines
Automatic Light Control Range		10,000:1	1,250,000:1 with f1.4-1360 auto-iris lens	10,000:1	800,000:1 with f1.4-1360 auto-iris lens
SPECIAL CIRCUITS					
Peak White Clipper		✓	✓	✓	✓
Automatic Beam Current Regulator		✓	✓	✓	✓
Automatic Black Level Clamp		✓	✓	✓	✓
High Frequency Peaker		B	B	B	B
Full Sweep Failure Protection		B	B	B	B
External Drive Capability		Optional	Optional	Optional	Optional
Light Averaging Control (Scene)		✓	Not Req'd	✓	Not Req'd
Auto Target		✓	Not Req'd	✓	Not Req'd
Target Voltage Limiter		✓	Not Req'd	✓	Not Req'd

*Traceable to National Bureau of Standards

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(502) 685-6200

CCTV CAMERAS

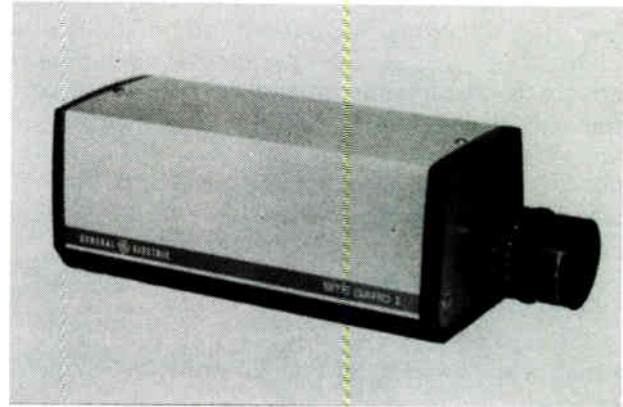
4TE-50 Site Gard I CCTV Camera

The General Electric 4TE-50 series of CCTV cameras present the latest state-of-the-art developments in camera technology. Designed for professional use, they offer high sensitivity over a broad range of lighting conditions and the flexibility that permits use in most systems where outstanding performance and dependability are of primary importance.

- Beam regulation circuit that automatically compensates for normal vidicon aging, minimizing manual beam adjustment.
- Instant-set that returns set-up and video level to factory preset level for ease in installation and servicing.
- Selectable frequency response booster for extra crisp pictures.
- High resolution, broad bandwidth design for sharper pictures.
- Capability to drive or be driven by other cameras.

OPTIONS

- Automatic bandwidth compression with LED indicator. Optimizes sensitivity and performance at low light levels.
- Full sweep failure protection.
- External drive capability with H&V, composite sync or Gen-Lock.
- Programmable EIA or CCIR sync.
- Jumper selectable 117/230V, 60/50Hz power.
- Modular plug-in boards with plated through holes.
- 10:1 automatic gain control.
- Filament regulation for extended tube life.
- Reversible H&V sweeps.



4TE-50 SITE GARD I SPECIFICATIONS

ELECTRICAL	
INPUT VOLTAGE	105V to 130 VAC 60/50 Hz 230 VAC ± 10% 60/50 Hz 24 VAC ± 10% 50/60 Hz
INPUT POWER	23 watts
COMPOSITE VIDEO	1V p-p into 75 ohms Adjustable from 4 to 1.2 V p-p
SYNC	RS-330, RS-170, CCIR, internal sync, external H&V drives or Gen-Lock
VIDEO BANDWIDTH	11 MHz
SIGNAL TO NOISE RATIO	55db (weighted)
GEOMETRIC DISTORTION	± 2% of picture height
GRAY SCALE RENDITION	10 shades
SCAN RATE	525/60, 625/50, 875/60
AGC	20db minimum
OUTPUTS	Video, (H drive, V drive, composite sync 75 ohms, Optional)
INPUTS	H drive, composite sync, Gen-Lock, V drive (10K ohms)
TEMPERATURE RANGE	-20°C to +60°C (-22°F to +140°F)
HUMIDITY	95%
CONTROLS & INDICATORS	
EXTERNAL	Bandwidth compression indicator, power on/off switch and indicator, beam, electrical focus, mechanical focus, instant set sw, sch, video level, setup
INTERNAL	V size, H size, V center, H center, auto-target limit, low peaking (streaking), horizontal hold (RS-170), H&V reverse white clip, target auto/manual, gamma
MECHANICAL	
SIZE	12 1/2" L x 5 25" W x 4 75" H (30.5cm x 13.3cm x 12.1cm)
WEIGHT	9 C lbs (4.1 kg)
CONSTRUCTION	Aluminum castings and extrusions
LENS MOUNT	Type "C"
CONNECTORS	BNC
CAMERA MOUNT	Two "L" x 20 (one moveable)

	1-inch Standard Vidicon 7735	1-inch Silicon Target Vidicon 4532H	1-inch Separate Mesh Vidicon 8541	1-inch Newvicon® S4076
Sensitivity:*				
Faceplate Illumination				
Full Video	.05 fc	.002 fc	.015 fc	.003 fc
Useable Picture (.25V Video)	0.015 fc	.0003 fc	.005 fc	.001 fc
Resolution (Typical)	750 lines	700 lines	1000 lines	800 lines
Automatic Light Control Range	100,000:1	20,000,000:1 with f1.4-f360 auto-iris lens 10:1 AGC amp.	100,000:1	20,000,000:1 with f1.4-f360 auto-iris lens 10:1 AGC amp.
SPECIAL CIRCUITS				
Peak White Clipper	✓	✓	✓	✓
Gamma Correction	✓	✓	✓	✓
Automatic Black Level Clamp	✓	✓	✓	✓
High Frequency Peaker	✓	✓	✓	✓
Automatic Beam Current Regulator	✓	✓	✓	✓
Light Averaging Control (Scene)	✓	Not Applicable	✓	Not Applicable
Auto Gain Control	✓	✓	✓	✓
Automatic Target Control	✓	Not Req'd	✓	Not Req'd

*Traceable to National Bureau of Standards

Prices and Specifications Subject to Change Without Notice.

VC-85

GENERAL ELECTRIC COMPANY

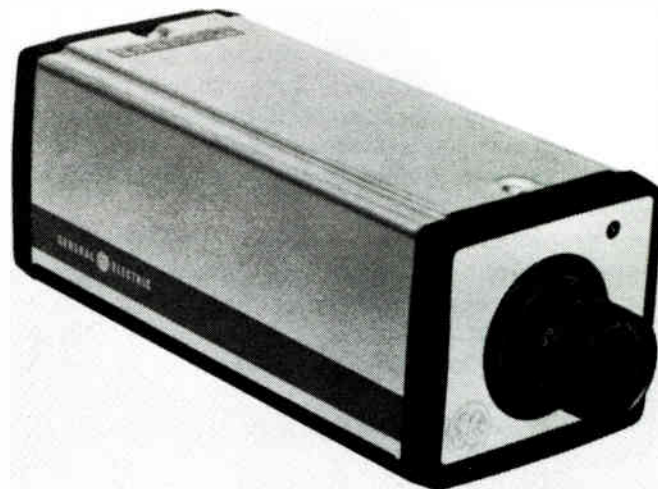
Closed Circuit TV Operation
 316 East Ninth Street
 Owensboro, KY 42301
 (502) 685-6200

CCTV CAMERAS

4TE63 Site Gard II Series

The General Electric Site Gard II series of CCTV cameras offer traditional GE quality and reliability in a $\frac{2}{3}$ -inch vidicon camera. Incorporating state-of-the-art circuitry plus features not found in other low cost cameras.

- A choice of models for either 120-volt AC, 60 Hz or 24 volt AC, 60 Hz
- Line locked random or Internal 2:1 RS-170 EIA standard sync.
- Internal beam, focus and target controls.
- Horizontal resolution of 550 lines and S/N ratio of 43dB.
- Automatic Beam Control (ABC) and Automatic Electric Focus Control (AFC) maintain clean sharp picture automatically.
- New metal case and design, along with rugged die-cast chassis. Rugged construction provides more stability and better protection from RFI.



ELECTRICAL

INPUT VOLTAGE	117 VAC, 60 Hz (± 10%) 9 watts 24 VAC, 60 Hz (± 10%) 10 watts
H SWEEP	15,750 Hz
V SWEEP	60 Hz
SYNC	RS 170 or vertical line locked (switchable) 525 line, 60 Hz
EXTERNAL CONTROLS	Power ON/OFF, mechanical focus

MECHANICAL

SIZE	W 3 $\frac{1}{16}$ " x H 3 $\frac{1}{16}$ " x L 8 $\frac{3}{8}$ "
WEIGHT	3.7 lbs
CONSTRUCTION	Aluminum
LENS MOUNT	Will accept "C" mount lens
VIDEO CONNECTOR	BNC
CAMERA MOUNT	$\frac{1}{4}$ -20

PERFORMANCE

SENSITIVITY: FACEPLATE ILLUMINATION .....	.5fc will produce full video .05fc will produce usable picture
COMPOSITE VIDEO OUTPUT	1.0 p-p into 75 ohms
RESOLUTION	550 lines
ALC RANGE	20,000:1
SIGNAL TO NOISE RATIO	43 dB
GEOMETRIC DISTORTION	Less than 2%
GRAY SCALE RENDITION	10 shades

ENVIRONMENTAL

TEMPERATURE	14°F to 122°F (-10°C to +50°C)
HUMIDITY	90%

GENERAL ELECTRIC COMPANY

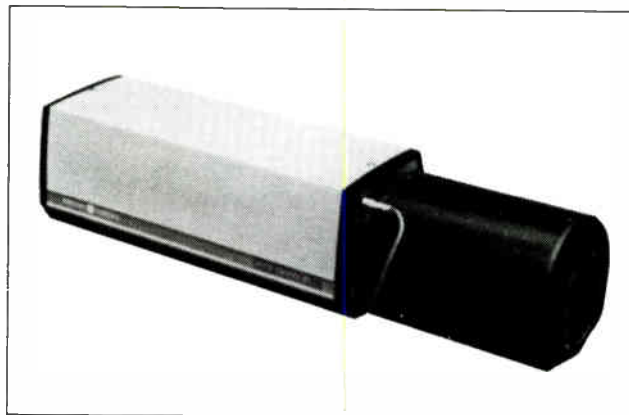
Closed Circuit TV Operation
316 East Ninth Street
Owensboro, KY 42301
(502) 685-6200

CCTV CAMERAS

4TE-57 Site Gard III Series

The 4TE-57 Site Gard III camera is the ultimate in very low light level cameras available today. Site Gard III has been carefully engineered to provide outstanding performance and GE dependability. General Electric's superiority in low light level cameras is known throughout the world. For hands off, 24-hour-a-day dependable service, Site Gard III "On Guard"!

- Electron beam coated lens assures highest contrast and resolution obtainable under the most adverse conditions.
- 15 Billion to 1 automatic light compensation.
- Utilizes reduced blooming, silicon intensified target vidicon.
- Cameras are subjected to a 48-hour "burn-in" before final testing.
- Rugged, dust resistant, all-aluminum case radiates heat away from vidicon to enhance tube life.
- Beam regulator circuit that automatically compensates for vidicon aging.



- Selectable frequency response booster for extra sharp display.
- Automatic bandwidth compression.
- Sweep failure protection.
- External drive capability with H&V, composite sync or Gen-Lock.
- Programmable EIA or CCIR sync.
- Jumper selectable 117/230V, 60/50 Hz power.
- Modular plug-in boards for easy service.
- 10:1 automatic gain control (AGC).
- Separately reversible H&V sweeps.

4TE-57 SPECIFICATIONS

ELECTRICAL

INPUT VOLTAGE	117 VAC \pm 10% 60/50 Hz 230 VAC \pm 10% 60/50 Hz 24 VAC \pm 10% 60/50 Hz
INPUT POWER	23 Watts
COMPOSITE VIDEO	1 volt p-p into 75 ohms. Adjustable from .4V to 1.2V p-p black to white
SYNC	RS-330, RS-170, CCIR, internal sync, external H&V drives or Gen-Lock
*AUTOMATIC LIGHT CONTROL RANGE	15 Billion to 1
VIDEO BANDWIDTH	10 MHz
*SENSITIVITY .....	.000004 (4×10^{-6}) footcandles/faceplate illumination for usable picture .000012 (1.2×10^{-5}) full video
*RESOLUTION	650 lines typical 750 lines maximum
GEOMETRIC DISTORTION	\pm 3% of picture height, 1.5% picture height center, 3% corners
GRAY SCALE RENDITION	10 shades
VIDICON	Silicon intensified target vidicon
SCAN RATE	525/60, 625/50
AGC	20 db minimum (10.1)
SIGNAL TO NOISE	45 db
CONTROLS & INDICATORS	External: Power on/off switch and indicator, beam, electrical focus, mechanical focus, video level, set-up Internal: V size, H size, V center, H center, target limit, low peaking, H hold (RS-170), H&V reverse, white clip, Gamma
OUTPUTS	Video, H drive, V drive, composite sync (75 ohms)
INPUTS	H drive, V drive (10K ohms) composite sync, Gen-Lock
TEMPERATURE RANGE	-20°C to +50°C at 95% humidity
MECHANICAL	
SIZE	4.75"H x 5.25"W x 14.12"L (12.1 cm x 13.3 cm x 35.86 cm)
WEIGHT	11.2 lbs. (5.0Kg) less lens
CONSTRUCTION	Aluminum castings and extrusions
LENS MOUNT	Type "C"
CONNECTORS	BNC
CAMERA MOUNT	Two ¼" x 20

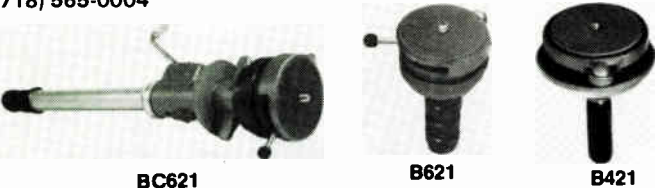
*Traceable To National Bureau of Standards.

Prices and Specifications Subject to Change Without Notice.

VC-87

GITZO KARL HEITZ, INC.

34-11 62 St. P.O. Box 427
 Woodside, NY 11377
 (718) 565-0004



Gitzo Product Features

Top Precision. Hand assembled, literally custom built to your order, to the most demanding European precision requirements, with stressproof light metals as used in airplanes.

Optimal Stability. Ingenious design with extra solid tubular legs firmly positioned against rigid center part, gives optimal stability without torque, prevents vibration of camera, telescope.

Easy Handling. Deeply anodized (1/10mm), corrosion and rust proof leg extensions and center column, glide smoothly and lock firmly on fiber sleeves (no metal on metal), with soft cushioned locking rings, for easy, foolproof handling without any binding — ever.

Multiple Choice. More than 100 tripods, short or long for portability or height, with rapid reversible sliding column or Cremaillere gearlift column for fine adjustment, thinner or fatter legs for any light weight (35mm, Super 8mm), medium weight (2 1/4", 6 x 7cm), heavy (4 x 5", 5 x 7", 8 x 10", 16mm), or extra heavy photo, video, cine cameras, equipment.

Interchangeable Heads. More than 30 photo, ball and video/cine pan-tilt heads, with 90° tilts, 360° panning, plus twin heads, counterbalanced heads, fluid heads, levelling balls for video/cine, with strong, but soft touch handles for smooth moving, tight locking in any position.

Complete System. More than 15 monopods, multipod, copystand, ladderpods, monocolumns, microphone booms, dollies, attachments, cases, protection stands and platforms, plus side arms, shutters, diaphragms, professional cable and remote releases, light stands, etc.

Economical All-Metal Construction. Uncompromisingly solid, virtually indestructible precision mechanism — the result of over 65 years of expert development — withstands the most rugged use, for lifelong durability.

Easy, Minimal Service. Construction unit system of rolled threads, solid steel bolts, nuts and screws, permits easy detaching, cleaning and replacing of any part by user, without any breakable casts or plastic substitutes, without any unrepairable riveting, without any falling apart — ever. And the service quota for GITZO tripods is less than 1%.

Scrupulous Quality Controls, Full Warranty Buyer Protection. Each tripod passes the most severe quality controls, to meet the most rigid European precision standards. And, you are protected by the Full GITZO Warranty For Life plus permanent service and availability of parts.

LEVELLING BALLS With LOCKING GRIP, HEADLOCK, For RAPID ADJUSTMENT OF FLUID HEADS, Without Or With CENTER COLUMN For HEIGHT ADJUSTMENT	
221 BR	Levelling Ball 2 w/Rapid column for Reporter \$139.95
221 BC	Levelling Ball 2 w/Cremaillere gearlift column for Cremaillere 2 149.95
321 BR	Levelling Ball 3 w/Rapid column for Studex 139.95
321 BC	Levelling Ball 3 w/Cremaillere gearlift column for Cremaillere 3 149.95
421 B	Levelling Ball 4 for Super Pro Tele Studex, platform 3/4" diameter 139.95
421 BR	Levelling Ball 4 w/Rapid column for Super Pro Tele Studex 199.95
421 BC	Levelling Ball 4 w/Cremaillere gearlift column for Super Pro Tele Studex 339.95
621 B	Levelling Ball 6 for Super Pro Tele Studex, platform 4/4" diameter 199.95
621 BC	Levelling Ball 6 w/Cremaillere gearlift column 18" for Super Pro Tele Studex 399.95
621 BCL	Levelling Ball 6 w/Long Cremaillere gearlift column 32" for Super Pro Tele Studex 499.95
622 BF	Levelling Ball 6 F w/flat base 4/4" diameter, 3/8" socket 259.95

TRIPODS With LEVELLING BALLS Without Or With CENTER COLUMN For HEIGHT ADJUSTMENT	
REPORTER, CREMAILLERE 2: LEG DIAMETER 1", For CAMERAS To 10 Lbs.	
203 BR2	Reporter Eco Ball 2/Rapid w/2 leg sections \$229.95
204 BR2	Reporter Industry Ball 2/Rapid w/3 leg sections 239.95
220 BR2	Reporter Performance Ball 2/Rapid w/3 leg sections, leg spreading 279.95
224 BR2	Reporter Industry Performance Ball 2/Rapid w/3 leg sect., leg spreading 289.95
210 BR2	Cremaillere 2 Industry Ball 2/Cremaillere gearlift w/3 leg sections 299.95
212 BR2	Cremaillere 2 Industry Performance Ball 2/Cremaillere gearlift w/3 leg sections, leg spreading 339.95

STUDEX, CREMAILLERE 3: LEG DIAMETER 1 1/2", For CAMERAS To 15 Lbs.	
303 BR3	Studex Eco Ball 3/Rapid w/2 leg sections \$259.95
301 BR3	Studex Ball 3/Rapid w/3 leg sections 279.95
323 BR3	Studex Compact Performance Ball 3/Rapid w/3 leg sections, leg spreading 329.95

LEVELLING BALLS/TRIPODS



320 BR3	Studex Performance Ball 3/Rapid w/3 leg sections, leg spreading \$329.95
310 BR3	Cremaillere 3 Ball 3/Cremaillere gearlift w/3 leg sections 349.95
312 BR3	Cremaillere 3 Performance Ball 3/Cremaillere gearlift w/3 leg sections, leg spreading 389.95

SUPER STUDEX STANDARD:

LEG DIAMETER 1 1/2", For CAMERAS To 50 Lbs.	
405 B4	Super Studex Compact Ball 4 w/4 leg sections \$339.95
405 BR4	Super Studex Compact Ball 4/Rapid w/4 leg sections 399.95
405 BC4	Super Studex Compact Ball 4/Cremaillere gearlift w/4 leg sections 539.95
400 B4	Super Studex Giant Ball 4 w/3 leg sections 339.95
400 BR4	Super Studex Giant Ball 4/Rapid w/3 leg sections 399.95
400 BC4	Super Studex Giant Ball 4/Cremaillere gearlift w/3 leg sections 539.95
400/2 B4	Super Studex Giant Eco Ball 4 w/2 leg sections 299.95
400/2 BR4	Super Studex Giant Eco Ball 4/Rapid w/2 leg sections 359.95
400/2 BC4	Super Studex Giant Eco Ball 4/Cremaillere gearlift w/2 leg sections 499.95
408	Super Studex Compact Luxe w/5 leg sections add 60.00
403	Super Studex Giant Luxe w/4 leg sections add 60.00

PRO STUDEX PERFORMANCE:

LEG DIAMETER 1 1/2" w/LEG SPREADING, For CAMERAS To 50 Lbs.	
415 B4	Pro Studex Compact Ball 4 w/4 leg sections \$389.95
415 BR4	Pro Studex Compact Ball 4/Rapid w/4 leg sections 449.95
415 BC4	Pro Studex Compact Ball 4/Cremaillere gearlift w/4 leg sections 589.95
410 B4	Pro Studex Giant Ball 4 w/3 leg sections 389.95
410 BR4	Pro Studex Giant Ball 4/Rapid w/3 leg sections 449.95
410 BC4	Pro Studex Giant Ball 4/Cremaillere gearlift w/3 leg sections 589.95
410/2 B4	Pro Studex Giant Eco Ball 4 w/2 leg sections 349.95
410/2 BR4	Pro Studex Giant Eco Ball 4/Rapid w/2 leg sections 409.95
410/2 BC4	Pro Studex Giant Eco Ball 4/Cremaillere gearlift w/2 leg sections 549.95
418	Pro Studex Compact Luxe w/5 leg sections add 60.00
413	Pro Studex Giant Luxe w/4 leg sections add 60.00

TELE STUDEX PERFORMANCE:

LEG DIAMETER 1 1/2" w/LEG SPREADING, For CAMERAS To 50 Lbs.	
505 B4	Tele Studex Compact Ball 4 w/4 leg sections \$429.95
505 BR4	Tele Studex Compact Ball 4/Rapid w/4 leg sections 489.95
505 BC4	Tele Studex Compact Ball 4/Cremaillere gearlift w/4 leg sections 629.95
500 B4	Tele Studex Giant Ball 4 w/3 leg sections 429.95
500 BR4	Tele Studex Giant Ball 4/Rapid w/3 leg sections 489.95
500 BC4	Tele Studex Giant Ball 4/Cremaillere gearlift w/3 leg sections 629.95
500/2 B4	Tele Studex Giant Eco Ball 4 w/2 leg sections 389.95
500/2 BR4	Tele Studex Giant Eco Ball 4/Rapid with 2 leg sections 449.95
500/2 BC4	Tele Studex Giant Eco Ball 4/Cremaillere gearlift w/2 leg sections 589.95

TELE STUDEX PERFORMANCE:

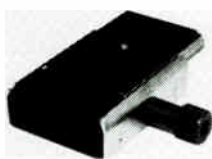
LEG DIAMETER 1 1/2" w/LEG SPREADING, For CAMERAS To 100 Lbs.	
505 B6	Tele Studex Compact Ball 6 w/4 leg sections \$489.95
505 BC6	Tele Studex Compact Ball 6/Cremaillere gearlift w/4 leg sections 689.95
505 BCL6	Tele Studex Compact Ball 6/Long Cremaillere gearlift w/4 leg sections 789.95
500 B6	Tele Studex Giant Ball 6 w/3 leg sections 489.95
500 BC6	Tele Studex Giant Ball 6/Cremaillere gearlift w/3 leg sections 689.95
500 BCL6	Tele Studex Giant Ball 6/Long Cremaillere gearlift w/3 leg sections 789.95
500/2 B6	Tele Studex Giant Eco Ball 6 w/2 leg sections 449.95
500/2 BC6	Tele Studex Giant Eco Ball 6/Cremaillere gearlift w/2 leg sections 649.95
500/2 BCL6	Tele Studex Giant Eco Ball 6/Long Cremaillere gearlift w/2 leg sections 749.95
508	Tele Studex Compact Luxe w/5 leg sections add 90.00
504	Tele Studex Giant Luxe w/5 leg sections add 120.00

GITZO KARL HEITZ, INC.

34-11 62 St. P.O. Box 427
Woodside, NY 11377
(718) 565-0004



285



385



380

100% FLUID HEADS

- 380 Fluid Head 3 with 100% fluid panning and 100% fluid vertical tilt, quick release plate, 15" handle, supports 5-15 lbs. \$ 399.95
 380/2 Same, with 2 15" handles 449.95
 384 Additional quick release plate for 380 19.95
 580 Fluid Head 5 with 100% panning, 100% fluid and counterbalanced vertical tilt, with 3 x 8" quick and shift release plate, extensible handle 14-22", supports 10-50 lbs. 1995.00
 579 Same, with 100% fluid panning, counterbalanced vertical tilt, supports 10-50 lbs. 1295.00
 680 Fluid Head 6: Same as 580 w/stronger counterbalance, supports 50-100 lbs. 2295.00
 679 Fluid Head 6: Same as 579 w/stronger counterbalance, supports 50-100 lbs. 1595.00
 586 580, 579, 680, 679, with second extensible handle 14-22" add 99.95

FLUID ACTION HEAD, BASE

- 180 Fluid Action Head 1 with rapid adaptor, supports 2-7 lbs. \$149.95
 285 Fluid Action Base for 360° Panning of non-fluid heads, supports 2-20 lbs. 119.95

VIDEO-CINE HEADS, SPRING BALANCED

- 155 Video-Cine 1S for Weekend, Total/Sport, Cremaillere 0/1, supports 2-7 lbs. \$ 79.95
 252 Video-Cine 2S for Total/Sport, Reporter, Cremaillere ½, supports 5-10 lbs. 119.95

VIDEO HEAD,

NOT COUNTERBALANCED With QUICK RELEASE

- 251 Video 2 for Total/Sport, Reporter, Cremaillere ½, supports 5-10 lbs. \$89.95

SIMPLE VIDEO-CINE HEADS, NOT COUNTERBALANCED

- 050 Video-Cine 0 for Loisir, Weekend, Cremaillere 0, supports 2-5 lbs. \$ 49.95
 150 Video-Cine 1 for Total/Sport, Cremaillere 1, supports 2-7 lbs. 59.95
 250 Video-Cine 2 for Reporter, Cremaillere 2, supports 2-10 lbs. 69.95
 350 Video-Cine 3 for Studex, Cremaillere 3, supports 5-15 lbs. 79.95
 450 Video-Cine 4 for Super Pro Tele Studex, supports 10-20 lbs. 89.95
 450 L Video-Cine 4L with longer handle 15", supports 10-20 lbs. 109.95
 585 Side tilt attachment for more than 90°, also suited for Monopods 49.95

VIDEO-CINE HEADS With ADJUSTABLE COUNTERBALANCE, COLUMN For HEIGHT ADJUSTMENT

- 550 5T Head/Rapid column, 1 handle extensible 16-22", supports 10-65 lbs. \$349.95
 551 5T Head/Cremaillere gearlift column, same handle, supports 10-65 lbs. 459.95
 5TDL 5T Head with 2 handles add 59.95

VIDEO-CINE TRIPODS With 2 LEG SECTIONS

- 03 Weekend Eco, leg diam. 3/4", supports 0-3 lbs. \$ 89.95
 103 Sport Eco, leg diam. 7/8", supports 2-5 lbs. 99.95
 203 Reporter Eco, leg diam. 1", supports 5-10 lbs. 119.95
 303 Studex Eco, leg diam. 1-1/4", supports 10-15 lbs. 149.95
 400/2 Super Studex Giant Eco, leg diam. 1-3/8", supports 20-50 lbs. 229.95
 410/2 Pro Studex Giant Eco w/leg spreading, leg diam. 1-3/8", supports 20-50 lbs. 279.95
 500/2 Tele Studex Giant Eco w/leg spreading, leg diam. 1-1/2", supports 25-65 lbs. 319.95

TWIN HEADS, BRACKET

- 584 Twin Heads, for 2 cameras of up to 5 lbs. \$39.95
 539 Twin (Triple) bracket, for 2 (or 3) heavier cameras of up to 25 lbs. 69.95

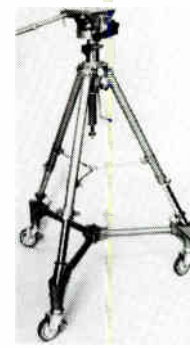
LADDERPODS And LADDER ATTACHMENTS, For CAMERAS And PERSONS To 300 Lbs.

- 598 B4 Gitzchel Ball 4 \$ 869.00
 598 BR4 Gitzchel Ball 4/Rapid 919.00
 598 BC4 Gitzchel Ball 4/Cremaillere gearlift 1069.00
 598 B6 Gitzchel Ball 6 909.00
 598 BC6 Gitzchel Ball 6/Cremaillere gearlift 1059.00
 597 Transport wheels for Gitzchel (when collapsed) pair 59.95
 599 B4 Gitfix Ball 4 Attachment 299.95
 599 BR4 Gitfix Ball 4/Rapid Attachment 369.95
 599 BC4 Gitfix Ball 4/Cremaillere gearlift Attachment 499.95
 599 B6 Gitfix Ball 6 Attachments 359.00
 599 BC6 Gitfix Ball 6/Cremaillere gearlift Attachment 559.00

TRIPODS/HEADS



203-252



610



810

MONOCOLUMNS With ACCESSORY TRAY:

- DIAMETER 4", For CAMERAS To 100 Lbs., CHARCOAL FINISH
 615 Monocolumn w/Cremaillere gearlift, diameter 1½", 35"-54" \$799.00
 615 L Monocolumn Luxe w/Long Cremaillere gearlift, 37"-68" 899.00

VIDEO COMBI TRIPODS With 2 LEG SECTIONS, FLUID ACTION, Or COUNTERBALANCED VIDEO HEAD

- 03-180 Weekend Eco/Fluid Action Head 1, supports 2-5 lbs. \$269.95
 103-180 Sport Eco/Fluid Action Head 1, supports 2-7 lbs. 279.95
 203-180 Reporter Eco/Fluid Action Head 1, supports 2-7 lbs. 299.95
 03-155 Weekend Eco Video Combi w/155 Video 1S, supports 2-5 lbs. 159.95
 103-155 Sport Eco Video Combi w/155 Video 1S, supports 2-7 lbs. 159.95
 103-252 Sport Eco Video Combi w/252 Video 2S, supports 2-7 lbs. 199.95
 203-252 Reporter Eco Video Combi w/252 Video 2S, supports 5-10 lbs. 219.95

VIDEO COMBI TRIPODS

With 2 LEG SECTIONS, NON-COUNTERBALANCED VIDEO Or SIMPLE VIDEO-CINE HEADS

- 103-251 Sport Eco Video Combi w/251 Video 2, supports 2-7 lbs. \$169.95
 203-251 Reporter Eco Video Combi w/251 Video 2, supports 5-10 lbs. 189.95
 03-050 Weekend Eco Video Combi w/050 Video-Cine 0, supports 2-5 lbs. 129.95
 103-150 Sport Eco Video Combi w/150 Video-Cine 1, supports 2-7 lbs. 149.95
 203-250 Reporter Eco Video Combi w/250 Video-Cine 2, supports 5-10 lbs. 169.95
 303-350 Studex Eco Video Combi w/350 Video-Cine 3, supports 10-15 lbs. 199.95
 400/2-450 Super Studex Giant Eco Video Combi w/450 Video-Cine 4, supports 10-20 lbs. 299.95
 410/2-450 Pro Studex Giant Eco Video Combi w/450 Video-Cine 4, supports 10-20 lbs. 349.95
 500/2-450 L Tele Studex Giant Eco Video Combi w/450L Video-Cine 4L, supports 10-20 lbs. 419.95
 500/2-450 LL Same, with 2 handles add 19.95

TRIPODS With COUNTERBALANCED VIDEO-CINE HEAD/ COLUMN, ACCESS. SUPPORTS

- 517/8 Wire hooks for Tele Studex, set of 3: 2 long, 1 short \$79.95
 608 Chain between legs for Tele Studex 69.95
 552 Intermediate plate for use with large lenses 29.95

EXTRA SOLID TRIPODS With COUNTERBALANCED VIDEO-CINE HEAD/COLUMN For HEIGHT ADJUSTMENT

- 610 Video 6T/Cremaillere gearlift w/chain, leg spreading, supports 65 lbs. \$1399.00
 810 Video 8T/Cremaillere gearlift w/4" diam. center column, for extra solid support, 5" wheel dolly, supports 250 lbs. 2499.00
 605/2 Quickchange dovetail attachment for 6T or 8T heads (specify) 399.95
 6TDL 6T or 8T Head with 2 handles add 99.95

EXTRA SOLID VIDEO TRIPODS: LEG DIAMETER 1½"

w/2 LEG SECTIONS For CAMERAS To 100 Lbs. And 250 Lbs.

- 600 B6F Video 6T/Ball 6F with chain, leg spreading, supports 100 lbs. \$ 799.00
 800 B6F Video 8T/Ball 6F w/4" diam. center column for extra support, 5" wheel dolly, supports 250 lbs. 2295.00

DOLLIES, COLLAPSIBLE With 3/8" SCREW In CENTER (Specify Tripod)

- 390 With 1½" wheels, adjustable leather shoes, rubber foot \$149.95
 391 With 3" wheels, adjustable metal shoes 199.95
 392 With 5" wheels, adjustable metal shoes 249.95
 491 With 3" wheels, metal shoes, stirrups (specify tripod for adaptors) 249.95
 492 With 5" wheels, metal shoes, stirrups (specify tripod for adaptors) 299.95
 590 Same, heavier duty, not collapsible (specify tripod for adaptors) 399.95
 591 Same, with travelling fixings (specify tripod for adaptors) 499.95
 593 Same, collapsible (specify tripod for adaptors) 449.95
 594 Same, with travelling fixings (specify tripod for adaptors) 549.95
 498 Tripod adaptors for dollies with metal shoes, stirrups (specify tripod) set of 3 19.95
 516 Pan-tilt cradle for dollies 491, 2, 590/4, for monitors, recorders, etc. 199.95

Prices and Specifications Subject to Change Without Notice.

VC-89

HARRIS CORPORATION

VIDEO SYSTEMS DIVISION

P.O. Box 4290
Quincy, IL 62305-4290
(217) 222-8200

ENG/EFP CAMERA

TC-90 ENG/EFP CAMERA

The Harris TC-90 brings out the best in your cameraperson...and your pictures. The just-right camera balance makes sure-footed shooting from even the most difficult angles a snap. And the super lightweight adds to the ease of handling and eliminates fatigue as a factor on long days in the field.

Better yet, the TC-90 provides excellent pictures, like a studio camera. It uses three LOC, mixed field 1/2" (13mm) diode gun Plumbicon® tubes, an extremely stable f/1.4 prism and exclusive FET preamps for outstanding picture performance. The TC-90 reproduces colors the way you actually see colors, and the pictures have a sharpness and clarity you rarely get from a portable camera. Even the reds are clearly defined. With most cameras, anything red tends to become a little fuzzy; with the TC-90, an exclusive contours-from-red* circuit maintains sharp detail on all red objects.

A terrific balancing act

The TC-90 could be smaller, but we deliberately designed it just a little longer than it had to be, making it slightly tail-heavy to counterbalance the weight of the lens. It also has a low center of gravity that makes the TC-90 practically cling to a cameraperson's shoulder. Then there's the weight, only 8.2 pounds without viewfinder, lens and battery.

It may be the most rugged camera there is.

Lightweight as it is, the TC-90 may be the toughest camera you can buy. Every part was selected or designed to take a beating. The case is built of a graphite composite that needs no maintenance and should never need repair.

FCC radiation certification.

The TC-90 has passed the FCC radiation test with flying colors, and is suitably labelled to conform to Part 15 Subpart J FCC Rules and Regulations for Type A equipment.

Tubes — smaller is better.

The LOC (low output capacitance), mixed field 1/2" diode gun Plumbicon tubes used in the TC-90 provide registration performance so much better than 2/3" magnetic tubes that the additional complication of computer-controlled geometry correction is not required.

Pictures with "snap".

From its exclusive f/1.4 prism to its sophisticated use of Large Scale Integrated (LSI) circuits, the TC-90 is designed to deliver outstanding picture clarity as well as perfect colorimetry under all lighting conditions.

Auto white balance in 0.3 second.

When the auto white balance switch is activated, with the TC-90's test signal inserted, you will get a perfect white balance for 3200°K scene color temperature. Or, when the auto white switch is activated with scene content, a perfect white balance is achieved for that scene content in 0.3 second. This is stored in memory until reset.

Auto black balance assures perfect colorimetry.

When the TC-90's black balance switch is momentarily activated, the lens iris closes automatically, the blacks are balanced in 0.3 second, and the lens opens to its previous iris setting. This ensures perfectly balanced individual black levels for red, green and blue channels, which are stored in memory until reset.

Comet tail suppression.

The TC-90 employs comet tail suppression circuits to minimize the effects of bright scene highlights.

The TC-90 delivers a S/N of at least — 60dB.

An outstanding S/N ratio of -60dB is achieved at light levels as low as 56 foot-candles at f/1.4.



TC-90

Simultaneous contours from red and green.

Other cameras offer contouring on only one color at a time. The TC-90 provides contours out of green and red simultaneously to enhance image sharpness over a wide color spectrum.

Genlock with precise SC/H phasing.

With three LSIs in the RS-170A sync generator system, timing is quick, accurate and at the proper relationship between horizontal sync and color subcarrier. The TC-90 genlocks to either a composite color or black-burst signal.

Built-in color bar and stairstep test signals.

The TC-90 has built-in full field or split field color bars that meet or exceed all NTSC specifications.

High-fidelity microphone amplifier.

The TC-90 includes a built-in microphone preamplifier to supply line level audio to all VTRs.

Built-in RTS-compatible intercom amplifier.

The TC-90 camera head has a built-in RTS-compatible intercom amplifier.

Runs on very little power from a big array of sources.

You can power the TC-90 on DC voltage from +10.5 to +15 volts, from any of six sources: 1) two-ampere/hour on-board battery pack; 2) four-ampere/hour on-board battery pack; 3) VTR/VCR battery; 4) an AC-to-DC converter power pack which attaches like a battery pack; 5) a battery belt; 6) any automotive 12-volt DC power supply with negative ground.

You get more than a good view on the 1-1/2" diagonal CRT in the TC-90 viewfinder.

An oscilloscope-type display provides an actual video waveform, which, with a 100% exposure cursor line, lets you make precise manual iris adjustments. You can turn it off when you don't want it. Four LEDs in the viewfinder give you four different warnings: 1) the VTR/VCR is in record mode; 2) end-of-tape of VTR/VCR not connected to camera; 3) VTR/VCR battery low; 4) on-board camera battery low.

A filter for any type of shot.

The TC-90 has a built-in 5-position filter wheel to allow the camera operator great flexibility for color temperature compensation and scene illumination correction.

With the "Smart Package"™ option, the TC-90 may just be the smartest ENG/EFP camera available anywhere.

Add the exclusive Smart Package™ option to the TC-90, and you get microprocessor time code generation that lets you record SMPTE and VITC time codes as you shoot. The Smart Package also adds diagnostics, auto centering and encoder balance. No diascope lenses or special test charts are needed for the automatic adjustment of these parameters, only normal scene content is required.

HARRIS CORPORATION

VIDEO SYSTEMS DIVISION

P.O. Box 4290
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(217) 222-8200

COLOR STUDIO TELEVISION CAMERAS

C SERIES COLOR STUDIO TELEVISION CAMERAS

The Harris C Series offers a wide range of choices to give you the exact camera configuration that best fits your production needs. Now you can have a camera that is essentially custom designed for your operation. You make the choices...and you get exactly what you want.

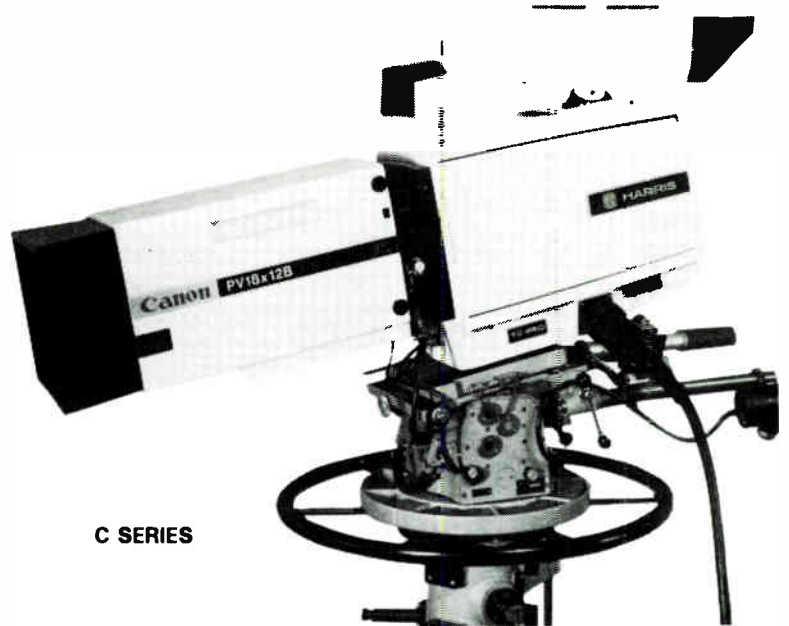
The basic C Series model is a manual setup camera with automatics. The C Series also offers a full computer-controlled automatic setup version that features a separate computer in each camera for simultaneous setup and greater flexibility. The basic model may be upgraded in the field to full computer setup capability as your requirements change.

The C Series operates with TV-81 multicore cable, Triax cable or TV-81 mini multicore cable. This gives you the flexibility of utilizing camera cable that may already be in place in your facility or at remote sites. All types of pickup tubes designed for the 25mm format can be accommodated. These include standard Plumbicons®, Diode Gun Plumbicons, ACT Plumbicons and Saticons. Choose the tube that best fits your operating environment. From your local newscast to a remote sports event, the C Series offers a lens to "bring it home". 10:1 to more than 42:1 zoom ranges are available from all major lens manufacturers.

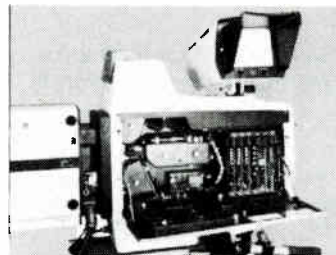
- Color fidelity and picture integrity of the Harris C Series cameras are unsurpassed. High resolution with low lag, high sensitivity, low noise, unique contouring from red and green simultaneously, highlight handling that virtually eliminates comet-tailing, and variable contrast give you color as you really see it, and clean sharp video even under the most severe lighting conditions.
- Harris C Series cameras are designed for easy operation from the control panel on through to the camera head.
- The Harris C Series cameras are reliable, rugged and ready to operate over long periods of time with minimal engineering attention.
- In the C Series computer setup model, 48 operator functions are controlled by the computer and adjusted according to preset parameters. Each camera has a built-in independent computer to eliminate camera interdependence in multi-camera installations.

TC-80C Manual Studio Camera
without Tubes and Lens

TC-85C Computer Studio Camera
without Tubes and Lens



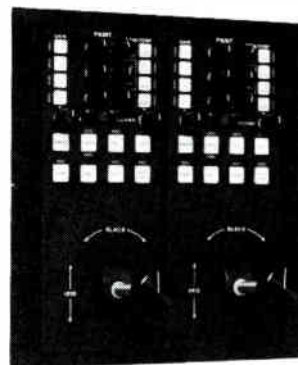
C SERIES



Camera-head modules are readily accessible for servicing, and controls are front-edge mounted.



Utility panel provides connections for test equipment and external intercoms, tallies, monitors.



Joystick remote control panels.



Operator's view of Harris C Series tilttable, rotatable viewfinder showing electronic-generated safe-title area and variable grease pencil window.

FP-5 PORTABLE COLOR VIDEO CAMERA

The FP-5 portable color camera is a single frequency separation type high-sensitivity color camera using 1/2" Saticon tube which ensures clear and sharp pictures even in dim light. It also has auto focus, auto/manual iris, auto white balance, character generator, genlock and color bar.

Features

Beautiful and Clear Picture

Since this camera uses a Saticon tube and a bias light just like television cameras used for the broadcasting industry, it is possible to obtain clear pictures with a minimum of after-image or noise even in dimly lighted scenes. Horizontal resolution is 250 lines at center and S/N ratio is 45dB.

Built-in Genlock Unit

For EFP and ENG applications, the camera can be used in genlock with other cameras by feeding the genlock input signal to the Genlock connector on the optional Remote Operation Panel.

Auto Focus Functions

The auto focus system enables the focus adjustment automatically. Thanks to this function, the focus operation is extremely easy.

CAM/BAR Select Switch

Since the color bar generator necessary for studio use camera is built-in, camera output signals or color bar signals are easily selected by the CAM/BAR select switch.




8x Zoom Lens with Macro Function

The lens is a 8x zoom lens with auto/manual iris. Since it has a macro function, extreme close-up shooting is possible.

Character Display by Microcomputer System

Titles, date, time and stopwatch can be displayed in the viewfinder screen and also recorded along with pictures.

Alarm Display on the Electronic Viewfinder

Phenomena	Battery run-down	White balance is unbalanced	Insufficient illumination
Display			

VTR Remote Function

The VTR functions: Record, Play, Forward and Reverse Search, Slow, Still, Record check can be controlled from the camera.

Auto White Balance

White balance adjustment is achieved by simply pressing down the white balance switch.

Fade-In/Out Switch

The picture and sound automatically fade in or out by one touch control.



FP-5

Boom-Type Condenser Microphone

A boom-type unidirectional electret condenser microphone is provided as an accessory. This microphone is removable.

Electronic Viewfinder can be Attached to Right or Left Side

The electronic viewfinder can be mounted on either the right or left side of the camera, depending on which side is most convenient for you. The viewfinder can be tilted to any position.

Low Power Consumption

The consumption is approx. 6.8W. As it is low, VTR's battery lasts longer. To reduce power consumption, this camera also has a Standby switch.

Power Consumption: Approx. 6.8W (when the power zoom, Auto focus and color bar generator are not operated)

Dimensions: 81W x 172H x 286.5D mm (excluding the electronic viewfinder and accessory microphone.)

Weight: Approx. 3.2kg (including electronic viewfinder and microphone)

\$1800.00

Optional Accessories

- GM-5N/P 4.5" viewfinder
- SA-5 Studio adaptor (for GM-5N/P mounting attachment)
- C-502CC Camera cable (50m)
- C-152CC Camera cable 15m
- C-501VF VTR cable 5m
- C-201VF VTR cable 2m
- AP-4 AC adaptor
- C-102CT Extension cable (10m)
- ZL-5WM Lens cable kit
- OP-5 Remote control functions; Master black, Iris, Camera cable select switch, Camera/Bar select switch, Intercom, Intercom level, Tally, (max. cable length; 50m) \$1280.00

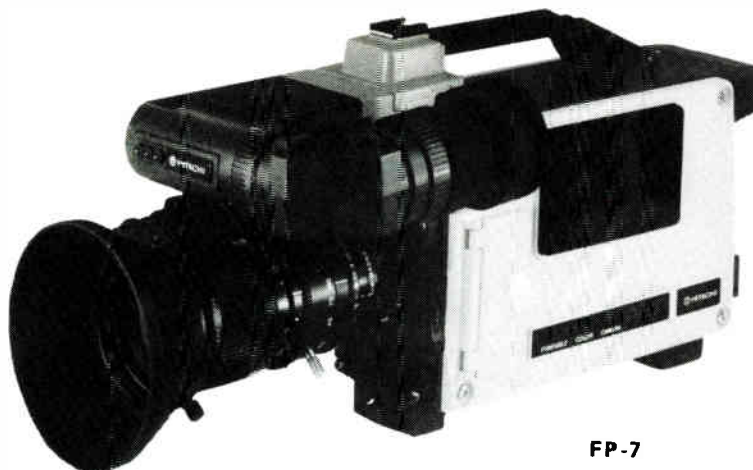


HITACHI

Hitachi Denshi, Ltd.

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

COLOR CAMERA



FP-7

FP-7 COLOR VIDEO CAMERA

High performance and multi-purpose single-tube color camera equipped with a 5MHz high band Saticon tube and a 10x power zoom lens.

Features

- CAM/BAR select switch
- Masking circuit
- Auto white balance and preset function
- Turret type color temperature compensation filter and filter position display
- Built-in genlock unit
- Servo zoom and servo iris type 10x f/1.6 lens
- VTR interface
- High gain select switch
- Independent monitor output
- Low power consumption

The FP-7 is developed mainly for broadcasting and sophisticated commercial applications and is provided with high performance and function which are equal to those of a 3-tube color camera. Not only a single set operation with a VTR but also system operation using several cameras can be performed by combining the camera with the remote operation panel (OP-77).

High Resolution Pick-Up Tube

The high band Saticon (2/3", 5MHz) offers the wide frequency band width of the luminance signal and high horizontal resolution of 360 lines.

2H Contour Corrector

The same 2H contour corrector used in a 3-tube color camera offers high vertical resolution.

High Sensitivity and Signal-to-Noise Ratio

A single carrier frequency separation system and a low noise preamplifier are incorporated to yield a very high signal-to-noise ratio of 50dB. Even when the quantity of light is insufficient at open aperture, setting the high gain switch to +12dB and using a 10x f/1.6 lens enable an object to be shot under subject illumination of down to 23 lux.

Color Shading Correction

The FP-7 is provided with the color shading correction circuit to produce a flat picture regardless of the frequency separation system. With this circuit, corner color shadings are reduced to a minimum.

Vertical and Horizontal False Signal Reduction

The vertical and horizontal false signals are reduced to obtain a high picture quality almost the same as that of a 3-tube color camera.

Color Reproduction

Since each of four channels (Y, R, G and B) is provided with a processing amplifier which controls color signal waveform, the color signals are balanced and the color reproduction distortion resulting from changing a pick-up tube is reduced.

Power Requirements: 12V DC

Power Consumption: Approx. 10W (incl. viewfinder)

Weight: 10.1 lbs. (4.6 kg)

including lens and viewfinder

Dimensions: 3.94"W x 8.66"H x 9.05"D

(100 x 220 x 230mm)

\$2195.00

Optional Accessories

GM-5N/P	4.5" viewfinder
AP-60U	AC adaptor
N10x10BRM-7 (f/1.6)	10x servo zoom lens
ZL-20W	Remote control unit for lens
DP-10	Battery pack
BA-7	Battery adaptor
AP-61	AC adaptor/charger
TA-1	Tripod adaptor
C-152CC (15m)	Camera cable
C-502CC (50m)	Camera cable
C-201CE (VHS)	VTR cable
C-201VE (U-matic)	VTR cable
C-501CE (VHS)	VTR cable
C-501VE (U-matic)	VTR cable
MC-7	Microphone
OP-77U	Remote operation panel
CL-77	Carrying case



HITACHI

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175 Crossways Park W.
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PORTABLE COLOR CAMERA



Z-31

Z-31 3-TUBE PORTABLE COLOR CAMERA

The Hitachi ENG/EFP Color Camera Z-31 is a three-tube auto set-up portable camera for production houses, schools, business, etc.

The Z-31, a sister camera of the FP-22, is improved in picture quality, temperature stability, and automatic set-up adjustments by a microcomputer. Character display function is newly designed to the Z-31 for ease of camera operation. Also features prism temperature sensor. Studio accessories and triax digital command systems are all available as options.

SPECIFICATIONS

HIGH PICTURE QUALITY

- Resolution:** Newly developed three 2/3" LOC MS Saticon tubes are employed. MS: Electromagnetic focus/electrostatic deflection type.
- Registration:** New MS Saticon tubes reduce registration errors. Registration compensation circuit is provided.
- S/N:** LOC MS type Saticon tubes are employed.
- Enhancer:** 2H (standard).
- Gamma Correction:** Variable gamma correction.

- Viewfinder Display:** LED: Tally (T), Battery (B), High gain (A), and Write mode (W).
CRT: Signal level (tiger stripe).
Mode: WHT, Gain, and CAM/BAR.
Alarm: DLT OFF, BAR.
Diagnosis: Auto set-up data.
Malfunction of automatic set-up: Next required operation is indicated.

ESSENTIAL FUNCTIONS

- Mon Out:** Yes
- Level Ind:** Yes (tiger stripe)
- ENC:** I.Q.
- Title Memory:** Yes
- Memory Backup:** Lithium Battery
- Beam Splitter:** Prism f/1.4
- Pickup Tube:** 2/3" LOC MS Saticon
- Opt. Filter:** 3200, 5600, 5600 + 1/8, ND, CAP
- Sensitivity:** f/4 2000 lux
- Resolution (G):** 750 TV Lines
- Registration:** 0.1, 0.2, 0.4%
- S/N (NTSC):** 58dB (typical)
- Hi Gain:** +9dB, +18dB
- Enhancer:** 2H
- Bars:** EIA Split Bar
- ENC (NTSC):** I.Q.

Z-31 Without Lens, including Auto Set-up \$6800.00

Z-31 With 15:1 Zoom Lens and Auto Set-up 8000.00



HITACHI

Hitachi Denshi, Ltd.

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

COLOR CAMERAS

Hitachi FP-50S is especially suitable for:

- All Studio Applications
- Multiplexer Transfers
- Graphics Intense Colors

FP-50S Color Camera

The Hitachi FP-50S is a fully developed new generation color studio camera adopting highly efficient prism optics and three 3/8-inch SATICON* pickup tubes. Features include superb resolution, signal-to-noise ratio and color fidelity even under low lighting conditions.

FEATURES

Lightweight

11.3 kg (24.9 lb) compact camera head (less lens) is very easy to operate both in studio and field.

Excellent resolution

3/8-inch magnetic focus magnetic-deflection separate-mesh SATICON tubes (H9311A) and improved electronics can provide 550 lines of resolution at center and 450 lines at corners.

High Sensitivity and low noise

Highly efficient (F1.4) RGB prism splitter and 3/8-inch SATICON tubes offer 53 dB signal-to-noise ratio at 2,000 lux (200fc), F4, 90% reflection, 3,200°K. Further a +6/+12 dB high gain switch offers acceptable pictures up to a minimum of 100 lux (10 fc), F1.6.

Low lag

Built-in bias light ensures low lag for SATICON* or Plumbicon** operation.

Shading correction

To assure flat pictures, adjustable saw-tooth and parabolic shading corrections are superimposed both in the H and V directions.

3 position filter wheel

3,200°K, 6,000°K plus 25% ND filters are included in the filter wheel for color temperature and scene illumination corrections.

Auto white balance

In combination with the above trim filters, white balance is achieved automatically from color temperature of 2,000 to 8,000°K, by merely pressing the "AUTO WHITE" button and using a white scene as reference. White balance is retained by an analog IC memory for over two days even after the camera power has been turned off.

Manual white balance (option)

By exchanging an H. detail/Auto white unit for an H. detail/Manual white unit (option), white balance can manually be corrected to 3,200, 4,000, 5,000, 6,000 and 7,000°K at the trim filter position of 3,200°K.

Color tone control

Fine color tone matching is achieved by controlling chroma phase. This does not affect the white balance.

Detail correction

Horizontal out-of-green detail correction ensures sharp pictures. 1-line vertical out-of-green detail unit (option) further adds picture contour crispness.

Internal/External synchronization

The camera can be synchronized to the internal sync pulse generator or external drive pulses. The camera can be genlocked to external color composite or black burst signal by using an optional genlock unit. Horizontal pulse timing (+/-3 us) and subcarrier phase (0 to 360°) adjustments are available.



FP-50S

Blanking width adjustment

To compensate for induced errors in recording and post-production processes, horizontal blanking width is adjustable from 10.2 to 11.2 us, and vertical blanking width is adjustable from 18 to 21 lines.

High brightness viewfinder

The 5-inch tiltable viewfinder features 100 ft-lambert brightness and minimum 500 lines of center resolution, which make camera focusing and framing very easy even under high ambient light. Viewfinder peaking and DC restoration circuits are also provided.

Auto iris

With any recommended zoom lenses the camera continuously and rapidly corrects the lens iris to compensate for changes in scene illumination by using mean video level detection. The iris may also be controlled manually from the CCU.

Auto iris closure

The lens iris is closed automatically when the camera is turned off or switched to standby, protecting the pickup tubes from highlight damage. The iris is not opened again when the "SHUTTER" button is in the "OFF" position, even if the camera is switched to "OPERATE." Meanwhile the black level of the camera output can be adjusted with no incident light.

Line-up signals

Built-in full field color bar generator facilitates the line-up of the camera encoder and color monitor. Synchronized focus wobbling circuitry for tube alignment is also provided.

R, G, B outputs

Individual R, G, B outputs at standard level and impedance are provided for chroma keying.

Remote control flexibility

The CCU can be separated from the camera head by up to 300m (1,000 ft). The CCU also has a remote connector to control "R and B GAIN," "MASTER BLACK," "IRIS" and "AUTO WHITE" from an additional unit.

*Trademark

**Trademark of N.V. Philips

FP-50S

STUDIO CAMERA SYSTEM

Package Includes:

HP-50S	Camera Head w/3-H9311AJ Saticons
VM-508	5" Tiltable Viewfinder
C-152-CE	15m Camera Cable
CU-50	Camera Control Unit w/19" Rack Mount Adaptor
E-002	Horizontal Detail and Auto White Extender Boards
E-006	Genlock Unit
SVM-50	Service Manual
	\$7795.00

ACCESSORIES

H Detail/Auto	
White Unit	\$1,130.00
V Detail Unit	1,215.00
Genlock Unit	760.00
H Detail/Manual	
White Unit (Interchange w/E-002 Unit)	1,130.00
ABO (Automatic Beam Optimizer)	900.00

LENSES

A10x11BRW	10:1 11-110mm	
	Auto Iris Servo Zoom	1,700.00
A10x11BRM	10:1 11-110mm	
	Auto Focus, Servo Zoom	1,950.00
J10x11HEIS	10:1 11-110mm	3,996.00
A14x9.5BERM	14x9.5-133mm 1.7 Auto	
	Focus Servo Zoom	6,315.00
A12x9BERM	12:1 9-108mm 1.7 Auto	
	Focus Servo Zoom	4,565.00
SRD-51	Servo Lens Grip	451.00
TC-300-50	Film Chain Adaptor, 55mm, F2.8 *Required	
	SCK-51, SRD-51	1,150.00

CABLES

C-152CE	50' Camera Cable	490.00
C-502CE	150' Camera Cable	870.00
C-103CE	300' Camera Cable	1,440.00
C-303CE	1,000' Camera Cable	4,100.00

Prices and Specifications Subject to Change Without Notice.

VC-95



HITACHI

Hitachi Denshi, Ltd.

175 Crossways Park W.
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(516) 921-7200

PROFESSIONAL COLOR TV CAMERA



FP-60S Studio Color TV Camera

The Hitachi FP-60S Color TV Camera adopts a newly developed prism optics and three 1-inch SATICON™ pickup tubes, and features superb resolution, signal-to-noise ratio and color rendition. The camera head is of sturdy die-cast aluminum construction and can be used in field applications under severe operating conditions as well as studio use.

Features

Prism optics and 1-inch SATICON™ tubes

The newly developed prism optics and 1-inch SATICON™ tubes provide a high signal-to-noise ratio of 52 dB and a high resolution of 600 TV lines.

Built-in automatic beam optimizer

Built-in automatic beam optimizer developed by Hitachi extends dynamic range and reduces comet tail.

Built-in bias light

The built-in bias light reduces lag.

Built-in test signals

Input and output levels for each module can be easily adjusted by the built-in test signals, also color encoder can be easily set without vectorscopes by special test signals.

Tiltable viewfinder

The viewfinder is tiltable and its 7 inch diagonal CRT offers easy viewing. Also a higher grade viewfinder is available for extra high illumination and resolution applications (option).

Dual method for color temperature compensation

Color temperature is compensated both by optical conversion filter for high color reproductivity and electrical method for high sensitivity. ND filter is built-in.

Built-in shading compensators

The built-in compensation circuit for modulation shading and black shading.

Built-in iris servo amplifier

Light volume coming into the camera is kept optimum by combined built-in iris servo amplifier and zoom lens. Manual control is also available.

Extra video gain

Extra video gain (+ 6 dB and + 12 dB) is available for applications in low light areas.

Built-in contour corrector

Sharp and clear pictures can be obtained through the built-in vertical contour correctors of H-detail and 1H delay types. A 2H-Vertical contour corrector is available (option).

Auto white balance

High quality picture can be maintained for many hours through the use of digital memory automatic white balance.

Painting

To get color balance between cameras, "Painting" function is provided. The painting can also be switched off.

Masking amplifier (optional)

Optional masking amplifier is provided for subtle color reproduction adjustment.

Automatic wobbling circuits

Automatic wobbling circuits are built-in for easy beam alignment.

Negative G. signal for registration adjustment

Negative G. signal is provided for easy registration adjustment.

R, G and B signal outputs

Outputs of R, G and B non-composite signals are available as the signals for chroma key.

A level meter

Black level and black balance can be easily set by a level meter.

Built-in color bar generator

Color bar generator is built-in for color adjustment between cameras and adjustment of color monitors. Switching of active video and color bar can be made from the remote control panel.

	Saticon Prism Studio Camera	
FP-60S	3 Tube Studio Camera with 1" Saticons, features Prism Optics, ABO, Built-in Test Signals, Painting Controls, RGB Outputs and 7" Studio Viewfinder	
	Complete package includes: HP-60 Camera Head • (1/2) H9325 Saticon VM-701 7" Viewfinder • C-1205 50' Cam. Cable • A-404 1H Vert. Enhancer • CCU-60 Cam. Control Unit • ROP-60 Remote Panel • C-1103 30' ROP Cable SVM-60 Service Manual . . .	\$25,670.00
FP60S-2H	Same as above, includes: A424 2H Vertical Enhancer	27,500.00
FP-60SR-2H	Same as FP60S except with A424 2H Vertical Enhancer and VF-702 7" Viewfinder w/ Rotator	27,900.00
	Accessories	
A-401	Internal Sync. Module	\$287.00
A-431N	Genlock Module	774.00
A-407	Masking Unit	347.00
VF-702	1" Viewfinder w/ Rotator	1400.00
TA-60	Tripod Adaptor	230.00
	Lenses	
K10X15RW-1	Fujinon 10:1 15-150mm f1.8 Auto Iris Lens . . .	\$3975.00
R14X14ESM	Fujinon 14:1 14-196mm Manual Focus, Manual Zoom with Mounting Plate	17,450.00
	Servo Focus, Manual Zoom with Mounting Hardware	19,200.00
	Servo Focus, Servo Zoom with Mounting Hardware	20,450.00
	Servo Focus, Manual Zoom with Shot Box and Mounting Plate	20,100.00
	Servo Focus, Servo Zoom with Shot Box and Mounting Plate	22,350.00



HITACHI

Hitachi Denshi, Ltd.

175 Crossways Park W.
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COLOR CAMERAS

SK-91 EFP Color TV Camera

- **ULTRA-LIGHT AND RUGGED** — Advanced design of the camera housing with magnesium alloy casting, new construction of the optical and mechanical sub-assemblies and careful selection of the electronic parts have realized the compact, ultra-light and rugged, self-contained, hand-held camera. It weighs only 4.4 kg (9.7 lbs.) including 1.5-inch viewfinder and withstands rough handling and environmental extremes.
- **SHOCK- AND VIBRATION-FREE** — A new shock-mounted optical system, with prism, yokes and tubes packaged as a single assembly, assures registration stability and makes the camera virtually impervious even to severe shock, vibrations and jolts encountered in transportation.
- **RF INTERFERENCE-FREE** — Improved shields for tubes, yokes and preamplifiers guarantee practically interference-free operation even in the 120dB electro-magnetic field from MF to UHF.
- **IMPROVED PRISM BEAM-SPLITTER** — A newly developed, high-speed (f1.4) prismatic, beam-splitter, together with low-noise pre-amplifiers, provides high sensitivity and excellent signal-to-noise ratio. A deviation of optical registration due to temperature changes and a bias light shading of the prism are also improved substantially.
- **ABO (AUTOMATIC BEAM OPTIMIZER)** — The Hitachi developed ABO circuit greatly extends dynamic range, reduces comet-tailing and thereby guarantees easy highlight handling.
- **SHADING CORRECTION** — Adjustable H/V sawtooth, parabolic and portholing axis shading correction for each color channel, and also V sawtooth modulation shading correction are adopted to assure perfectly flat pictures.
- **2H CONTOUR CORRECTION** — 2-line horizontal and vertical out-of-green signals, level dependent with coring and comb-filtering, are added to R, G and B channels to ensure optimum picture sharpness with minimum noise contribution.
- **GAMMA CORRECTION** — Gamma correction is continuously adjustable in each color channel from 0.35 to 1, which permits easy matching to other cameras.
- **LINEAR MATRIX MASKING** — A linear matrix masking amplifier is built-in to get high-fidelity color rendition and fine tone-matching among the cameras.
- **AUTO IRIS** — Automatic iris control by video level detection maintains constant video level under wide variations of lighting conditions.
- **AUTO WHITE BALANCE** — White balance is achieved automatically in half a second by the "AUTO WHT" switch, if a white object is focused in the center of the picture. Digital memory retains the white balance semi-externally even after the camera is turned off or to standby, or the power supply is disconnected.
- **AUTO BLACK BALANCE** — Black balance is also automatic by turning on the "AUTO BLK" switch, which closes the lens iris and sets up the video black level in each color channel. Digital memory is used also for this control.
- **VIDEO LEVEL INDICATOR** — For manual iris operation of lenses, an oversignal indication of tiger stripes is superimposed on the viewfinder display.
- **AUTO IRIS CLOSURE** — A lens iris is automatically closed for protecting the camera tubes from possible damage due to highlight when the camera is turned off or to standby, and for setting up the video black level when the "AUTO BLK" switch is turned off.
- **4-POSITION FILTER DISC** — A filter disc includes 3200° K, 4700° K, 6000° K +50% ND, and 0% ND filters. These filters, together with the auto white balance and auto iris, provide sufficient color temperature compensation and scene illumination correction.



SK-91

- **POWER SUPPLY OPTIONS** — The SK-91 may be powered from any of a conventional battery belt, an attachable battery pack, a car battery and an AC power adaptor. Low power consumption of mere 20W at single +12 V DC assures continuous operation in excess of two hours with the battery belt or one hour with the attachable battery pack.
- **LOW BATTERY VOLTAGE WARNING** — A flashing LED in the viewfinder alerts the cameraman to low battery voltage.
- **STANDBY/OPERATE SWITCH** — The camera draws only 5% of the normal power in the "STANDBY" mode. Return to the "OPERATE" mode is accomplished in a few seconds.
- **+9/ +18dB HIGH-GAIN SWITCH** — Master gain of +9/ +18dB operates on the gain of all three color channels simultaneously and is quite useful for the camera operation under extremely low light levels. Usable pictures with acceptable signal-to-noise ratio is provided down to 20 lux (2 fc) scene illumination at +18dB and f 1.4.
- **MASTER BLACK CONTROL** — Master black level control is provided for brightness matching to other cameras.
- **REGISTRATION CONTROLS** — H/V centering trim pots in R and B channels and R, G, B, R-G and B-G monitor outputs are provided to check and control fine registration.
- **SPLIT-FIELD COLOR BARS** — A built-in color bar generator produces split white with 75% and 100% white as well as six hues and black. This makes it easy to set 100% modulation level in VTR recording.
- **SEPARATE VIDEO OUTPUTS** — In addition to the two isolated encoded video outputs for line and VTR, a separate monitor output is provided. This delivers R, G, B, R-G, B-G or encoded video signal by switch selection.
- **RETURN VIDEO INPUT** — An external synchronous or non-synchronous composite video signal may be switched in the viewfinder.
- **GENLOCK INPUT** — A built-in sync generator can be genlocked to an external color composite or black burst signal. Horizontal pulse timing and sub-carrier phase are adjustable. In a PAL model the genlock unit is externally attached to the camera.
- **BLANKING WIDTH ADJUSTMENT** — Both H and V blanking widths are adjustable over a wide range to compensate for the errors introduced into the recorded video signal in the recording/time base correction/editing process.
- **HIGH RESOLUTION VIEWFINDER** — A 1.5-inch, tiltable, high brightness, high-resolution viewfinder with a magnifying eyepiece assures precise focusing and picture composition. A built-in peaking circuit further assists in attaining sharp optical focusing of the lens. An optional 5-inch viewfinder is also available for studio use.

- **VIEWFINDER INDICATORS** — The 1.5-inch viewfinder includes the following indicators: Tally, White Balance, Video Level (tiger stripe), Battery Voltage and VTR Record.
- **HI-FI MICROPHONE AMPLIFIER** — A built-in microphone amplifier accepts a mike having output level from -45 to -60dBm. Two-time-constant limiting amplifier assures natural sounds even when a sound level varies abruptly.
- **VTR TRIGGER BUTTON** — A trigger button is provided on the lens for remote control of a portable VTR. VTR record is indicated in the viewfinder with an LED.

- SK-91** ENG/EFP Camera
With 2/3" Saticons or Plumbicons, f1.4 prism optics, 2H enhancer and AVO, 9.7 lbs., +9, +18dB gain, auto white and black balance and low 22 watts power consumption. **\$26,700.00**
- Self-contained color camera package includes:**
HP-91: Camera Head
(3) H8398: Saticons
VF-153: Viewfinder (1.5")
DC-91: Camera Cover
DP-40: Battery
CB-91: Battery Bracket
BC-40: Battery Charger
SDM-91: Shoulder Mount
TA-91: Tripod Adaptor
CL-91: Carrying Case
MK-91: Maintenance Kit
SVM-91: Service Manual
- SK-91P** Same as SK-91 package except with XQ-1427 RGB Plumbicons. **\$26,700.00**

* N.V. Philips
** Hitachi, Ltd.

PORTABLE ACCESSORIES

DP-40	Battery Pack	\$ 475.00
CB-91A	Battery Bracket	95.00
BC-40	Battery Charger	70.00
AD-91	AC Adaptor	510.00
QC-40	Quick Charger	385.00
MC-80	Microphone	160.00
MH-91	Microphone Holder	90.00
C-302A1	1' Microphone Cable	80.00

AUDIO ACCESSORIES

ROU-90	Remote Operation Unit (requires CA-91H)	\$5450.00
OP-91	Operation Panel (requires CA-91H)	1550.00
CA-91H	Cable Adaptor for OP and ROU	890.00
VF-501	5" Viewfinder w/AT-91	2450.00

Prices and Specifications Subject to Change Without Notice.

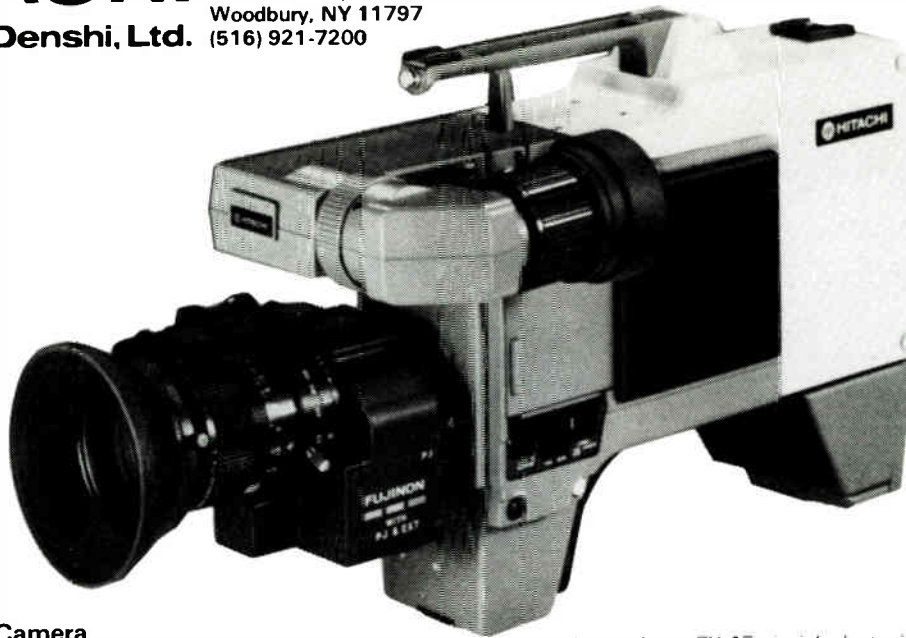
VC-97



HITACHI
Hitachi Denshi, Ltd.

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COLOR CAMERA



SK-97 Full Auto Setup EFP Camera

The Hitachi SK-97 is an epoch-making, 2/3-inch, 3-tube, portable color camera with full auto setup functions. The camera satisfies all the requirements necessary for a portable camera in EFP and studio applications; i.e. excellent picture quality, great ease of operation and extremely high reliability.

The SK-97 employs the same auto setup system as that of the sister camera SK-970 for studio portable use, and can be used in combination with the SK-970. In addition, the SK-97 can be controlled by the SK-110 full auto setup studio camera system too.

The SK-97 weighs approximately 13.2 lbs. (6 kg) excluding a lens in spite of improvement in performance and addition of the auto setup functions.

Excellent Picture Quality

- High Performance Pickup Tubes
- High Resolution over Entire Screen — 600 TV Lines at Center
- High Signal-to-Noise Ratio — 58dB (NTSC); 55dB (PAL)
- Improved Prism Optics
- ABO (Automatic Beam Optimizer)
- Encoder with Dynamic Contrast (Variable Gamma)
- High-Precision Static and Dynamic Registration
- Linear Matrix Masking

Great Ease of Operation

- Auto Iris
- Two Filter Disks
- High-Brightness, High-Resolution Viewfinder
- Viewfinder Character Display
- Power Supply Options
- Preheat/Operate Switch
- +9/+18 dB High-Gain Switch
- Centralized Control Panel
- Chroma Keying Outputs
- Selectable YIQ/RGB Outputs
- SMPTE/EBU Color Bar Output
- Hi-Fi Microphone Amplifier
- Two-Wire/Four-Wire Intercom System

Versatile Auto Setup System

- Zero Method Control
- Auto Setup Mode Selection
- Data Files
- Fault Diagnosis
- RCU (Remote Control Unit)
- Auto/Manual Setup by Camera Itself

Digital Command System Available

When an optional digital command system consisting of the MU-97 multi adaptor and the DU-97 DCU is used, all the camera operations can be remotely controlled from the RCU or the SK-110's SCU through a single coaxial cable. The MU-97 is attached to the camera side cover and the DU-97 of half-rack size is located near the BSU

VC-98

In addition, when a TX-97 triaxial adaptor is used together with the above units, power transmission as well as camera control is possible through a single triaxial cable of up to 1.4 miles (2.3 km) in case of using a Felten 2.5 LS/11.5 cable.

Superior Serviceability

The pickup tubes are rear-loaded for ease of replacement. In particular, the R and the B channel tube can be simply replaced by removing the top and the bottom cover of the camera respectively.

All of the electronic circuitries are divided by functions into printed circuit boards with silk printing on both sides, and major circuit boards are inserted into a PCB harness with mother board connection.

SK-97-3A Full Auto Set-Up EFP/Studio Camera For Broadcast Use with LOC D.G. Plumbicon (XQ3427RGB), Less Lens.

Package Includes:

- SK-97 Camera Head, Built-in Auto Set-up
- XQ-3427RGB LOC D.G. Plumbicons
- VF-154 1.5" High Resolution V.F. w/ Diagnosis Display
- AP-40U A/C Adaptor
- TA-97 Tripod Adaptor
- CL-97 Carrying Case
- SVM-SK-97 Service Manual
- Standard Accessories

\$39,500.00

Accessories

- CB-97 Battery Bracket \$ 95.00
- DP-40 Battery (2 Hour) 475.00
- BC-40 Battery Charger for SP-40 70.00
- C-201VD 2m/6 ft. VTR Cable 14-pin 280.00
- C-201VC 2m/6 ft. VTR Cable for HR-100 310.00
- MH-97 Microphone Holder 180.00
- C-400M Microphone Cable 80.00
- RC-97 Rain Proof Cover 280.00

DIMENSIONS AND WEIGHT

	Width		Height		Depth		Weight approx	
	mm	in	mm	in	mm	in	kg	lb
Camera	100	3.9	280	11.0	355	14.0	6	13.2
BSU	210	8.3	180	7.1	350	13.8	13	28.6
RCU	76	3.0	360	14.2	160	6.3	3.8	8.4
DU-97	210	8.3	133	5.2	350	13.8	8.5	18.7
MU-97	30	1.2	155	6.1	345	13.6	1.6	3.5
TX-97	110	4.3	170	6.7	43	1.7	0.9	2.0

Prices and Specifications Subject to Change Without Notice.



HITACHI
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COLOR CAMERAS

SK-970

Full Auto-Setup Compact Studio Camera

The Hitachi SK-970 is an epochmaking, 2/3-inch, 3-tube studio camera with full auto setup functions built into a compact size and a light weight of 55 lbs. (25 kg). The camera satisfies all the requirements necessary for studio and field applications; i.e. excellent picture quality, great ease of operation and extremely high reliability.

The auto setup system controls every parameter related to color balance and registration to provide the highest picture quality at all times. In addition, the system controls on-line, real-time compensation for registration errors caused by a change in lens zooming and focusing or in prism temperature, ensuring high picture quality.

Since a microcomputer is built into the camera, the camera can be set up both automatically and manually either at the camera itself or from an RCU (Remote Control Unit) through a BSU (Base Station Unit). A DCU (Digital Command Unit) is also provided to constitute a system configuration best suited to each application anywhere at any time.

The SK-970 employs the same auto setup system as that of the sister camera SK-97 EFP camera, and can be used in combination with the SK-97. In addition, the SK-970 can be controlled by the SK-110 full auto setup studio camera system too.

The SK-970 features not only high performances but also much flexibility for system configuration.

FEATURES

Excellent Picture Quality

- High performance pickup tubes
- High resolution over entire Screen — 600 TV lines at center
- High signal-to-noise ratio — 58dB (NTSC); 55dB (PAL)
- Improved prism optics
- ABO (Automatic Beam Optimizer)
- Encoder with dynamic contrast (Variable Gamma)
- High-precision static and dynamic registration
- Linear matrix masking

Great Ease of Operation

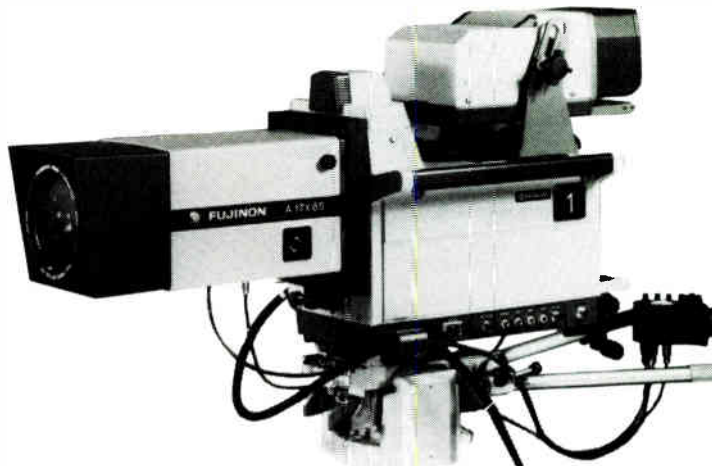
- Compact and lightweight system
- Auto iris
- Two filter disks
- 7-inch VF with various functions
- Viewfinder character display
- +9/+18 dB high-gain switch
- Centralized control panel
- Outputs of four pictures at camera
- Chroma keying outputs
- SMPTE/EBU color bar output
- Hi-Fi microphone amplifier
- Two-wire/Four-wire intercom system

Versatile Auto Setup System

- Zero method control
- Auto setup mode selection
- Data files
- Fault diagnosis
- RCU (Remote Control Unit)
- Auto/Manual setup by camera itself

Triaxial Digital Command System Available

When an optional digital command system consisting of the MU-970 multi adaptor and the DU-970 DCU is used, all the camera operations can be remotely controlled from the RCU or the SK-110's SCU through a single triaxial cable and also the camera power can be transmitted through the cable.



The MU-970 is built into the camera and the DU-970 of half-rack size is located near the BSU. When a Felten 2.5 LS/11.5 cable is used, both are separated by up to 1.1 miles (1.8 km).

Since an FM frequency multiplexed transmission is used for video, audio and command signals, the system ensures excellent transmission quality, especially high signal-to-noise ratio for video and audio signals and high reliability for command signals. Transmission of the selected monitoring video signal (PIX/WFM/CK) is possible as a standard.

Superior Serviceability

The pickup tubes are rear-loaded for ease of replacement. In particular, the R and the B channel tube can be simply replaced by removing the top and the bottom cover of the camera respectively.

All of the electronic circuitries are divided by functions into printed circuit boards with silk printing on both sides, and major circuit boards are inserted into a PCB harness with mother board connections.

General-purpose electrical parts are selected for ease of maintenance and particularly, ICs having a second source are used.

SK-970-3 Full Auto Set-Up

Self-Contained Studio Camera for broadcast field/studio use with LOC D.G. Plumbicons, Less Lens.

Package Includes:

SK-970 Camera Head, Built-in Auto Set-Up

XQ-3427RGB LOC D.G. Plumbicons

VF-710 4" Viewfinder

SVM-SK-970 Service Manual

\$49,400.00

SK-970-3 Full Auto Set-Up

ENG/Studio Camera Less Lens.

Package Includes:

SK-970 Camera Head, Built-in Auto Set-up

XQ-3427RGB LOC D.G. Plumbicons

VF-710 4" Viewfinder

BU-97 Base Station Unit

RU-97 Remote Control Unit

SVM-970 Service Manual

Standard Accessories

\$58,900.00

DIMENSIONS AND WEIGHT

	Width		Height		Depth		Weight approx	
	mm	in	mm	in	mm	in	kg	lb
Camera	230	9.1	455	17.9	440	17.3	25	55.0
BSU	210	8.3	180	7.1	350	13.8	13	28.6
RCU	76	3.0	360	14.2	160	6.3	3.8	8.4

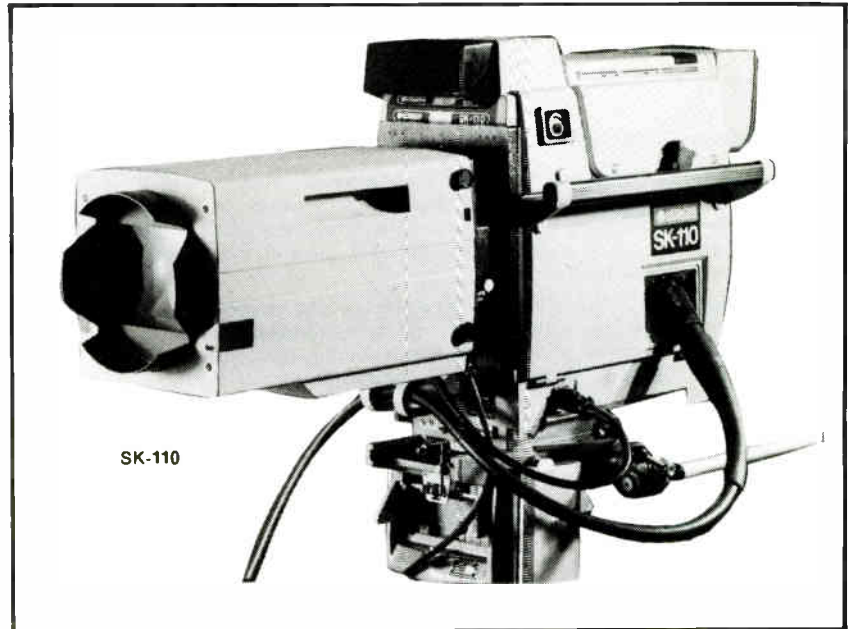
Prices and Specifications Subject to Change Without Notice.

VC-99

SK-110 Broadcast Quality Camera

CAMERA HEAD

- **Highly efficient prism optics:** A newly developed f1.8 prism optics are used in conjunction with 1-1/4" Plumbicon* tubes to provide a high signal-to-noise ratio of 54 dB at 2000 lux and f5.6. The optical filters have been dust-proofed to virtually eliminate dust problems.
 - **Six-position ND and color filter discs:** Two filter discs, one for ND filters and the other for color filters have been provided, with independent filter selection possible from both the RCU and the SCU. The discs are servomotor driven and may be rotated in either direction.
 - **Improved registration and optical axis accuracy:** By using an independent four-corner adjustable dynamic registration compensation unit, compensation to within 0.05% over the entire picture area is possible. This can be achieved by means of either the auto-setup or the remote control from the SCU. The compensation data is stored in RAM memory with a back-up battery. The optics, coil assemblies and zoom lens are mounted as a unit to ensure that mechanical distortion does not affect the optical system or coil assemblies and to eliminate the effects of external mechanical stresses on registration and optical axis accuracy.
 - **Comet tails eliminated by ABO (Automatic Beam Optimizer):** The Hitachi developed ABO circuit allows the beam current to be increased up to 16 times versus only 4 times the normal setting for conventional systems, a limitation imposed by considerations of picture quality. This means that comet tails can be eliminated without the usual accompanying misregistration, loss of resolution, and increase in dark current.
 - **High-performance viewfinder:** A bright, high-resolution CRT has been used in the viewfinder to provide an easy-to-view image even for outdoor shooting. The viewfinder can be tilted from +25° to -45° and rotated +/90° to set it at any arbitrary angle.
 - **Easy-to-use video select button:** R, G, B, minus G, and two return video signals (AUX-1 and AUX-2) can be switch-selected as the viewfinder video signal.
 - **Convenient monitor output on the camera head:** A separate video output has been provided on the camera head to be used for floor monitors, etc.
 - **Red and green tallies:** The viewfinder is provided with both red and green tallies, the red one for live shooting and the green one used for VTR recording.
 - **Built-in microphone amplifier:** The camera head is provided with a built-in microphone amplifier with limiter. The audio output is balanced to prevent the pickup of noise from the camera cable.
 - **Test signals provided to simplify setup:** Test signals are used for easy calibration of the output of each amplifier stage. The signals are applied in sequence, starting from the process amplifier and walking back until the preamplifier is calibrated. The test signals may be applied to the input of the preamplifier first stage, process amplifier-1 and process amplifier-2, and consist of a 100% and 200% level sawtooth waveform which can be used for level calibration as well as verification of gamma, knee point, slope and clipping point.
 - **Designed for easy servicing:** The camera head and CCU PC boards are simple to remove and marked on both sides, making parts easy-to-find for quick servicing or inspection. Another serviceability feature is a coil assembly that can be removed while the camera is mounted to the dolly.
- CCU**
- **Compact design:** The CCU is designed as a dedicated camera control unit for computer controlled cameras. Both the video processing section and the computer section have been housed in one compact package.
 - **Linear matrix masking:** A built-in linear matrix masking circuit is provided and ensures faithful color reproduction and easy tone matching among cameras.
 - **High-performance contour corrector:** Compensation signals derived from the R and G channels provide clear, crisp images of even red subjects. The contour correction signals are automatically processed to match the type of subject, maintain optimum compensation and ensure natural images.



- **Standby mode operation:** Three operating modes have been provided to reduce power consumption and extend the life of the pickup tubes and CRT.
 - (1) **CCU POWER:** Main power supply is switched on; the CCU is operating.
 - (2) **POWER:** The camera head is on and the heaters of the pickup tubes and CRT are supplied with 50% of the normal voltage.
 - (3) **BEAM:** The pickup tube beams are switched on and the camera operates.
- **Genlock:** The SK-110 is genlocked to an external sync signal when composite sync and subcarrier signals are applied. Horizontal and subcarrier phases can be adjusted manually. If required, genlocking by means of a black burst signal can also be provided.
- **Built-in SMPTE/VIT color bar generator:** A color bar generator conforming to the latest SMPTE standards has been built-in for convenient adjustment of monitors. Also built-in is a VIT color bar generator, allowing monitoring of the characteristics of the encoder and the transmission line while on the air.
- **High-reliability LSI process amplifier:** Camera picture quality is greatly effected by the stability of the process amplifiers used. LSI process amplifiers have been used in the SK-110 camera to provide stable operation with respect to temperature variations and eliminate variations between channels. They provide both picture quality and high reliability and represent the most advanced step in a camera of this class.
- **Special effects:**
 - (1) The horizontal and vertical deflection currents can be independently reversed, a feature useful in picking up mirror images.
 - (2) The video polarity of the R, G, and B signals can be independently inverted.
 - (3) A circuit has been provided which can be used to provide swinging of horizontal deflection by means of an externally applied low frequency signal.
- **Encoder with variable gamma (contrast):** Gamma control of luminance and chrominance signals is linked and can be adjusted by remote control, making adjustment of the picture contrast very easy, even under such difficult conditions as those encountered outdoors.
- **Iris:** In the Auto Iris mode the lens iris is automatically adjusted according to subject illumination. In manual mode, the center value and adjustment range of the iris are set by the sense and range controls of the SCU or RCU. This feature makes operation in the studio where light variations are small extremely simple. The iris values are visible on the SCU and RCU LED display.

AUTOMATIC SETUP

- **Zero method control:** The zero method of control is capable of controlling the R, G, and B channels, thus eliminating the troublesome manual adjustment of the G channels required in the G channel reference method. The system has been completely automated, and a parallel control system can set up multiple cameras simultaneously in just 2 minutes.
- **Control of multiple cameras:** By using a DSU for every group of six cameras, up to 24 cameras can be controlled with just one SCU. By adding a TSU control capabilities can be expanded up to 42 cameras using two SCUs, providing all the flexibility you will ever need.
- **Automatic setup modes:** Five automatic setup modes have been provided; full, registration, color balance, G-reference, and white balance. These can be selected from to suit the picture conditions at the time. In addition, manual control from either the SCU or RCU is possible, with all normal operational controls accessible manually.
- **Data files:** Five data files are provided except for the AUTO data file. Automatic setup data is automatically stored in the AUTO data file. It is possible to store or erase the manual setup data from the SCU in the five data files by operating the entry or reject switch.
- **Fault diagnosis:** Fault diagnosis of the camera video system, power supply and pulse system is performed automatically to detect failures. Diagnosed results are printed out on the typewriter. This system has greatly simplified camera maintenance by providing quick and accurate information on failures.
- **Quick check:** When the SCU Check switch is depressed, registration (G-reference) and color balance (G-reference) are automatically checked and, if the required accuracy is not being obtained, the readjustment is automatically made.
- **Scroll display and automatic setup status display:** The results of the fault diagnosis and the quick check are displayed on a scrolled picture monitor character display. The scrolling display may be stopped at any desired point for viewing. The status of the automatic setup function (controlled parameters and their status) may also be viewed on the picture monitor character display.
- **Remote control:** The SCU, TSU, DSU, and CCU may be connected with just three twisted-pair cables and be separated from one other by up to 1000m (3000 ft.). The CCU and RCU may be connected using three twisted-pair cables and separated up to 100m (300 ft.). If the power supply is provided externally to the RCU the distance to the CCU can be extended up to 1000m (3000 ft.).

\$78,000.00



HITACHI

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COLOR CAMERA

SK-110D FULL AUTO-SETUP COLOR TV CAMERA

SCU (Setup Control Unit)

This unit provides centralized camera control functions for multiple cameras.

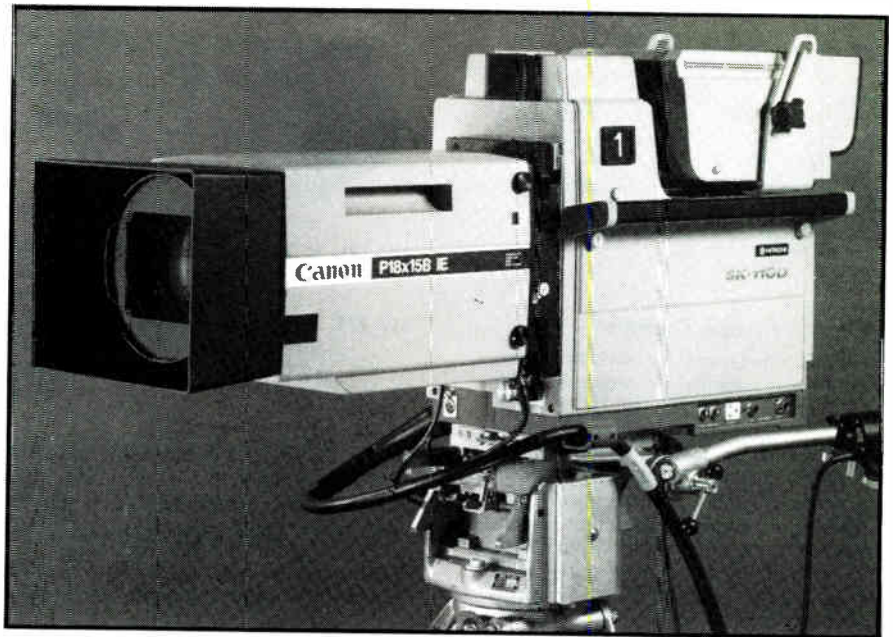
A power supply on/off, auto-setup, quick check, fault diagnosis, manual control, typeout, picture monitor character display, digital display of lens f-number, monitor picture selection, floppy-disk memory for manual adjustment data, and RCU function are provided for each camera. The picture monitor character display includes controlled parameters and percentage of controlled quantities. The DSU function for six cameras is built into the SCU to simplify the system. However, when controlling more than six cameras, use external DSUs.

DSU (Delegation Switch Unit)

This unit serves as a switching unit for data lines and video signals when several cameras are controlled by an SCU. It is possible to assign up to 6 CCUs to one DSU which can be located anywhere between the SCU and the CCU.

TSU (Transfer Switch Unit)

This unit provides switching for data lines and video signals when several camera groups are controlled by two SCUs. The group is selected in a block of a DSU and each camera is controlled through the DSU.



CAMERA HEAD

Pickup Tubes

1-1/4" LOC-DG Plumbicon*1 pickup tube; 750 TV lines; signal-to-noise ratio of 56dB or more.

Highly Efficient Prism Optics

f/1.8 prism optics.

High-Accuracy Static Registration

Auto setup control for camera registration including that for bow and skew distortions in both the horizontal and vertical directions guarantees high accuracy static registration of 0.05% over the entire screen, in combination with Digital Registration Compensation (DRC) and corner registration compensation which controls four corners independently.

High Precision Dynamic Registration

By using RLC (Real-time Lens Correction), the auto setup system controls on-line, real-time compensation for registration errors caused by variations of lens zooming and focusing.

Scrambling Use of Multiple Cameras

Computerized Tube Hour Meter

Controlled by the built-in microcomputer instead of a conventional electromechanical hour meter, providing a character display of operating hours on the viewfinder screen.

Dynamic Focusing Circuit

ABO (Automatic Beam Optimizer)

High Performance 7" VF with Numerous Functions

Built-in Microphone Amplifier/Limiter

Test Signals for Amplifier Calibration

A 100% and a 200% level sawtooth test signal are provided to facilitate calibration and setup of each video amplifier. By applying these signals in sequence to the input of the process amplifier-2, process amplifier-1 and preamplifier first stage, it is possible to calibrate the level of each amplifier as well as to verify the gamma, knee point, slope, clipping point, etc.

Easy Servicing

The PC boards in the camera head and CCU are simple to remove and are marked on both sides, making parts easy-to-find for quick servicing or inspection. Another serviceability feature is a coil assembly that can be removed while the camera is mounted on the dolly.

CCU

Compact Design

The CCU is designed as a dedicated camera control unit for a computer controlled camera. Both the video processing section and the computer section have been housed in one compact package. The width of the power supply unit is reduced to just a half of 19" rack for compact system configuration.

Linear Matrix Masking

High-Performance Contour Corrector

Compensation signals derived from the R and G channels provide clear, crisp images even for red subjects. The contour correction signals are automatically processed to match the type of subject, maintain optimum compensation and ensure natural images.

Standby Mode Operation

Three operating modes are provided to save power consumption and extend the life of the pickup tubes and CRT.

1. CCU Power: Main power supply is switched on; the CCU is operating.
2. Power: The camera head is on and the heaters of the pickup tubes and CRT are supplied with 50% of the normal voltage.
3. Beam: Beam current of the pickup tube is turned on and the camera operates.

Genlock

The SK-110D is genlocked to a black burst signal or a composite video signal. Horizontal and subcarrier phases can be adjusted manually.

High Reliability LSI Process Amplifier

Output picture quality is greatly affected by the stability of process amplifiers. LSI process amplifiers used in this camera provide stable operation against temperature variations and provide no deviation between channels.

Special Effects

1. The horizontal and vertical deflection currents can be independently reversed, a feature useful in picking up mirror images.
2. The video polarity of the R, G, and B signals can be independently inverted.
3. Swinging of horizontal deflection is provided by means of an externally applied audio frequency signal.

Encoder with Variable Gamma (Contrast)

Gamma control of luminance and chrominance signals is linked and can be adjusted by remote control, making adjustment of the picture contrast very easy, even under such difficult conditions as those encountered outdoors.

Built-In SMPTE/VIT Color Bar Generator

A color bar generator conforming to the latest SMPTE standards has been built in for convenient adjustment of monitors. Also built in is a VIT color bar generator, allowing monitoring of the characteristics of the encoder and the transmission line while on the air.

Computer-Controlled Auto Iris

Lens iris is automatically controlled by detecting the average and peak value of the object illumination and calculating the control output data for optimizing lens servo response by a built-in microprocessor.

AUTOMATIC SETUP

Zero Method Control

The zero method of control is capable of controlling the R, G, and B channels, thus eliminating the troublesome manual adjustment of the G channel required in the G channel reference method.

Expandable System Hierarchy

A microprocessor is built in each unit from the SCU to the camera head, so that the system can flexibly be configured from 1-camera chain to a large scale system. By using a DSU for every group of six cameras, up to 24 cameras can be controlled with just one SCU. By adding a TSU control capabilities can be expanded to up to 42 cameras using two SCUs, providing all the flexibility you will ever need.

Automatic Setup Modes

Eleven automatic setup modes are provided: AUTO SETUP (full), COLOR BALance, REGISTRATION, DRC AUTO, G REFERENCE, EXTERNAL chart full AUTO, EXTERNAL chart regi AUTO, EXTERNAL chart color balance AUTO, CHECK, AUTO WHITE, and AUTO BLACK.

Fault Diagnosis

Fault diagnosis of the video system, pulse system and power supply in the camera head and the CCU of the selected camera is performed by depressing the DIAG switch. Diagnosed results are displayed on the picture monitor and the viewfinder, and can be printed out on an optional teletypewriter, too.

Auto Setup of 38 Parameters

Total of 38 parameters of auto setup for color balance and registration including digital registration compensation are available for system setup.

Remote Control

The SCU, TSU, DSU, and CCU may be connected with just three twisted-pair cables and be separated from one another by up to 1,000m (3,000 ft.). The CCU and RCU may be connected using three twisted-pair cables and separated up to 100m (300 ft.).

*1 © N.V. Philips



HV-17L

HV-17L 1" Vidicon Camera

The HV-17L, designed for industrial use, and faithful surveillance is a recent addition to the superb line of Hitachi CCTV cameras. Two features particularly appealing about the HV-17L are its top-level performance and low price. Its sensitivity has been greatly enhanced by a Hitachi 1-inch Vidicon, producing faithful scene reproduction despite the absence of adequate lighting. Its superb performance is further ensured by more advanced circuit design such as white suppress and auto-beam circuits. These features render it possible to use the HV-17L in the broad industrial field.

FEATURES

- **Enhanced ASC operation range**
The HV-17L boasts of greatly enhanced ASC (Automatic Sensitivity Control) operation . . . 20,000:1.
- **1-inch high-sensitive Vidicon**
Equipped with a 1-inch high-sensitive Vidicon, the HV-17L provides expert surveillance where there is inadequate lighting. It requires only 3 luxes (minimum illumination) for thorough surveillance.
- **Clearst possible image**
The built-in white suppress circuit assures the clearest, brightest possible images of darkened scene objects even when there is a bright object among them.
- **Auto-beam circuit**
The auto-beam circuit automatically compensates Vidicon emission deterioration, and eliminates the necessity to periodically adjust the camera reducing maintenance cost.
- **Easy back-focus adjustment**
Vidicon back focus can be easily adjusted from the camera exterior.

HV-17T 1" Vidicon Camera

Not Shown

The Hitachi CCTV Camera HV-17T, a high-performance TV camera intended for broad industrial use, is designed with particular emphasis placed on system application.

Equipped with a Hitachi 1-inch Vidicon, its sensitivity has been sharply improved, assuring faithful scene reproduction in the low light condition. The HV-17T incorporates a 2:1 complete interlace synchronizing signal generator, a white suppress circuit, an auto-beam circuit, and other advanced circuit designs to ensure wide-range surveillance capability. Operable by external synchronizing signals, it can be used in combination with other cameras or in conjunction with a VTR, promising expanded system application.

VC-102



(with Standard Lens)

HV-17L 1" Vidicon Camera, 600L, 117VAC
7262A Vidicon Tube, Lens Optional
\$350.00

HV-17T 1" Vidicon Camera, 600L, 117VAC
Internal 2:1, or External Sync.
7262A Vidicon Tube, Lens Optional
\$500.00

Lenses

A1214 12.5mm F1.4 wide angle lens **\$124.00**
A1219 12.5mm F1.9 wide angle lens **109.00**
A2514 25mm F1.4 standard **99.00**
A2519 25mm F1.9 standard **77.00**
A5014 50mm F1.4 Telephoto **105.00**
A7514 75mm F1.4 Telephoto **168.00**
A7519 75mm F1.9 Telephoto **133.00**

HV-700 Series CCTV Camera

The Hitachi HV-700 Series CCTV Camera is a monitor television camera which is suitable for a wide range of applications.

It is available either as an internal sync type (Line-lock type), an external sync type (Non-line-lock type).

FEATURES

- Owing to the use of an automatic sensitivity control circuit, the only necessary camera operation is focusing (only vidicon tube type).
- **Automatic Beam Control (ABC)**
Automatic circuitry eliminates need for periodic readjustment of beam throughout life of camera tube.
- A white suppressor circuit ensures faithful reproduction on the video monitor, even for subjects with strong contrast.
- Camera mounting screws are provided at the top and bottom of the camera, facilitating mounting of the camera.

■ Specifications for Each Machine

Model	Synchronizing system	Pick-up tube	Power supply input
HV-720	Line-lock, 2:1 interlace	Vidicon tube	Commercial AC power input
HV-721	Line-lock, 2:1 interlace	Vidicon tube	24V AC power input
HV-725N	Line-lock, 2:1 interlace	Newvicon tube	Commercial AC power input
HV-726N	Line-lock, 2:1 interlace	Newvicon tube	24V AC power input
HV-730	Internal/external sync., 2:1 interlace	Vidicon tube	Commercial AC power input
HV-731	Internal/external sync., 2:1 interlace	Vidicon tube	24V AC power input
HV-735N	Internal/external sync., 2:1 interlace	Newvicon tube	Commercial AC power input
HV-736N	Internal/external sync., 2:1 interlace	Newvicon tube	24V AC power input

■ Standard Composition

Items	HV-720/721	HV-725/726N	HV-730/731	HV-735/736N
Camera	○	○	○	○
Lens TV16-16J (16mm f1.6)	○	—	○	—
Connecting Plug Mak 60	—	—	○	○
EE lens connecting clamp 2.5φ, 3.5φ(mm)	—	○	—	○
Operation manual	○	○	○	○

Prices and Specifications Subject to Change Without Notice.



(with ES Lens)

- Switchover to external synchronization takes place automatically when an external drive signal is input, hence no switch operation is necessary.
- The camera is available as a high resolution type for a Vidicon tube or as a high sensitivity type for a Newvicon* tube, to suit the particular applications and place where it is to be used. In total, 8 models are available. All of these employ a 2:1 interlaced scanning system, providing a more stable and clearer image.
- Video monitor available in three versions, 9-inch, 12-inch and 17-inch.
The optimum distance for viewing a video monitor is considered to be about 4 to 10 times the height of the screen. This monitor is available in three sizes, 9-inch, 12-inch and 17-inch, for applications ranging from close up monitoring to cases where the monitor is viewed from a distance. All three monitors provide a clear, sharp and stable image.
- **Wealth of accessories**
A wide range of accessories, including various lenses, camera case, motorized pan/tilt heads, automatic video switcher, VTR, and video cable, is available to enable you to upgrade your system in accordance with the particular applications.

*Trade mark

HV-720 2/3" Vidicon type **\$240.00**
HV-721 AC version **240.00**
HV-725N Newvicon tube type **764.00**
HV-726N Newvicon tube type **764.00**
HV-730 2/3" Vidicon type **\$332.00**
HV-731 AC version **332.00**
HV-735N Newvicon tube type **706.00**
HV-736N Newvicon tube type **706.00**



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CCTV CAMERA

"REMOTE EYE" SINGLE CABLE CCTV SYSTEM

The Remote Eye is a compact, high-performance CCTV camera system designed for use in a wide variety of monitoring applications. As a result of its single coaxial cable system, the need for involved AC power installation of the camera has been eliminated. This system allows greatly increased customer service, crime and fire prevention in such diverse applications as financial institutions, stores, hospitals, and hotels, while also helping improve managerial capabilities.

CAMERA HV-240/240N

This is a black and white TV camera of an internal sync type designed to be used with a multi unit (MU-240). A 2:1 interlace system employing a crystal oscillator makes for excellent picture. The HV-240 is a high resolution type (horizontal 550 lines or more at center) of vidicon camera containing an ASC (Automatic Sensitivity Control) circuit, enabling a stable picture to be obtained over a range of illumination between 10 and 100,000 lux. The HV-240N is a high sensitivity type of Newvicon camera (minimum illumination: 0.5 lux f1.6).

It is provided with an auto iris lens output terminal, permitting fitment of an auto iris lens which automatically regulates the aperture in accordance with fluctuations in illumination.

CAMERA HV-245/245N

This is an external sync type of camera which is used in combination with a dedicated sequential switcher (CS-263/266). The HV-245 is a vidicon camera. The HV-245N is a newvicon camera.

SEQUENTIAL SWITCHER CS-263/266

This is a sequential switcher which selects the video signals from several HV-245/245N cameras and then sends them to a video monitor. It is provided with all the functions necessary for monitoring and recording. Two models, the CS-263 with 3 inputs and the CS-266 with 6 inputs, are available.

- Clean, undistorted switched picture. Each camera is driven by the same sync signal, and switching takes place during the vertical blanking period of the video signal, hence there is no distortion of the picture during switching. During automatic switching, it is possible to skip terminals to which cameras are not connected, by operating a switch. It is also possible to perform video switching manually.
- Interrupt switching function provided. Interrupt terminals corresponding to the camera numbers are provided, hence by connecting an alarm device such as a sensor, the video of the camera corresponding to the place where an alarm was emitted will automatically be selected. Thus there is no risk of failing to recognize an abnormal condition.
- Alarm output function provided. This unit is provided with an alarm output terminal from which an alarm signal is emitted for a period of about 5 to 30 seconds in the event of an interrupt input. By connecting an alarm device such as a buzzer or a lamp, the occurrence of an abnormality will be brought to your attention.
- Auto mode return function. The video of a camera switched by an interrupt input can be returned to the auto mode after about 5 to 60 seconds (this time can be continuously varied). It is also possible to return to the auto mode immediately after the interrupt input disappears.
- Can be connected to a Time Lapse VTR. Switching timing can be controlled by an external switching pulse input. As a result, even when connected to a Time Lapse VTR, the entire camera picture can be recorded without error.

HV-240	\$350.00
HV-240N	800.00
HV-245	225.00
HV245N	595.00
CS-263	470.00
CS-266	625.00

LENSES

Wide angle, standard and telephoto lens...various replacement lenses are available to accommodate the field of vision. (The photographs shown below were taken at a fixed distance of 5m from the subject.)



Wide angle lens 6.5mm

B618CX	6.5mm	F1.8
C815B	8.5mm	F1.5
C814BEX	8mm	F1.4
B1214D-2	12.5mm	F1.4
B1214DEX	12.5mm	F1.4



Standard lens 16mm

C1616DNR-2	16mm	F1.6
C1614	16mm	F1.4
C1614DEX	16mm	F1.4



Telephoto lens 50mm

B2514C-2	25mm	F1.4
B2514CES-3	25mm	F1.4
B5014A	50mm	F1.4
B5018AE-3	50mm	F1.8
B7514C	75mm	F1.4
B7518ES-3	75mm	F1.8



Zoom lens 75mm

CS21218	12.5 - 75mm	F1.8
CS21218ES	12.5 - 75mm	F1.8

The type numbers shown are those of COSMICAR lenses

HV-240/HV-245

Minimum illumination 10 lux (f/1.6 3200°k)
Resolution 550 lines or more at center
Horizontal resolution 3 x 2.4 x 5.9"
Dimensions (WxHxD) (76 x 62 x 150mm)
Weight Approx. 1.3 lbs. (0.6kg)



HV-240N/245N

Minimum illumination 0.5 lux (f/1.6 3200°k)
Horizontal resolution 450 lines or more at center
Dimensions (WxHxD) 3.0 x 2.4 x 5.9"
(76 x 62 x 150mm)
Weight Approx. 1.3 lbs. (0.6kg)



MU-240

Supply voltage U-type: 120V AC 60 Hz
E-type: 220V AC 50 Hz
K-type: 240V AC 50 Hz
Power consumption Approx. 10W (When using a HV-240 or HV-240N)
Dimensions (WxHxD) 3.0 x 2.4 x 5.7"
(76 x 62 x 145mm)
Weight Approx. 2.2 lbs. (1kg)



CS-263

Video inputs Max. 3 (HV-245/245N)
Power consumption Approx. 40W (When using three HV-245/245N cameras)
Dimensions (WxHxD) 9.4 x 3.0 x 10.2"
(240 x 75 x 260mm)
Weight Approx. 8.8 lbs. (4kg)



CS-266

Video inputs Max. 6 (HV-245/245N)
Power consumption Approx. 70W (When using six HV-245/245N cameras)
Dimensions (WxHxD) 9.4 x 3.0 x 11.4"
(240 x 75 x 290mm)
Weight Approx. 13.2 lbs. (6kg)



MONITORS

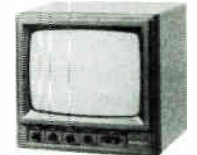
VM-900A 9-inch monitor

Dimensions (WxHxD) 9.6 x 9.2 x 9.3"
(244 x 233 x 235mm)
Weight Approx. 13.4 lbs. (6.1kg)
Optimum monitoring distance 2 to 5' (0.5 to 1.5m)
VM-900A \$180.00



VM-906 9-inch monitor

Dimensions (WxHxD) 8.6 x 8.6 x 9.2"
(219 x 219 x 234mm)
Weight Approx. 13.2 lbs. (6kg)
Optimum monitoring distance 2 to 5' (0.5 to 1.5m)
VM-906 \$285.00
Used in combination with Time Lapse VTR



VM-129 12-inch monitor

Dimensions (WxHxD) 12.5 x 11.2 x 12.4"
(318 x 284 x 315mm)
Weight Approx. 22 lbs. (10kg)
Optimum monitoring distance 3 to 7' (0.8 to 2m)
VM-129 \$380.00



VM-173 17-inch monitor

Dimensions (WxHxD) 15.9 x 15.2 x 11.5"
(405 x 386 x 293mm)
Weight Approx. 37.4 lbs. (17kg)
Optimum monitoring distance 4 to 10' (1 to 3m)
VM-173 \$395.00



KP-230/231 ALL SOLID-STATE CCTV CAMERA

The Hitachi KP-230/231 is a solid-state black-and-white TV camera which employs a solid-state imaging device instead of a conventional pickup tube.

The KP-230/231 is designed to be a separate type of an ultra-compact camera and a camera control unit. KP-230 is DC powered, KP-231 is AC powered.

FEATURES

- This camera features an MOS two-dimensional photo sensor array with 384 horizontal and 485 vertical picture elements, developed especially by Hitachi, as the solid-state imaging device, and this device provides the high resolution of 450 TV lines and high picture quality.
- The "blooming" can be greatly reduced as compared with a conventional camera.
- 2:1 interlaced scanning is employed according to the EIA standard.
- The MOS solid-state imaging device ensures no deflection distortion or burning, and also a low level of lag. Moreover, the service life is prolonged and the reliability of the camera has been upgraded.
- Max cable length is 10 m. Camera head with incl. cable is 2 m; camera extension cable is 8 m (option).
- Easy system configuration: the KP-230/231 is used with external units and peripheral units, since the clock pulse, horizontal and vertical sync signals and composite sync signal are supplied from the camera control unit (CCU).
- Besides the internal non-line-lock system, external sync may also be employed. The switch-over to external sync is automatic with the supply of the external drive signal and so there is no need to operate any switches. **\$2450.00**



SPECIFICATIONS

Imaging device	MOS-type 2-dimensional photo sensor array with 384(H)x485(V) picture elements, HE-98222
Scanning area	6.6x8.8 mm (equivalent to 2/3-inch vidicon)
Synchronization	Internal/External sync
Scanning system	2:1 interlaced scanning
Scanning frequency	Horizontal: 15,734 Hz Vertical: 59.94 Hz
Resolution	Horizontal: 450 lines at center Vertical: 350 lines at center
Signal output	Composite video signal, 1.0Vp-p(VS), 75 ohms sync negative (BNC connector)
Signal-to-noise ratio	42 dB
Minimum illumination	20 lux, f1.4 (When the HIGH GAIN switch is ON)
Lens mount	C-mount
Camera cable to CCU	2m (Standard)
Camera mount	1/4"-20 UNC

Ambient temperature	-10 to +50°C (14 to 122°F)
Power requirements	
KP-230:	DC12 ⁺ 3V
KP-231:	U type 117V±10%, 60Hz E type 220V±10%, 50Hz K type 240V±10%, 50Hz
Power consumption	
KP-230:	Approx. 4.8W
KP-231:	U type Approx. 9W E&K types Approx. 10W
Dimensions (WxHxD)	
Camera head:	45x45x61 mm (1.8x1.8x2.4 in)
Camera control unit:	200x71x235 mm (7.9x2.8x9.3 in)
Weight	
Camera head:	Approx. 110g (0.24 lb) excluding lens and cables
Camera control unit:	
KP-230:	Approx. 1.5 kg (3.3 lb)
KP-231:	Approx. 2.0 kg (4.4 lb)

STANDARD COMPOSITION

• Camera head (with 2m-camera cable)		1 pc
• Camera control unit		1 pc
• EE lens connector	HR10-7P-4P	1 pc
• External sync input connector	DIN 6-pin	1 pc
• Sync output connector	DIN 7-pin	1 pc
• 12V DC input connector (KP-230 only)	RM12-BPG-3S	1 pc
• Operation manual		1 copy

OPTIONAL ACCESSORIES

- Lenses
- Extension camera cable (8m)



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CCTV CAMERA



MOS SOLID STATE CAMERA

KP-120/220 CCTV CAMERA

The KP-120/220 is a black-and-white TV camera employing a solid-state pickup device in the form of a MOS-type 320 (H) x 244 (V) picture element two-dimensional photo-sensor array, developed by Hitachi, Ltd., to achieve improved sensitivity and blooming characteristics.

The operating principle of a TV camera which employs solid-state pickup devices prevents the actual picture from deflection, distortion or sticking and minimizes lag problems. Furthermore, this type of camera is characterized by long life and high reliability.

And there are even more merits! The KP-120/220 is compact and lightweight, and it can be operated easily. All these features render this camera ideal for geometric image processing where its lack of distortion is put to good use, and also for special monitoring applications in high or dangerous locations where the camera's long life and high reliability can be used to the utmost advantage.

EE lens output signals can be fed out.

FEATURES

Compact size and light weight

By replacing the pickup tube and coil with a solid-state pickup device, the camera's weight and volume have been reduced to about one-third the corresponding values of conventional black-and-white pickup tube cameras (produced by Hitachi).

Long service life and high reliability

Similar to conventional semiconductor devices, the KP-120/220's solid-state pickup device is characterized by minimal aging, ensuring long service life. What a pleasing contrast with an outmoded pickup tube whose degree of vacuum was subject to impairment and whose cathode material was subject to deterioration, requiring replacement.

Using a solid-state pickup device also reduces by about 50% the total number of parts used and increases reliability (compared with other Hitachi cameras).

Applications

- Pipe cameras, underwater cameras, cameras mounted in high locations, monitoring of locations where no maintenance is normally possible
- Instrumentation applications, pattern recognition (geometric readout devices, robots), planimeters, dimensional and flow inspections
- Monitoring of moving objects, monitoring of locations subject to possible strong light, monitoring inside tunnels, pollution monitoring, traffic survey
- Monitoring behind buses and trucks, monitoring work with cranes and other machines, monitoring at locations subject to vibration and shock
- Shooting in strong magnetic or electrical fields

SPECIFICATIONS

- Pickup device: 320 H x 244V MOS-Type Solid-State device, HE-97211
- Scanning Area: 6.6 x 8.8 mm (equivalent to 2/3-inch Vidicon)
- Synchronization: Internal/External automatic selection
- Scanning System: Progressive scanning
- Scanning Frequency: Horizontal: 15.72 kHz, Vertical: 59.9 Hz
- Resolution: Horizontal: More than 240 lines at center, Vertical: More than 190 lines at center
- Signal output: 1.0 Vp-p (VS), 75 ohms, sync negative
- Minimum Illumination: 10 lux (1 fc) standard or 5 lux (0.5 fc) selector incorporated, F1.4
- Signal-to-noise ratio: Random noise; 49 dB (4.5 MHz band), Fixed pattern noise; 52 dB (4.5 MHz band)
- Lens Mount: C-mount
- Camera Mount: 1/4" -20
- Ambient Temperature: -10 to +50°C (15 to 122°F)
- Power Requirements: 100 V +1 -10% AC, 50/60 Hz; 120V +/-10% AC, 60 Hz, Approx. 5 W (using AC adaptor), 9 V DC, 0.3A, approx., 2.7 W (camera only)
- Dimensions (W x H x D): Camera; 2.4 x 1.9 x 5.2 in., AC adaptor; 2.6 x 2.1 x 3.5 in.
- Weight: Camera; approx 0.95 lbs. excluding lens, AC adaptor: Approx. 1.76 lb.

No geometric distortion

The solid-state pickup device is composed of tiny picture elements—320 horizontal to the light sensor and 244 vertically. These elements are arranged with precision in the order of microns, and since the video signal is taken out from these unit devices, no geometric distortion occurs regarding the light sensor.

It has been impossible to avoid this type of distortion with conventional pickup tubes because the electron beam emitted from the electron gun was deflected by the coil and the light sensor was scanned. This demerit persisted even when some form of electrical compensation was provided.

Reduced lag

One undesirable characteristic of pickup tubes leads to lag for a very short interval after the subject image had faded away. This produces a so-called "comet tail effect" when a rapidly moving subject is shot. However, with the solid-state pickup device, this lag has been reduced to a very low level.

No sticking; long service life

When the same object is shot over a long period or when an extremely bright light is shot, the signals produced may not fade away—or they may never fade away. This phenomenon is termed "sticking".

However, with a solid-state pickup device, absolutely no sticking occurs—a feature which prolongs camera service life.

Excellent immunity to vibration and shock

The construction and mounting method of conventional pickup tubes and the coil made them susceptible to vibration and shock. By using a solid-state pickup device, it is now possible to upgrade the camera's immunity to vibration and shock to a level commensurate with other electronic devices and equipment.

KP-120

Includes camera without lens, AC adaptor, connectors for external sync and EE lens, operators manual.

KP-220

Includes camera head without lens, cable, remote control unit, operators manual.

DK-3000/3300 SINGLE TUBE COLOR CAMERAS

Compact, easy-to-operate cylinder type camera head suitable for combination with surgical microscopes, endoscopes, and biological microscopes. They are approximately 1.5" (38mm) in diameter and weigh approximately 0.8 lb. (370g).

Resolution of 350 lines, minimum illumination of 25 lux (2.5 fc), f/1.6, and SN ratio of 50 dB. A special circuit enables independent adjustment of red and green color phases and color saturation for the finest color reproduction. A compensation circuit is also built in for sharper pictures.

Special color bar for easy color adjustment of color monitor. LEDs are used for indication of the video level. ALC (automatic light control) and AGC (automatic gain control) detect the amount of light at the center of the screen, enabling a continuously stable picture. Auto to white, ALC, AGC and ABO (automatic beam optimizer) are provided.

STANDARD COMPOSITION

Camera head with 10' (3m) camera cable (for DK-3000); with 10' (3m) + 23' (7m) camera cable (for DK-3300); camera control unit.

The DK-3300 has a very unique feature, the title generator, which superimposes title, date, patient name, etc. onto the picture screen.

MEDICAL SERIES CAMERAS

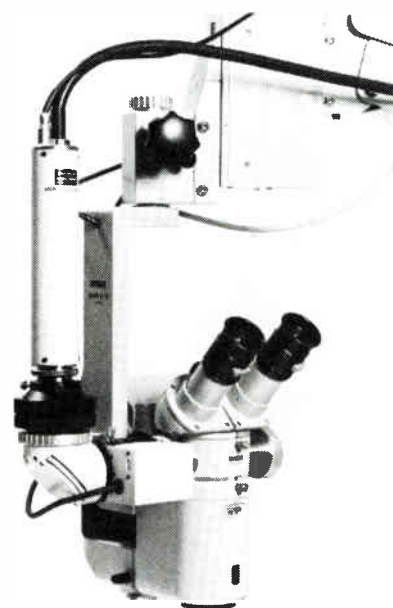
CAMERA ITEMS	SINGLE TUBE COLOR CAMERA DK-3000	DK-3300
Pick-up Tube	3/8" x 1	3/8" x 1
Output Signal	NTSC x 2	NTSC x 2
Synchronization	Internal	Internal External (GL)
Resolution (H. Cntr)	350 TV Lines	350 TV Lines
Min. Illumination	25 lux (f/1.4 Max. Gain)	25 lux (f/1.4 Max. Gain)
Vertical Enhancer	1H	2H
A B O	Yes	Yes
Microphone Jack	No	Yes
Character Generator	No	Yes
Lens Mount	C	C
Camera Head Dimensions	1.5" dia. x 7.7"D (38 x 195mm)	1.5" dia. x 7.7"D (38 x 195mm)
Weight	0.8 lb. (0.37 kg)	0.8 lb. (0.37 kg)
Price	\$4900.00	\$9500.00

OPTIONS

Camera Cable	7m, 17m	17m
Tripod Adaptor	TA-30, TA-3000	TA-30, TA-3000


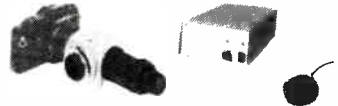

ADAPTORS FOR SURGICAL OPERATION MICROSCOPE

These adaptors are used for combining a surgical operation microscope with a television camera.



ADAPTORS USED FOR COMBINING SCOPE WITH TELEVISION CAMERA

Applicable camera Manufacture	DK-3300/3000	Conversion adaptor
For OLYMPUS	MC-06 MC-08	CP-301(MA-ST)/(MA-WO)
For FUJINON	TVA-10B TVA-01/02	CP-302(ST-OL)/(WO-OL)
For MACHIOA	CA-16-AC	CP-302(ST-FU)/(WO-FU)
Others	For STORZ WOLF SHINKO MA-9300	FOA-08

Applicable camera	DK-5050	DK-3300 3000
Model	ME-901(CZ)*	ME-902(CZ)*
Exterior		
General	This adaptor is designed for use on CARL ZEISS surgical operation microscopes. It is provided with automatic aperture control and also the aperture can be controlled remotely. The television field is about 70%.	This adaptor is the same as that of the ME-901(CZ)* with the addition of a photography function. By simply pressing the foot switch, it is possible to take unblurred pictures without interrupting the operation in progress. For a still camera, we recommend the separately available (at cost) Contax 137MD. Television field is about 70%.
		ZEISS = 301519
		
		This adaptor is designed for use on CARL ZEISS surgical operation microscopes. It has a television field of approx. 80%.

* Can be used with DK-3000 series using mounting adaptor LM-B48C.



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MEDICAL CAMERAS

DK-5050/5053 3-TUBE COLOR CAMERA

The DK-5050/5053 is a 3-tube color camera with an ultra-compact size, light weight and high performance. It is composed of a camera head and camera control unit, and is ideal for combination with surgical microscopes, endoscopes, biological and metal microscopes. It has horizontal resolution of 550 TV lines (NTSC).

When an f/1.6 lens is used, a signal-to-noise ratio of 53 dB (NTSC) can be attained minimum 16 lux (1.6 fc) illumination by a high-sensitivity pick-up tube and a low-noise pre-amplifier.

The camera sensitivity can be increased to 3 times or 8 times; usable picture is obtained under the illumination of 16 lux (1.6 fc) without changing the lens. A built-in contour correction circuit ensures clear and crisp pictures.

The DK-5050/5053 is used with an optional viewfinder and a zoom lens. A compact and high-performance prism and ICs make it possible to reduce the size and weight of the camera.

ABO (Automatic Beam Optimizer) (only DK-5050)

The built-in ABO circuit ensures the dynamic range from dark portion to highlight portion.

Built-in auto black and white balance controls with digital memory/color correction

Automatic light control is incorporated to activate the automatic light control device for a microscope and the auto-focusing device of the zoom lens.

An optical automatic setup unit using a microprocessor facilitates a correction of the deviation of the setting during operation.

This function has never been used in cameras of this class.

Video level is indicated by the level meter on the operation panel, and the video waveform is displayed on the viewfinder screen (option). Therefore, the adjustment of illumination and lens iris is facilitated even when the ALC is not used.

The color bar signal is used as a color reference signal and facilitates the inspection of color monitor.

Remote control (only DK-5050)

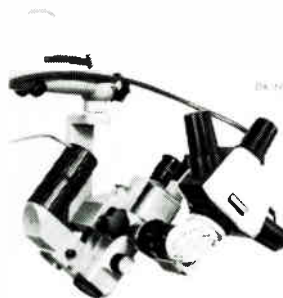
Though the standard distance between a camera head and a CCU is 20m, the distance can be extended up to 300m by using a remote operation unit (option). Inter-communication between a remote operation unit and a CCU are available by headsets (option).

STANDARD CONFIGURATIONS:

DK-5050 Camera head (2m cable) x 1, camera control unit x 1, camera cable (18m) x 1

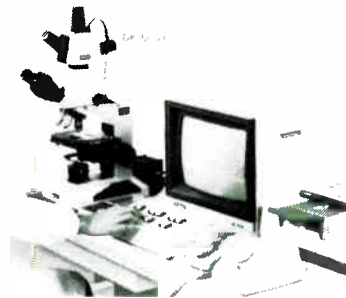
DK-5053 Camera head (2.5m cable) x 1, camera control unit x 1

CONNECTION WITH A SURGICAL MICROSCOPE



DK-5050

CONNECTION WITH A BIOLOGICAL MICROSCOPE



DK-5053

MEDICAL SERIES CAMERAS

ITEMS	CAMERA 3 TUBE COLOR CAMERA	
	DK-5050	DK-5053
Pick-up Tube	3/8" x 3	3/8" x 3
Output Signal	NTSC x 2 RGB x 1	NTSC x 2 RGB x 1
Synchronization	Internal External (GL)	Internal External (GL)
Resolution (H. Cntr)	550 TV Lines (G. Ch)	550 TV Lines (G. Ch)
Min. Illumination	16 lux (f/1.4 Max. Gain)	16 lux (f/1.4 Max. Gain)
Vertical Enhancer	2H	1H
Microphone Jack	Yes	No
Character Generator	No	No
Lens Mount	Bayonet	Bayonet
Camera Head Dimensions	3"W x 10.2"H x 7.2"L (76 x 259 x 183 mm)	3"W x 10.2"H x 7.2"L (76 x 259 x 183 mm)
Weight	2.4 lb. (1.1 kg)	2.4 lb. (1.1 kg)
Camera Cable	Std. 2m + 18m Max. 20m	2.5m 2.5m
Price	\$28,900.00	\$19,900.00
OPTIONS	DK-5050	DK-5053
Camera Cable	No	No
Tripod Adaptor	TA-505	TA-505
R.O.U.	OP-21A C-152CR (15m)	No
R.O.U. Cable	C-502CR (50m) C-103CR (100m)	No
Viewfinder	GM-3B	GM-3B

ADAPTORS USED FOR COMBINING SCOPE WITH TELEVISION CAMERA

Applicable camera Manufacture	DK-5050/5053	Conversion adaptor
For OLYMPUS	 CP 202 XX OL - ME 501 XX	 CP 301 MA ST - MA WO
For FUJINON	 CP 202 XX FU - ME 501 XX	 CP 302 ST OL - WO GL
For MACHIDA	 CP 202 XX MA - ME 501 XX	 CP 302 ST FU - WO FU
Others		 FOA 08

ADAPTORS FOR SURGICAL OPERATION MICROSCOPES

These adaptors are used for combining a surgical operation microscope with a television camera.

Applicable camera	OK-6060	
Model	ME-901 (CZ)	ME-902 (CZ)
Exterior		
General	This adaptor is designed for use on CARL ZEISS surgical operation microscopes. It is provided with automatic aperture control and also the aperture can be controlled remotely. The television field is about 70%.	This adaptor is the same as that of the ME-901 (CZ)* with the addition of a photography function. By simply pressing the foot switch, it is possible to take unblurred pictures without interrupting the operation in progress. For a still camera, we recommend the separately available (at cost) Contax 137MD. Television field is about 70%.



HITACHI
A World Leader in Technology

401 West Artesia Blvd.
Compton, CA 90220
(213) 537-8383

VIDEO CASSETTE RECORDERS/ COLOR VIDEO CAMERAS

VT-3P 3 HEAD PORTABLE VCR PORTADECK — VT-3A

- Compact VCR under 8 lbs • 3 Heads • Special effects • 11 mode wired remote • Power shut-off feature with compatible Hitachi video cameras • Video dubbing facility for later insertion of titles, etc. • LCD multi display, including memory rewind/stop • Large, functionally spaced LSI (large-scale integrated circuit) logic controls • DD motors • Noise free editing • Sound on sound • 8 hour recording
- Dimensions: 10"W x 3-3/8"H x 10-3/8"D • Weight: 7.92 lbs. approx. (including Battery Pack)

TUNER VT-TU3A

- 6 program/14 day timer • Instant recording timer • Auto channel lock — protects against accidental disruption of timer settings • Simple 1-cable connection between tuner and video deck • Large, easily visible fluorescent time display • Cable ready - 82 channels
- Dimensions: 10"W x 3-3/8"H x 10-3/8"D • Weight: 7 lbs. **\$1095.00**

VT-5P 3 HEAD PORTABLE VCR PORTADECK — VT-5A

- Lightweight • 3 heads • 8 hour recording • DD motors with power shut-off feature • Noise-free editing • Sound on sound • Video dubbing facility for later insertion of titles, etc. • LCD multi-display, including memory rewind/stop • 18-function wireless remote control included • Large, functionally spaced LSI (large scale integrated circuit) logic controls • Special effects
- Dimensions: 10"H x 3-3/8"H x 10-3/8"D • Weight 7.92 lbs. approx. (including optional Battery Pack)

TUNER — VT-TU5A

- 6 Program/14 day timer • Instant recording timer • 105 channel tuner • Auto channel lock, protects against accidental disruption of timer settings • Simple 1-cable connection between tuner and video deck • Large, easily visible fluorescent time display
- Dimensions: 10"W x 3-3/8"H x 10-3/8"D • Weight: 7 lbs. **\$1195.00**

VT-8P 5 HEAD STEREO PORTABLE VCR PORTADECK — VT-8A

- Compact VTR under 8 lbs. • 5 heads stereo sound • Noise free special effects • Normal speed reverse play • Sound with sound • Wide range of special viewing effects • Noise-free fine editing • Date coding • LCD multi-display • "Power Shutoff" • DD motors
- Dimensions: 10"W x 3-3/8"H x 10-3/8"D • Weight 7.92 lbs. (approx.)

VT-TU8A TUNER/TIMER

- (Customized Tuning)
- 7 prog/14 day timer • Instant recording timer • 19 mode wireless remote • "Cable Ready" 133-channel tuner • Instant Recording Timer—activates automatic on/off recording of 30, 60, and 90 minutes; 2, 3 or 4 hours duration • Dimmer switch for digital timer readout • Quick, single cable connection between tuner and recorder • Timer backup circuit
- Dimensions: 10"W x 3-3/8"H x 10-3/8"D • Weight 7 lbs. **\$1295.00**

VK-C840 SATICON

Auto Focus Color Video Camera

The VK-C840 eliminates problems through a new type of CCD (charge coupled device) sensor which employs photoelectric signals relayed to a servo circuit employing a high-accuracy analog/digital converter. This then instructs a built-in DC drive system to focus precisely on the subject. The auto focus operates in a range of 1 meter to infinity, and under virtually any natural or artificial lighting conditions between 10 to 100,000 lux. Manual override can also be used to defeat auto focus operation when desired.

- 1/2" Saticon™ including striped filter • NTSC 525 lines, 2:1 interlace • Nondirectional microphone • Electronic viewfinder (1" b/w CRT) • Better than 270 TV lines • f/1.2 special mount, 6x zoom, macro function, auto-iris lens • Instant review • Power consumption: 4.0W • Dimensions: 4-5/8"W x 5-1/2"H x 10-1/2"D • Weight: 3.08 lbs. **\$995.00**

VC-108

VT-8P SYSTEM



VT-TU8A

VT-8A



VK-C3400

VK-C870

VK-C870 SATICON

Auto Focus Color Video Camera

- High-performance 1/2" Saticon™ pickup tube • Sharp f/1.4 motorized zoom lens (6x) with macro setting • Auto iris, auto white balance adjustment • 1" electronic viewfinder reversible for left or right mounting • Unidirectional boom-type condenser microphone • 1.5x teleconversion and 0.7x wide angle conversion lenses available • Fade in/out instant review • Shoulder mount • Character generator • VCR remote operation for special effects
- Dimensions: 7-5/8"W x 9"H x 17-7/8"D includes handgrip
- Weight: 5.7 lbs. **\$1125.00**

VK-C1500 ONE-HAND MOS COLOR VIDEO CAMERA

- High resolution of up to 300 TV lines • Inner microphone with excellent sensitivity • Instant review of just-shot scenes through the viewfinder in use with selected Hitachi video tape recorders • 2/3" MOS image sensor • f/1.2, 6x zoom lens with macro function and fixed mount • Horizontal grip • Automatic white balance control
- Dimensions: 4-7/8"W x 5-1/4"H x 7-11/16"D • Weight: (without cable) approx., 2.16 lbs. **\$1225.00**

VK-C3400 MOS W/COMPUTERIZED AUTO FOCUS

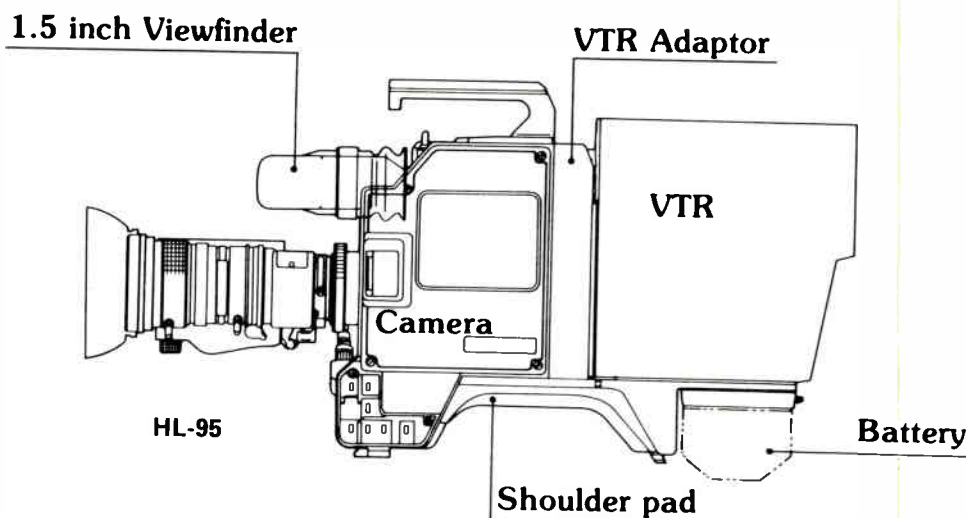
- 2/3" MOS image sensor • Full feature special effects • Color viewfinder • Computerized auto focus • Fade in/out, focus in/out functions • Nega-Posi reversal function • Detachable unidirectional gun-type condenser microphone • Time lapse function (3 seconds to maximum 999 seconds) • Titler provides insertion of title characters (max. 60 letters) at beginning of already recorded scene • Check button confirms operation modes in viewfinder • Warning display informs low battery and underexposure information • Timer readout start/stop inserts digital time display in 1/10 second increments • "Scene timer", digital time readout in viewfinder informs cameraman of exact length of scene being filmed • Instant review facility • f/1.2, 6x, 10.5 to 62mm Zoom, Auto Iris, macro focusing lens
- Dimensions: 7-7/8"W x 8"H x 13-1/2"D • Weight: 5.5 lbs. **\$2095.00**

Prices and Specifications Subject to Change Without Notice.

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR CAMERA



IKEGAMI HL-95 UNICAM®

If you're confused by the many tape formats and conflicting manufacturers claims, relax. Ikegami's new HL-95 Unicam® is the only universal camera system that accepts all professional on-board VCR formats, 1/4-inch and 1/2-inch, and solves your buying puzzle by putting the picture you want into place.

Engineered to offer performance beyond the most rigid expectations, the HL-95 utilizes new 2/3-inch SM diode gun Plumbicons®, resulting in a camera with higher sensitivity and S/N ratio, greater resolution, lower operating power requirements and less registration error than previously possible in a camera of its size and weight.

The HL-95 is also available as a stand-alone ENG camera, and in systems configurations using Triax or multi-core cable base stations, or with the ML-95 ENG Microwave Link. Once you examine the HL-95 Unicam®, you'll agree that the system flexibility and picture quality puts it in a class all by itself. The standard of excellence continues at Ikegami.

FEATURES

- High sensitivity: Max. 24dB
- Small size: 165D x 95W x 250H mm
- Weight: 3.0kg (Camera + 1.5" VF)
- Full shading correction: Black and white
- Dynamic focus correction
- Flare correction
- Geometry correction
- Color matrix
- Knee aperture correction
- Viewfinder:
 - White balance indication
 - Battery warning indication
 - Tally (REC) indication
 - Gain up indication
 - Stand-by indication
 - Lens extender indication
 - Audio level indication (CH1, CH2)
 - Tape remaining time indication
 - Filter position indication
- Color bars: Split field, in accordance with RS-189
- Sync generator: RS-170A, adjustable H. V Blanking

- Automatics:
 - Auto iris
 - Auto iris close
 - Auto white balance
 - Auto beam control
 - Auto highlight compression

SPECIFICATIONS (RATING)

Input Signal	
Return signal:	VBS/VS 1.0V p-p 75 ohms
External sync (G/L):	Option VBS/BBS 1.0V p-p/0.45V p-p (using the optional adaptor)
	DC 12V
Power:	
Output Signal	
Composite signal:	VBS 1.0V p-p 75 ohms
Monitor signal:	RGB, R-G, B-G, ENC
Pick-up tubes:	2/3" SM Diode Gun Plumbicon®
Filter:	3000°K, 5600°K, 5600°K + 25% ND, CAP
Lensmount:	Bayonet, interchangeable with HL-79
(PERFORMANCE)	
Sensitivity:	2000 lux F4.5
S/N ratio:	60dB
Resolution:	More than 650 TVL
Registration:	Zone 1 > 0.05% of picture height
(Deviations of R, B with respect to G)	Zone 2 > 0.1% of picture height
	Zone 3 > 0.2% of picture height
Geometric distortion:	Less than 1.5%
Power consumption:	17W

SYSTEM (WEIGHT)

Camera (includes VF and Shoulder Pad)	3.0kg
VTR Adaptor	0.6kg
Lens	1.5kg
VTR (BOSCH 1/4")	2.9kg
Battery	1.0kg
Total	9.0kg

Plumbicon® : Registered Trademark of N.V. Philips.

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

1/2" M-FORMAT PORTABLE VCR FOR THE HL-95

IKEGAMI HM-100

1/2" Portable VCR for HL-95 ENG Camera

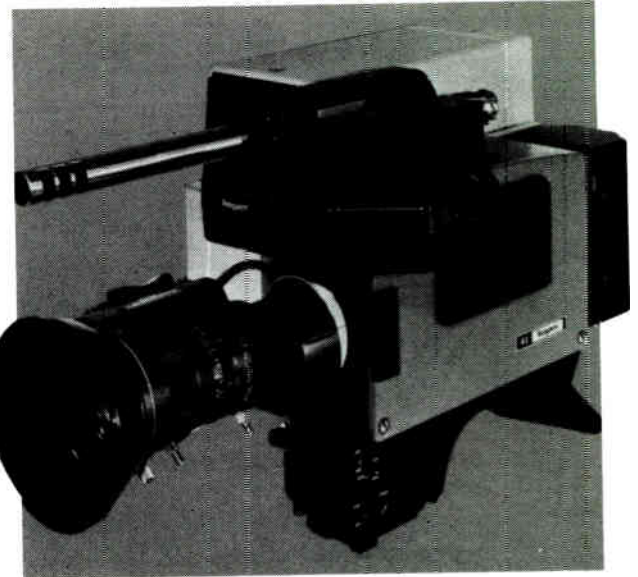
Ikegami has succeeded in combining the HL-95 compact ENG camera and a newly developed 1/2" video cassette recorder. The HL-95 with 1/2" VCR is our answer for demanding ENG applications. It incorporates a creative new recording process which may record up to 20 minutes of broadcast quality signal on one NV-T120HG VHS tape. This camera system will afford a camera person greater maneuverability in material gathering activities such as news reporting and documentary and sports reporting.

New 1/2 inch Format Features

The HL-95 with 1/2 inch VCR's professional quality results are made partly possible by a special recording process which records Y and I/Q information on separate video tracks. This means that Y and I/Q signals are delivered directly from the camera to the recorder. In addition, the I/Q signals are multiplexed for even greater freedom from intermodulation.

Also contributing to the outstanding picture quality are the 4 video recording heads and the high tape speed of about 8 ips with a recording wavelength of 27,000 cycles per second. Although compact VHS tape is only 1/2" wide, the M-format recording system delivers broadcast quality video, 2 high quality audio tracks, a control track, and a time code track all on this space saving, easily available tape.

And the new 1/2 inch VCR gives you a full 20 minutes of recording on one NV-T120HG VHS cassette.



HM-100

Specifications for 1/2" Portable VCR

General

- Power: DC +12V
- Power consumption: 12W (nominal DC +12V)
- Video recording system: 4 rotary heads, 2-track helical scanning system
- Tape speed: 8 inch/sec. (204.5mm/sec.)
- Recording time: 20 min. (NV-T120HG VHS cassette)
- FF/REW time: less than 5 min.
- Tape: NV-T120HG VHS cassette
- Dimensions (WxD): 120mm x 237mm x 240mm
- Weight: 9.0 lbs. (4.1 kg)

Video

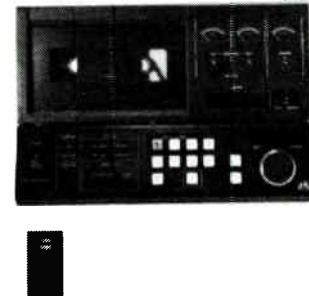
- Television system: NTSC system, 525 lines, 60 fields
- Modulation system: 2 channel Y/I/Q frequency modulation, I/Q frequency multiplexing
- Bandwidth: Luminance: 3.0 MHz, -1dB, Chrominance: 1.0 MHz, -1dB
- Signal-to-Noise ratio: Luminance: better than 47dB, Chrominance: better than 48dB
- Differential gain: less than 5%
- Differential phase: less than 5°
- K factor (2T pulse): less than 2%
- Chrominance: Luminance delay: 90 nsec.
- Inputs: Y/I/Q from camera
- Outputs: composite video: 1.0Vp-p, 75Ω

Audio

- Frequency response: 50 ~ 15,000 Hz ± 3dB
- Signal-to-noise ratio: better than 50dB
- Crosstalk: better than -40dB
- Inputs: Mic 1 (XLR): -60dBm, 600Ω, Mic 2 (XLR): -60dBm, 600Ω
- Output: Headphone: -20 to -32dB, 8Ω

Environmental

- Ambient temperature: 32° ~ 104°F (0° ~ 40°C)
- Relative humidity: 20 ~ 85% (noncondensing)
- Operating altitude: 0 ~ 10,000 ft. (3,040m) unpressurized



HM-300

IKEGAMI HM-300

Playback and Editing Equipment

Features

- M-Format recording can produce broadcast quality results
- Y and I/Q or NTSC video input and output
- Advanced microprocessor control for smooth tape transport and direct mode operation
- Insert or assembly editing
- Audio limiter built-in
- Y and I/Q direct dubbing input and output connectors for minimal loss of signal quality
- 4 servo controlled direct-drive motors
- 2 audio tracks plus a time code track
- Dial search control with jogging capability

VC-110

Prices and Specifications Subject to Change Without Notice.

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR CAMERA



SC-500 STUDIO CAMERA

A new economical professional studio color-TV.

The new viewfinder camera, employs three 2/3" pickup tubes and a prism-optics system to produce pictures of superb clarity and color fidelity. The sturdily built, easy-to-service camera can be relied on to keep performing under the most demanding studio conditions.

Features

- Dynamic focus to ensure superior corner resolution
- Deflection distortion corrector for extremely low registration error
- Detail corrector for crisp, sharp images
- Black and white full shading correction
- Video matrix to provide accurate color matching between cameras
- Servo-controlled filter disc
- +6/ +12dB video gain switch
- Dynamic beam stretch
- Return video
- Level suppression to accommodate high-contrast scenes
- Horizontal resolution (at G channel)—700TVL at center, 600TVL at corners
- S/N ratio—57dB/NTSC, with Gamma, DTL off

Automatic Features

- Automatic centering control
- Automatic iris with weighting system
- Auto cap for tube protection
- Auto white and black balance
- Auto black level
- A newly developed non-volatile memory retains all the automatic correction data for several years, even when power is removed.

A zebra-pattern video signal indicator in the 7" viewfinder ensures optimum matching of video signals, and a built-in split-field color-bar generator is provided. A character display in the viewfinder permits easy monitoring of camera status while the camera is being used.

Fully modular construction is employed to simplify service and maintenance. Plug-in printed-circuit boards, divided according to circuit function, are utilized. All major controls are located in front of each unit to facilitate adjustments.

Prices and Specifications Subject to Change Without Notice.

VC-111

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

ENG/EFP COLOR CAMERA



ITC-730A

IKEGAMI ITC-730A

Ikegami introduces the ITC-730A, a compact, professional, and economical camera capable of consistently producing quality pictures of fast-breaking events. The ITC-730A is the perfect answer for the cost-conscious TV station or cable operation that wants a multi-purpose, high-quality ENG/EFP camera that's easy to maintain.

PERFORMANCE FEATURES

- Saticon II pick-up tubes
- A built-in high-speed (f/1.4) prism beamsplitter produces pictures with excellent sensitivity, resolution, colorimetry, and high sensitivity (f/4.0 at 2000 lux)
- A high-performance FET is built into the coil assembly to offer pictures with an excellent signal-to-noise ratio of -57dB
- A bias light is incorporated to reduce lag, designed especially for critical low-light scenes
- A 2H detail corrector assures an excellent, crisp, sharp image
- The camera employs a deflection distortion corrector to make images with extremely low registration error
- To ensure superior corner resolution, a dynamic focus is employed

OPERATIONAL FEATURES

- The lightweight camera head is well balanced on the shoulder, so there is no feeling of fatigue during extended operation
- Rugged camera head: The camera head is made from a tough, magnesium diecast alloy
- The lens mount is the same size as that on the ITC-350, ITC-730 and HL-79D/E cameras. Perfect interchange among lenses is possible—meaning you can use a wide variety of ENG-type high magnification lenses with any of these cameras
- A servo type auto iris control system is used to enable iris control from peak to average levels, or variable combination of peak and APL
- The auto iris closes automatically to protect the camera pickup tubes from damage whenever the power is cut off
- To maintain optimum video quality under all indoor and outdoor conditions, the ITC-730A incorporates a color temperature filter wheel. Indoors: 3200°K, Outdoors (cloudy weather): 5600°K, Outdoors (sunny weather): 5600°K + 25% ND, CAP: Blind

SYSTEM CONNECTION FEATURES

- A built-in genlock feature (standard) makes external sync (VBS/BBS signals) operation possible by a coaxial cable
- When the supply of genlock signals stop, the camera is automatically switched over to the internal sync operation
- There is easy control of subcarrier phase and horizontal sync phase at the camera head
- Horizontal and vertical blanking widths can be controlled separately
- SC-H phase relationship meets EIA RS-170A
- Gamma correction is continuously adjustable in each video channel to permit easy matching to other cameras
- By connecting the CCU-730A, a variety of remote control operations, such as those shown below, are possible

- | | |
|------------------------------------|-----------------------------------------------|
| 1) Iris | 8) Color bar switching phase |
| 2) Manual/Auto switch-over of iris | 9) Subcarrier phase control |
| 3) Master pedestal | 10) Horizontal sync phase control |
| 4) R/B pedestal | 11) Nor/Mid/High (0/+9/+18dB) Gain switchover |
| 5) Peaking with R or B-knob | 12) Camera call |
| 6) Peaking with R/B-knob | 13) R/B H-centering |
| 7) Auto white setting | 14) R/B V-centering |

- The 5-inch viewfinder is equipped with a tilting mechanism mount for studio use. (A 1.5-inch viewfinder for portable use is also available.)

CAMERA CONTROL UNIT

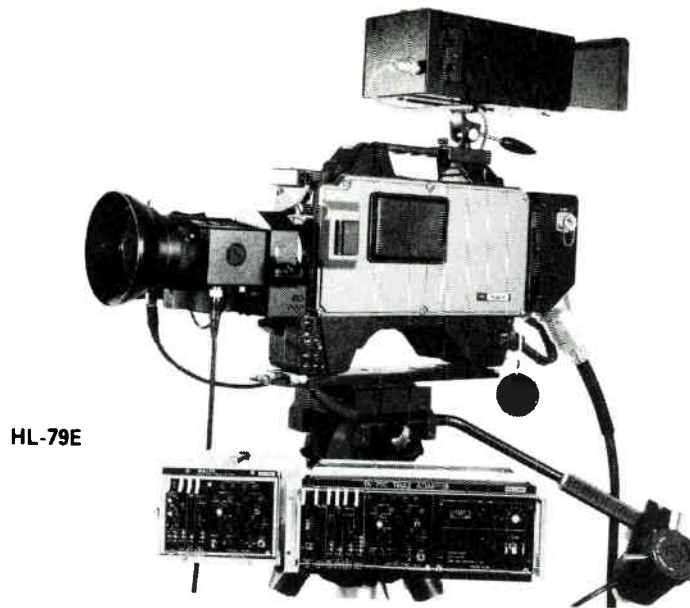
- The ITC-730A CCU mounts into a 19" rack, height is 3.5"
- The CCU-730A compensates for cable lengths up to 300 meters. Cable diameter is 13mm. Cable compensation positions are 15/100/200/300 meters
- The standard unit can be operated from Camera Head power, a battery, or other DC power source
- Horizontal phase is automatically controlled by APC (Auto Phase Control) system regardless of cable length
- Utilizes a power source with a remote sensing function which automatically supplies a fixed voltage to camera head, regardless of cable length
- RGB signals (with one channel provided for each), simultaneously fed out from the CCU, may be utilized for chroma key signals

ITC-730AP Plumbicon® ENG/EFP Color Camera
Plumbicons are utilized for better highlight handling characteristics and lowest image lag.

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR CAMERA



IKEGAMI HL-79E ENG/EPF Color Television Cameras

The Ikegami HL-79E establishes a new standard of comparison for high quality ENG/EPF color television cameras. Although it is smaller and lighter than its HL-79 series predecessors, it uses the same proven and available 2/3-inch pick-up tubes while achieving important performance improvements in the areas of sensitivity, signal-to-noise ratio, registration accuracy, resolution and R.F.I. immunity. Picture quality is further enhanced by new circuit features such as chroma aperture correction, dynamic detail correction, automatic highlight compression and knee aperture correction. The improved performance and picture quality enhancement result in a camera with overall performance rivaling that of the competitor's studio cameras; hand-held or tripod supported versions are available.

The HL-79E is designed for ease of maintenance with a micro computer to carry out self diagnostic functions. The micro computer assesses the camera's operating condition and makes any necessary corrections in a short time.

The ADC-79E incorporated in the system prints out a statement of the camera's condition via an RS232C port, thus control of the camera can easily be made for the long term.

FEATURES

RFI Immunity

Up to 10 volts per meter (140dB) from 100kHz to 600MHz for the entire camera surface (not including lens port).

Chroma Aperture Correction

Generates aperture correction signal when Green information is absent from the signal, results in improved sharpness of picture in Red and Blue content areas.

Dynamic Focus

Parabolic modulation of electrostatic focus voltage improves corner resolution.

Dynamic Detail Correction

Parabolic modulation of detail correction signal improves corner picture sharpness.

Knee Aperture Correction

Expands horizontal video frequency response in highlight areas of picture to compensate for aperture correction fall-off due to gamma compression of correction signal.

Performance Parameters

Various fundamental performance parameters have been emphasized to achieve the superior performance desired by today's program originators.

Sensitivity

Standard sensitivity is 2000 lux at f/5.0 Maximum sensitivity at + 18dB video gain is 20 lux at f/1.4 (using 89.9% reflectance chart).

Signal-to-Noise Ratio

-59dB is achieved with low input capacitance tubes using conventional measuring techniques (0dB video gain).

Registration

Deviation of Red and Blue with respect to Green is within 0.05% in Zone 1, 0.1% in Zone 2, and 0.3% outside of Zone 2 as a result of the Quadrant Geometry Correction Circuit used.

Resolution

By operating the pick-up tube in a high voltage mode, center resolution of 650TVL limiting and corner resolution of 500TVL limiting is achieved (using Diode Gun pick-up tubes, measured at 2000 lux illumination on a standard RETMA resolution chart).

Viewfinder Resolution

Crisp, high contrast pictures are assured by the use of an improved cathode-ray tube.

Output Signal Characteristics

In accordance with EIA Standard RS-170A, blanking pulse widths and SC-H phase relationship adjustable.

HL-79ESL Saticon 3 tube, low capacitance

HL-79EAL XQ3427 Tubes

HL-79EA XQ2427 Tubes

HL-79E XQ1427 Tubes

Prices and Specifications Subject to Change Without Notice.

VC-113

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
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ACCESSORIES

AUTOMATIC FEATURES

The HL-79E is a fully automatic camera configured to permit the camera operator to concentrate on artistic aspects with minimum attention required by the camera operators. The automatic features provided are:

- Auto Iris Control
- Auto White Balance (2 Modes)
- Auto Black Balance
- Auto Iris Closure
- Auto Iris Waiting
- Auto Highlight Compression
- Auto Beam Control

MAINTENANCE CONSIDERATIONS

To simplify maintenance of the HL-79E, numerous features have been incorporated in the design:

- Electromagnetic Beam Alignment Controls
- Synchronized Focus Wobble Circuitry for Precision Tube Alignment
- Deflection Overscan Facility for Accurate Raster Positioning
- Calibrated Video Test Sawtooth Voltages for Video Amplifier Adjustment
- Sealed and Dust Free Color Splitting Optics
- Monitor Video Output Separate from Line Video Output
- Monitor Video Output with Negative Green Facility for Precision Registration
- Externally Accessible Monitoring Controls

ADC-79E AUTO SETUP DIGITAL CONTROL

Following functions may be controlled from the ADC-79E Auto Setup Digital Control.

1. Just pushing a button automatically diagnoses and sets up the camera simultaneously. This function is useful to check if the camera is ready or not.



- a. Registration
R/BH cent, R/BV cent,
R/B rotation, R/B skew,
R/BH lin, R/BV lin,
R/B width, R/B Height
 - b. Level
R/G/B gamma, R/G/B flare,
Master ped, R/B ped,
R/B gain.
2. Other controls (manual)
Total knee, Total slope, DTL
cont, Iris, CAL on, Bar on,
Auto iris off, Auto black off,
Auto knee off, White clip off,
DTL off, Gamma off, Knee
off, Tally,
Mon sel (R, G, B, R-G, B-G, R + G + B, ENC),
WFM sel (R, G, B, RG, BG, super, seq, ENC),
Chroma aperture off, Auto white cont, Auto white sel,
Auto black cont, Diascope on.
Iris close, Extender ans.

RDC-79E REMOTE DIGITAL CONTROL

The various functions may be digitally controlled from the RDC-79E Remote Digital Control to match the users' preferences.

Detail cont, Iris, M. ped, R/B paint, R/B ped, R/BH cent, R/BV cent, BAR on, Auto iris on, Auto white cont, Mon sel (R, G, B, R-G, B-G, R + G + B, ENC), Call. R/G/B flare, Auto knee on/off, Knee cont, DTL off, Chroma aperture on/off. Cable length: up to 100m



LENSES

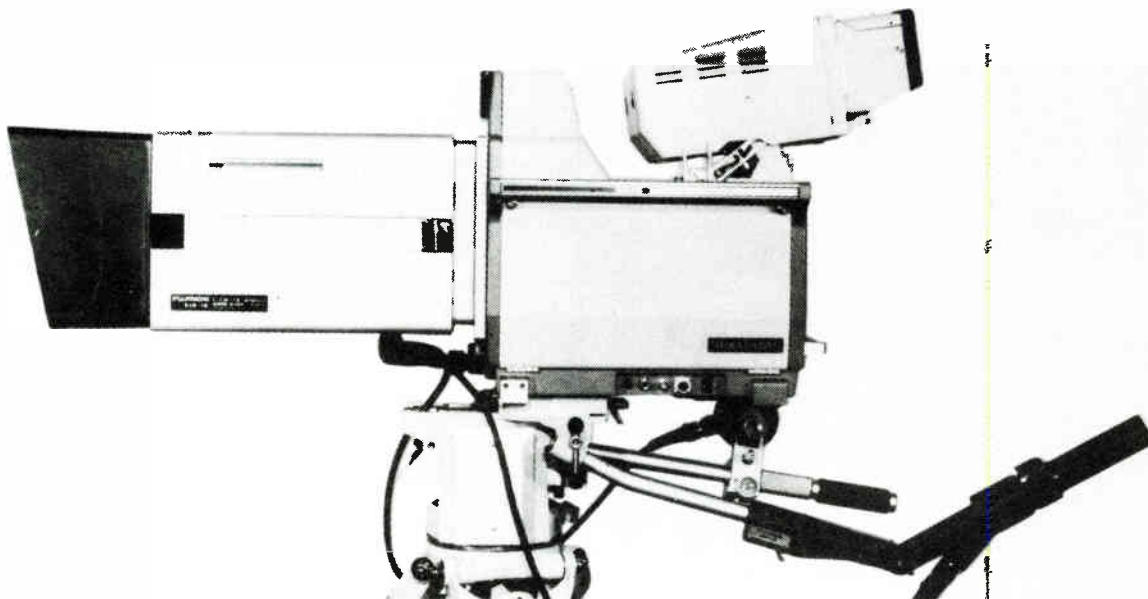
Canon	J13x9BIRS-II	f/1.6
Canon	J20x8.5BISS	f/1.6
Canon	J25x11.5BISS	f/1.6
Canon	J13x9BIRS-II W/PP	f/1.6 with Diascope
Fujinon	A12x9ERM	f/1.7
Fujinon	A14x9ERM	f/1.7
Fujinon	A17x9ERM	f/1.7
Fujinon	A14x9ERM-1P	f/1.7 with Diascope

- MA-79 Multicore remote control system
- TA-79E Triax remote control system
- HL-790A Studio camera system w/6" VF
- VF45-3 4-1/2" Studio viewfinder
- Remote Paint box (only for HL-79E)
- ML-83/79 portable Micro-Link system

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

BROADCAST COLOR CAMERA



Ikegami HK-302

The Ikegami HK-302 is the workhorse camera for studios that want network-grade color at an affordable price.

With the HK-302, you'll be getting a standard, rugged, reliable studio camera. You'll find the HK-302 easy to use because it's compact and light in comparison with other studio cameras. Yet, just the right amount of automatic controls have been left to make superb color with a minimum attention from a video operator.

Performance

PICK-UP TUBES

The HK-302 uses three 2/3" Low-capacitance Diode-Gun Plumbi-cons® (XQ-3427).

OPTICAL SYSTEM

The color-separation prism is tops in efficiency and performance. We've mounted the yoke assemblies directly on the optical block to prevent any mechanical registration errors. Bias light is introduced through the prism. An IR filter assures correct colorimetry with extended red PbO's.

QUALITY COLOR

The HK-302 has an adjustable matrix to improve overall colorimetry of the pick-up tubes and prism, and to provide high fidelity chromatic performance. Both black shading and amplitude modulated shading circuits are employed to produce a uniform field.

DETAIL CORRECTOR

A 2H-delay detail corrector enhances the picture vertically and horizontally. Noise suppressor and threshold circuits maintain a high S/N ratio of 57 dB.

DYNAMIC BEAM STRETCH

Ikegami's DBS (Dynamic Beam Stretch) circuit minimizes comet-tailing.

SYNC SYSTEM

The HK-302 satisfies EIA RS-170A standards which prescribe relationships for horizontal and subcarrier phases for correct color framing. Horizontal blanking width and vertical blanking width can be adjusted over a wide range. The HK-302 has an internal sync generator. Genlock is possible using VBS or BBS as an external sync signal, or from sync and subcarrier input signals.

Price Upon Request

CONTRAST EXPANSION CIRCUIT

Produces a sharper image in fog or haze—400 TV lines, 50% performance response.

Improves pick-up tube beam landing errors, resulting in excellent corner focus.

VIEWFINDER

A tiltable, high resolution 6" viewfinder is standard. A high-brightness, 7" viewfinder is optional.

Easy operations

SET-UP

To simplify camera setup, there are four types of test pulses: preamp set, gain set, gamma set, and reference pulse. Speedy and exact setup is possible. The video circuits can be checked with the pick-up tubes turned off or removed.

COLOR BAR GENERATOR

A split-field color bar generator facilitates simplified encoder adjustments.

AUTO IRIS

To assist the video operator in fast changing scenes, auto iris circuitry may be activated by a switch on the control panel.

FILTERS

Two independent filter wheels contain five sets each of ND filters and color temperature conversion filters. The filters can be selected either manually at the camera head or controlled electrically from the CCU.

CABLE COMPENSATION

Video frequency equalization is adjustable in 50 meter steps. Timing is automatically corrected.

CCU MULTIPLEXER

Digital multiplexing of camera control signals vastly reduces the amount of conductors used in a camera cable, thus reducing its size requirement.

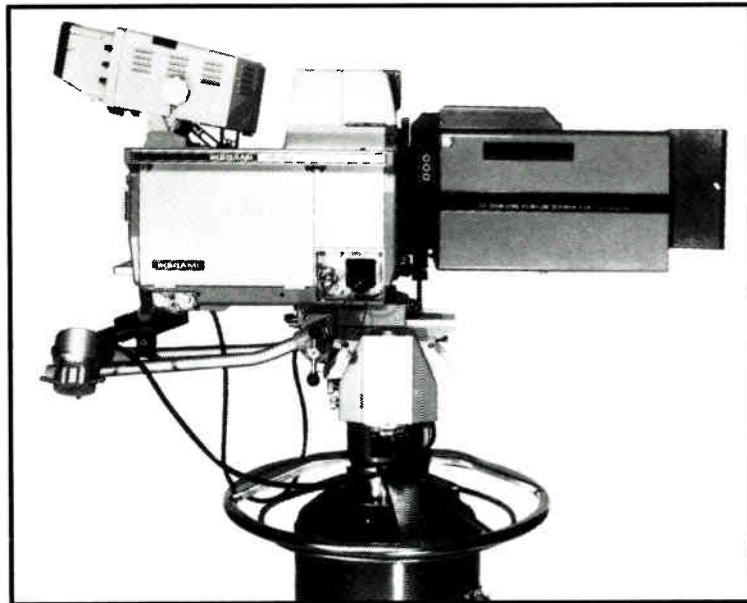
LENSES

Normally, the HK-302 uses a 2/3" studio zoom lens; it can, however, take a 1" studio, 2/3" EFP or 2/3" ENG zoom lens. Lenses are easy to mount on the HK-302's quick disconnect wedge mount.

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

BROADCAST COLOR CAMERA



Ikegami HK-322

The fully automatic television camera. IKEGAMI introduces its newest and most advanced studio color camera: The IKEGAMI HK-322, a fully automatic television camera system. The HK-322's Master Control Panel contains a computer to perform all of the setup functions automatically.

Several other TV cameras have computerized automatic setup controls—but it takes a lot more than just a computer to produce top quality color.

Ikegami has that extra something: color technology. So, when you get an HK-322, you're not just getting a fully automatic camera — you're getting excellent picture quality, superior craftsmanship, and many non-computerized, automatic correction functions.

Television cameras aren't just a sideline at Ikegami — they're the mainstay of our business. And when it comes time to choose the camera that's going to show off your productions best, remember IKEGAMI: the TV-Camera Specialists.

Camera head

Camera setup functions performed by the digital control system contained within the MCP. This information is stored in a camera memory system. The camera becomes a "black box", requiring essentially no internal adjustments.

Among the design highlights included are:

- Precise geometry of less than 0.1% distortion
- Superior registration accomplished digitally resulting in minimal errors, maintained with 0.05% throughout the entire picture area
- Independently adjustable bias lights for R, G and B channels
- 8 pre-programmable zoom lens and diascope error correction modes
- ND and Color Correction filter wheels quickly removable "CASSETTE fashion" for easy maintenance or special effects filter insertion
- Zoom lens heater power is available when the head power is turned off
- Video and power is provided for a video prompter system
- Dual tally system
- Two channel return video
- Dual Mic amplifiers
- S/N ratio of 56dB
- Horizontal resolution — 60% performance response at 400 TV lines, center

Camera Control Unit

Similarly to the camera head, the CCU's memory system retains the setup control data from the MCP. The "black box" concept permits the mounting of the CCUs out of the control area. Several features are to be noted:

- Totally automatic cable compensation for up to 600m of small diameter multicore cable
- Plug in FM Triax system with an operational range of 1500m
- Digitally controlled automatic shading correction
- R/G/B Detail corrector employs a novel design. Picture detail is no longer lost in red or blue picture content as is common with the "contour out of green" principle
- Chromakey (option)
- Negative video (option)
- Color Corrector (option)

Automatics

Basic automatics, other than CPU setup, include:

- Auto White Balance/Black Balance
- Auto Iris Control
- Auto Cable Compensation
- Auto Pedestal Control
- Auto Detail Level Control/Selection Control
- Auto Optical Cap
- Auto Highlight Compression

Special Effects

- H and V deflection reversal, with stored linearity correction
- Negative video permits RGB video polarity reversal
- Horizontal deflection modulation for "dream scenes"
- Scene compression and expansion for improving high contrast and/or hazy scenes
- Various effects may be stored in a data file. Up to 8 presets may be retrieved on command

The Operation Control Panel controls the camera during normal "on air" operation

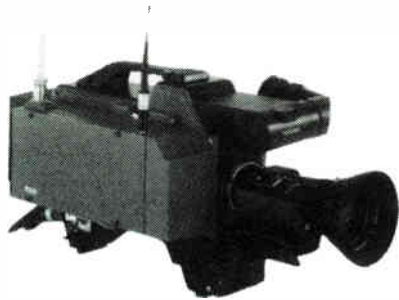
After initial setup, each camera may be operated by its individual OCP, independently of the MCP.

One Master Control Panel can control up to 24 cameras directly by using a Camera Switching Unit (CSU). By the addition of a Studio Selector Unit and other CSUs, up to 10 camera groups or a total of 100 cameras may be controlled by a single MCP. For backup purposes, a second MCP may be connected in parallel.

In addition, to provide up to 10 studio parallel Automatic Setup capability, additional CPUs may be added for each of the studios.

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
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(201) 368-9171



IKEGAMI ML 83/79 Portable Micro-Link System for HL-83, HL-79A/D Series and HL-79E Color TV Camera

The Ikegami ML-83/79 Micro-Link System is a complete high quality wireless television program origination and reception system. At the Camera Station, program audio captured by a microphone, scene video picked-up by an HL-83, HL-79A/D Series or HL-79E television camera, and audio intercom are modulated onto a 2GHz band carrier for R.F. transmission up to 1,500 meters to a companion Base Station. The transmitted aural/video signal is received at the Base Station, and de-modulated to base-band frequencies. Command signals and intercom audio are sent to the Camera Station from the Base Station on a 950MHz band carrier. Seven (7) channels are available in the 2GHz band and 950MHz band to accommodate multi-camera systems.

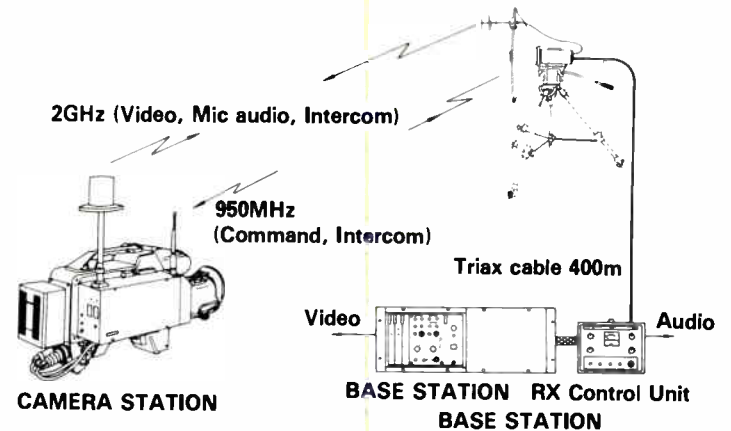
Command signals transmitted over the 950MHz wireless link from Base Station to Camera Station include Genlock; horizontal delay and S.C. phase controls are available at the Base Station to correctly time each individual camera's output signal to the video system.

The system permits two-man operation as well as one-man operation at the camera station using a directional electromagnetic horn antenna. In two-man operation, the 2GHz transmitter and 950MHz receiver are removed from the camera's microwave camera adaptor and are attached to a Hip Pack that is carried by a follower. The cable between camera and Hip Pack is extendable up to 30m. Thus, the camera operator is permitted to concentrate on the scene, the follower is responsible for the transmission.

Microwave Camera Adaptor (MCA)

- Easily attaches directly to Ikegami HL-83 system adaptor, HL-79 interface, or HL-79E interface.
- The MCA is compact, lightweight, easy to carry, and supports both transmission and reception of signals to the base station.
- The video operator at the base station has remote control over camera functions and can correct for scene changes.
- System permits use of a program audio microphone. The audio signal is multiplexed with the video signal and transmitted to the base station.
- The MCA has an intercom circuit permitting direct communication between the camera operator and the base station.
- The 2GHz transmitter and the 950MHz receiver on the MCA both have 7 selectable channels.
- The 2GHz antenna used on the camera has an automatic steering mechanism that can turn throughout a full 360°. Once the direction to the base station's antenna has been established, the antenna will continue to transmit to that point regardless of where the camera operator points the camera. This reduces the effect of multipath. The 2GHz transmitter and 950MHz receiver may be separated from the microwave camera adaptor and attached to the Hip Pack for two-man operation.

PORTABLE MICRO-LINK SYSTEM



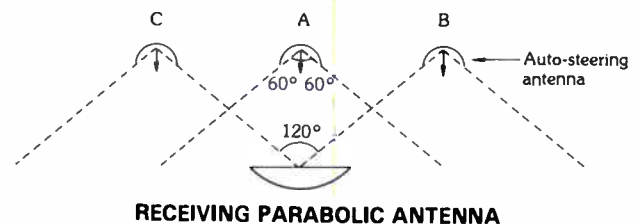
Base Station

- The base station can be separated from its receiving antenna by up to 400 meters of triax cable (Belden 9232).
- The video operator at the base station can control the camera function genlock via the camera's wireless microwave link.
- Control over the following camera functions is possible.
Analog: Iris, M-ped, R/B gain, R/B H cent, R/B V cent, R/B ped
Digital: Bar on/off, Iris manual on/off, White Bal on/off, Call, Tally

Effective Transmission Area

Once the direction of the automatic steering antenna to the base station's antenna has been established, the camera is movable within the area between points B and C as long as the base station antenna is directed to the camera.

Horizontal beam width of auto-steering antenna: $\pm 60^\circ$
Horizontal beam width of parabolic antenna: $\pm 11^\circ$



System & Components

Camera Station

1. Microwave Camera Adaptor (MCA)

- Head command unit
- WL201T 2GHz transmitter
- WL901R 950MHz receiver
- 2GHz auto-steering antenna
- 950MHz whip antenna

2. Components for Two-man Operation

- Multi adaptor
- Hip Pack
- Hip Pack pedestal
- Hip Pack belt
- 2GHz directional electromagnetic horn antenna
- Pole antenna

Base Station

- 2GHz parabolic antenna
- 950MHz 3-element antenna
- WL201R 2GHz receiver
- WL901T 950MHz transmitter
- Camera control unit
- Receiver control unit
- 19" rack mount

Prices and Specifications Subject to Change Without Notice.

VC-117

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

ELECTRONIC CINEMATOGRAPHY CAMERA

EC-35

The World's First Electronic Cinematography Camera

Performance

The EC-35 uses 2/3" Low-capacity diode-gun Plumbicon® pickup tubes.

The EC-35 has a complete micro-processor that will automatically perform all of the set-up functions for you. All you do is aim the camera at the test chart, push Auto Set, and wait for the Set Up light to go off.

The EC-35 has an unusually wide dynamic range that makes the picture look like it was taken with a 35mm film camera:

- The camera uses special technology to produce gamma curves that match that of film
- The Knee compression circuit compresses signals from 600% of the rated signal level down to 100%
- A dynamic beam stretch circuit (DBS) stabilizes highlight signals as much as four stops in excess of normal peak video level
- The EC-35 has extremely high resolution and low noise (S/N over 57 dB rms).
- A dynamic beam focus circuit improves corner focus resulting in sharper pictures from corner to corner
- Image enhancement and out of band aperture correction signals are proportionately mixed, producing exceptionally pleasing picture detail

Lenses

Ordinary video lenses weren't good enough for the EC-35. A whole new set of lenses have been designed and even calibrated in T-stops — so that you would feel at home with this camera. The EC-35 has its own set of five, fixed, focal-length lenses interchangeable without effecting registration or color balance. You can also use the special effects filters you already have for your film camera.

Using these superior quality lenses you'll be able to do something you could never do with ordinary video lenses: Use depth of focus to create scenes as a film camera does. You'll also be able to regulate the light source to create lighting effects that you'd normally use for a film camera.

Convenience

The EC-35, like a 35mm camera, is normally used with a tripod — but it can be hand held. It weighs in at about 9.9 kg (under 22 lbs, with 1.5" VF). It has a focus knob, like that of a 35mm camera, which you can use for the "follow focus" method of filming.

Off the tripod, you'll like its balanced feel in your hands. You'll find VTR Start and Return Video controls on the pistol-grip for handy use. You can use the EC-35 with any production VTR.

The viewfinder is rotatable, positionable in the front or rear of the camera. You have a range of viewfinders to choose from: 1.5", or 6". You can even attach a second viewfinder for the assistant cameraman.

A new type of geometry corrector, based on quadrant control, makes it easier to set up the registration with exceptional accuracy.

And the EC-35 comes with an arms-length of typical Ikegami high-tech features: Auto black/white balance will reset color balance for you in response to changes in color temperature. A video level (zebra), shows you 100% white or 70% flesh tone level. A level meter will help you in selecting an ND filter and in deciding the right amount of light, and it comes with a handy dotline indicator. On the upper portion of the viewfinder is a timer that shows you the remaining VTR tape time.



Lens	EC Camera Lens			35mm Cine Lens Equivalent		
	Focal Length	T No.	Horizontal Angle	Focal Length	T No.	Horizontal Angle
Zoom Lens	10.5–50mm.	T1.6	45.5°–10.1°	25–120mm.	T2.8	45.5°–10.1°
Fixed Focal Length Lens	6mm.	T1.5	72.5°	15mm.	T2.8	72.5°
	10mm.	T1.5	47.5°	24mm.	T1.6	47.5°
	15mm.	T1.5	32.7°	38mm.	T1.4	32.7°
	24mm.	T1.5	20.8°	55mm.	T1.4	20.8°
	35mm.	T1.5	14.3°	85mm.	T1.4	14.3°

CANON EJ6	6mm Fixed Focus Lens
CANON EJ10	10mm Fixed Focus Lens
CANON EJ15	15mm Fixed Focus Lens
CANON EJ24	24mm Fixed Focus Lens
CANON EJ35	35mm Fixed Focus Lens
CANON J5x10.5B	Zoom Lens
FUJINON AF14	14mm Fixed Focus Lens
FUJINON AF40	40mm Fixed Focus Lens

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR TELECINE CAMERAS

TTC-150 System

High grade 3-tube prismatic color camera

The ITC-240 high performance color camera forms the central part of this unique system. Colorimetry, picture resolution and shading are uniformly excellent. A highly compact prism optical multiplexer and automatic light control unit is utilized on a rigid rack frame.

Superior quality images are obtained from the slide projector, super/single 8 mm film projector and 16 mm film projector. An opaque card projector can be optionally employed.

Field lens system construction makes possible easy, cost saving camera assimilation in existing systems. Moreover, adjustment is simpler than most competitive systems. S/N ratio better than 47dB, horizontal resolution of 550 lines or better at center.

Pedestal construction on rigid channel base

Individual pedestals are provided for each main component. Mechanical vibration originating in one pedestal cannot spread to other units of the island. A standard 19-inch rack is employed for the camera pedestal, the lower half of which is available for accommodating other equipment.

Standard axis height

A standard optical axis height of 1220mm facilitates interchangeable use with broadcast-quality projectors.

SPECIFICATIONS

Overall Construction

Floor stand type on channel base with standard 1220mm optical axis height

Camera Rack

Standard 19" width rack type

Optical Multiplexer

Fixed half-mirror prism type

Auto Light Controller

ALC-710 Variable density ND

ALC ND Filter

Transmissivity 0.92 to 92%

Telecine Control

(1) Remote/local control selection

Panel Function

(2) Slide projector lamp on/off; (3) Slide change normal/reverse selection; (4) Slide change; (5) 16mm film projector start/stop (6) 16mm film projector lamp on/off; (7) 8mm film projector start/stop; (8) 8mm film projector lamp on/off

Power Supply Unit

(1) Control relay system; (2) 24 VDC power supply; (3) 2 channels Audio input; (4) 2 channels Audio output; (5) Color corrector by RGB

Overall Dimension

1512 x 1875 x 1636mm

Overall Weight

160 kg approx.

Power Requirement

120 VAC, 60 Hz

OPTIONAL AUDIO AND VIDEO MONITOR PANEL

Audio Inputs

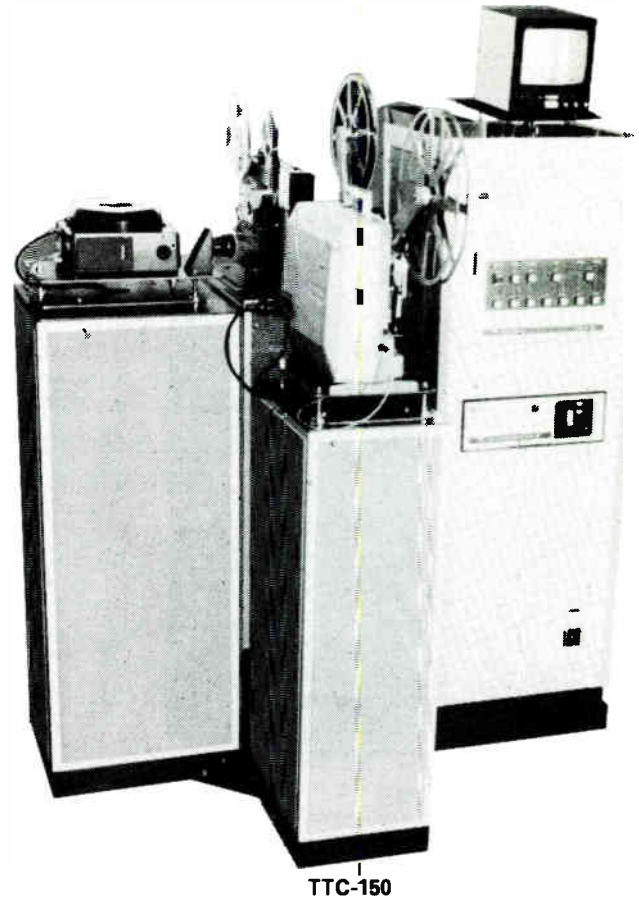
2 channels, 600 ohms 0 dB unbalanced

Audio Outputs

2 channels, 600 ohms 0 dB balanced

Audio Monitor

Monitor speaker built-in VU meter built-in



TTC-150

Video Inputs

G, B, R, ENC, Aux. and EXT. G

Video Monitor Select

G, B, R, -G, Enc., Aux.

Waveform Monitor Mode

G/B, G/R, B/R, Enc., Aux., Ext. G, Super Seq.

Video Outputs

(1) Picture monitor output; (2) Waveform monitor output

COLOR CAMERA SECTION

TCS-15/24 Telecine Camera Chassis Consists of: Camera Head Mount Assembly, TMP-15 Prism Multiplexer Unit, ALC-710 Auto Light Controller, Local Control Panel with cable, Camera Taking Lens (F:4.5, 90mm), CCU Rack Mounting Chassis for Head Color Camera System

ITC-240S

TPU-15 Power Supply Unit w/Color Corrector

TCR-15/24

Telecine Camera Rack Consisting of Rack with Ventilation Fan, Tally Lamp, Monitor Panning Mount and Blank Panels

TCB-15/3

Telecine Channel Base

TCP-15/8

Telecine Pedestal for 8mm Film Projector

TCP-15/16

Telecine Pedestal for 16mm Film Projector

TMU-15

Audio and Video Monitoring Panel

TRC-15

Telecine Remote Control Unit

TRC-1515

15m Remote Control Cable w/Conn.

TRC-1530

30m Remote Control Cable w/Conn.

TRC-1540

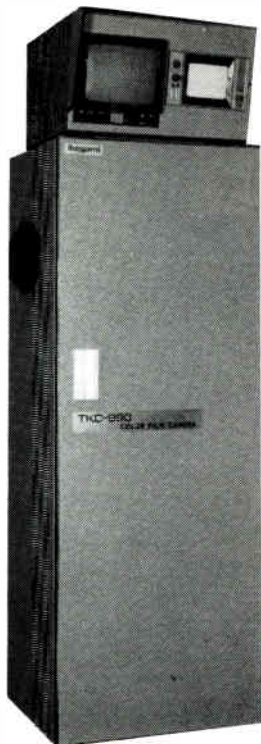
40m Remote Control Cable w/Conn.

TRC-1550

50m Remote Control Cable w/Conn.

IKEGAMI ELECTRONICS, INC.

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COLOR TELECINE CAMERA

- Color separation is accomplished by a prism beam-splitter, with high transmission efficiency, minimum color shading, minimum ghosting and color errors
- Bias lighting to reduce pickup tube lag at low light levels is introduced via the prism. RGB bias lights, individually adjusted, automatically or manually, are utilized
- Yoke is mounted directly on the optical block to minimize registration errors
- An IR filter is provided to assure correct colorimetry

Pickup Tubes

- Vidicon or Saticon® tubes, operated in the high voltage mode are usable to provide high resolution (700 TVL at center)
- A new and improved coil assembly together with dynamic beam focus (DBF) to reduce beam landing errors, results in improved corner focus and resolution (typically 600 TVL in corners)
- Digital deflection and shading circuitry optimizes overall registration geometric distortion and shading performance and also assures ease of tube replacement. The registration is within 0.05% and is stored in digital memory
- Low noise FET pre-amplifier to establish a video signal with a minimum of -58dB S/N ratio

Operational Automatic Features

The TKC-990 is capable of automatically correcting the video signal generated to reduce or correct problems due to various film errors. Without prior programming, electronic analysis and adjustment of the R/G/B video signals developed by the camera accomplish auto color balance by correcting white, gamma, and black. The automatic White Balance (AWB), Automatic Gamma Balance (AGB), and Automatic Black Balance (ABB) functions are coordinated with auto level compensation functions which are Auto Light Control (ALC), Auto White Level (AWL), and Auto Black Level (ABL).

Maintenance Conveniences

To simplify manual camera check-out, the TKC-990 is provided with the following:

- For monitoring purposes, the camera provides 2 sets of picture monitor (PXM) signals, 2 sets of waveform monitor (WFM) signals and the necessary keying signals for type 528 (or equivalent) waveform monitor
- For precision pickup tube adjustment, a synchronized focus wobble circuit is employed for the beam alignment procedure
- For accurate raster positioning, deflection overscan is available
- A new SMPTE color bar is built in

Specifications:

Camera tube:	1" Vidicon tube or 1" Saticon® tube
Optical system:	Dichroic prism system (Bias light for RGB built in) (Pattern projector built in) Image size: 86 x 115 (mm)
Input signal:	
BBS	0.45 Vp-p, 75 ohm or high impedance
Sync	4 Vp-p (negative), 75 ohm or high impedance
SC	2 Vp-p (sinewave), 75 ohm or high impedance
Output signal:	
Line output	4 channels (VB or VBS), 75 ohm
Video monitor	2 channels, 75 ohm
Waveform monitor	2 channels, 75 ohm
Power requirements:	AC 100V, 117, 200, 220, 240V; 50/60Hz
Power consumption:	600VA approx. (incl. picture monitor and waveform monitor)
Tally input:	DC 24V or contact closure
Ambient temperature:	0°C - +40°C
Weight:	220kg (approx.) (incl. picture monitor and waveform monitor)
Dimensions:	W: 550; H: 1,500; D: 430 (mm)

TKC-990

The High-Performance Telecine Camera With Computer Control

The Ikegami TKC-990 is a new multipurpose broadcast telecine camera suitable for "on-line" applications, such as local viewing or direct on-air broadcast and "off-line" applications, such as tele-production and video tape recording. For on-line applications, film characteristics can be uncorrected, manually corrected or automatically corrected.

For off-line applications, detailed operator scene-by-scene corrections can be established and stored for retrieval during subsequent playback of the film and transfer to video tape.

Outstanding performance and stability characteristics have been incorporated into the TKC-990. Setup, operation and maintenance controls for the camera, as well as color corrections for film types and corrections to normalize projector characteristics are microcomputer controlled and stored.

A 6-vector adjustable color matrix permits colorimetry setting to user preferences and match between cameras. The camera's built-in test pattern projector assures standardized setting of geometry and level parameters; simple centralized control of multiple cameras is made feasible by digitally addressing the memories built into each camera's body.

A sequential manual setup mode, fully automatic setup mode, as well as a rapid pre-operational auto check of user selected set-up parameters is available.

Performance Features

Optical System

- A built-in pattern projector permits computer control
- Large image field lens built into camera body assures long-term stability of optical alignment
- Built-in neutral density wheel with fast attack rate for automatic light control (ALC)

IKEGAMI ELECTRONICS, INC.

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Ikegami TKC-970

The TKC-970 is one of Ikegami's best color telecine camera systems. Featuring top-quality picture, faithful color reproduction and high reliability, it answers today's demands from professionals for a top-grade telecine camera, adopting 1" tubes with electromagnetic focus and electromagnetic deflection systems. The TKC-970 employs a prism splitting system with 86 x 115mm image size. Thanks to the adoption of space focusing on an object, any dust adhering to the lens seldom appears as such on the picture. When a telecine camera with the same image size is replaced by the TKC-970, related equipment previously used can be employed without modification. By selecting a field lens, the TKC-970 can be freely combined with various projectors. Further, equipment layout planning can be effected with due regard to operability.

TOP-QUALITY PICTURE, FAITHFUL COLOR REPRODUCTION

- By adopting a pre-preamplifier system employing high S/N FETs, the S/N ratio has been greatly upgraded to 56dB.
- Registration has also been further enhanced by employing newly designed yoke assemblies and a registration corrector.
- Thanks to adopting dynamic focus, resolution at the corners has been improved. (700 lines at center; 600 lines at corners).
- The TKC-970 is provided with a black shading correction circuit.
- White shading correction is available in three modes.
- A bias light incorporated in the TKC-970 reduces lag in dark picture areas.
- A crisp, high-quality picture is attained by employing an optical black and a flare compensation circuit.
- A horizontal/vertical detail corrector with an auto-edge circuit constantly provides appropriate corrected pictures.

VARIOUS AUTOMATIC SYSTEMS

Added to the conventional automatic systems (ALC, AWL, ABL, optical black, etc.) are incorporated new automatic systems.

- The edge circuit in the detail corrector circuit is provided with auto level control for assuring constant, most rational correction.
- Auto Light Control (ALC) is incorporated in the TKC-970's optical system.
- Auto Color Balance functions—Auto White Balance (AWB), Auto Gamma Balance (AGB), and Auto Black Balance (ABB)—are provided. These balance controls maintain the best color-balance pictures during On-Air.

COLOR TELECINE CAMERAS

COLOR CORRECTION CONTROLS

- An optional color corrector unit permits correction of hue and saturation of R, G, B, Y, C, and M respectively. Also, this unit is available in three presetting modes.
- The masking unit is provided for correct color matching among cameras.
- A gamma selector is included on the TKC-970 control panel. Overall gamma of 0.55, 0.6, 0.65 and 0.7 may be applied according to the status of the film material.

HIGH RELIABLE CONTROL SYSTEM

- Since all controls from the exterior are stored in the camera, an abrupt power failure does not require readjustment.
- A digital semiconductor in the control system, including a monitor circuit, greatly enhances reliability.
- Multiplexer control is possible from the camera thanks to the multiplexer select switch on the control panel.

EASY-TO-OPERATE MONITOR SYSTEM

Selection is made from the following items through piano-key-touch operation.

- PM Select; R, G, B, R-G, B-G, -G and ENC.
- WFM Select; PRE SUP, PRE SEQ, PROCE SUP, PROCE SEQ, PROCE RG, PROCE BG, ENC.
- When the camera power supply is turned OFF and then turned ON again, PM Select is automatically set to 'ENC', while 'PROCE SEQ' is automatically selected on the WFM Select.
- The SEQ indication employs a horizontal system.
- Preamp as well as proc amp waveforms can be monitored.

COMBINABLE WITH OTHER EQUIPMENT

Two types of field lenses are available, and the projection direction (right and left) for the TKC-970 can be selected, enabling a combination with various projectors. For 16 mm film projectors, an aplanatic TV film lens (67 mm, f/2.5) is available.

EASY OPERATION AND MAINTENANCE

- A test chart, test pulse, and color bar are incorporated respectively in the optical system, amplifier system, and encoder.
- Preamp and process-amp are composed of separate R, G, B amplifiers of the same structure, greatly facilitating replacement and maintenance.
- Since all dual-in-line IC's are socket types, replacement and maintenance of semiconductors are facilitated.
- The target voltmeter employs digital display.
- The ND filter position is indicated by LED.
- Various check meters for power supply voltage are provided.
- Two timers (camera operation time display and tube operation time display) are provided.
- The registration corrector circuit is incorporated for easy registration control.
- Beam discharge at 150% can be easily set with the Beam Set switch.

VARIOUS PROTECTIVE CIRCUITS

- Camera Tube Protection: Automatic camera tube protection is provided in case of sweep failure either horizontal and vertical scanning.
- Camera tube heater voltage is lowered during Beam-Off.
- Should short-circuiting occur, the power supply is restricted by internal protection, preventing hazards.

Prices and Specifications Subject to Change Without Notice.

VC-121

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

COLOR TELECINE CAMERAS

TKC-970 Specifications

Rating

Camera tube: 1" Vidicon tube or 1" Saticon® tube.

Optical System: Dichroic prism system (light incidence selectable in left or right direction). Image size: 86 x 115 (mm).

Input signal — Sync: 4Vp-p (negative), 75 ohm or high impedance. **SC:** 2V p-p (sinewave), 75 ohm or high impedance.

Output signal — Line output: 4 channels (VB or VBS), 75 ohm. **Video monitor:** 1 channel (exclude for proper), 75 ohm. **Waveform monitor:** 1 channel (exclude for proper), 75 ohm.

Power requirements: AC 100V, 110V, 120V, 240V, 50/60 Hz.

Power consumption: 400VA approx. (incl. picture monitor and waveform monitor).

Tally input: DC 24V or contact closure.

Ambient temperature: 0°C to +40°C.

Weight: 193 kg (approx.) (incl. picture monitor, waveform monitor, color corrector).

Dimensions: W: 550, H: 1,500, D: 430 (mm).

Projector lens

Field Lens Model	1 m Field Lens (*800 ~ 920 mm)	1.2 m Field Lens (*1,000 ~ 1,120mm)
16 mm Film Projector	f = 60 ~ 69 mm	f = 75 ~ 84 mm
35 mm Slide Projector	f = 158 ~ 180 mm	f = 196 ~ 220 mm

*Distance between the pupil-point of the projector lens and the primary image plane.

Example:

Distance Model	1 m	1.2 m
16 mm Cine	EL NIKKOR 63/3.5 CANON P65/1.4, P67/2.5	EL NIKKOR 80/5.6
35 mm Cine	EL NIKKOR 135/5.6	EL NIKKOR 150/5.6
35 mm Slide	MASTER 180/4.7	EL NIKKOR 210/5.6
Super 8		EL NIKKOR 50/4 50/2.8

Performance

Frequency response: 1 kHz to 5.5 MHz: ± 0.5 dB (at 100 kHz), below 1 kHz, over 5.5 MHz: falling down characteristic (aperture off, masking off, detail off, and gamma correction off).

Waveform distortion

Frequency	60Hz	15kHz-250kHz
Rise Time		Less than 0.1 μ s
Overshoot		Less than 10%
Sag	Less than 2%	Less than 1%

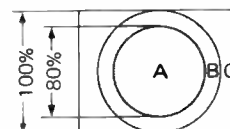
Luminance signal noise: (with respect to encoder output of 0.7V p-p). **Hum:** Less than -60 dB. **Synchronous noise:** Less than -45 dB. **Other noises:** Less than -56 dB. (Refer to 4.2 MHz band and aperture off, masking off, detail off, and gamma correction off).

Linearity: Less than DG 5% at encoder output (APL 10, 50 and 90%).

Gamma — (1) Step gamma: 0.7, 0.65, 0.6, 0.55 (Vidicon). **(2) Variable gamma:** More than ± 0.2 . (For step gamma, variable gamma, remote control is possible). **Horizontal resolution:** Better than 700 lines at center. Better than 600 lines at corners. Modulation ratio at 400 TV lines is more than 50% (aperture off, masking off, detail off, and gamma correction off) (with vidicon tube).

Registration —

- Area A: Within 0.05%
- Area B: Within 0.1%
- Area C: Within 0.2%



Geometric distortion: Zone A (circle in center = 0.8 picture height) 1%. Zone B (area outside Zone A) 2%.

Stability —

(1) **Power Stability:** Stable operation within $\pm 5\%$ of the rated value. (2) **Input drive signal stability:** Stable operation within ± 6 dB variation. (3) **Environmental temperature: No adjustment range:** After 30 minutes preheating, when the ambient temperature varies by $\pm 10^\circ\text{C}$ in the range of 5° to 35°C , the permissible variation values of the amplitude and pedestal level are within $\pm 2\%$ with respect to the performance referred to above without adjustment.

TKC-970 Package

Consisting of — Camera head with: • 3VFK-7 optical system • Vidicon tubes 8507 • Yoke and assembly • Pre amp unit • Shading unit • Proc. unit • Masking unit • V. detail unit • H. detail unit • Auto black level on auto B unit • Auto white on auto B unit • Pulse unit • Sync. generator with SC/Sync gen-lock • Monitor unit • Deflection unit (hand V) • Geometric distortion corrector • Multi board • Encoder 1 • Encoder 2 • ALC assembly • Power supply • Interface • Control Panel • Monitor select panel • Set up panel.

Accessories: • module extender • test slide • lamps • tool • service manual

Remote Control Panel w/30' Cable
Automatic Color Balance Module
Color Corrector w/Remote Control
Negative Video Module
Optical Axis Tester

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

MICROSCOPE COLOR CAMERA

ITC-350M COMPACT 3 TUBE COLOR MICROSCOPE VIDEO CAMERA

Features

- The three-tube prism optical system offers excellent resolution, sensitivity, and color reproduction.
- A light, compact camera head facilitates compatibility with microscopes and other optical systems.
- Handy operation is enabled by the finecore cable connecting the camera head to the CCU, allowing use at distances of 30 meters (100 feet).
- Optimum camera condition is ensured by the unique automatic color balance circuit.
- An extremely high sensitivity is provided by the pickup tube, a 2/3-inch MAG-MAG Chalnicon.
- Bias lighting in the optical assembly minimizes image lag.
- Fine-correction circuits are provided for both horizontal and vertical contour, improving the clarity of the picture contour.
- Sensitivity can be increased by a factor of two to four times, simply by touching the +6 dB/ +12 dB switch, permitting low light level operation.
- RGB connectors are provided at the CCU to output the RGB signals. These are invaluable for the requirements of high picture quality in image processing, such as analog-to-digital conversion.
- A built-in color bar generator facilitates color monitor adjustment and color tone matching for multiple cameras.
- External sync driving requires only a VBS (color video sync composite signal) or BBS (black burst signal), option.
- Internal-to-external sync switching is automatic.

SPECIFICATIONS

Camera Tube:	Chalnicon E5092D (2/3" magnetic focus and deflection type)
Optical System:	RGB prism system, f/1.4
Scanning System:	2:1 interlaced 50 PAL or 525/60 NTSC
Sync System:	Internal sync operation with built-in sync generator or external sync driving
Video Outputs:	NTSC or PAL Video Out 1.0V(p-p) Composite, 2 Channels Monitor Out 1.0V(p-p) Composite, 1 Channel RGB Out 0.7V(p-p), 1 Channel each
Sensitivity:	a) Minimum 60 lux approx., f/5.6/6000°K b) Standard f/4.0/2000 lux/6000°K
Signal-to-Noise Ratio:	52 dB (p-p)/rms or better at f/4.0/2000 lux. G-channel at 4.2 MHz bandwidth, gamma and detail off
Horizontal Resolution:	f/5.6/2000 lux, G-channel a) 550 lines or better at center b) 450 lines or better in corners
Power Requirement:	100/110/120 60 Hz AC or 220/240 50 Hz AC
Power Consumption:	80 VA approx.
Dimensions (WHD):	Camera head: 3.9 x 10.6 x 7.2" (99 x 270 x 184mm) Control unit: 15.7 x 5.2 x 14.6" (400 x 132.5 x 370mm)
Weight:	Camera head: 4.6 lbs. (2.1kg) approx. (less lens and cable) Control unit: 18.7 lbs. (8.5kg) approx.



Standard Composition

- ITC-350M: Camera head w/3M camera cable 1 pce
- Control unit 1 pce
- Service manual 1 vol

Prices and Specifications Subject to Change Without Notice.

VC-123

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

MK-309C

COLOR CAMERA FOR MEDICAL APPLICATIONS

The MK-309C is an extremely compact television camera developed solely for the special requirements of the medical fields. In order to provide high-fidelity color reproduction, the MK-309C employs three pick-up tubes and prism optics with high-sensitivity.

The color splitting prism and circuitry, such as the quality video amplifier and detail correction, provide for faithful color reproduction, unlike less expensive single tube cameras. Furthermore, an adoption of high sensitive CdSe tubes assures quality color pictures even in low light conditions.

The lightweight compact camera head can be used for various medical requirements such as microscopic, endoscopic, or other special applications.

The MK-309C provides superior results with simple operation by using various automatic functions.

FEATURES

SUPER COMPACT CAMERA HEAD

The camera head of the MK-309C with three pick-up tubes is small and lightweight in order to permit easier system connection with other apparatus and reduces the space required. The camera head weighs only 1.2kg.

FAITHFUL COLOR REPRODUCTION

The specially designed circuitry of the MK-309C always reproduce faithful color. The highly sensitive CdSe tubes enable beautiful color pictures, even in low light level conditions, especially in red, which is important since the interior of the human body is primarily red in color. The red reproduction of the MK-309C is finely tuned to a precise red shade, and built-in detail correction circuit gives a sharp and clean picture.

HIGH SENSITIVITY WITH LOW LIGHT

The beam splitting system and sensitive pick-up tubes give a clear picture in low light levels. The +18dB/9dB gain switch can increase the sensitivity 8X/3X, electronically, which is important for both microscopic applications and endoscopic applications.

EASY DIRECT INPUT TO VIDEO RECORDER

Since the MK-309C incorporates a color encoder and sync signal generator, the output signal of the MK-309C can be directly recorded on video tape. In this way, important and valuable information can be stored and replayed later with a clean and clear color picture.

SIMPLE AND EASY OPERATION

The operation of the MK-309C is simple. Various automatic functions offer very smooth handling with no special training for operation necessary. Anyone can use this camera system with microscope, endoscope or fibroscope. The only control is the power on-off switch.

SPECIFICATIONS

Rating

Optical system:	R/G/B prism beamsplitter
Pick up tube:	2/3" Chalnicon
Scanning system:	2.1 interlace; 525 lines, 60 fields 30 frames/sec or 2.1 interlace; 625 lines, 50 fields 25 frames/sec
Sync system:	Internal Sync Operation with built-in Sync Generator or External Sync Drive (Genlock)
Lens mount:	P-mount
Dimensions:	Camera Head 74×261×169mm (W×H×D) Camera Control Unit 180×250×430mm (W×H×D)
Weight:	Camera Head 1.2kg (2.6 lb.) Camera Control Unit 9kg (19.8 lb.)
Ambient temperature:	0°C ~ 40°C (32°F ~ 104°F)
Power Supply:	AC 110V, 220V, 240V ± 10%, 50, 60Hz

VC-124

MEDICAL COLOR CAMERA



SIMPLE WHITE BALANCE CONTROL

With the built-in white balance control, the camera operator can obtain well-balanced, faithful color reproduction by pushing the white balance button on the camera control unit.

AUTOMATIC LIGHT CONTROL

For microscope application, the MK-309C provides the automatic light density control system. A uniform brightness can be obtained automatically without any manipulation by the camera operator.

BUILT-IN TEST PULSE GENERATOR

When the power switch is turned on, the pulse for setup testing automatically comes on to check the camera operation and monitors.

H & V Detail Corrector

Detail correction circuits are incorporated for both Horizontal and Vertical contours, giving improved clarity to picture information.

Color painting

To facilitate color adjustment, an R & B color painting control is provided at the CCU.

Power consumption: 70 VA

Output signal:

- (1) Color composite VBS 1.0Vp-p, 75 ohms, 2 outputs
- (2) RGB video V 0.7Vp-p, 1 output
- (3) Monitor out VS 1.0Vp-p, 1 output

Genlock input signal: VBS 1.0Vp-p 75 ohms or BBS 0.45Vp-p 75 ohms

Shading compensation: Standard provision

Gamma correction: Standard provision

Performance

- Resolution:** 500-lines or better at center (horizontal)
- Signal to noise ratio:** 54dB or better (NTSC), 52dB or better (PAL)
- Sensitivity:** 250 lux at F2.0/6000°K
- Registration:** Maxim 0.1% inside a circle having a diameter of 80% of picture height

Prices and Specifications Subject to Change Without Notice.

INNOVATIVE TELEVISION EQUIPMENT

6445 De Soto Ave.
 P.O. Box 681
 Woodland Hills, CA 91365
 (818) 888-9421 Telex 181028

ITE-30/ITE-40 CAMERA SUPPORT SYSTEMS

Both systems include: a fluid head, tripod and dolly.

SYSTEM ITE-30

The ITE-30 Camera Support System is specifically designed for broadcast, educational and industrial applications. Handles cameras up to 10 lbs.

ITE-H30 Fluid Head

Provides smooth pan and tilt control. Its counter-balanced design eliminates camera "nose dives." It features a quick-release camera mounting plate, a spirit level and is equipped with a single, adjustable control handle. Dual handles are optional. The ITE-H30 is compatible with other ITE Tripods.

Capacity: 10 lbs. Counter balanced for 2" Vertical C.G.
 Height: 4"
 Width: 5"
 Length: 4"
 Weight: 2 lbs. \$120.00
 ITE-RH30 Right Hand Zoom Handle . . \$35.00

ITE-T30 Tripod

Features three-section legs with radial locks for extension and contraction. Its elevator column adjusts to 14". An adjustable, lockable spyder provides structural stability. The ITE-T30 is equipped with a spirit level and combination rubber leg tips and metal spikes.

Camera/Head Load Capacity: 15 lbs.
 Minimum Height: 24"
 • Maximum Height at 40°
 Included Angle: 69"
 Weight: 6.5 lbs. \$130.00

ITE-D30

Completing the system is the ITE-D30 Dolly which provides a stable platform with sufficient radius for proper structural support.

A tripod attachment affords quick set-up and tear-down. Quiet movement is assured by bearing-mounted casters with step-on brakes. A center-locking device offers excellent stability and allows the dolly to easily fold and lock in place.

Load Capacity: 20 lbs.
 Folded Length: 19-3/4"
 Folded Width: 6-1/2"
 Height: 6" \$95.00

SYSTEM ITE-40

The ITE-40 Camera Support System is designed for both studio and remote applications.

This system is specifically oriented toward cameras weighing up to 30 lbs. and which are equipped with studio viewfinders, larger lenses and rear controls which create high centers of gravity.

ITE-H40 Fluid Head

Counterbalanced for smooth, effortless control. It features separate controls for pan and tilt lock and is lightweight. The ITE-H40 utilizes a quick-release camera-mounting platform. It comes equipped with a spirit level and one control handle. Dual handles are optional. The ITE-H40 is compatible with other ITE Tripods.

Capacity: 30 lbs.
 Height: 6-1/2"
 Width: 7-1/2"
 Length: 6-1/2"
 Weight: 7 lbs. (without handle) . . . \$295.00
 ITE-RH40 Right Hand Zoom Handle . . \$35.00

ITE-T40 Tripod

Lightweight, heavy duty system that features two-section, positive cam-locked legs that are indexed for easy length adjustment.

An adjustable, lockable spyder for structural stability, the elevator column adjusts to 16". Spirit level and rubber-tipped legs are provided. The ITE-T40 will accommodate other ITE Fluid Heads.

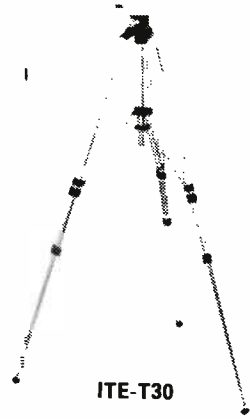
Camera/Head Load Capacity: 40 lbs.
 Minimum Height: 20-1/2"
 Maximum Height at 40°
 Included Angle: 66"
 Weight: 10 lbs. \$240.00

ITE-D40

Completing the system is the ITE-D40 Dolly. It shares the same features as the ITE-D30 except:

Load Capacity: 50 lbs.
 Folded Length: 22"
 Folded Width: 8"
 Height: 6"
 Diameter: 40"
 Wheel Diameter: 4"
 Weight: 9 lbs. \$140.00

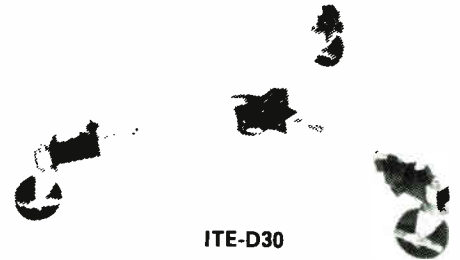
CAMERA SUPPORT SYSTEMS



ITE-T30



ITE-H30



ITE-D30



ITE-T40



ITE-H40

INNOVATIVE TELEVISION EQUIPMENT

6445 De Soto Ave.
P.O. Box 681
Woodland Hills, CA 91365
(818) 888-9421 Telex 181028

TRIPODS

ITE-T1 WOOD TRIPOD (Miller Senior Model) Ball Leveling Bowl

Camera/Head Load Capacity 20 lbs (6 kg)
Maximum Height 59 in. (147.5 cm)
Leg Angle up to 85°
Folded Length 35 in. (87.5 cm)
Folded Width 5 in. (12.5 cm)
Weight 8 lbs (3.6 kg)
Finish Natural Wood and Black Wrinkle



Optional Accessories

\$435.00
ITE-TS1 Spreader
ITE-CB1 Claw Ball
ITE-RFP Rubber Foot Pads

ITE-T4 WOOD TRIPOD (Miller Light Pro Mini Model) Ball Leveling Bowl

Camera/Head Load Capacity 50 lbs (22.5 kg)
Maximum Height 65 in. (162.5 cm)
Leg Angle up to 80°
Folded Length 40 in. (100 cm)
Folded Width 6 1/2 in. (16.25 cm)
Weight 12 lbs (5.4 kg)
Finish Natural Wood and Black Wrinkle



Optional Accessories

\$625.00
ITE-TS4 Spreader
ITE-CB3 Claw Ball
ITE-RFP Rubber Foot Pads

ITE-T8 ENG TRIPOD Ball Leveling Bowl

Camera/Head Load Capacity 40 lbs (18 kg)
Minimum Height 20 in. (50 cm)
Maximum Height (at maximum leg spread) 68 in. (170 cm)
Minimum Folded Length 34 in. (85 cm)
Minimum Folded Width 7 in. (17.5 cm)
Leg Angle up to 80°
Weight 10 lbs (4.5 kg)
Finish Anodized Aluminum and Black Wrinkle

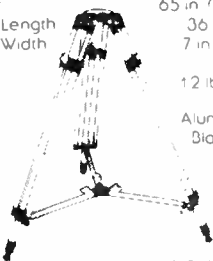


Optional Accessories

\$735.00
ITE-CB3 Claw Ball
ITE-RFP—Rubber Foot Pads
Includes removable adjustable spider (tyrod) assembly quick-action toggle leg locks leg spikes

ITE-T12 TRIPOD Pro Model—Ball Leveling Bowl

Camera/Head Load Capacity 50 lbs (22.5 kg)
Minimum Height 24 in. (60 cm)
Maximum Height (at maximum leg spread) 65 in. (162.5 cm)
Minimum Folded Length 36 in. (90 cm)
Minimum Folded Width 7 in. (17.5 cm)
Leg Angle up to 80°
Weight 12 lbs (5.4 kg)
Finish Anodized Aluminum and Black Wrinkle



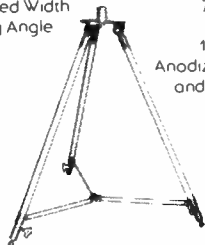
Includes removable adjustable spider (tyrod) assembly

Optional Accessories

\$625.00
ITE-CB3 Claw Ball
ITE-RFP Rubber Foot Pads
ITE-SPS Spike Set

ITE-T2 STUDIO/REMOTE TRIPOD

Camera/Head Load Capacity 60 lbs (27 kg)
Minimum Height 29 in. (72.5 cm)
Maximum Height 65 in. (162.5 cm)
Minimum Folded Length 32 in. (80 cm)
Minimum Folded Width 7 in. (17.5 cm)
Maximum Leg Angle 35°
Weight 12 lbs (5.4 kg)
Finish Anodized Aluminum and Black Wrinkle

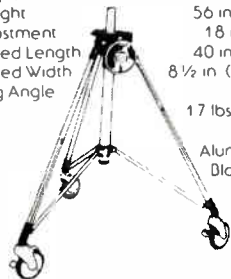


Optional Accessories

\$475.00
ITE-SPS Spike Set
Set ITE-RFP Rubber Foot Pads

ITE-T5 ELEVATION TROLLEY

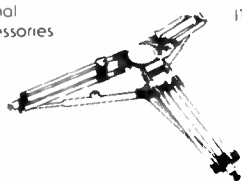
Camera/Head Load Capacity 50 lbs (27 kg)
Minimum Height 38 in. (95 cm)
Maximum Height 56 in. (140 cm)
Elevation Adjustment 18 in. (45 cm)
Minimum Folded Length 40 in. (100 cm)
Minimum Folded Width 8 1/2 in. (21.25 cm)
Maximum Leg Angle 34°
Weight 17 lbs (7.65 kg)
Finish Anodized Aluminum and Black Wrinkle



\$750.00

ITE-T9 TRIPOD—MINI Ball Leveling Bowl

Camera/Head Load Capacity 30 lbs (13.5 kg)
Minimum Height 13 1/2 in. (33.75 cm)
Maximum Height 29 in. (72.5 cm)
Minimum Folded Length 21 in. (52.5 cm)
Minimum Folded Width 7 in. (17.5 cm)
Leg Angle up to 80°
Weight 8 lbs (3.6 kg)
Finish Anodized Aluminum and Black Wrinkle



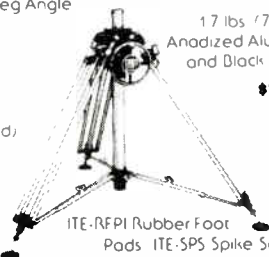
Includes removable adjustable spider (tyrod) assembly

Optional Accessories

\$625.00
ITE-CB3 Claw Ball
ITE-RFP Rubber Foot Pads
ITE-SPS Spike Set

ITE-T13 ELEVATION TRIPOD

Camera/Head Load Capacity 60 lbs (27 kg)
Minimum Height 24 in. (60 cm)
Maximum Height (at maximum leg spread) 83 in. (207.5 cm)
Elevation Adjustment 18 in. (47.5 cm)
Minimum Folded Length 36 in. (90 cm)
Minimum Folded Width 9 in. (17.5 cm)
Maximum Leg Angle 35°
Weight 17 lbs (7.65 kg)
Finish Anodized Aluminum and Black Wrinkle



Includes adjustable spider (tyrod) assembly

Optional Accessories

\$1095.00
ITE-RFP Rubber Foot Pads
ITE-SPS Spike Set

ITE-T3 ENG. TRIPOD Ball Leveling Bowl

Camera/Head Load Capacity 25 lbs (11.25 kg)
Minimum Height 15 in. (37.5 cm)
Maximum Height 62 in. (155 cm)
Minimum Folded Length 28 in. (70 cm)
Minimum Folded Width 6 in. (15 cm)
Maximum Leg Angle 80°
Weight 7 lbs (2.25 kg)
Finish Black Wrinkle



Includes Rubber Foot Pads
Adjustable Spreader
Spike Set

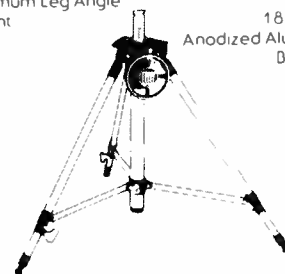
Optional Accessories

ITE-CB3 Claw Ball

\$350.00

ITE-T6 ELEVATION TRIPOD

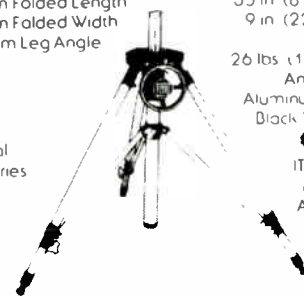
Camera/Head Load Capacity 50 lbs (22.5 kg)
Minimum Height 29 in. (72.5 cm)
Maximum Height 65 in. (162.5 cm)
Elevation Adjustment 18 in. (45 cm)
Minimum Folded Length 33 in. (82.5 cm)
Minimum Folded Width 8 1/2 in. (21.25 cm)
Maximum Leg Angle 33 1/2°
Weight 18 lbs (8.1 kg)
Finish Anodized Aluminum and Black Wrinkle



\$625.00

ITE-T10 ELEVATION TRIPOD

Camera/Head Load Capacity 140 lbs (63 kg)
Minimum Height 28 in. (70 cm)
Maximum Height 59 in. (147.5 cm)
Elevation Adjustment 18 in. (45 cm)
Minimum Folded Length 35 in. (87.5 cm)
Minimum Folded Width 9 in. (22.5 cm)
Maximum Leg Angle 33 1/2°
Weight 26 lbs (11.7 kg)
Finish Anodized Aluminum and Black Wrinkle



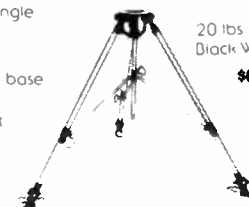
Optional Accessories

\$935.00

ITE-H25T Mitchell Adapter

ITE-T14 FIELD TRIPOD

Camera/Head Load Capacity 140 lbs (63 kg)
Minimum Height 25 in. (62.5 cm)
Maximum Height 45 in. (112.5 cm)
Minimum Folded Length 34 in. (85 cm)
Minimum Folded Width 9 in. (17.5 cm)
Maximum Leg Angle 38°
Weight 20 lbs (9 kg)
Finish Black Wrinkle



Includes Mitchell base footpad/spike spherical ball set

\$650.00

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INNOVATIVE TELEVISION EQUIPMENT

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TRIPODS/HEADS

ITE-T20 ELEVATION TRIPOD

Camera/Head Load Capacity 20 lbs (9 kg)
Minimum Height 34 in (85 cm)
Maximum Height 68 in (170 cm)
Elevation Adjustment 16 in (40 cm)
Minimum Folded Length 32 in (80 cm)
Minimum Folded Width 9 1/2 in (23.75 cm)
Maximum Leg Angle 15°
Tilt Angle ± 60°
Pan Rotation 360°
Weight 8 lbs (3.6 kg)
Finish Anodized Aluminum and Black Wrinkle



\$205.00

ITE-H2 CAM HEAD

Camera Load Capacity 120 lbs (54 kg)
Tilt Angle up to ± 50°
Pan Rotation 360°
Height 7 1/2 in (18.75 cm)
Width 9 in (22.5 cm)
Length 10 in (25 cm)
Weight 25 lbs (11.25 kg)
Dose Mitchell Type

\$1295.00

Optional Accessories

Dual handles
wedge adapter
telescopic handles



ITE-MT1 TRIPOD

For Camera and Microwave Applications

Camera/Head Load Capacity 250 lbs (112.5 kg)
Minimum Height 25 in (62.5 cm)
Maximum Height 43 in (107.5 cm)
Minimum Folded Length 34 in (85 cm)
Minimum Folded Width 9 1/2 in (23.75 cm)



Maximum Leg Angle 38°
Weight 33 lbs (14.85 kg)
Finish Aluminum and Black Wrinkle

Includes spreader foot pad/spike/spherical ball set. Mitchell base

\$1095.00

ITE-T44 ELEVATION TRIPOD

Camera/Head Load Capacity 33 lbs (15 kg)
Minimum Height 32 in (80 cm)
Maximum Height @ 40° Included Angle 66 in (165 cm)
Leg Angle (adjustable) 80° included (max.)
Elevator Column Adjustment 10 in (25 cm)
Minimum Folded Length 35 in (85 cm)
Minimum Folded Width 7 in (17.5 cm)
Weight 12 lbs (5.3 kg)
Finish Anodized Aluminum and Black Wrinkle



\$270.00

ITE-H4 TORSION HEAD

Camera Load Capacity 40 lbs (18 kg)
Tilt Angle ± 45°
Pan Rotation 360°
Height 6 in (15 cm)
Width 6 in (15 cm)
Length 8 in (20 cm)
Weight 8 lbs (3.6 kg)
Dose 1 3/4 in (4.4 cm) Clamp

\$295.00

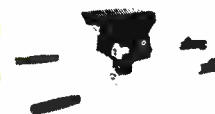


ITE-H4D TORSION HEAD

Camera Load Capacity 40 lbs (18 kg)
Tilt Angle ± 45°
Pan Rotation 360°
Height 6 in (15 cm)
Width 6 in (15 cm)
Length 8 in (20 cm)
Weight 8 lbs (3.6 kg)
Dose 1 3/4 in (4.4 cm) Clamp

Includes dual handles

\$375.00



ITE-H6 HYDROCAM HEAD

Camera Load Capacity 130 lbs (58.5 kg)
Tilt Angle up to ± 50°
Pan Rotation 360°
Height 8 in (20 cm)
Width 9 in (22.5 cm)
Length 9 1/2 in (23.75 cm)
Weight 23 lbs (10.35 kg)
Dose Mitchell Type

Includes dual handles and wedge adapter (requires wedge plate)

\$2650.00



ITE-H7 TORSION HEAD

Camera Load Capacity 50 lbs (22.5 kg)
Tilt Angle ± 45°
Pan Rotation 360°
Height 8 1/2 in (21.25 cm)
Width 7 1/2 in (18.75 cm)
Length 8 1/2 in (21.25 cm)
Weight 13 lbs (5.85 kg)
Dose 1 3/4 in (4.4 cm) Clamp

Includes dual handles

\$895.00



ITE-H8 MICROWAVE PAN/TILT HEAD

Camera Load Capacity 250 lbs (112.5 kg)
Tilt Angle ± 45°
Pan Rotation 360°
Height 7 in (17.5 cm)
Width 8 in (20 cm)
Length 9 in (22.5 cm)
Weight 19 lbs (8.55 kg)
Dose Mitchell Type

Mounting plate designed for standard L bracket attachment

\$995.00

Optional Accessories

Control handle



ITE-H9AC HYDRO HEAD

Camera Load Capacity 30 lbs (13.5 kg)
Tilt Angle ± 50°
Pan Rotation 360°
Height 6 in (15 cm)
Width 6 1/2 in (16.25 cm)
Length 6 in (15 cm)
Weight 8 lbs (3.6 kg)
Dose 1 3/4 in (4.4 cm) Clamp or Claw Ball

Mounting plate includes standard ITE-QR Quick Release Adaptor

\$1395.00

Optional Accessories

Dual handles



ITE-H10 HYDRO HEAD

Camera Load Capacity 40 lbs (18 kg)
Tilt Angle ± 60°
Pan Rotation 360°
Height 6 1/2 in (16.25 cm)
Width 6 3/4 in (16.9 cm)
Length 6 3/4 in (16.9 cm)
Weight 9 lbs (4.05 kg)
Dose 1 3/4 in (4.4 cm) Clamp or Claw Ball

Camera Mounting Plate/Quick Release

4 in (10 cm) x 2 in (5 cm) with 3/8 in (9.4 mm) slot for mounting cameras with 1/4 in (6.25 mm) or 3/8 in (9.4 mm) screws

Optional Accessories

\$1750.00

Dual handles



ITE-H11 FLUID HEAD (Miller Super "8" Model)

Camera Load Capacity 10 lbs (4.5 kg)
Tilt Angle ± 80°
Pan Rotation 360°
Height 5 in (12.5 cm)
Width 3 1/2 in (8.75 cm)
Length 4 in (10 cm)
Weight 2 lbs (0.9 kg)
Dose Flat

Optional Accessories

Claw Ball leveling

\$365.00



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VC-127

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ITE-H12 FLUID HEAD (Miller Senior "F" Model)

Camera Load Capacity	20 lbs (9 kg)
Tilt Angle	± 80°
Pan Rotation	360°
Height	5 in (12.5 cm)
Width	4 in (10 cm)
Length	4 1/2 in (11.25 cm)
Weight	5 lbs (2.25 kg)
Base	Flat

Optional Accessories

\$710.00

Claw Ball leveling
dual handles
quick-release assembly



ITE-H14 FLUID HEAD (Miller Light Pro Model)

Camera Load Capacity	30 lbs (13.5 kg)
Tilt Angle	± 80°
Pan Rotation	360°
Height	5 1/2 in (13.75 cm)
Width	6 1/2 in (16.25 cm)
Length	5 1/2 in (13.75 cm)
Weight	8 lbs (3.6 kg)
Base	Flat

Optional Accessories

\$1095.00

Pro Claw Ball leveling
dual handles
quick release assembly



ITE-H15 FLUID HEAD (Miller V.G. 50 Model)

Camera Load Capacity	40 lbs (18 kg)
Tilt Angle	± 75°
Pan Rotation	360°
Height	6 1/4 in (16.9 cm)
Width	6 in (15 cm)
Length	7 in (17.5 cm)
Weight	8 lbs (3.6 kg)
Base	Flat

Optional Accessories

\$1300.00

Pro Claw Ball leveling
dual handles
quick release assembly



ITE-H16 FLUID-DAMPENED HEAD

Camera Load Capacity	35 lbs. (15.9 kg)
Tilt Angle	± 90°
Pan Rotation	360°
Height	6 in (15 cm)
Width	6 in (15 cm)
Length	6 in (15 cm)
Weight	6 lbs. (2.7 kg)
Base	Pro Claw Ball

Includes Standard ITE-QR
Quick Release Adaptor

\$1775.00

Optional Accessories

Dual handles



ITE-H17 FLUID HEAD

Camera Capacity	: (18lbs) 8 kg
Pan Movement	: 360° plus positive lock system
Tilt Movement	: ±60° plus positive lock system
Drag	: Full fluid system
Temperature Range	: -40° to +65°C
Counterbalancing	: Static system; 8 kg @ 50mm C of G height

Camera Platform : ±30mm sliding camera plate for balancing C of G plus quick release action

Pan handles : Ø16mm x 450mm vertically and horizontally adjustable

Base Weight : Ø75mm ball levelling : 2kg **\$625.00**



ITE-H100FD FLUID DRAG HEAD

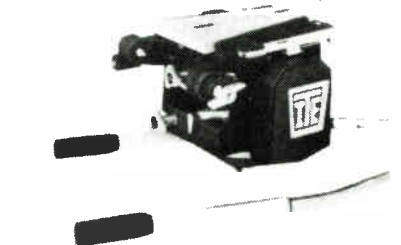
Camera Load Capacity	250 lbs (112.5 kg)
Tilt Angle	± 53°
Pan Rotation	360°
Height	8 1/2 in (21.25 cm)
Width (less handles)	12 in (30 cm)
Length (less handles)	14 in (35 cm)
Weight	31 lbs (13.95 kg)
Base	Mitchell Type

Includes telescopic control handle zoom stub handle quick-release lever-action wedge adaptor (requires ITE-WP100 wedge plate)

\$2995.00

Optional Accessories

Right hand telescopic handle



ITE-P1 PNEUMATIC STUDIO PEDESTAL

Camera/Head Load Capacity	290 lbs (130.5 kg)
Minimum Height	29 in (73.75 cm)
Maximum Height	51 in (127.5 cm)
Minimum Doorway Clearance	30 in (75 cm)
Wheelbase	28 1/2 in (71.25 cm)
Dual Wheel Diameter	8 in (20 cm) (cast aluminum polyurethane tires)

Steering Wheel Diameter : 26 in (65 cm) (vinyl coated)

Steering Mode : Crab and Tricycle

Cable Guard : Adjustable from 1/8 in (3.1 cm) to 1 in (2.5 cm) above floor
Air Pressure : Pressure relief valve opens at 200 PSI representing equivalent overload condition of 300 lbs (135 kg)

Construction : Cast aluminum structure with steel tank and outer column to ASME Pressure Vessel Safety Code aluminum center column

Weight : 180 lbs (81 kg)
Mount : Modified Mitchell Type
Finish : Black Wrinkle

\$8850.00

Optional Accessories : Air Supply Charging System



ITE-P3 ELEVATION PEDESTAL

Camera/Head Load Capacity	60 lbs (27 kg)
Minimum Height	31 in (77.5 cm)
Maximum Height	49 in (122.5 cm)
Elevation Adjustment	18 in (45 cm)
Caster Radius	19 in (47.5 cm)
Wheel Diameter	4 1/2 in (11.25 cm)
Weight	36 lbs (16.2 kg)
Finish	Black Wrinkle

Optional Accessories

\$1475.00

Cable guards



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PEDESTALS/DOLLIES

ITE-P4 STUDIO PEDESTAL

Camera/Head Load Capacity 140 lbs (63 kg)
(first 87 lbs [39.15 kg] spring counterbalanced)
Minimum Height 34 in (85 cm)
Maximum Height 52 in (130 cm)
Minimum Doorway Clearance 32 in (80 cm)
Single Wheel Diameter 7 in (17.5 cm)
(polyurethane tires)
Steering Wheel Diameter 25 in (62.5 cm)
Steering Made Crab
Base Construction Cast Aluminum
Weight (less camera balance weights) 160 lbs (72 kg)
Mitchell Type
Finish Black Wrinkle
Optional Accessories \$4900.00
Additional capacity to 200 lbs (90 kg)



ITE-P5 STUDIO PEDESTAL

Camera/Head Load Capacity 265 lbs (119.25 kg)
(first 174 lbs [78.3 kg] spring counterbalanced)
Minimum Height 34 in (85 cm)
Maximum Height 52 in (130 cm)
Minimum Doorway Clearance 32 in (80 cm)
Dual Wheel Diameter 7 in (17.5 cm)
(polyurethane tires)
Steering Wheel Diameter 25 in (62.5 cm)
Steering Made Crab
Base Construction Cast Aluminum
Weight (less camera balance weights) 180 lbs (81 kg)
Mitchell Type
Finish Black Wrinkle
Optional Accessories \$5600.00
Additional capacity to 310 lbs (139.5 kg)



ITE-P6 STUDIO PEDESTAL

Camera/Head Load Capacity 120 lbs (54 kg)
Minimum Height 32 in (80 cm)
Maximum Height 52 in (130 cm)
Minimum Doorway Clearance 28 in (70 cm)
Dual Wheel Diameter 7 in (17.5 cm)
(polyurethane tires)
Steering Wheel Diameter 20 in (50 cm)
Steering Made Crab
Base Construction Cast Aluminum and Fiberglass
Weight 125 lbs (56.25 kg)
Mitchell Type
Finish Black Wrinkle
\$4300.00



ITE-P7 ELEVATION PEDESTAL

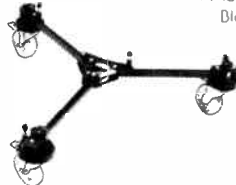
Camera/Head Load Capacity 75 lbs (33.75 kg)
Minimum Height 32 in (80 cm)
Maximum Height 49 in (122.5 cm)
Elevation Adjustment 18 in (45 cm)
Caster Radius 19 in (47.5 cm)
Wheel Diameter 6 1/2 in (16.25 cm)
Weight 45 lbs (20.25 kg)
Finish Black Wrinkle
Optional Accessories \$1925.00
Mitchell Mount Adapter



Unit comes equipped with adjustable cable guards

ITE-D3 DOLLY

Load Capacity 90 lbs (40.5 kg)
Folded Length 26 in (65 cm)
Folded Width 12 in (30 cm)
Height 7 in (17.5 cm)
Diameter 42 in (105 cm)
Wheel Diameter 5 in (12.5 cm)
Weight 17 lbs (7.65 kg)
Finish Black Wrinkle
\$525.00



ITE-D3G DOLLY

Load Capacity 90 lbs (40.5 kg)
Folded Length 26 in (65 cm)
Folded Width 12 in (30 cm)
Height 7 in (17.5 cm)
Diameter 42 in (105 cm)
Wheel Diameter 5 in (12.5 cm)
Weight 17 lbs (7.65 kg)
Finish Black Wrinkle
Includes cable guards \$565.00



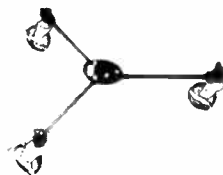
ITE-D5 DOLLY

Load Capacity 60 lbs (27 kg)
Folded Length 23 in (57.5 cm)
Folded Width 6 in (15 cm)
Height 6 in (15 cm)
Diameter 42 in (105 cm)
Wheel Diameter 5 in (12.5 cm)
Weight 7 lbs (3.15 kg)
Finish Black Wrinkle
\$355.00



ITE-D6 DOLLY

Load Capacity 60 lbs (27 kg)
Folded Length 23 in (57.5 cm)
Folded Width 6 in (15 cm)
Height 6 in (15 cm)
Diameter 41 in (102.5 cm)
Wheel Diameter 5 in (12.5 cm)
Weight 7 lbs (3.15 kg)
Finish Black Wrinkle
Accessories Available \$295.00
ITE D6G comes equipped with cable guards
\$355.00



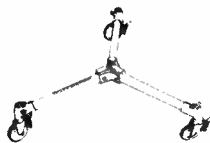
ITE-D7 DOLLY

Load Capacity 250 lbs (112.5 kg)
Folded Length 29 in (72.5 cm)
Folded Width 15 in (37.5 cm)
Height 9 in (22.5 cm)
Diameter 45 in (112.5 cm)
Wheel Diameter 6 1/2 in (16.25 cm)
Weight 25 lbs (11.25 kg)
Finish Black Wrinkle
Includes adjustable cable guards \$1095.00



ITE-D2D DOLLY

Load Capacity 25 lbs (11.25 kg)
Folded Length 19 in (47.5 cm)
Folded Width 12 in (30 cm)
Height 9 in (22.5 cm)
Diameter 37 in (92.5 cm)
Wheel Diameter 4 in (10 cm)
Weight 7 lbs (3.15 kg)
Finish Anodized Aluminum
\$120.00



ITE-TS TRIPOD SPREADER (For ITE/Miller -T1 and -T4 Tripods)

This spreader is constructed of sturdy lightweight aluminum. It will retain tripod legs from a diameter of 32 to 48 inches (80-120 cm). Weight is 3 pounds (1.35 kg)

ITE-TS1 \$285.00
ITE-TS4 285.00



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ACCESSORIES

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QUICK RELEASE ASSEMBLIES

The ITE Quick Release Assembly provides for rapid attachment and removal of cameras from pan/tilt heads. Positive attachment of plate to adapter is accomplished by rotating a spring-loaded lever. Inadvertent disengagement is impossible.

Assemblies are used in conjunction with all models of Torsion, Fluid and Hydra Heads.

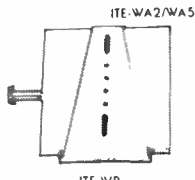


ITE-QR

WEDGE ADAPTER ASSEMBLIES

The ITE Wedge Plate and Adapter combination provide for rapid attachment and removal of cameras from pan/tilt heads. Positive attachment of wedge plate to adapter is accomplished by rotation of a locking screw which make inadvertent disengagement impossible.

Assemblies are used in conjunction with Model ITE-H2 Cam Head and ITE-H5 Hydra Head.



ITE-WP
ITE-WP100

HI HATS

ITE-HH6 (Mitchell-Type Mount)

Camera Load Capacity
Height
Maximum Width
Mounting Bolt Circle
Bolt Attachment Size
Finish

300 lbs (135 kg)
6 in (15 cm)
7 1/2 in (16.75 cm)
6 1/2 in (16.25 cm)
3/8 in (9.4 cm)
Black Wrinkle



ITE-MHH (Miller "Pro Ball" Bowl)

Camera Load Capacity
Height
Maximum Width
Mounting Bolt Circle
Bolt Attachment Size
Finish

40 lbs (18 kg)
6 in (15 cm)
7 in (17.5 cm)
6 1/2 in (16.25 cm)
3/8 in (9.4 cm)
Black Wrinkle



ADAPTERS

ITE-CB1 Claw Doll Assembly

For ITE H11 H12 to T1 Tripod



ITE-CB3 Claw Doll Assembly

For ITE-T3 T4 T8 T9 and T12 Tripods



ITE-H910P

For ITE H9AC and H10 Hydra Heads to P6 Pedestal



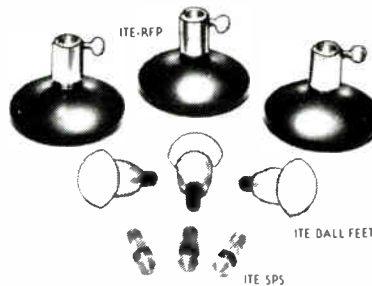
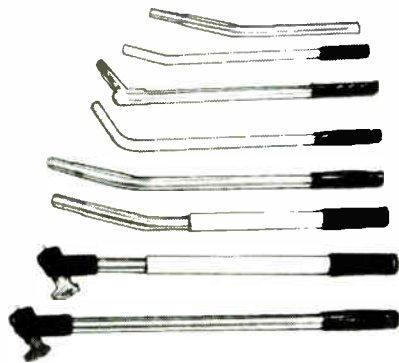
ITE-MHT

For ITE H11 H12 H14 and H15 Fluid Heads to T2 T5 T6 T13 and T55 Tripods and Trolleys



HANDLES

A wide variety of handles and adapters is available for all ITE Heads.



TRIPOD ACCESSORIES

Rubber Foot Pads, Ball Feet and Leg Spikes are available for various ITE Tripods. Contact ITE for availability.

CASES

Sturdy, hi-impact carrying cases are available for all ITE products. Contact ITE for additional information.



ITE C CASES

ITE-WA2	Wedge Adapter — H2	\$190.00
ITE-WP	Wedge Plate	145.00
ITE-WP100	Wedge Plate — H100	145.00
ITE-05A	Offset Adapter with Wedge Plate — Use with H6 & H100FD for large Studio Cameras	325.00
ITE-RH	Right Hand Zoom Handle for H2, H4, H8	95.00
ITE-RH9AC	Right Hand Zoom Handle for H9AC	115.00
ITE-RH10	Right Hand Zoom Handle for H10	115.00
ITE-H2/6TH	Telescopic Handle for H2 and H6	175.00
ITE-RHM	Right Hand Handle for H12, H14, H15 and H16	80.00
ITE-RHMT	Telescopic Handle for H12, H14, H15 and H16	115.00
ITE-H910P	Adapter — for H9AC and H10 to P6	175.00
ITE-H25T	Adapter — for H2 and H6 to T6, T10, T13 and P7	115.00
ITE-MHT	Adapter — for M Heads to T2, T5, T6, T10 and T13	85.00
ITE-MHTH	Adapter — for H40 to T5 and T6	50.00
ITE-HH6	Hi-Hat — 6" Mitchell Mount	165.00

ITE-MHH	Hi-Hat — 6" Miller "Pro" Ball Cup — adjustable	165.00
ITE-CW	Counterweight Set (40 lbs.) for P4 and P5	200.00
ITE-RFPM	Rubber Foot Pad Set — for T1, T3, T4 and T8	95.00
ITE-RFPI	Rubber Foot Pad Set — for T2, T12 and T13	120.00
ITE-CB1	Claw Ball Assy — for T1	65.00
ITE-CB3	Claw Ball Assy — for T3, T4, T8 and T12	145.00
ITE-QR	Quick Release Adapter Assy	155.00
ITE-QRP	Quick Release Adapter Plate	45.00
ITE-SPS	Spike Set — for T2, T6, T10, T12 and T13	45.00
ITE-CTH	Shipping Case for T6, T10 and T13 Tripod	
	with H9AC, H10, H12, H14, H15 and H16 Heads	350.00
ITE-CD	Shipping Case for D3, D5, D6 and D7 Dolly	310.00
ITE-CH	Shipping Case for H2, H6 and H100FD	
	Heads with Handles and Accessories	295.00
ITE-MPC	Molded Poly Shipping Case for T3, T4, T8, T12 Tripod with H12, H14, H15 and H16 Heads	185.00

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REMOTE VIDEO SYSTEM

Two-Way Telecommunication In A Portable Package

Now, with a minimum of expense and training, full motion color video conferencing is within reach.



IRIS RM-1. A totally self-contained, live origination/videoconferencing module, designed for use on cable and broadband local area network systems. Wherever there is a need for frequent face-to-face contact between people from different sites, IRIS provides the solution. Without the downtime and expense of employee travel. **\$9725.00**

And, there is no need for exotic operator training. The applications are almost limitless:

- School Districts
Telecourses
- Medical Facilities
Consultation
Video-Visiting
- Businesses with Multiple Locations
Administration
Training
- Campus Based Institutions
- Government Facilities
- Municipal and County Governments

Specifications

RM-1 Module

Single tube, color camera
 Tripod
 Microphones (4)
 Weight 52 lbs.
 Height 13.5"
 Width 20.0"
 Depth 12.7"
 (16.7" when closed
 for transportation)

Inputs

Video-1.0v pp NTSC composite/75 ohms
 Audio-4 microphones, 25-600 ohms
 or
 3 microphones, 25-600 ohms
 1 line, switchable 600 ohms/less than 10k ohms
 RF-broadband RF cable input

Outputs

Video-baseband, 1.0v pp NTSC composite/75 ohms
 Audio-600 ohm, line output
 or
 RF-modulated 6 Mhz audio/video frequency in
 sub, low, high, mid bands (channel specified by users)
 Level - +40 dBm V to +54 dBm V

JAVELIN ELECTRONICS, INC.

19831 Magellan Dr.
P.O. Box 2033
Torrance, CA 90510
(213) 327-7440
Telex 19-4860 JAVELIN TRNC

CCTV CAMERAS



SP1810A



SP1910A



LL77/LL79

CAMERAS

SPECTAR® SERIES

General Purpose Cameras — All models have 2/3" separate mesh vidicon. 10,000:1 weighted ALC utilizes three state of the art chips, and plug-in type PC boards can be disassembled without soldering. Provides 600 TV lines of resolution, vertical phase built in to all units. Can be top or bottom mounted. Lens not included.

Models:

SP1810A	117VAC	60 Hz	Random Interlace	\$269.00
SP1820A	220VAC	50 Hz	Random Interlace	269.00
SP1840A	24VAC	60 Hz	Random Interlace	283.00
SP1861A	12VDC		2:1 Interlace (RS-330)	283.00
SP1812A	117VAC	60 Hz	External/internal sync	283.00
SP1822A	220VAC	50 Hz	External/internal sync	315.00
SP1842A	24VAC	60 Hz	External/internal sync	315.00

Low Light Level Cameras — All models have a Newvicon® camera tube. 100,000:1 ALC — with auto iris spot filter lens. Resolution beyond 600 lines. Scene illumination 0.05 fc for usable picture, 0.5 fc for full video.

Models:

SP1910A	117VAC	60 Hz	Random Interlace	\$710.00
SP1920A	220VAC	50 Hz	Random Interlace	710.00
SP1940A	24VAC	60 Hz	Random Interlace	710.00

Optional Plug-in Accessories (for all Spectar® cameras):

SP10 Camera ID—Adjustable 00 to 99 identification of camera view on the monitor.

SP20 RF Modulator—Switchable channel 3 or 4 output for display on standard television receiver.

SP30 Inserter/Splitter—Combines views from two ext. sync cameras into a single monitor.

SP40 Video Line Amplifier—Amplifies the video signal for extended operating distances.

SP50A Mother Board—Interfaces all options within the camera. 1 per camera required.

SP60 2:1 Sync—Converts random interlace Spectars to RS-330 2:1 sync operation.

SP65 2:1 Sync—Converts random interlace Spectars to CCIR 2:1 sync operation.

LL77 AND LL79

Very Low Light Level Cameras (SIT/ISIT)—Extremely high sensitivity and low lag. Scene illumination 3.3×10^{-4} fc (SIT), 2.7×10^{-5} fc (ISIT) for usable picture, 1.0×10^{-3} fc (SIT), 5.4×10^{-5} fc (ISIT) for full video (f/1.4 lens, 75% highlight reflectance). Full horizontal and vertical sweep-loss protection circuits. Provides stable operation with high resolution. **\$7775.00**

Control for Zoom/Auto-Iris Lenses: CB1430—Rack or Desk Top Controller. CB1430R—Camera Mounted Control Unit.

MINI-SECURITY SYSTEMS

As easy to install as plugging in a TV set.

1. JMS-30 Mini System includes SP1810 camera, D1800 dummy camera, VM-9C monitor, 50 ft. of RG59/U video cable and two JWM-9 camera wall mounts.
2. JMS-41 Mini System includes two SP1810 cameras with two 16mm lenses, one VM-9C monitor, two 50 ft. RG59/U video cables, 10 ft. of RG59/U video cable, two JWM-9 wall mounts and MS-4D manual four position video switcher with room for expansion.

JAVELIN ELECTRONICS, INC.

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P.O. Box 2033
Torrance, CA 90510
(213) 327-7440
Telex 19-4860 JAVELIN TRNC

CAMERAS/MONITOR

JE-3040A CCTV SYSTEM CAMERA AND CVM-13 MONITOR

The only solid state (No Tube) color camera designed specifically for CCTV.

Features

- Many Security and Industrial Applications
- Extremely Compact — 2.5"W x 4.4"H x 8.6"D
- Uses Standard CCTV Lenses
- Requires a Single Adjustment
- 300 Lines Horizontal Resolution
- S/N Ratio of 46dB
- Weighs just 3.3 lbs.

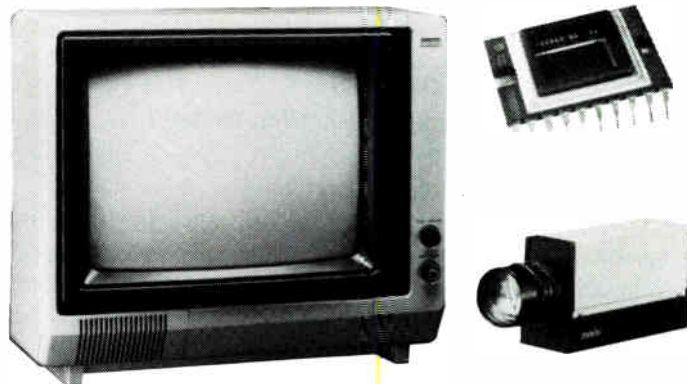
True-to-life color monitoring is important in many different industries: gaming, medical, processing, chemical, robotics, etc. Not only is it valuable in identifying colors, but it is needed when shadows, lack of contrast or darkness of tone eliminate black and white details. For example, facial features, even in normal indoor light, may be unidentifiable without the full fidelity of color.

Because the camera has 100% solid state electronics, there is no flare or bloom, no light streaks and no trailing in the picture. Additionally, there is no image retention.

Only solid state electronics and rugged, industrial-type construction can provide the level of reliability required of a system that must be used constantly.

Both the camera and the monitor are designed to be compatible with most other quality CCTV components. The monitor is also compatible with many computers and can be used for color graphics as well.

JE-3040A \$1565.00



CVM-13 MONITOR

Features

- Sharp Focus by In-Line Ultra High-Resolution - 260 Horiz, 300 Vertical Lines — Color Display Tube (13") Incorporating 0.31mm Pitch Matrix
- Excellent Terminals for Personal Computers, Micro-Computers and Office Computers
- More than 2,000 Characters in Alphabet. Numerals and Graphics Can Be Displayed with Seven Bright Colors: Red, Green, Blue, Yellow, Cyan, Magenta and White
- Compact Chassis Employing Self-Convergence System. The Chassis Has Enough Space for Incorporating Extra Logic Circuit Boards
- Bright Picture with Low Distortion is Ensured Thanks to Employment of High Performance Deflection Yoke and Transformer-less Power Supply
- Lightweight, 25.6 lbs. High Reliability and High-Performance

CVM-13 \$550.00



JE-2062 (U.S. EIA)/JE-2152 (CCIR) SOLID STATE B/W TV CAMERA

Features

- All Solid State Chip Sensor
- No Sensor Burn
- No Residual Image or Smearing
- No Distortion
- Not Influenced by Electromagnetic Fields
- Long Life
- Vibration and Shock Resistant
- External or Internal RS-170 2:1 Sync
- High Resolution
- Vertical Camera Positioning Does Not Damage Sensor
- Back Focus Adjustment of Chip

SPECIFICATIONS

Signal Format:	Model JE-2062 EIA Standard Model JE-2152 CCIR Standard
Synchronization:	RS-170 2:1 Sync
Internal	Horizontal and Vertical Drive Pulses
External	4V RP 20%
Input Voltage	Vertical 667-10 μ sec \pm 2H
Pulse Width	Horizontal 16.35-32 μ sec
Lock Range	Vertical Driving Pulse: HD/262.5
	Horizontal Driving Pulse: 15,734 \pm 5Hz

Picture Elements	
Horizontal	384 x 2
Vertical	485 x 2
Image Sensor:	MOS Solid State
Scan Area:	Equivalent to 2/3 inch Vidicon Camera
Video Output:	IV P-P, 75 ohms unbalanced

Illumination	3fc (30 lux) using f/1.4 lens
Minimum:	43 dB or greater
S/N Ratio:	Greater than 450 TV lines
Resolution:	0.45
Gamma:	Adjustable, set at 53.5 MV (7.51RE)
Pedestal Level:	12 VDC (Operates from 11 to 14 VDC)
Input Voltage:	0.66 lbs. (300 gr) less lens
Weight:	2.2"W x 1.89"H x 4.53"D
Dimensions	(5.6W x 4.8H x 11.5D cm)
(External)	
Recommended Power Supply:	PS816DC (EIA) or PS816DX (CCIR)

JE-2062 \$1325.00
JE-2152 1325.00

JAVELIN ELECTRONICS, INC.

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Torrance, CA 90510
(213) 327-7440
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NIGHT VIEWING DEVICES

NIGHT VIEWING DEVICES

General Surveillance Models (Non-Military)

Easy to handle. Interchangeable lens fields. Connects and disconnects to different cameras quickly.

Models 221 and 226—For single lens reflex (SLR) photographic, 16mm TV, 16mm and 35mm SLR cameras. Focal plane iris, automatic brightness control, batteries, carrying case and manual.

221—Most versatile of all NVDs. Mounts on tripod. Can be used with biocular viewer. 3X magnification. 2.9 lbs. (1.3 kg).



221



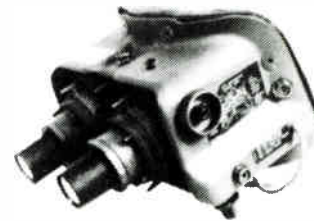
226



325

Night Vision Goggles

Complete hands-free vision. Need no supplemental illumination for normal observation. Small infrared light source for map reading, etc. Separate adjustable viewer for each eye. Can be adapted to helmets. Automatic brightness control. 2.0 to 2.7DC battery. Temperature range of 0° to 125°F (to -65°F with optional arctic adaptor.)



304

Accessories

Accessories for various models are similar. Included are biocular viewers; adaptors for photographic and TV cameras (relay lenses), "C" mount lenses, and for lenses that will not mate with "C" mount lens; batteries and rifle mounts.

Military Models

Fully militarized. Passive operation, no artificial lighting required. Completely self contained and portable. Undetectable. Waterproof, shock and vibration resistant. Nitrogen-filled lenses, automatic brightness control and bright flash protection. Carrying case included.

Model 229—For long range direct observation and target location. 5000 meter (3 miles) range. 7X magnification. Standard lens 255mm f/1.23. Built-in azimuth and elevation scales. Self-contained tripod 12" above ground level. 37 lbs. (16.81 kg).

Model 230—Small arms sight. Can be rifle mounted. Meets MIL-STD 512, Procedure 1. 600 meter (2000 ft.) range. 3.8X magnification. Standard lens 95mm, T/1.6, f/1.2. 4.5 lbs. (2.05 kg).



229



230



240



340

226—For long distance viewing. Biocular viewer on swinging door type mount with optional adjacent swinging door to attach camera. Tripod mounting. Standard 135mm f/1.8 telephoto lens. Can also be used with 1000mm (or greater) lenses. 13.5 lbs. (6.14 kg).

Model 325—"Pocketscope". Less than 1 lb. (.5 kg). Very low distortion and reduced blooming when bright light is in field of view. Standard lens 50mm f/1.4.

Model 230RI—Same as model 230 with Reticle Illuminator, providing dark to light reticle adjustment to provide contrast against variations in reticle background illumination.

Models 240 and 240RI—Same as models 230 and 230RI except for longer range—1200 meters (4000 ft.) for use with crew served weapons. 6.2X magnification. Standard lens 155mm, T/1.6, f/1.2. 8.8 lbs. (4 kg).

Model 330—Javelin's second generation small arms, short range weapon sight with light weight 25mm micro-channel Intensifier Unit. Meets MIL-STD 512, Procedure 1. 600 meter (2000 ft.) range. 3.8 magnification. Standard lens 95mm, T/1.6, f/1.2. 2.8 lbs. (1.27 kg).

Model 330RI—Same as model 330 with Reticle Illuminator.

Models 340 and 340RI—Same as models 330 and 330RI except for longer range—1200 meter (4000 ft.) for use with crew served weapons. 6.2X magnification. Standard lens 155mm, T/1.6, f/1.2. 6.1 lbs. (2.77 kg).

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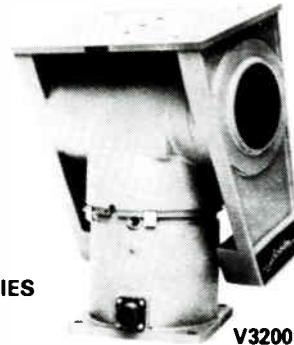
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PAN & TILTS/ SCANNERS

PAN/TILTS & SCANNERS

Proven through years of dependable service. High torque motors for smooth, constant pan motion. Lifetime lubrication.

All pan/tilt units have a pan of 350° and a tilt of ±90°. Accessories such as cable guards, spot heaters, weather proofing, optional gear head speeds and long distance relay boxes are available.



300 SERIES



V3200 SERIES

Pan/Tilts

Model	Indoor Light Duty 20 lbs	Outdoor Medium Duty 40 lbs	Outdoor Heavy Duty 80 lbs	Low Voltage	Auto-Scan	Variable Pan & Tilt Speeds	Explosion Proof	Price
V3000PT	•				•			\$ 429.00
V300 PT		•						952.00
V300-115 PT		•						1047.00
V330 APT		•			•			1045.00
V330 APT-115		•			•			1109.00
V353 APTV			•		•	•		1995.00
VP355 APTV		•			•	•		1787.00
V360 APT	•				•			668.00
V3800 PT			•					2980.00
V380PTX			•				•	2018.00
V390 APT			•		•			1517.00

Scanners

Model	Indoor Light Duty 20 lbs.	Outdoor Medium Duty 30 lbs.	Outdoor Heavy Duty 100 lbs.	Voltage	Auto-Pan	Variable Speed	Price
J106	•					•	\$116.00
V3200AP	•						139.00
V320024AP	•						139.00
V3200LCAP	•						139.00
V3200APS	•						139.00
V320024APS	•						139.00
V3200LCAPS	•						139.00
V3210AP		•					213.00
V3210LCAP		•					213.00
V321024AP		•					213.00
V310AP			•				521.00
V310LCAP			•				521.00
V31024AP			•				545.00

JAVELIN ELECTRONICS, INC.

CONTROLS

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CONTROLS

Zoom Lens Controls—Provide operating voltages to Zoom Lenses for zoom, focus and iris functions.

Scanner Controls—Provide operating voltages to control left, right and auto-scan functions for motorized Scanners.

Pan and Tilt Controls—Provide operating voltages to pan/tilt to add variable speed, auto-scan and Vector solving.

Dual Station Controls—Combination lens and pan/tilt controls in two separate control locations to supply operating voltages to a single Zoom Lens, Pan/Tilt installation.



V111PT

CB100ZF

Multi-Drive Controls—Combined Zoom Lens and Pan/Tilt control in one unit. Provide operating voltages to any one of six different Pan/Tilt, Zoom Lens locations.

OMNI-ACS—Operates in conjunction with the OMNI-100™ controller (SuperSwitcher) to provide full Pan/Tilt, Zoom, Focus and Iris control plus up to 6 on/off functions at up to 100 separate locations.

Model	Zoom	Focus	Iris	Auto Iris	Speed	Extender	Left/Right	Auto Scan	Up/Down	Variable Speed	Vector Solving	24VAC	117VAC	Light Duty	Medium Duty	Heavy Duty	Aux. Functions
Lens																	
CB100C	•	•	•		•												
CB100ZF	•	•			•												
CB106AC	•	•	•	•	•												
CB108C	•	•	•		•	•											
CB108AC	•	•	•	•	•	•											
Scanner																	
V130AP							•	•					•				
V130-24AP							•	•				•		•	•	•	
V135AP							•	•					•		•		
V135-24AP							•	•				•		•	•		
V131-24AP							•	•				•		•	•		
V136-24AP							•	•				•		•	•	•	
Pan and Tilt																	
V111PT							•		•			•		•	•		
V113APT							•	•	•			•		•	•		
V115PTV							•		•	•		•		•	•	•	
V117APT							•	•	•	•		•		•	•	•	
V120PT							•		•				•		•	•	
V121PTV							•		•	•	•	•		•	•	•	
V123APT							•	•	•				•		•	•	
V125APT							•	•	•	•	•	•		•	•	•	
Multi-Drive																	
V1700C	•	•	•		•		•		•			•		•	•		
V1701C	•	•	•		•		•		•				•	•	•	•	
V1702C	•	•			•		•		•			•		•	•		
V1703C	•	•			•		•		•				•	•	•	•	
V1730C							•	•				•		•	•		
Dual Station																	
V1600C	•	•	•		•		•		•			•		•	•		
V1601C	•	•	•		•		•	•	•			•		•	•		
V1630C							•	•				•		•	•		
ModuPulse Multi-Station																	
V1760CS	•	•	•	•	•		•	•	•			•	•	•	•	•	•
V1761CS	•	•	•	•	•		•		•			•	•	•	•	•	•
V1762CS	•	•	•		•		•	•	•			•	•	•	•	•	•
V1763CS	•	•	•		•		•		•			•	•	•	•	•	•
ModuPulse Single-Station																	
V1770C	•	•	•	•	•		•	•	•			•	•	•	•	•	•
V1771C	•	•	•	•	•		•		•			•	•	•	•	•	•
V1772C	•	•	•		•		•	•	•			•	•	•	•	•	•
V1773C	•	•	•		•		•		•			•	•	•	•	•	•

For 220-240VAC 50 Hz operation specify by adding suffix X to model number.

Prices and Specifications Subject to Change Without Notice.

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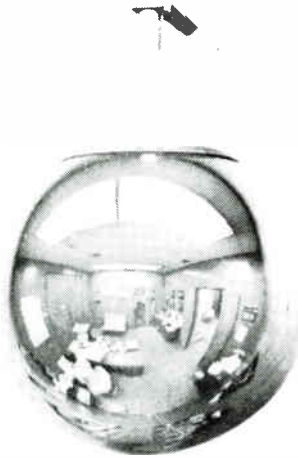
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HOUSINGS & ENCLOSURES

DISCREET SURVEILLANCE SYSTEMS

Where overt camera systems would be undesirable, Javelin JB16 Series has camera assemblies enclosed in completely mirrored spherical capsules. Clear picture in lighting conditions to a minimum of 1 fc scene illumination. Band transmission 5X greater than conventional one-way mirror.

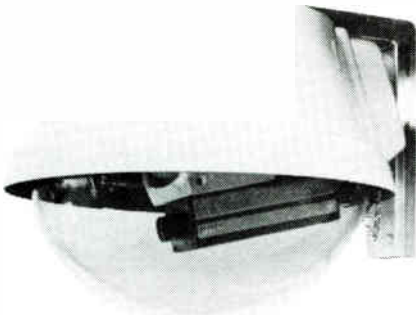
Available for fixed camera position, Auto-Scan, Pan and Tilt and Pan/Tilt with Motorized Zoom Lens.



JBA16

OUTDOOR SYSTEM ENCLOSURES

Both camera and Pan/Tilt or Scanner are enclosed in a clear dome. Provides an operational environment for inexpensive indoor Pan/Tilts or Scanners in outdoor locations. Wind, snow and ice loads are eliminated along with deterioration by weathering.

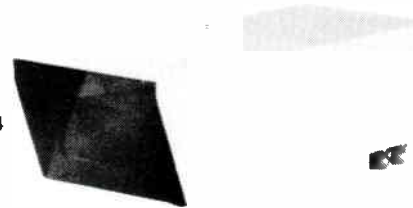


CD29

INDOOR/OUTDOOR ENCLOSURES

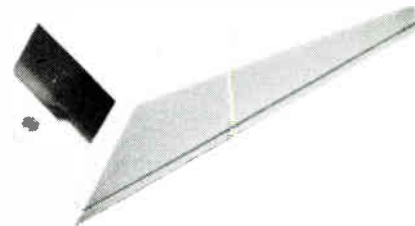
From a simple tamper-proof box to an explosion-proof enclosure, there is no requirement that can't be met. Temperatures from -110° to $+750^{\circ}$ F. Dust-proof. Pressurized/Non-Pressurized Explosion Proof.

JEH24



A complete line of Housing Accessories—Heater and thermostat assemblies; blower and thermostat assemblies, insulation. Whatever requirements you demand, Javelin can supply.

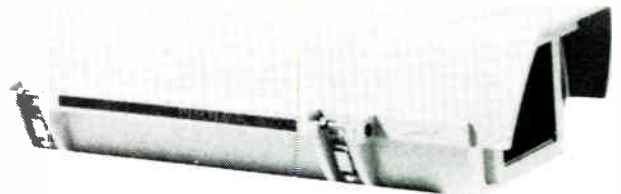
V8660H



V8300H



V8000H



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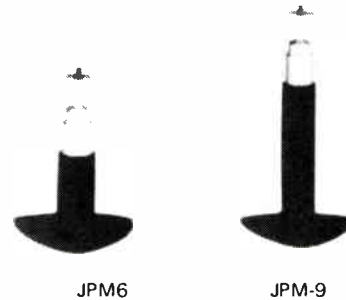
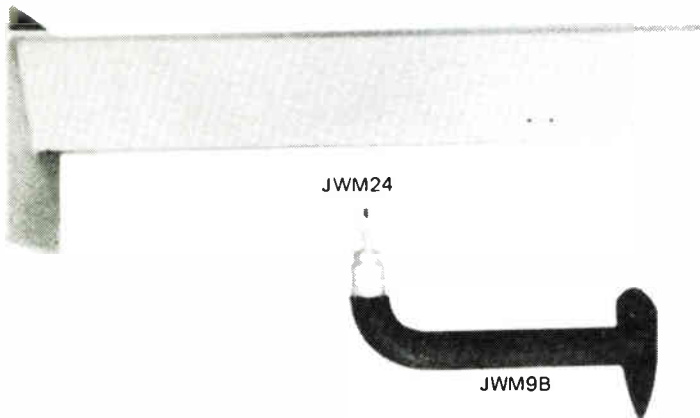
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MOUNTS/VIDEO SIGNAL EQUIPMENT

MOUNTS

Housing Mounts—Wall, ceiling or pedestal models with load limits up to 100 lbs. and with tilt range of 90° and rotation range of 360°. Extensions from 8.5" to 24".

Monitor Mounts—Wall and ceiling models with load limits up to 150 lbs., tilt ranges to 90° and rotation ranges to 360°. Extensions to 22".



Scanners/Pan and Tilt Mounts—Wall, ceiling or pedestal models with load limits up to 250 lbs.

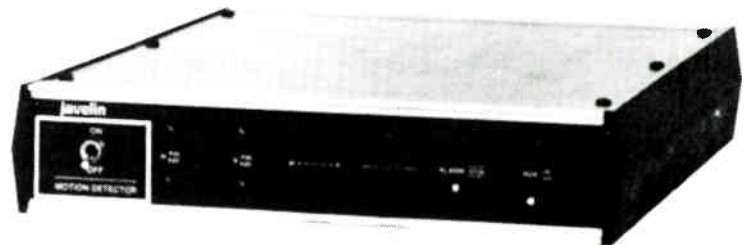
Camera Mounts—Wall, ceiling or pedestal models with load limits up to 100 lbs. Tilt range of 90° and rotation range of 360°. Extensions to 17". Javelin camera mounts are recommended for all cameras except SIT/ISIT.

VIDEO SIGNAL EQUIPMENT

Video Motion Detector

Models: **J314MD** 117VAC 60 Hz
J314MDX 220-240VAC 50 Hz (CCIR)

From 2% to almost 100% of screen may be sensitized to discern movement within or into and out of adjustable window positionable on screen. When intrusion detected, provides audio/visual notice and outgoing closures to trigger other devices. Reads video streaking, repetitive light changes, noise and power fluctuations to eliminate false alarms while maintaining sensitivity. Automatic or manual reset. Works with black and white or color systems.



J314MD Video Motion Detector

RF Modulator

JRF-10 (video only)—Converts any video signal to RF signals tunable over TV channels 2 through 6.

JRF-15 (NEW)-Audio/Video—Accepts line-level or low-level audio with black and white or color video. Set for standard TV signals for channels 3 and 4. Built-in gain control. Adjustable audio and video and RF levels.



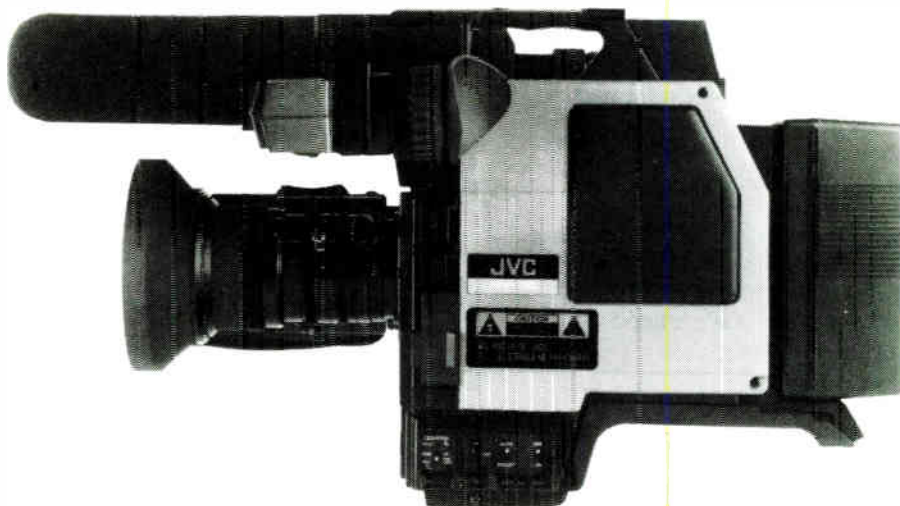
JRF15 RF Modulator

3-TUBE CAMERA BY-110U

JVC®

FEATURES

- Extremely Compact & Lightweight — 8.2 lbs. with Lens and 1" Viewfinder
- Low Power Consumption—15.0 watts with 1" Viewfinder
- F/1.4 Prism Optical System
- 3 Newly Designed 1/2" Hi-Voltage Satlcon Tubes
- Hi-Resolution of 600 Lines
- Excellent Signal-to-Noise Ratio of 54dB
- Genlock Input (through AC power connector)
- Auto-Shift Registration
- Auto White/Black Balance
- Auto Beam Control (ABC)
- Auto Black Level Circuit (ABL)
- Servo Iris Control Circuit with Auto Iris Close
- Color Bar Circuit
- +6dB/+12dB Gain Boost For Low Light
- Built-in Color Temperature Filter Wheel
- "Hot Shoe" Viewfinder, Lens and Optional Microphone
- Extended Life Memory Backup Battery



BY-110U

BY-110U COLOR VIDEO CAMERA

Extremely Compact, Extremely Light.

Computer aided design and manufacturing techniques have made possible drastic reductions in size and weight without reducing performance and features. Strength and protection are provided by an aluminum diecast body. Total weight of the camera including lens and 1" viewfinder is only 8.2 lbs. (3.7 kg).

Low Power Consumption. Power consumption is a low 15.0 watts when the 1" viewfinder is used. When a fully-charged DC-C11U battery pack is used, the camera will operate for approximately 60 minutes at normal temperatures (about 77°F). The camera may be powered from a range of 10.5 to 15 DC volts. The BY-110U has a quick warm-up time and is stabilized sufficiently for normal use about 40 seconds after switching the power on. (Perfect stabilization will require 10 minutes or more.)

Excellent Picture Quality. Three newly designed 1/2" Satlcon (SM) tubes assure accurate color reproduction and 600 lines of horizontal resolution. The BY-110U

has a superb signal-to-noise ratio of 54dB. The new 1/2" tubes (H9392) were chosen because of their excellent reproduction quality and compact size. A fast f/1.4 glass prism assures superb resolution and accurate color separation.

Wide Range Of Automatic Functions

Auto Shift Registration (auto centering). Provides automatic adjustment of vertical and horizontal alignment (shift) of blue and red channels. Adjustment is accomplished by simply flipping a switch on the front panel. The circuit is digital, and registration data is stored in the camera's memory (battery back-up provided).

Auto White Balance Circuit...white color balance can be adjusted automatically by flipping a switch, or the camera can be operated in the "pre-set" position (3200K). White balance data is stored in the camera's memory circuit.

Auto Black Balance Circuit. Flipping a switch automatically closes the iris and adjusts pedestal balance of the individual channels.

Auto Beam Control Circuit. Reduces comet tails in most cases.

Auto Black Level Circuit. The ABL circuit offers sharp black images even when shooting outdoors under bright conditions.

Auto (Servo) Iris Circuit. The iris responds quickly to objects with varied contrast and slowly for those with little contrast for natural automatic iris operation. A weighting detection circuit controls the video signal level of the upper part of the screen to optimize the over-all brightness when the sky is very bright, etc. To protect the pickup tubes, the iris closes automatically when the Operate switch is off, or when the color bar switch is on.

Extended Life Back-Up Battery. To retain the memory of the digital auto circuits, a back-up battery is employed. This allows the camera to retain its white balance, black balance, and auto-shift settings even when the power is turned off. A new long-life battery is utilized for this function and has a rated life of approximately 4 years.

Excellent Operability. Good human engineering went into the placement of switches and other camera controls. Switches are "touch coded" and some are protected from accidental mis-operation. The auto centering and auto white/black controls are located on the front panel behind a small door. A diopter is provided in the 1" electronic viewfinder for people who wear eyeglasses. An optional adjustable chest rest is available which improves stability and comfort. The chest rest, model KA-111, is similar to the one provided with the KY-210U cameras.

"Hot Shoe" Connection System. To eliminate problems with cables and connectors, the camera head and its portable accessories are designed to connect together without the use of cables. Direct connection is provided for: 10:1 zoom lens; 1" electronic viewfinder; M-K50U microphone; DC-C11U NiCad battery pack. When in operation, the only exposed cable is the VCR cable. This feature not only solves the usual problems associated with cables, it greatly enhances the appearance of the camera, giving it a very "solid" look.

Genlock Circuit. The BY-110U has built-in genlock facilities for locking up to other cameras in multi-camera operations. Instead of the usual genlock connector on the camera, to save space the genlock input and external power inputs are provided through the AA-C11U AC adaptor. Connection between the camera and AC adaptor is provided by the VCR cable (VC-511BU-2). The BY-110U will lock to any stable composite video signal or black burst (B.B.).

Built-in Color Bars. The BY-110U has a built-in full field color bar generator. Color bars are useful for checking and making adjustments to color monitors and they provide a consistent reference for checking the performance of the videocassette recorder.

Gain Boost For Low Light. The BY-110U has a +6dB and +12dB gain booster for operation in low light conditions. Also provided is a level-depend circuit which adjusts the starting point of

enhancement, according to the light level. Together, these circuits enable maximum low light performance with a minimum of noise in the picture. The minimum illumination required is 65 lux (70% video level) with +12dB of gain. Even at this light level, the picture is quiet, with well defined images and natural colors.

Wide Choice Of Lens Options. The BY-110 is available in a variety of configurations and offers a wide choice of lens options. For ENG/EFP applications, the 10:1 HZ-110U (f/1.4, 7-70mm) and 16:1 HZ-116U (f/1.4, 7-112mm) are recommended.

PRICING/ACCESSORIES		Suggested List Price
BY-110UCH	3-Tube Camera Head	\$3590.00
BY-110UL10A	3-Tube ENG Package with 10:1 Lens	4280.00
BY-110UL16A	3-Tube ENG Package with 16:1 Lens	4995.00
AA-C11U	AC Adaptor/Battery Charger	250.00
DC-C11U	2.2AH Battery Pack	130.00
HZ-FM11U	Manual Focus Control for BY-110UP	265.00
HZ-ZS11U	Servo Zoom Control for BY-110UP	285.00
HZ-110MDPU	Motorized 10:1 Zoom Lens and Remote	1430.00
HZ-M110U	Microscope Adaptor	1450.00
HZ-110U	10:1 (f/1.4, 7-70mm) Servo Zoom Lens	680.00
HZ-116U	16:1 (f/1.4, 7-112mm) Servo Zoom Lens	1480.00
HZ-CA11U	C-Mount Lens Adaptor	675.00
HZ-NK11U	Nikon Adaptor	675.00
HZ-TCL11U	1.5X Teleconversion Lens	350.00
HZ-WCL11U	Wide Angle Conversion Lens	350.00
KA-110U	Quick Release Tripod Base	100.00
KA-111U	Adjustable Chest Rest	65.00
KA-D50U	Adaptor for DC-C50U 3.5AH Battery	135.00
KA-130	Mounting Frame for BR-1600U VHS Deck	120.00
KA-M50U	Pistol Handgrip for M-K50U	160.00
M-K50U	"Hot Shoe" Microphone	235.00
RS-.10U	Remote Control Unit (RCU)	695.00
TE-1000	Telecine Attachment	480.00
VF-400	4" Studio Viewfinder for BY-110U	495.00
VC-515U	65' Camera to RCU Cable	335.00
VC-516U	65' Extension Cable for VC-515U	385.00
VC-511BU-2	14p - 10p Camera to VCR/2M AC Adaptor Cable	115.00
VC-512BU	14p-14p VCR Cable	145.00

SPECIFICATIONS:

COLOR VIDEO CAMERA BY-110UCH

Optical System:

f/1.4 three-tube RGB prism system

Focusing/Deflection System:

Electrostatic focus/electromagnetic deflection

Pickup Tubes:

1/2" Saticon* (x3)

Encoder:

NTSC type (R-Y, B-Y)

Synchronizing System:

Internal: Built-in SSG

External: Composite video or black burst

Lens Mount:

Special mount

Sensitivity:

f/2.8 at 2000 lux (186 fc)

Minimum Illumination:

f/1.4, 65 lux (6 fc)

S/N:

54dB

Horizontal Resolution:

600 lines (G ch center)

Registration:

Zone 1: Within 0.1% (80% of picture ht.)

Zone 2: Within 0.4% (picture width)

Zone 3: Within 0.8% (outside Zone 2)

Input Signals:

Return video signal: VBS, 1.0V p-p, 75 ohms

Genlock Signal: Composite video (VBS, 1.0V p-p, 75 ohms) or black burst (B.B., 0.43V p-p, 75 ohms)

Microphone: -60dBm, 600 ohms unbal.

Output Signals:

Composite Video Signal: 1.0V p-p, 75 ohms

Test Signal: R, G, B, R-G, B-G, ENC

Audio Signal: -20dB unbalanced

Audio Monitor Signal: From video recorder used

Video Recorder Control Signal: Contact or 4V supply (switchable)

Contour Correction:

Horizontal: Dual-edged

Vertical: 1H, single-edged

Optical Filters:

Closed, 3200K, 5600K, 5600K + 25% ND

Gain Boost:

0dB, +6dB, +12dB

Power Requirement:

+12V DC (10.5 to 15V), 1.05 A (camera head only)

Ambient Temperature:

-5 to +45°C (23 to 113°F)

Weight:

5.3 lbs. (2.4kg)

Dimensions:

4-1/8"W x 10-1/16"H x 10-7/8"D
(104.5 x 254.5 x 276 mm)



RS-110U Remote Control Unit For BY-110U. Despite its surprisingly low price, the RS-110U offers a full range of features and capabilities. Using only one standard rack space (1-3/4"), the RS-110U may be used to power and control many of the functions of the BY-110UP. In addition, the RS-110U provides individual red, green, and blue channel outputs from the camera.



HZ-FM11U, HZ-FM12U Manual Focus Control. Rear focus and zoom controls are essential for most studio operations. The HZ-FM11U (for HZ-110 lens) and HZ-FM12U (for HZ-116 lens) are manual focus units which attach to the lens and to the tripod.



HZ-WCL11U Wide Angle Converter For BY-110U. This adaptor screws onto the front of the BY-110U lens to decrease the focal length by 0.7 times.



HZ-NK11U Nikon Lens Adaptor For BY-110U. This adaptor was designed to enable a wide variety of photographic lenses to be used with the BY-110U. Using a standard Nikon mount, literally hundreds of special effects lenses become available. Extreme wide angle and extreme close-up lenses are the most popular of this type.



HZ-ZS11U, HZ-ZS12U Servo Focus Control. The HZ-ZS11U (for HZ-110U lens) and HZ-ZS12U (for HZ-116 lens) are electronic zoom units which plug into the lens and attach to the tripod. Use with HZ-FM11U/HZ-FM12U, VF-400 and RS-110U to make a complete studio package.



HZ-M110 Microscope Attachment. The HZ-M110 Microscope Attachment is designed exclusively to use the BY-110 in combination with a microscope made by Olympus, Nikon, etc. for applications such as analysis, research, education, process control and inspection.



HZ-CA11U C-Mount Adaptor For BY-110U. Because the BY-110U uses 1/2" pick-up tubes and a prism optical system, conventional lenses would not normally be able to be used on it. For this reason, the HZ-CA11U was designed. Actually a lens itself, this adaptor enables most any standard C-Mount lens to be used on the BY-110U.



TE-1000 Telecine Attachment. The TE-1000 Telecine Attachment can easily be attached on the front of the lens of the KY-210 or BY-110 for the transfer of film images onto videotape. The amount of light is adjusted by the automatic iris of the lens and, as it is mounted on the front of the lens, it takes up only a small space and makes it easy to use the camera for both normal shooting and telecine operations. It can be used with a wide range of projectors using 8mm, 16mm and 35mm film.



HZ-110MDPU 10X Motorized Zoom Lens & Remote Control Unit. The HZ-110MDPU 10X Motorized Zoom Lens was developed specially for the BY-110. Included with it is a Remote Control Unit; zooming, focusing and iris operation can be controlled from a distance of up to 600m (1970 ft). The HZ-110MD is ideal for surveillance, teleconferences, graphics displays, etc.



HZ-TCL11U Teleconversion Lens For BY-110U. This adaptor screws onto the front of the BY-110U lens to increase the focal length by 1.5 times.



VF-400U 4" Viewfinder. A large-screen viewfinder is desirable for studio and EFP applications. The VF-400U incorporates a high resolution CRT (more than 500 TV lines), pan-tilt mechanism, and tally lamps.

3-TUBE CAMERA KY-210U

JVC®

FEATURES

- Outstanding Picture Quality: 650 Lines Resolution, 57dB S/N
- Excellent Low Light Performance: 40 Lux (3.8 fc) at +18dB
- Compact and Lightweight Diecast Construction
- High Quality Prism Optical System
- Full RS-170A SSG with Color Framing Output
- 2H Vertical Enhancement with Level Depend Circuit
- Split-Field Color Bars (RS-189A Standard)
- Built-in Genlock Circuit
- "Hot Shoe" Adjustable Viewfinder with Diopter
- Numerous Auto Circuits and Functions
- Full Complement of Studio Options



KY-210U COLOR VIDEO CAMERA

Excellent Picture Quality. Utilizing three H4101 Saticon tubes (the same tubes used in the popular KY-1900U cameras), JVC engineers have incorporated a high quality f/1.4 prism beam splitter to achieve a high resolution of 650 TV lines (G channel, center).

Picture sharpness is further improved through the use of a 2H vertical enhancement circuit. As with any enhancement circuit, a certain amount of noise is also enhanced. To eliminate this under low light conditions, a level depend circuit is incorporated which controls the enhancement, so that the pictures produced are sharp and well defined, yet quiet even under gain boost situations. At +18dB boost, the minimum illumination required is only 40 lux (3.8 fc) using the standard lens, which makes the KY-210U one of the most sensitive three tube cameras available today.

To provide the most natural color reproduction possible, a linear matrix masking circuit is employed. Briefly, what it does is adjust the pickup characteristics of the camera to be identical to the human eye, compensating for the negative energy portion of the ideal color characteristics.

(Without this circuit the camera cannot "perceive" the color picture the way the human eye does). Camera performance in bright light is just as important as in low light, and the KY-210U contains several circuits which achieve performance not equalled by other cameras in its class.

With the newly designed processing circuitry, the slope circuit compresses 300% video level to 110% so that the gradation in highlight sections is greatly improved.

An automatic black level (ABL) circuit always offers a sharp, black image even when shooting outside under bright lighting conditions.

A NAM-type servo iris circuit including a weighted detection circuit improves pictures taken outdoors in bright sunlight by placing greater emphasis on the illumination of the subject in the lower part of the frame.

Compact, Light & Rugged Construction.

The KY-210U incorporates a diecast aluminum body. Extensive use is made of miniaturized components, and the entire camera head weighs only 7.8 lbs. (3.5kg). Controls are logically placed, and protected from damage and mis-operation.

RS-170A Color Framing. The sync signal generator (SSG) in the KY-210U conforms to RS-170A specification. A color framing pulse, required in some editing systems, is output through the VCR connector. This assures the widest range of compatibility today, and with post-production systems in the future.

Genlock Circuit. To genlock the KY-210U, simply plug-in a stable composite video signal to the genlock input on the camera. The camera will then be locked to the external source. To control the phase (color shift) of the camera, an adjustment is provided inside the camera to match it with the external source.

Split Field Color Bars. The KY-210U has a built-in split field color bar generator, meeting the RS-189A standard. Color bars are useful for checking and making adjustments to color monitors and provide a consistent reference for checking the performance of the video-cassette recorder. The advantages of split field bars (as opposed to full field) are as follows: Both 75% white and 100% white are displayed, making it easier to check these levels; The I & Q signals of the encoder are provided and easily displayed on the vectorscope; Virtually all broadcast and high-end production systems use the split field bars.

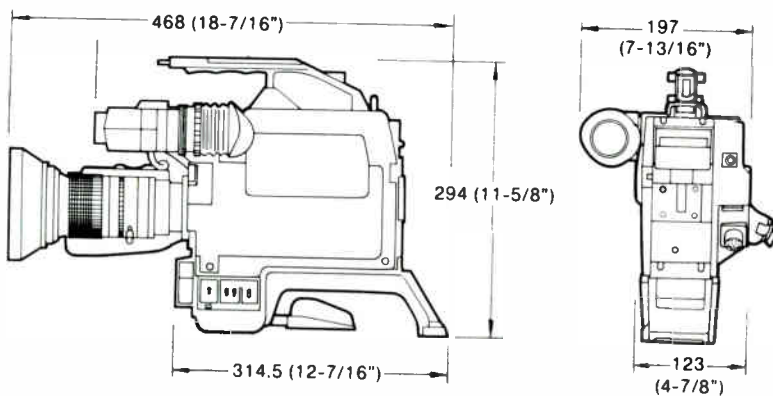
Newly Designed 1.5" Electronic Viewfinder. The new VF-215U is unique in that it combines the adjustability of the cable-connect type of viewfinder, with the advantages of the direct connect (Hot Shoe) system. The VF-215U connects directly to the KY-210U camera head without cables, thus eliminating cable related problems (such as RF interference, bad connections, etc.) It is also unique in that it is adjustable both horizontally and vertically and has both a flip-up eyepiece and a diopter. The diopter allows the eyepiece to be adjusted for people who wear eyeglasses.

Indications provided by the viewfinder are: Front tally lamp; Video recorder/camera battery warning; High sensitivity indication; Tape run/tape end warning; Peaking (with on/off switch).

Wide Range Of Automatic Functions Auto-Shift Registration (Auto Centering).

Provides automatic adjustment of vertical and horizontal alignment (shift) of blue and red channels. Adjustment is accomplished by simply flipping a switch on the front panel. The circuit is digital, and registration data is stored in the camera's memory (battery back-up provided).

Dimensions (with VF-215U and HZ-510U)



Unit: mm (inch)

KY-210UPL System Components	
Camera Head	
1.5" Viewfinder	
Q21 Battery Bracket	
Carrying Case	
Microphone Holder	
Suggested List Price	\$6150.00

Auto White Balance Circuit. White color balance can be adjusted automatically by flipping a switch, or the camera can be operated in the "preset" position (3200K). White balance data is stored in the camera's memory circuit.

Auto black balance circuit. Flipping a switch automatically closes the iris and adjusts pedestal balance of the individual channels.

Auto Beam Control Circuit... reduces or eliminates comet tails in most cases.

Auto black level circuit. The ABL circuit offers sharp black images even when shooting outdoors under bright conditions.

Auto (Servo) Iris Circuit. The iris responds quickly to objects with varied contrast and slowly for those with little contrast for natural automatic iris operation. The weighting detection circuit compresses the video signal level of the upper screen for smooth iris operation, with the NAM system (which controls the iris by separate R, G, and B signals) guaranteeing the correct response. The iris level can be switched to over (0.5/f-stop open) the normal setting.

To protect the pickup tubes, the iris closes automatically when the Operate switch is off, or when the color bar switch is on.

SPECIFICATIONS:

COLOR VIDEO CAMERA KY-210U

Optical System:

f/1.4 three-tube RGB prism system

Focusing/Deflection System:

Electrostatic focus/electromagnetic deflection

Pickup Tubes:

2/3" Saticon® (x3) (H4101)

Encoder:

NTSC (IQ encoder)

Synchronizing System:

Internal: Built-in SSG conforming to RS-170A with color framing pulse output

External: Composite video or black burst

Lens Mount:

Bayonet

Sensitivity:

f/4.0 at 2000 lux (186 fc)

Minimum Illumination:

f/1.6, 40 lux (3.8 fc)

(+18dB switch On)

S/N:

57dB (Contour correction Off, Gamma 1, Bandwidth 4.2MHz, matrix off, I/Q off)

Horizontal Resolution:

650 lines (G ch center)

Registration:

Zone 1: Within 0.1% (circle 80% of picture ht.)

Zone 2: Within 0.2% (circle of picture width)

Zone 3: Within 0.4% (area outside Zone 2)

Input Signals:

Return video signal: VBS, 1.0V p-p, 75 ohms

Genlock Signal: Composite video (VBS, 1.0V p-p, 75 ohms) or black burst (B.B., 0.43V p-p, 75 ohms)

Microphone: -52dBm, 600 ohms unbal.

Output Signals:

Composite Video Signal: 1.0V p-p, 75 ohms (x2 from BNC and 14p connector)

Test Signal: R, G, B, —G, ENC

Audio Signal: -52dBm, 600 ohms unbalanced -20dBs, unbalanced (switchable)

Audio Monitor Signal: 8 ohms, -20dB

VCR control signal: Contact or 4V supply (switchable)

Contour Correction:

Horizontal: Dual-edged

Vertical: 2H (with comb filter)

Color Bar Generator:

Spirit bar

Optical Filters:

Closed, 3200K, 5600K, 5600K + 25% ND

Gain Boost:

0dB, +9dB, +18dB

Power Requirement:

+12V DC (10.5 to 17V), 1.45 A

Ambient Temperature:

-20 to +45°C (-4 to 113°F)

Weight:

7.8 lbs. (3.5kg)

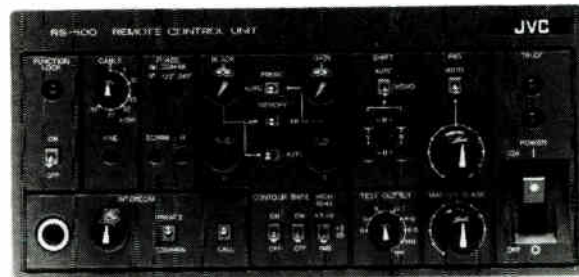
ACCESSORIES

KY-210U

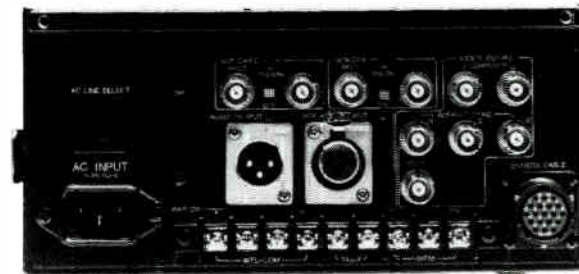
JVC®

FEATURES

- Compact & Lightweight
- Remote Control Up To 320m (1,050 ft.)
- Built-In Genlock Facility
- Serial Data Command System
- Various Output Systems
- Comprehensive Functions for Versatility
- Camera Adaptor
- Balanced Audio Line (to & from camera)
- Intercom Function



RS-500U
FRONT PANEL



REAR PANEL

RS-500U

REMOTE CONTROL UNIT

RS-500U Remote Control Unit. So the KY-210U color video camera can be used for a wider range of applications both in the studio and on location, we are pleased to offer a remote control unit and a 5.5" viewfinder together with camera cables and lens control units.

Compact & Lightweight. The RS-500U is easy to carry outdoors and takes up so little space that two can be mounted in one EIA rack (using an optional rack mount adaptor UC-1003U), making it ideal for use in small video vans.

Remote Control Up To 320m (1,050 ft.). The cable connecting the camera and the remote control unit can be extended up to 320m (1,050 ft.). Even at such a long distance, the RS-500U is still able to supply power to the camera with no other power supply being necessary.

Built-In Genlock Facility. External genlocking is possible with either composite video or black burst signal. SC phase and H phase are adjustable from the front panel of the unit.

Serial Data Command System. With the aid of a microprocessor and 14-conductor cable, a variety of remote control operations can be performed.

Various Output Systems. The output terminals accept the connection of composite video signals, RGB signals, test signals, waveform monitoring signals and audio signals.

Comprehensive Functions For Versatility. Power On/Off; Manual iris control; Iris mode selection (Auto/Manual); Master black level control; R/B black level controls; Auto black balance; Auto white balance; Preset white balance; R/B gain controls; Auto-shift registration; Manual-shift registration controls; Sensitivity selection; Color bar On/Off; Contour correction On/Off; SC phase control; H phase control; Cable length compensation; Remote control function lock switch; Intercom volume control; Call switch

Camera Adaptor. Included with the RS-500U is a camera adaptor which mounts on the rear of the camera, and provides connections for camera cable and intercom headset.

SPECIFICATIONS

Remote Control Unit RS-500U

Output Signals:

Composite Video Signals: 1.0 Vp-p, 75 ohms, x 2

RGB Signals: 0.7 Vp-p, 75 ohms, x 1 each

Test Video Signals: ENC, R, G, B, B-G, R-G, SEQ, AUX

Audio Signal: -20dBm, 600 ohm balanced

Intercom Signal: 2-wire system or 4-wire system, line -10dBm, 600 ohm balanced

Input Signals:

Genlock Signal: VBS 1.0 Vp-p, 75 ohm (loop-thru output) or BB 0.43 Vp-p, 75 ohms (loop-through output)

AUX Signal: VBS or VS, 1.0 Vp-p, 75 ohms, (loop-thru output)

AUX Audio Signal: -10dB, 10k ohms unbalanced

Intercom Signal: 2-wire system or 4-wire system, line -20dBm, 600 ohm balanced

Tally Signal: Make-contact or power supply (5 to 24 V DC, or 6 V AC)

Power Requirement:

120 V AC, 50/60 Hz

Power Consumption:

76W (incl. camera w/5.5" VF) 24W RS-500U only

Weight (Main Unit)

4.8 kg (10.6 lbs.)

Weight (Camera Adaptor):

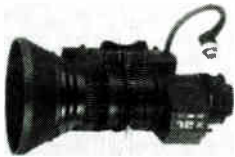
1.1 kg (2.5 lbs.)

Ambient Temperature:

-10 to +45C (+14 to 113F)



VF-550U 5.5" Viewfinder. A large-screen viewfinder for studio and EFP applications, incorporating a high-resolution CRT. Pan and tilt mechanisms are provided so that the position can be set according to the scene being shot and for the ease of the camera operator.



HZ-E512U 12:1 Servo Zoom Lens W/Extender. 9-108mm Fujinon lens. Motorized zoom and iris. Bayonet mount (B type). With 2x extender built-in.



RS-L501 Local Remote Control. The RS-L501 Local Remote Control is used for the operation of the RS-500 Remote Control Unit so that the required images can be created while watching the picture. Up to four RS-L501 units can be mounted in the optional UC-P1004 Unit Case which fits in a standard EIA rack.

- Single-Knob Control of Iris, Master Black Level and Preview Switching (make-contact supply)
- Control Select Switch
- New "Iris Preset Mode" which Enables Fine Adjustment of Preset Iris Value By Up To ± 2 f-stops
- On-Air/Tally Indicator



HZ-516 16X Power Zoom Lens. The HZ-516 is a newly developed power zoom lens for use with the KY series cameras. A high zoom range of 16:1 (9.5 to 152mm) and max. aperture of f/1.8 will capture any object, precisely and sharply.



HZ-CA23U C-Mount Adaptor For KY Series Cameras. This adaptor fits the bayonet mount of the 3-tube prism cameras (KY series) and permits use of standard C-Mount lenses.



HZ-NK23U Nikon Lens Adaptor For KY Series Cameras. This adaptor fits the bayonet mount of the 3-tube prism cameras (KY series) and permits use of 35mm Nikon camera lenses.



MK-50U "Hot Shoe" Microphone Mounts to side of camera without cable. Power is provided by the camera. Uni-directional. Windscreen. For hand-held use, use KA-M50. Can also be used with BY-110U.



KA-3 Component Adaptor. The KA-3 Component Adaptor is to be used when component signals (Y/R-Y/B-Y or Y/I/Q signals) are required to be output from a KY series color video camera.

- Easy Attachment Onto the Rear of Camera Head
- DC-C50 Mount Shoe and 4-Pin (Canon) Power Supply Connector Provided
- Output Selector Switch for Y/R-Y/B-Y Signals or Y/I/Q Signals

PRICING/ACCESSORIES		Suggested List Price
AA-C50U	AC Power Adaptor—can be used as an AC power adaptor for the camera as well as a battery charger for the DC-C50U	\$ 350.00
B-20	Rechargeable NiCad Battery (4AH)	435.00
C-20	Charger for B-20 Battery	71.00
CB-2000S	Soft Carrying Case for KY Series Cameras	160.00
DC-C50U	Battery Pack — can be attached to the rear of the camera	285.00
HZ-510U	10:1 Servo Zoom Lens (10-100mm)	960.00
HZ-E512U	12x Zoom Lens (w/2x Extender)	2260.00
HZ-516U	16:1 Servo Zoom Lens for KY Cameras	1480.00
HZ-FM12U	Focus Manual Unit for 12:1 Lenses	370.00
HZ-ZS12U	Zoom Servo Unit for 12:1 Lenses	415.00
KA-3	Component VCR Adaptor for KY Cameras	\$950.00
M-K50U	Microphone — this Super-Directional Microphone snaps directly onto the Camera; Power is supplied from the Camera Head	235.00
RS-500U	Remote Control Unit	2000.00
UC-1003U	Rackmount Adaptor — a Blank Panel is provided as standard	130.00
VC-544U	Camera Cable (20m/65')	465.00
VC-545U	Camera Extension Cable (50m/160')	925.00
VC-586U	16' Extension Cable for AA-C19U, AA-C50U	141.50
VF-215U	1.5" Viewfinder	450.00
VF-550U	5.5" Viewfinder	665.00

COLOR CAMERA GX-S700U

JVC®

FEATURES

- **Excellent Picture Quality:** 360 Line Resolution, 48dB S/N
- **Ultra-Low-Light Performance:** 30 Lux (2.8 fc) (+12dB)
- **C-Mount 10X Variable-Speed Servo Zoom Lens**
- **2 Line Enhancement Circuit**
- **Built-In Genlock Circuit**
- **Built-In Color Bar Generator**
- **Built-In Character Generator with Time/Date Function**
- **Auto Fade In/Out Circuit**
- **Computerized On-Screen Read-Out Warning System in VF**
- **Stereo Microphone Provided**
- **Snap-On Battery Power System**
- **Simple Operation with Variety of Automatic Functions**



GX-S700U COLOR VIDEO CAMERA

Excellent Picture Quality. A newly-developed 2/3" high-band Saticon tube is employed. Also, a new multiplex crystal filter is installed between the lens and the pickup tube, which minimizes color beat interference, giving clear color pictures. Horizontal resolution of 360 lines is achieved (excellent for a one-tube camera) with a signal to noise ratio of 48dB. Picture sharpness is further improved by the use of a 2H vertical enhancer circuit, normally found on more expensive three-tube cameras. A switch for the enhancement circuit (contour on-off) is conveniently located for the camera operator. For operation in low lighting conditions, a +6dB/+12dB gain booster is provided. Even under extreme low light, the GX-S700U produces a clear picture with good color reproduction. Lag and comet-tailing are kept to a minimum through the use of an ABC (Automatic beam control) circuit and LED bias lighting.

10:1 Zoom Lens. A 10:1 Zoom Lens is included on the camera. The motorized zoom speed is variable, dependent on the amount of pressure applied to the zoom rocker arm. The f/1.8 lens has a zoom range of 10.5mm to 105mm, making it ideal for telephoto operation. In addition, a macro feature is included,

which permits extreme close-ups. Also built into the lens is an automatic iris function which can be switched for manual operation. An iris lock (AL) is included, which locks the iris at the current setting. This is useful when momentary lighting fluctuations or strong back lighting conditions occur. The lens has a built-in color temperature conversion filter to change from indoor (3200K) to outdoor (5100K) temperature settings. The GX-S700U is designed to accept a wide variety of C-mount lenses without modification.

Genlock. Genlock is very simply a method of synchronizing or locking-up the camera's internal circuitry to an external video signal. Once a camera is "genlocked", its output can be switched or mixed with the other signal (or any other signal that is locked to the same source) without any distortion or break-up in the picture. This is of course provided that the synchronizing signal is from a stable source — like another camera, not a VCR. Without genlock, switching the signal to another signal would create terrible distortion at the transition, and mixing the signals (dissolves, special effects) would be impossible. To genlock the GX-S700U,

simply plug-in a stable composite video signal to the genlock input on the camera. The camera will then be locked to the external source. To control the phase (color shift) of the camera, an adjustment is provided on the camera to match it with the external source.

Built-In Color Bars. The GX-S700U has a built-in full field color bar generator. Color bars are useful for checking and making adjustments to color monitors and they provide a consistent reference for checking the performance of the videocassette recorder. When the color bars are activated, the lens iris is automatically closed, if it is in the Auto mode.

1.5" Electronic Viewfinder w/Computerized Warning System. A black and white 1.5" (diagonal) electronic viewfinder is provided with the GX-S700U. It utilizes an advanced warning/status system which displays, in alphanumeric characters, various indications on the screen. These include iris, pause, tape run, battery alarm, white balance, filter setting, gain switch, etc. This system makes the camera "user friendly" and nearly impossible to make

an error. This feature is especially important for beginners, and those unknowledgeable about video camera operations.

Built-In Character Generator w/Lap Time/Date. A 12-key character generator with 8-hour memory backup time enables titles, dates, and lap time to be recorded over the scene being shot. This feature is especially beneficial when the camera is used for documentation.

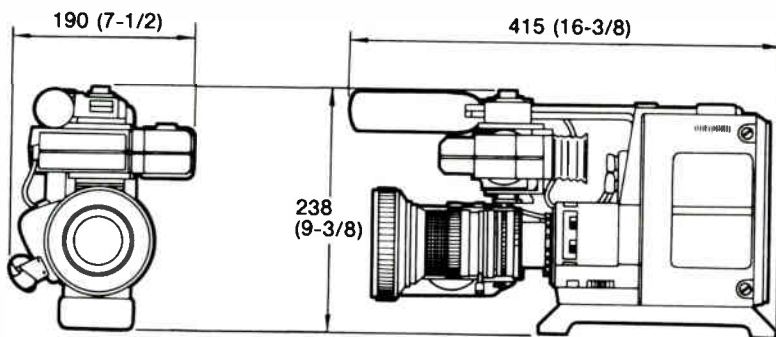
Fade-In, Fade-Out. This feature, normally found on consumer type cameras, was included because it gives the user better scene transitions, when no post-production equipment is used. Fades can be to and from black, white, or color (R, G, or B). When used in conjunction with the built-in character generator, effective titles can be produced.

Modular Power System. One very distinctive — and very important — feature of the GX-S700U is its modular power system. As it is packaged, the camera can be powered from the VCR's battery using the standard VCR cable (provided). Power consumption is 9.2 watts (peak at 12V DC). (Under normal operation, power consumption will be around 8.0 watts.) However, it is the practice of most professionals to power the camera from its own, separate battery. This provides longer operation time, and extends the life of the VCR battery. The GX-S700U can be used with either the NB-P3U (0.7 Ah) or the NB-P4U (1.4 Ah) NiCad battery packs which snap directly onto the rear of the camera. This is the same modular power system used with the HR-C3U compact

VHS recorder. The optional charger for the system, the BB-P3U, can be powered from any AC power source in the world, and is designed to quick-charge either battery. The NB-P3U and NB-P4U batteries are optional and are not included in the basic camera package. For AC operation, the optional AC-P3U snap-on AC adaptor can be used, or if a separate adaptor is desired, the AC-C412U can be connected via the VCR cable.

Stereo Microphone Included. Included with the GX-S700U is a plug-in stereo microphone. The single microphone has two pickup elements with slightly different directional characteristics (the same as you have two ears). The two audio signals are fed through the VCR cable to the individual left and right channels of a stereo portable VCR (like the JVC BR-6200U). If the VCR only has one audio channel, then the two channels may be mixed by flipping the "stereo-mono" switch to the Mono position.

PRICING/ACCESSORIES		Suggested List Price
GX-S700U	Color Camera	\$1900.00
AC-C412U	Camera AC Adaptor	65.00
AC-P3U	Snap-On AC Adaptor	50.00
AP-P3U	Snap-On Car Battery Cord	18.00
BB-P3U	Battery Charger for NB-P3U/NB-P4U	93.00
BKT-3U	Battery Kit (BB-P3U, NB-P4U)	123.00
CB-100S	Soft Carrying Case	125.00
NB-P3U	.7 Ah NiCad Battery Pack ...	30.00
NB-P4U	1.2 Ah NiCad Battery Pack	46.00
VC-235-10U	33' Camera Ext. Cable (10p - 10p)	45.00



Unit: mm (in.)

SPECIFICATIONS

Pickup Tube:

2/3" Static-magnetic Saticon, high resolution type

Color System:

Frequency separation color system 5MHz chrominance carrier frequency

Scanning System:

30 frames, 525 lines, 2:1 interlaced

Video Output:

1Vp-p, 75 ohms, NTSC

Horizontal Resolution:

Better than 360 TV lines

Video Signal to Noise Ratio:

Better than 48dB (contour off)

Minimum Illumination:

30 lux with +12dB gain

Audio Output:

CH-1 and CH-2, -20dB, 1K ohm

External Microphone Input:

CH-1 and CH-2, -72dB/low impedance, 3.5mm stereo jack

Headphone Output:

-6dB/low impedance, 3.5mm stereo jack

Mike Mixing:

CH-1 and CH-2 mixed by stereo mono sw

Lens:

Variable-speed power zoom lens, 10:1 (10.5 — 105mm), f/1.8, with macro and auto-shutter

Iris: Auto iris/auto lock/manual control
Color Temperature Filter: Indoor (3200K)/outdoor (5100K) switched on lens

White Balance:

Preset and automatic

Viewfinder:

1.5" Electronic, detachable

Indicator & Alarm:

On-screen read-out indications controlled by character generator and microcomputer (Iris, pause, tape run, battery alarm, white balance, filter, gain, etc.)

Auto Fader:

Video/audio or video only to/from white, black, red, green or blue or audio only

Genlock Input:

BNC; 1.0V p-p composite (NTSC)

Color Bar Generator:

Built-in; full field

Character Generator:

12-key operation character generator for superimposition of titles, dates and lap time; memory back-up time: 8 hours

Power Requirement:

+12V DC from VCR or battery pack

Power Consumption:

9.2 watts

Weight:

2.95kg with lens, VF, mic, shoulder pad

Dimensions:

415(D) x 190(W) x 238mm(H)
w/lens hood, VF & shoulder pad

FEATURES

- Extremely Lightweight, Only 4.3 Lbs.
- Automatic Iris Control
- Compact Electronic Viewfinder
- High-Sensitivity Low-Lag Pickup System
- 6:1 Power Zoom Lens with Macro Setting
- Direct TV Connection
- VHS Compatibility
- Shuttle Search
- Independent Camera and Recorder Functions
- 3-Way Power Supply Flexibility
- Compact Videocassettes



BR-C100U

BR-C100U* VIDEOMOVIE

VideoMovie is a single lightweight and compact unit that combines a full-feature camera with a VHS video recorder, for playback as well as recording.

Comprehensive Color Temperature Adjustment. VideoMovie employs a combination of a filter and electronic circuitry to accommodate lighting of different color temperatures.

Automatic Iris Control. When set to the STD position, VideoMovie's iris control system automatically adjusts the lens opening for optimum exposure. The iris setting can be manually adjusted.

Compact Electronic Viewfinder. VideoMovie's supremely compact EVF incorporates a comprehensive warning system which includes an exposure meter, low battery warning, tape-end alarm and five other indicators. The eyepiece can be rotated 180° to accommodate different shooting angles. The viewfinder permits instant playback of newly-recorded tapes for on-the-spot checks.

Audio. A high-sensitivity unidirectional condenser microphone is provided for exclusive use with VideoMovie along with an earphone jack for audio monitoring.

High-Sensitivity Low-Lag Pickup System.

VideoMovie can be used effectively under a wide variety of shooting conditions. In lighting as low as 15 lux (1.4 fc) — about what you'd find in a quiet continental restaurant — the sensitive Saticon pickup tube and supporting technology, including a bias light, Automatic Beam Control, and low-noise FETs, record normal images with clear, natural color.

6:1 Power Zoom Lens with Macro Setting.

A 6-to-1 wide-angle/telephoto range is provided, along with a macro setting for screen-filling close-ups of objects as small as a postage stamp. The zoom buttons are strategically placed for light, natural fingertip control.

Direct TV Connection. VideoMovie includes circuitry for playback of the cassettes it records; no additional recorder, player or adaptor is required.

VHS Compatibility. Because VideoMovie uses the standard VHS tape pattern and signal processing system, its recordings are compatible with all VHS equipment. Compact videocassettes can be played on full-size recorders using a special cartridge which holds the compact cassette in a standard-size cassette shell.

Shuttle Search. For quick accurate access to any part of a tape, the picture can be viewed at three times normal speed in forward or reverse.

Independent Camera and Recorder Functions.

For direct live recording onto full-size cassettes, VideoMovie can be used just like an ordinary video camera with any full-size video recorder. In addition, its playback facility allows VideoMovie to be used as a master player for editing or tape-to-tape transfer.

3-Way Power Supply Flexibility. Compact rechargeable Ni-Cad battery packs are VideoMovie's standard power source. To take advantage of other power sources, an optional AC power adaptor (AA-P1V) and a car battery cord (AP-P1V) are available.

Compact Videocassettes. VideoMovie uses VHS-C compact cassettes which are one-third the size of standard VHS cassettes. Each cassette holds enough half-inch video tape for 20 minutes of recording.

PRICING/ACCESSORIES		Suggested List Price
BR-C100U	VHS Color Camera/Recorder	\$1595.00
SF-P1U	Convenient Shoulder Frame ...	35.00
VC-P1U	A/V Extension Cable	13.00
RM-P1U	Remote Control Unit	6.00
CB-P1U	Carrying Case	130.00
C-P3U	VHS Cassette Adaptor	55.00
CG-P50U	Character Generator	100.00
TM-P3U	Compact 3" Video Monitor ...	355.00
MZ-230	Super-directional Microphone	62.00

TM-9060/TM-9010 CCTV System Monitors

TK-10/TK-N10 CCTV Camera Heads

TM-920/TM-122 CCTV Video Monitors

JVC has developed a new series of CCTV systems using more compact camera heads for easier installation and operation.

FEATURES

- Connection between the system monitors and each camera can be done with a single coaxial cable
- The 9-inch system monitor incorporates CCUs so that the construction of a monitoring system is easy: The TM-9010 has one CCU while the TM-9060 has six CCUs and can perform sequential switching
- Both of these system monitors, the TM-9010 and TM-9060, have built-in CCUs and are provided with a power-save standby mode, with which video output is interlocked with the built-in video sensor
- The TM-9060 is provided with a video recording connector, a video playback connector, an external alarm input connector and a camera No. 1 output connector
- The camera heads are both compact, with the TK-10 using a vidicon tube and the TK-N10 a Newvicon tube. A monitor output connector is provided on the camera heads so the angle of view can be easily set when installing the cameras
- The TM-920 9-inch high-resolution video monitor has been newly designed and can be mounted in a standard EIA 19-inch rack. The TM-122 12-inch monitor is also available



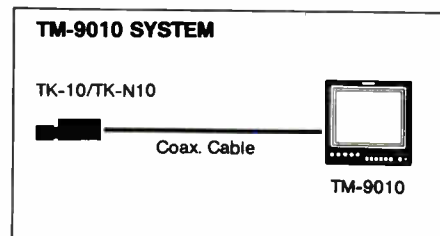
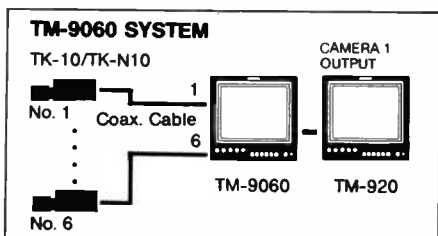
Preliminary Specifications

SPEC.	MODEL	TK-10	TK-N10
Scanning system		2:1 interlaced	
Scanning frequency		Horizontal: 15.625 kHz Vertical: 50 Hz	
Synchronization system		External (Special Composite Sync. Signal from CCU)	
Video output		for CCU x 1 Video 0.7 Vp-p 75 Ω (BNC) for Monitor x 1 VS 1.0 Vp-p High Imp. (PIN)	
Horizontal resolution		more than 550 lines (at center)	
Scene illumination		min. 3 lux (f/1.4) normal 30 lux (f/1.4)	min. 0.3 lux (f/1.4) normal 3 lux (f/1.4)
Pickup tube		2/3" Separate mesh type vidicon (20PE14)	2/3" Separate mesh type newvicon (S4092)
Lens mount		C-mount (for TV camera)	
Power supply		from video monitor only (BNC) DC 12 V to DC 30 V, coaxial cable	
Power consumption		max. 9 VA (DC 30 V, 270 mA)	
Dimensions (W x H x D)		70 x 70 x 150 mm (2-3/4" x 2-3/4" x 6") without lens	
Weight		approx. 0.6 kg (1.33 lbs) without lens	

SPEC.	MODEL	TM-9010
Picture tube		9"
Horizontal resolution		more than 900 lines (at center)
Scanning frequency		Horizontal: 15.625 kHz Vertical: 50 Hz
Camera control unit		Yes x1
Input		Camera x1, TK-10/N10 only (BNC)
Output		Video x1, VS 1.0 Vp-p 75 Ω (BNC) Alarm x1, contact Low Level (PIN)
Power supply		AC 220/240 V
Power consumption		25 W (including camera head x1)
Dimensions (W x H x D)		220 x 250 x 290 mm (8-3/4" x 9-7/8" x 11-1/2")
Weight		approx. 7 kg (15.5 lbs)

SPEC.	MODEL	TM-9060
Picture tube		9"
Horizontal resolution		more than 900 lines (at center)
Scanning frequency		Horizontal: 15.625 kHz Vertical: 50 Hz
Sequential switcher		Yes x6, Time: Internal 0.5 sec to 30 sec External 0.3 sec to ∞
Camera control unit		Yes x6
Input		Camera x6, TK-10/N10 only (BNC) VTR FB x6 Alarm x6 Alarm auto x1 Timer x1
Output		Camera x1, Alarm x1, Timer x1 Select x6, Video x1
Power supply		AC 220/240 V
Power consumption		90 W (including camera head x6)
Dimensions (W x H x D)		220 x 270 x 290 mm (8-3/4" x 10-3/4" x 11-1/2")
Weight		approx. 9 kg (19.9 lbs)

SPEC.	MODEL	TM-920	TM-122
Picture tube		9", 90° deflection	12" 90° deflection
Horizontal resolution		more than 900 lines (at center)	
Scanning frequency		Horizontal: 15.625 kHz Vertical: 50 Hz	
Input		Video x1, VS 1.0 Vp-p 75 Ω (BNC)	
Output (Bridge out)		Video x1, VS 1.0 Vp-p 75 Ω (BNC)	
Power supply		AC 220/240 V	
Power consumption		22 W	27 W
Dimensions (W x H x D)		220 x 250 x 300 mm (8-3/4" x 9-7/8" x 11-7/8")	300 x 310 x 330 mm (11-7/8" x 12 1/4" x 13")
Weight		approx. 7 kg (15.5 lbs)	approx. 12 kg (26.5 lbs)



1270 Jarvis Ave.
Elk Grove Village, IL 60007
(312) 437-5900 (800) 323-8551



KW5 FLEXIPAK™ WITH VIS-I-VOLT™ VOLTAGE INDICATOR
The Most Advanced Belt Packs Available Today . . .

KW5 Flexipak with Vis-i-Volt™

This was (and still is) the first flexible, yet lightweight pack that is worn around your waist. The case is made of Cordura®, which is virtually indestructible, and features cylindrically wound metal cells, the exclusive Vis-i-Volt feature, and the KAPCO in-line fused receptacle.

- The battery cells are individually wound in their own heavy-duty Metal cylinders
- The battery cell construction is so superior, they can't leak in any position
- Solid cross-linked polyfoam wraps around cells for maximum protection
- The rugged Metal cell cases maximize resistance to shock and vibration
- Up to 2½ years shelf life without needing a charge
- Can be recharged up to 1400 times
- Provides excellent performance under severe usage and conditions
- Cylindrically wound cells are the best you can buy
- Exclusive Vis-i-Volt and in-line fused receptacle
- Long service life means only pennies per use

KAPCO Power Packs Will Operate:

- Portable TV
- Video Recorders
- Video Cameras
- Radios and Tape Decks
- Indoor and Outdoor Power Tools
- Test Equipment
- Depth and Fish Finders
- High Intensity Lighting
- Photographic Lighting
- CB and other Communications Equipment

KW5 FLEXIPAK™ WITH VIS-I-VOLT™ VOLTAGE INDICATOR \$149.95
KW675 FLEXIPAK™ WITH LEAD ACID BATTERY AND REGUCHARGER™ \$129.95

Unit	Type Of Construction	Average Camera Recorder Operating Time*	Typical Usage
FLEXIPAK (KW5)	Flexible fabric belt pack	4 to 5 hours	Medium to heavy

R10 Vis-i-Volt™

Provides visual indication of the charge condition of your battery pack. Can be used while charging and using your pack. For 12 volt "lead-aid" packs only.

R10 Vis-i-Volt™ **\$19.95**

KF1 Fast Charger

Will fully charge any KAPCO 5 to 8 amp hour battery pack in approximately 4 hours. Provides an approximate 50% charge after only 1 hour of charging. UL and CSA listed.

KF1 Fast Charger **\$19.95**

KR201 Regucharger™ **\$24.95**

Connectors

C50 Double Receptacle Cord \$ 5.95
C10 "Y" adaptor 9.95

Accessories

A20 Accessory pouch 16.95
P10 Video cart 129.95
C23 8' plug cord 6.95
C24 12' extension cord 9.95

KAPCO MFG CO., INC.

1270 Jarvis Avenue
 Elk Grove Village, IL 60007
 (312) 437-5900 (800) 323-8551

BATTERY PACS



KH1 Hande-Pak™ 1 Amp

The Hande-Pak is ideal for powering those smaller electronic devices; radios, CB sets, test equipment, small portable TVs etc. Durable, vinyl case has a stitched loop for attaching to your own belt, and has a built-in receptacle. Complete with charger (and recharges in only 2 hours). Combine this with the R37 Voltage Converter, and you'll be able to power most of those smaller devices. At a little over 1 pound and 4"H x 4-1/2"L x 2"W, this is one small, but versatile, battery pack.

KH1 \$49.95
KW1P Walk-Pak™, 3 Amp, 6 Volt 39.95

K08 Powerpouch™ 8 Amps

Durable, lightweight, attractive vinyl case with attached shoulder strap. Comes complete with charger and in-line fused receptacle. Charges in 12-16 hours. (Approx. 7 lbs.-8-1/2"H x 5"L x 2"W)

K08 \$119.95

KL08 Powerpouch™ with Vis-i-Volt™

Durable, lightweight, attractive vinyl case with attached shoulder strap. Comes complete with Vis-i-Volt feature, charger and in-line fused receptacle. Charges in 12-16 hours. (Approx. 7 lbs. - 8-1/2"H x 5"L x 2"W)

KL08 \$139.95

K12 Shoulder Pack 12 Amps

This pack has a padded cordura case with shoulder strap. The charger stores inside. Comes complete with charger and in-line fused receptacle. Charges in 14-18 hours. (Approx. 12 lbs. - 9-1/2"H x 8-1/2"L x 3-1/2"W)

K12 \$169.95

KL12 Shoulder Pack with Vis-i-Volt™

This pack has a padded cordura case with shoulder strap. The charger stores inside. Comes complete with Vis-i-Volt feature, charger and in-line fused receptacle. Charges in 14-18 hours. (Approx. 12 lbs. - 9-1/2"H x 8-1/2"L x 3-1/2"W)

KL12 \$189.95

K15 Powerhouse™ 15 Amps

Plenty of extended running time for your camera, recorder, lights and accessories. The leatherette case has carrying handle and strap.

Comes complete with charger and in-line fused receptacle. This is truly economical, heavy-duty power. Charges in 16-20 hours. (Approx. 14 lbs. - 8"H x 11"L x 6-1/2"W)

K15 \$159.95

KN2001 Handle-Pak™ Ni-Cad With Regucharger™

This KN2001 battery packs 4.8 amps at 12 volts. It's the smallest and lightest weight ni-cad (only 3-1/4 lbs., 2-3/4"W x 6-3/4"L x 2-1/2"D). It's cased in metallic, padded Cordura®. A detachable shoulder strap and stitched belt loop make it easy to transport. Comes with in-line fused receptacle and regucharger.

KN2001 \$119.95

Battery Comparison

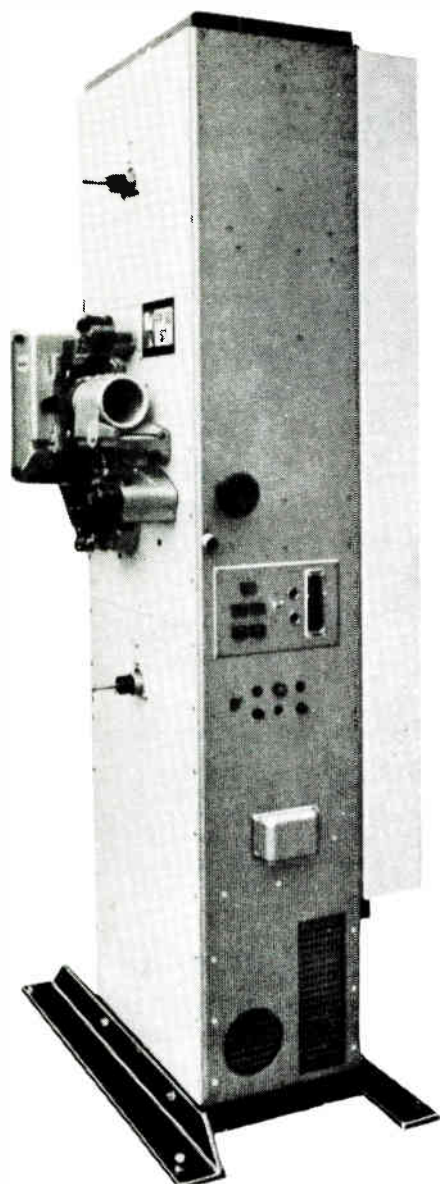
1. Add up the total number of watts used by your equipment. (Camera, monitor, recorder, radio, etc.)
2. Read across to find the "average" continuous operating time for each Kapco battery pack.

WATTS	KH1	KW5	K08 KLO8	K12 KL12	K15
6 - 9	2:00	8:30	12:45	16:00	25:45
10 - 13	1:15	5:30	8:30	11:00	17:00
14 - 17	1:00	4:00	6:15	8:30	12:30
18 - 21	0:45	3:15	4:45	6:45	9:45
22 - 25	0:30	2:45	4:00	5:45	8:15
26 - 29		2:15	3:30	5:00	7:00
30 - 33		2:00	3:00	4:15	6:00
L20 Quartz Light (100 Watts)		0:30	1:00	1:45	1:00

NOTE: The above chart is based on a fully charged battery pack. Environmental conditions must be considered along with the length of connecting cord(s) plus deviations in equipment requirements.

Prices and Specifications Subject to Change Without Notice.

VC-151



FP-30 TV

FP-30 TV PROJECTOR

The FP-30 TV Projector utilizes the basic film transport and system as found in the professional 35mm systems widely used for exhibition, and studio applications. The high speed intermittent movement with 5 blade shutter renders the system compatible with 25 or 30 Frame operation. The system meets all SMPTE specifications.

Precision Projection

The FP-30 TV Projector utilizes a single piece, curved gate of self-lubricating delrin material. The gate, with delrin runner strips and ceramic guides, provides a film path exactly controlled with minimal pressure, providing high picture stability with minimal stress on the film.

Optimal Sound Quality

The optical reproducer follows all of the state-of-the-art designs, resulting in low wow and flutter. The rotating sound drum and the flywheel accelerator provides fast sound stabilization. The high quality slit lens and scanning system provides for high quality sound reproduction.

Audio

The FP-30 TV System is normally provided without Pre Amplification. The solar cell output being easily coupled to Station audio systems. Where a 0 level signal is required, an audio system can be provided as an accessory.

FEATURES

- Equipped with Column and adjustable Pedestal
- 35mm Film Transport
- Fast Pull Down Intermittent 5 Blade Shutter
- Step Frame
- Proximity Sensor (Auto Stop)
- Sound Reproducer, Optical with Solar Cell Pick-up and Exciter Lamp
- DC Exciter Lamp Power Supply
- Sound Drum Accelerator
- Picture Change-Over Relay, Dowser Control
- Electrical Control System 24V DC
- SMPTE Spec on Jump and Weave
- Spool Shafts and Frictions: 6000' capacity
- Drive Motor: Synchronous 115V, 60Hz, 24 p/s
- Lens Support: Vernier Focus, Lensholder, Set of Aperture Plates
- Light Source: Halogen Lamphouse 250W, 36V, 2 Lamp System, Automatic Lamp Change

\$18,500.00

ACCESSORIES

Magnetic Reproducer, 4 Track	\$2400.00
Aperture Air Valve	275.00
Remote Focus	725.00
Remote Focus/Frame	1375.00
Reverse Run	2175.00
Torque Motor Drive, Upper and Lower Reel	3000.00
Torque Motor Drive, Upper Reel only	1600.00
Remote Control Panel	400.00
Cable per ft. for above	3.50
Lens Requirements	Special Quote

FP-18 TV PROJECTOR

For use in TV, film to tape transfers, and special studio systems.

Precision Projection

The projector's extremely high picture stability, less than .19% jump and weave, is achieved by the unique Philips grooved disk mechanism, curved gate, and ceramic film edge guides. The intermittent mechanism was developed especially for 16mm film systems using a 12 tooth sprocket for film control and protection. This combined with the rotating 5 blade disk shaped shutter, dual halogen lamp with automatic lamp change, provides a highly efficient projection system compatible with 25 or 30 frame TV systems.

Optimal Sound Quality

The sound reproducing system follows the pattern of professional standards used in 35 or 70mm reproducers. A rotating sound drum machined to high standards, fitted with a split damping drum and flywheel accelerator provides for a fast stabilization time and provides for less than .2% wow and flutter. The scanning optics can be adjusted (by lever) to compensate for standard or non-standard recordings. A manual switch will shift the system from optical to magnetic if so equipped.

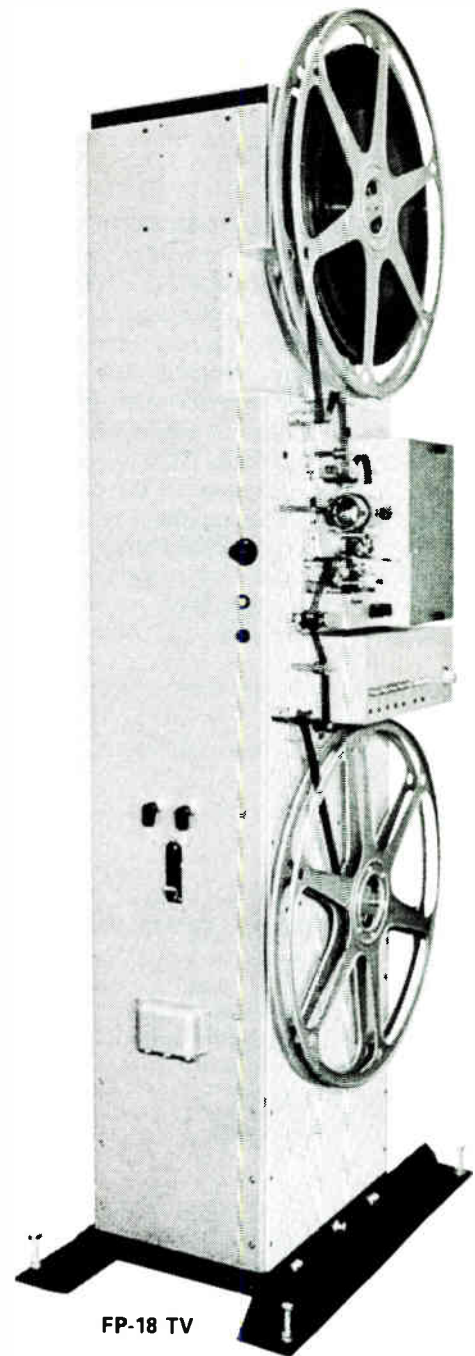
Audio

The preamplifier module is located within the cabinet. It provides for pre-amplification of selected signals with plug-in equalization boards for optical or magnetic signals. The output provides for a +8dBm signal into a 600 ohm load. Each input is individually controlled for balance, with an overall master and a bass/treble boost circuit.

FEATURES

- Rack Mounting with adjustable Pedestal, 24V Control System, Control Panel, built-on Proximity Sensor (Auto Stop)
- Film Run Mechanism Forward/Reverse
- Crown Groove Intermittent 5 Blade Shutter
- Picture Dowser/Change Over, Still/Step Frame
- Curved Gate
- SMPTE Specs for Jump and Weave
- 5000 foot Film Capability, Remote Control for all Functions
- 24 Frames per second
- Audio: Preamplifier/Line Amplifier Module built-in with +8dBm Output Level into 600 ohm Load B+ Power Supply
- Light Source: Halogen Light Source, 2 Lamp Turret System with Automated Change 250W, 24V
- Drive Motor: 110-250V, 60Hz Synchronous
- Reel Drives: Friction Drive, 5000' capacity
- Optical Playback: Sound Drum Damping Assembly, Sound Drum Accelerator, Solar Cell, Exciter Lamp, Exciter Lamp Power Supply

\$19,000.00



FP-18 TV

ACCESSORIES

Lensholder (Anamorphic)	\$ 325.00
Aperture Air Valve	275.00
Remote Focus	515.00
Remote Focus/Remote Frame	1185.00
Torque Motor Film Reel Drive, Upper and Lower	3000.00
Torque Motor Film Reel Drive, Upper Only	1600.00
Remote Control Panel	400.00
Cable per ft. for above	3.50

LENS-SCHNEIDER (with Iris)

CPR-75 4.5	\$168.00
CPN-80 4.0	225.00
CPN-100 5.6	255.00
CPR-105 4.5	193.00

LENS-ISCO (without Iris)

50mm f/1.9	\$250.00
65mm f/1.6	250.00
75mm f/1.7	265.00

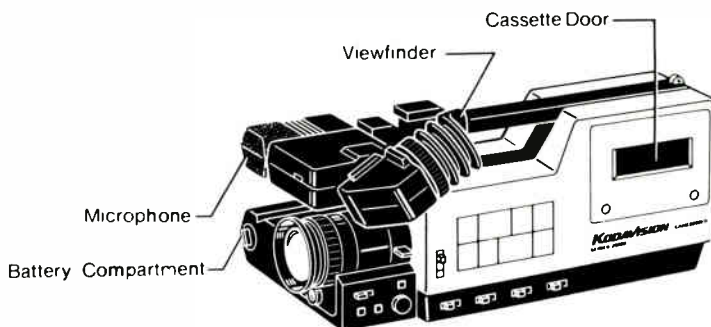
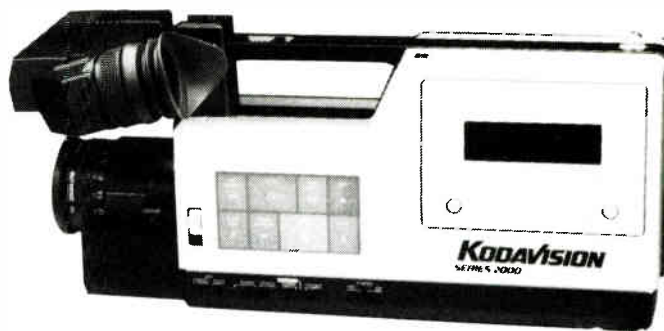
EASTMAN KODAK CO.

343 State St.
Rochester, NY 14650
(716) 724-4000

KODAVISION CAMCORDERS

KODAVISION SERIES 2000 CAMCORDERS

The Kodavision Series 2000 Camcorder is an exciting new concept in home video movie making. The camera and recorder are combined in one light-weight, easy-to-use unit that can record images and sound on a compact 8mm video cassette. And it's battery powered. Because of this new configuration, the entire well-balanced unit rests on the shoulder of the user for ease of operation. With a Kodavision Series 2000 Cradle, Model 2020, your movies can be viewed on your television screen. Or the camcorder can be used with the Kodavision Series 2000 Cradle equipped with an optional Kodavision Series 2000 Tuner/Timer, which will allow the additional capability of recording broadcast programs directly from your television for viewing at a later time. The cradle includes a remote control.



MODEL 2400 AUTO FOCUS CAMCORDER

Features

- Still Frame and Single Frame Advance, 3 heads
- Infrared Auto Focus
- Date Set—day, month, year
- Fade In/Fade Out
- Negative/Positive Switch
- Backlight Switch with f/1.5 override
- Black-and-White Electronic Viewfinder
- Viewfinder Indicators
 - Light levels
 - Counter, to indicate tape usage
 - DEW Warning Light, to indicate condensation
 - Recording Mode
 - Indoor/Outdoor Lights
 - Battery-Power Low Light
- 1/8" Newvicon tube
- 6x Power Zoom
- Fully Automatic White Balance
- Auto Iris, variable aperture
Low-light capability to 20 lux
- Standby Switch
- Fast Forward and Fast Reverse
- Visual Search
- Counter with "Memory" Feature
- Record Review
- Indoor/Outdoor Lighting Selection
- Tally Light
- Auto White Balance Override Switch
- 60-Minute Battery Use/Charge
- Metal-Particle (MP) and Metal-Evaporated (ME) Kodak Video Cassettes
- Microphone

MODEL 2200

MODEL 2200 CAMCORDER

Features

- Still Frame, 2 heads
- Black-and-White Electronic Viewfinder
- Viewfinder Indicators
 - Light levels
 - Counter, to indicate tape usage
 - DEW Warning Light, to indicate condensation
 - Recording Mode
 - Indoor/Outdoor Lights
 - Battery-Power Low Light
- 1/8" Newvicon tube
- 6x Power Zoom
- Fully Automatic White Balance
- Auto Iris, variable aperture
Low-light capability to 20 lux
- Standby Switch
- Fast Forward and Fast Reverse
- Visual Search
- Counter with "Memory" Feature
- Record Review
- Indoor/Outdoor Lighting Selection
- Tally Light
- Auto White Balance Override Switch
- 60-Minute Battery Use/Charge
- Metal-Particle (MP) and Metal-Evaporated (ME) Kodak Video Cassettes
- Microphone

Camcorder 2400 \$1899.00

Camcorder 2200 \$1599.00

EASTMAN KODAK CO.

343 State St.
Rochester, NY 14650
(716) 724-4000

KODAVISION ACCESSORIES

MODEL 2000 CRADLE

The Kodavision Series 2000 Cradle, with the use of a Kodavision Series 2000 Camcorder, Model 2200 or 2400, allows video recorded tapes to be viewed on your television screen. In addition to providing the proper signal to your television, the cradle serves as an AC adaptor and a battery charger. This also allows you to dub your recorded images onto standard 1/2" tape on existing VCRs and vice versa. With the addition of a Kodavision Series 2000 Tuner/Timer, the cradle may be used as a VCR to record your favorite broadcast television programs.

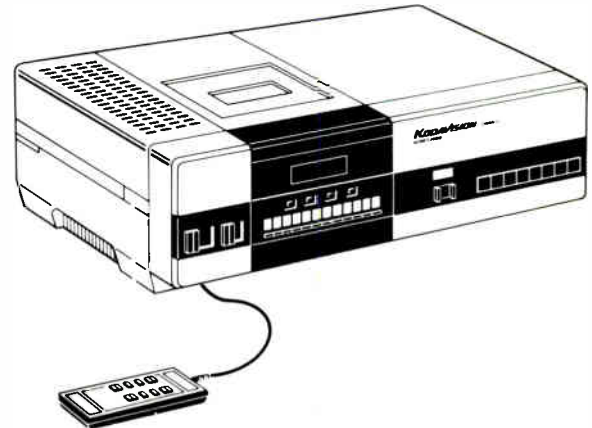
Features

- Full set of VCR record and playback controls: Play, Record, Fast Forward with Visual Search, Fast Reverse with Visual Search, Fast Forward/Fast Reverse, Pause/Still, Frame Advance, Stop, Eject, Tape Counter with "Memory" Feature
- Dust-Cover Protection for Camcorder
- Wired Remote Control
- Battery Charger in Camcorder Plus Spare Battery with Automatic Shutoff
- Convenient Tape Storage Drawer
- Accepts Optional Tuner/Timer

2000 Cradle \$199.00



MODEL 2000 CRADLE



MODEL 2000 TUNER/TIMER

The cradle (with Camcorder), when equipped with the Tuner/Timer plug-in module, provides the user with a complete video cassette recorder. The Tuner/Timer module allows the user to record broadcast television programs on 8mm Kodak Video Cassettes.

Features

- 105-Channel Cable Ready Capability
- 12 Preset Channel Positions
- LED Channel Position Display
- Program Capability: 2 programs/2 weeks
- One-Touch Recording: 0, 30, 60, 90 Minutes
- Fluorescent Indicator Panel Display
- Tuner/Cradle Multiconnector

2000 Tuner/Timer \$300.00



MODEL 2000 TUNER/TIMER

8mm KODAK VIDEO CASSETTES

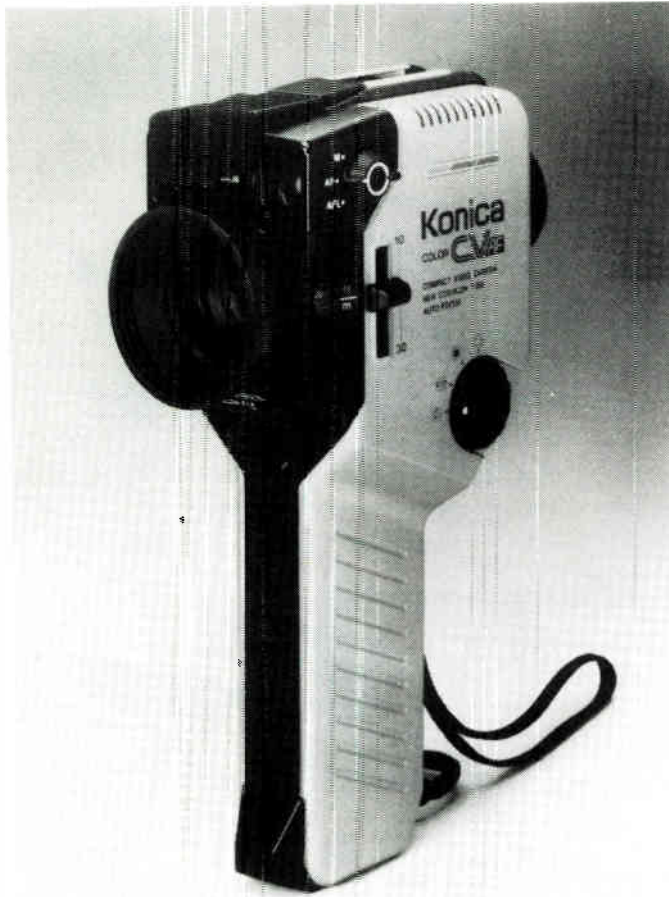
8mm Kodak Video Cassettes for use with the Kodavision Series 2000 Video System and other 8mm systems. MP video tape offers an advanced metal-particle coating for excellent density and sensitivity, and ME video tape offers highest-quality metal-evaporated coating for excellent performance and dubbing.

Cat. #	Product Description	Price
173 3427	MP6-30	\$12.99
100 9455	MP6-60	13.99
101 2301	MP6-90	15.99
110 7069	ME6-30	18.99
111 0592	ME6-60	21.99
115 6520	ME6-90	23.99

KONICA, U.S.A., INC.

440 Sylvan Ave.
Englewood Cliffs, NJ 07632
(201) 568-3100

COLOR VIDEO CAMERA



- **High sensitivity.** The New Cosvicon pickup tube in the CV-301 is so sensitive, it requires only 35 lux for recording, allowing for recording indoors without special illumination
- **Very easy to use.** There are no complex or difficult adjustments to worry about. The user just turns the 4-position color temperature selector to the appropriate setting (indicate by graphic symbols), focuses and shoots
- **Low power consumption.** Since the CV-301 consumes only 3.5 watts, recorder batteries last longer between recharging
- **Compatible with a wide variety of decks.** The camera cord can be connected directly to VHS 10-pin connectors and to other VHS and Beta decks easily via an adaptor

Specifications

Television system:	NTSC, Single carrier frequency separation system
Pickup tube:	1/2 inch New Cosvicon™
Video output signal:	1 volt p-p, 75 ohms
Scanning system:	525/60 fields/sec, 2:1 interlace
Horizontal resolution:	270 lines plus
Image S/N ratio:	45 dB plus
Min. required luminance:	35 lux
Built-in microphone:	Unidirectional electret condenser
Audio output level:	-20 dB (1K ohm)
Zoom lens:	f/1.5 (f = 10~30mm), 3X manual zoom lens, automatic iris, 43mm filter diameter

Minimum focusing distance:	0.8 meter
Viewfinder:	TTL optical type, recording indicator, insufficient lighting indicator, battery strength indicator, optional electronic viewfinder may be added

Color temp. compensation control:	4-step:	
	Cloudy:	7000°K
	Sunny:	5500°K
	Fluorescent:	4500°K
	Incandescent:	3200°K

Power requirement:	DC12V (from a portable video recorder or camera AC adaptor)
---------------------------	-------------------------------------------------------------

Power consumption:	Approx. 3.5 watts
Temp. range for operation:	0°C to +40°C (32°F to 104°F)
Dimensions:	2.76" (W) x 9.65" (H) x 5.63" (D)
Weight:	About 1.8 lbs. (including 5 feet cable. Not including lens hood and lens cap.)

CV-301 Compact Color Video Camera\$699.00

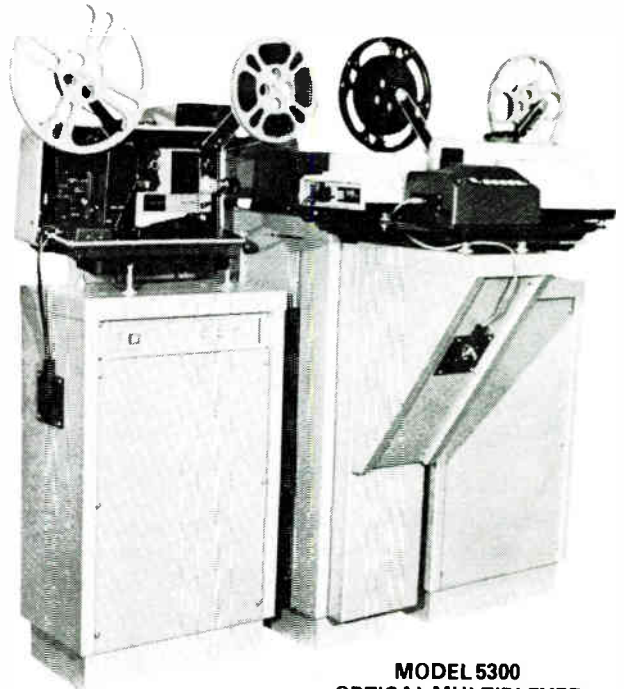
CV-301 COMPACT COLOR VIDEO CAMERA

Weighing just 1.8 lbs., the Konica CV-301 is the smallest and lightest color video camera in the world. That's why it was given the name CV, "C" for compact and "V" for video.

Extremely compact size was achieved by the use of a 1/2" New Cosvicon pickup tube, a unique, original optical system, and high density circuit boards. Further benefits of the Konica CV-301's sophisticated optical-electronic system are that the camera is very simple to operate and requires no more than 35 lux for low-light recording. The result is a color video camera with which anyone can make beautiful recording. From beginners to the experienced camera user, the Konica CV-301 is the ideal camera for today's on-the-go consumers since it satisfies the demand for compact size, light weight and simplicity.

Features

- **Ultra-compact, ultra-lightweight design.** The use of a 1/2" pickup tube, a unique optical system and densely packed circuit boards made it possible to build a color video camera this small and this light



**MODEL 5300
 OPTICAL MULTIPLEXER**

The **MODEL 5300 OPTICAL MULTIPLEXER** provides as many as three separate film images projected for televising by a single camera. First-surface mirrors and precision optics ensure excellent results in color TV applications. An integral field lens provides an intermediate image plane upon which both camera and projector lenses are focused. The field lens mounting is designed to permit insertion of a special screen for alignment purposes. The mirrors are shifted by individual electric gear motors through a unique torsion-bar/pitman coupling and produce an "instant" vertical wipe image transfer. The optical transfer assembly is supported for a 48" optical center by a bench pedestal.

The **MODEL 5400 OPTICAL MULTIPLEXER** is similar to the Model 5300, with the capability of multiplexing up to four separate film images. It has two field lenses to provide intermediate image planes upon which the camera and the projector lenses are focused. The movable mirrors are shifted by a cam/aperture coupling but in both the 5300 and the 5400, automatic self-dousing is inherent in the vertical-wipe image transfer so that all unused input images are eliminated.

MULTIPLEXERS

- * **5300** For three input sources (Small Image). Includes optical transfer assembly with field lens and cover, bench pedestal and local control. **\$2095.00**
- * **5330** For three input sources (Large Image). Includes optical transfer assembly and cover, bench pedestal and local control. **\$3680.00**
- * **5340** For three or four input sources (Large Image. Less field lens). Includes optical transfer assembly with cover, bench pedestal and local control. Three input units may be field converted for fourth input source.
 For three input sources **\$3490.00**
 For four input sources **4220.00**
- 5040** Large Image Field Lens and mounting assembly for 5330, 5340 Multiplexer. (Required for camera without integral field lens.) **\$1105.00**
- * **5400** For four input sources (Small Image). Includes optical transfer assembly with field lens and cover, bench pedestal and local control. Requires 5041 ND mounting bracket for 410 light control. **\$2735.00**
- * **5500** For five input source (Small Image). Includes optical transfer assembly with field lens and cover, and bench pedestal.
 For four input sources **\$3545.00**
 For five input sources **3910.00**

SHELVES AND STANDS (For Multiplexers)

- (For 5300, 5340 and 5400 Multiplexers)
- 5104** Stand for cameras or projectors with optical center height between 8-1/4" and 12-1/4". Includes mounting adaptor. (Specify camera or projector model when ordering) **\$425.00**
- 5107** Shelf for small camera or projector. Includes mounting adaptor. (Specify camera or projector model when ordering) **\$310.00**
- 5108** Stand for camera or projector with height of less than 8-1/4" from mounting base to center of optics. Includes mounting adaptor. (Specify camera or projector model when ordering) **\$425.00**
- * **Does not include camera or projector mounting shelves or stands.**

DIPLEXERS/UNIPLEXERS

- 5116** Assembly with first surface mirror and field lens. Includes shelves and adaptors for camera and 16mm film projector. (Specify camera and projector when ordering). Requires 50mm camera lens with 3/8" extender and 3" projection lens. (Lenses not included) **\$1200.00**
- 5116 + 35** Diplexer Assembly — for two input sources. Includes first surface mirror, field lens, bench assembly and shelves (desk top mount) for 35mm slide projector and 16mm film projector. (Specify camera or projector, dedicated or dolly-up) **\$1790.00**
- 5135** Uniplexer Assembly same as above for one 35mm slide projector. (Less mirror) **\$1075.00**
- 5135m** Uniplexer Assembly for monochrome camera and 35mm slide projector. (Less field lens and mirror) **\$540.00**
- 5136** 105mm Camera taking lens and 1.57" lens barrel for use with 5135 Uniplexer. ("C" Mount) **\$245.00**

LENS/EXTENDERS

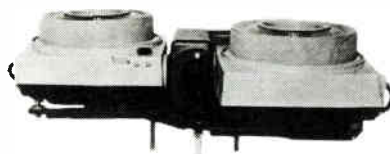
- 5015** 3/8" Lens Extender for 50mm lens to "C" mount camera adaptor. **\$21.00**
- 5016** Lens Extender Kit (Cosmicar) **\$52.00**
- 5017** 50mm f/1.4 Lens — for "C" mount camera, includes lens extender: 3/16" for 2/3" format camera. 3/8" for 1" format camera. **\$240.00**
- 5019** 55mm lens with Bayonet mount for prism optic cameras. **\$1515.00**

MULTIPLEXER ACCESSORIES

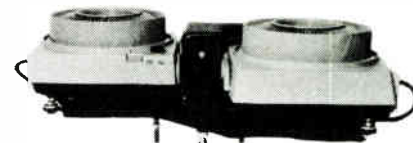
- 5021** Test Film Kit Loop. Includes RES, REG, FLESH TONE slides. RES 16mm film loop **\$225.00**
- 5022** Eastman Kodak Gray Scale Slide **\$700.00**
- 5036** Neutral Density Filter Kit — 6 filters supplied for mounting. For small image. (One Kit for each projector recommended). **\$110.00**
- 5037** Neutral Density Filter Kit — 6 filters supplied for mounting. For large image. (One Kit for each projector recommended). **\$235.00**
- 5041** Mounting Bracket for 5050 light control for use with 5400 4-input optical multiplexer. **\$45.00**
- 5050** Automatic Light Control — maintains camera video at p/p. **\$2185.00**



4410 TELOP PROJECTOR



FRONT VIEW 4220 — LOCAL CONTROL



FRONT VIEW 4210

4220 DISSOLVE DUAL DRUM SLIDE PROJECTOR provides a large slide capacity projector with time-controlled dissolve transitions. The 4220 Dual Projector offers the alternate sequencing of up to 160 glass, metal, plastic or paper-mounted 2" x 2" slides from a dual configuration of Eastman Ektagaphic E2 projectors.

The fade from one slide to the other can be varied, by means of a panel control, from less than half a second up to a full 15 seconds.

4210 DUAL DRUM SLIDE PROJECTOR provides a large slide capacity projector with broadcast-quality quick-cut transitions. The 4210 projector offers the alternate sequencing of up to 160 glass, metal, plastic or paper-mounted 2" x 2" slides from the dual configuration of Eastman Ektagaphic E2 projectors.

4410 TELOP PROJECTOR for use on an optical multiplayer for converting opaque pictures, such as magazine or newspaper clippings, Polaroid or quick notes. The picture size is 3-1/4" x 2-7/16".

PROJECTORS

- 4110 Eastman Single Drum Slide Projector.** Holds 80, 35mm slides. Includes modified 7" lens and adjustable mount. (Requires 5107 Shelf or 5108 Stand). (Use 2508 Remote and 3504 Adaptor for remote control) **\$540.00**
- 4210 Dual Drum Slide Projector.** Holds 160, 35mm Slides. Includes lens and adjustable mount.
 - With 7" lens for Small Image System **\$2365.00**
 - With 7 1/2" lens for Large Image System **2870.00**
 - With 9" lens **2870.00**
 (Requires 5107 Shelf or 5108 Stand). (Uses 2515 for remote control). (Uses 2513 for remote reconcile).
- 4220 Dual Drum Dissolve Slide Projector.** Hold 160, 35mm Slides. Includes lens and adjustable mount.
 - With 7" lens for Small Image System **\$4125.00**
 - With 7 1/2" lens for Large Image System **4625.00**
 - With 9" lens **4625.00**
 (Requires 5107 Shelf or 5108 Stand). (Uses 2525 for remote control). (Uses 2526 for program tone generator).
- 4410 Telop Projector**— Includes 3" lens and two image holders. (Uses 2510 Remote Control) **\$1900.00**
- ST 1200LTI Elmo Super 8 TV Film Projector**— Includes 25-50mm zoom lens, optical and magnetic playback, and magnetic record. (Requires 5108 Stand). (Uses 2510 Remote Control and 3518 Adaptor for remote control) **\$1775.00**
- 16-CLLTI Elmo Slotload 16mm TV Film Projector**— Includes 75mm lens, optical and magnetic playback. (Requires 5108 Stand). (Uses 2510 Remote Control and 3518 Adaptor for remote control) **\$2640.00**
- 16-FLTI Elmo Heavy Duty 16mm TV Film Projector**— Includes 75mm lens, optical and magnetic playback. (Requires 5104 Stand). (Uses 2523 Remote Control) **\$2825.00**
- 2230LTI Singer 16mm TV Instaload Film Projector.** Includes 3" lens, fast forward and reverse mode and Optical Playback. (Requires 5108 Stand). (Uses 2510 remote and 3503 adaptor for remote control) **\$2595.00**
- NT-2LTI Eiki Autoload 16mm TV Film Projector.** Includes 3" lens, Optical and Magnetic Playback, and Remote Adaptor. (Requires 5108 Stand). Uses 2523 remote control **\$2585.00**
- NT-3LTI Eiki Autoload 16mm TV Film Projector.** Includes 3" lens, Optical and Magnetic Playback, and Remote Adaptor. (Requires 5108 Stand). Uses 2523 remote control **\$3110.00**

REMOTE CONTROL

(All modules use 1/3" of rack width unless otherwise indicated)

- 1506 Rack Frame**— accepts up to three remote control modules. Blank filler panels provided, if necessary. Frame is 19" x 3 1/2" x 3" (W x H x D) **\$60.00**
 - 2508 Control, Remote** — "Off", "Ready", "Show", "Forward", and "Reverse" slide change **\$150.00**
 - 2509 Control, Remote** — for two 16mm TV Film Projectors. (Dual configuration of 2510 below) **\$180.00**
 - 2510 Control, Remote** — Controls "Off", "Ready", and "Show" modes **\$120.00**
 - 2513 Control, Remote Reconcile** — (optional) for Model 4210 Dual Drum Slide Projector. Adds individual "Forward" and "Reverse" control of Drum A and Drum B **\$120.00**
 - 2515 Control, Remote** — "Off", "Ready", "Show", "Forward", "Reverse", and "Alternate" **\$180.00**
 - 2516 Control, Remote** — for 5400 Multiplexer. Controls input sources 1, 2, 3 and 4. Uses 2/3 of rack frame. (Not required with LTI projector remote control system) **\$120.00**
 - 2517 Control, Remote** — for 5300 Multiplexer. Controls input sources 1, 2 and 3. (Not required with LTI projector remote control system) **\$120.00**
 - 2523 Control, Remote** — "Off", "Ready", and "Show", "Forward", and "Reverse" **\$150.00**
 - 2525 Control, Remote** — Uses 2/3 of rack frame **515.00**
 - 2526 Tone Generator** **350.00**
 - 2528 Control, Remote** **80.00**
 - 2533 24 Volt Power Supply** — for Uniplexer remote control ... **190.00**
- NOTE:** Consult factory for remote control cables.

ADAPTORS FOR REMOTE CONTROL

- 3503 Remote Adaptor** for 2230 LTI film projector **\$ 75.00**
- 3504 Remote Adaptor** for 4110 slide projector **110.00**
- 3510 Universal Remote Adaptor** with AC power cord for all projectors without remote provisions. Includes local controls, "Off" and "Ready". (Used with 2510 Remote Control) **150.00**
- 3518 Remote Adaptor** for ST 1200LTI and 16-CLLTI Elmo Projectors. **150.00**
- 3520 Remote Adaptor** for 16-FLTI Elmo Projector. **150.00**

MODEL 4320 DISSOLVE DUAL DRUM SLIDE PROJECTOR

Provides a large capacity projector, with a time controlled dissolve transition. The dissolve time and the dwell time can be programmed to run automatically. The 4320 Dual offers the alternate sequencing of up to 160 glass, metal, plastic, or paper-mounted 2" x 2" slides, from a dual configuration of the new Eastman Ektagraphic III E projectors.

Image transfer between successive slides is accomplished by a means of a stationary optical beam splitter, thus slides selected from either of the two storage drums share a single, high-quality projection lens. This, together with the use of a quartz halogen light source, makes the projector ideal for color television applications.

The single-chip, programmable microcomputer based electronics allows for user computer interface, an unlimited number of remote inputs, and a real-time sequencer.

MODEL 4300 SINGLE DRUM SLIDE PROJECTOR

Utilizes the new Eastman Ektagraphic III E projector modified by Laird for Film Chain use. It holds 80 35mm Slides; and includes modified 7" Lens and adjustable mount.

Projectors

4300 EASTMAN III E Single Drum Slide Projector. Includes modified 7" lens and adjustable mount. (Requires 5107 Shelf or 5108 Stand.) Uses 2543 Remote Control. \$ 590.00

4320 Eastman III E Dual Drum Dissolve Slide Projector. Includes lens and adjustable mounting hardware. (Requires 5107 Shelf or 5108 Stand.) (Uses 2545 Remote Control.) (Uses 2546 Tone Generator/Decoder.)

With 7" lens for small image system \$4200.00
 With 7-1/2" lens for large image system 4700.00

Remote Controls

(To be used for all projectors when the 4320 Dual Drum Projector is used.) (All modules use 1/3 Remote Control Frame Width unless otherwise specified.)

2540 Remote Control Frame-Accepts up to three remote control modules. Blank filler panels provided, if necessary. Frame is 19"W x 1-3/4"H x 1-1/4"D. \$ 60.00

2541 Remote Control-For 5300 or 5330 Multiplexer. Controls input sources 1, 2, and 3. (Not required when LTI Projector remote controls are furnished.) \$ 120.00

50 Ft. Cable 46.00
 100 Ft. Cable 75.00

2542 Remote Control-For 5400 or 5340 Multiplexer. Controls input sources 1, 2, 3, and 4. (Not required when LTI projector remote controls are furnished.) \$ 120.00

50 Ft. Cable 68.00
 100 Ft. Cable 120.00



REAR VIEW 4320

2543 Remote Control-For Model 4300 Single Drum Slide Projector. Controls "Off", "Ready", "Forward", and "Reverse" slide change. \$150.00

50 Ft. Cable 62.00
 100 Ft. Cable 105.00

2544 Remote Control-For Model 4210 Dual Drum Slide Projector. Controls "Off", "Ready", "Show", "Forward", "Reverse", and "Alternate". \$180.00

50 Ft. Cable 70.00
 100 Ft. Cable 110.00

2545 Remote Control-For Model 4320 Dual Drum Dissolve Slide Projector. Includes all local control functions. Full Width Rack Frame furnished. \$515.00

50 Ft. Cable 150.00
 100 Ft. Cable 250.00

2546 Tone Generator/Decoder-For Model 4320/2545 Dissolve Slide Projector System. \$350.00

2549 Power Supply-24 Volt-For Uniplexer remote control. (Required only on Uniplexer with stationary mirror.) \$190.00

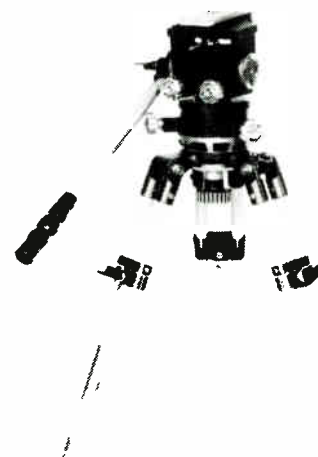
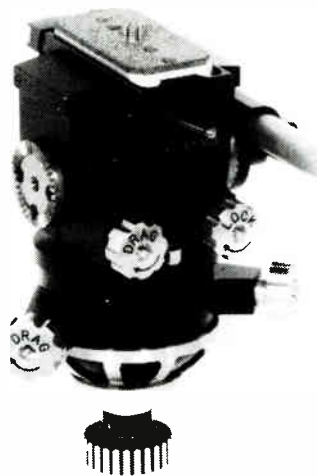
2550 Remote Control-For Model 5050 ND Light Wheel. \$ 80.00
 50 Ft. Cable 47.00
 100 Ft. Cable 75.00

2551 Remote Control-For Film Projectors. Controls "Off", "Ready", and "Show" Modes. \$120.00

50 Ft. Cable 49.00
 100 Ft. Cable 80.00

2553 Remote Control-For Eiki NT-2LTI and NT-3LTI or Elmo 16-FLT1 Projectors with LTI Modification. Controls "Off", "Ready", "Show", "Forward", and "Reverse". \$150.00

50 Ft. Cable 73.00
 100 Ft. Cable 115.00

**"ULTRA"
FLUID HEADS****JRA-83M TRIPOD
AND FLUID HEAD****JRA83M TRIPOD SYSTEM**

The Peter Lisand Company has announced a new, "true-fluid" design camera/tripod head designed exclusively for application in the professional cinematography and video industries. Peter Lisand's true-fluid head is available separately or as part of the total Lisand Camera Support System. Two versions are currently being offered: Ultra I the light-duty head 15-30 lbs., or the Ultra II heavy-duty version, 30-50 lbs. (Matching support systems from Lisand are similarly rated.) The head is designed to be compatible with most support systems on the market today.

FEATURES

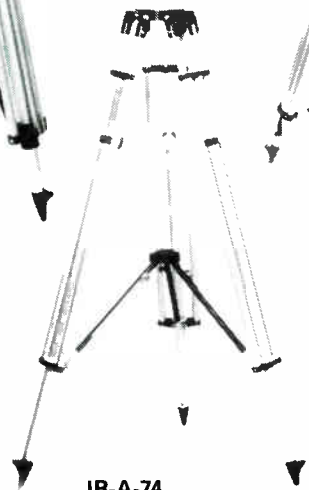
The key elements in the Lisand Camera Head are its simplicity and positive leak-proof design. The head uses two separate chambers, each filled with a specially-formulated "heavy" fluid, and then permanently, hermetically sealed. The Lisand True-Fluid system allows extraordinarily smooth tilt and pan action every time. The head is capable of tilting to a full 90° vertical position. Separate fluted knobs control the fluid-head's movement offering positive lock and positive drag adjustments across the full spectrum. All parts of the Lisand tripod are of the finest quality. Bearings, for example, are bronze operating in Delrin. This combination was chosen to minimize wear and eliminate metal-to-metal contact. The finish on the Lisand head is a combination of baked-on vinyl and anodized aluminum. Users may choose where they want their handles. Left, right, or, both sides. There is also the opportunity to choose an optional quick-release or standard tie-down screw for the camera attachment.

- True fluid action maintains a smooth regulated motion by a sensitive system without brake shoes, bands, or other mechanical parts to interfere with its operation. Separate positive locks and drag are featured on the pan and tilt. Tilt achieves a full 90° vertical position.
- Sealed leak-proof chamber assures long-lasting, problem free operation
- Adjustable quick release will counterbalance camera and lens requirements. (optional)
- Versatile control—use right, left or dual handles.
- New reversible foot, rubber-tipped for interiors and standard metal points for outside use, can be ordered with either of the JRA tripods. (optional)
- Tripods come with various top castings to accommodate existing systems.
- Complete the light-duty system with the JRA-83M, a new light-weight tripod that weighs in at 7 lbs., with a total combined weight of 16 lbs.

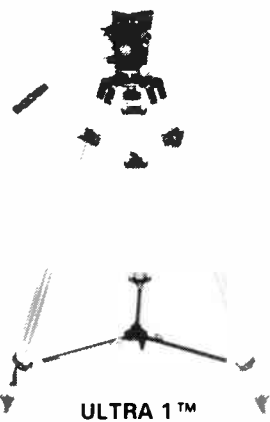
These Peter Lisand products reflect our highest standards and are backed with our one-year no-hassle guarantee.



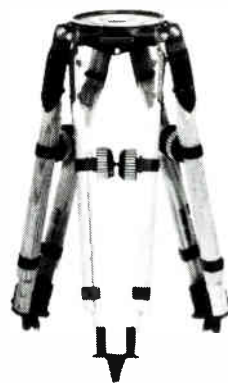
LST-80



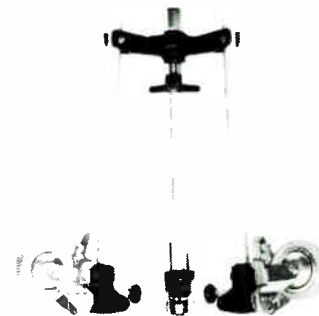
JR-A-74



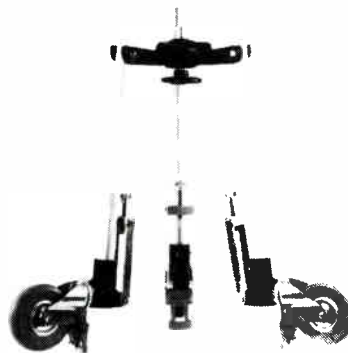
ULTRA 1™



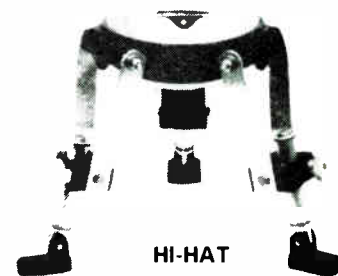
MITCHELL TRIPOD



VIDEO TRIPOD DOLLY



HEAVY DUTY
TRIPOD DOLLY



HI-HAT

JR-A-74

- The new light-weight Junior motion picture tripod weighs in at a mere 9½ lbs
- Finely machined tubular aluminum legs and stainless steel parts and nylon bushings. Rustproof and noiseless too!
- Adjustable from 39" closed to 60" open. Flexible leg adjustment
- Rigid construction—no movement when panning

LST-80

- This heavy duty tripod is built for cinema and video weighing
- Only 22 pounds complete with built-in spider assembly
- Finely machined tubular aluminum legs and stainless steel parts and nylon
- Rigid construction—no movement when panning. Will support 200 lbs. or more of equipment
- Ideal for studio and location work
- Available in standard, regular, intermediate and baby versions

The Mitchell Type Tripod

- Precision Built—we use only air-dried selected American hardwoods, finely machined aluminum and steel parts
- Heavy construction—assures solid base for camera, free of vibration
- Fully adjustable—can be adjusted with hairline precision, all locks hold legs exactly as you set them
- Beautifully finished—all steel parts plated, all aluminum parts
- Spider assembly is available on request
- Available in three models—Regular, Sawed-Off and The Baby

Video Tripod Dolly

- Tripod dolly for smooth silent maneuverability designed for all professional tripod-mounted movie and video cameras
- Rugged construction—heavy 1/8" wall aluminum tubing assures solid base for even the biggest and heaviest movie camera
- Smooth running—heavy 4" Darnell rubber-tired swivel wheels glide smoothly and noiselessly over any studio or location surface
- Compact—folds up in seconds from an open-spread diameter of 46" to compact, easy to store unit just 10" in depth

Heavy Duty Tripod Dolly

- Rugged construction — heavy aluminum tubing assures solid base for even the biggest and heaviest movie camera.
- Smooth running — heavy 5" deluxe rubber-tired swivel wheels glide smoothly and noiselessly over any studio or location surface.
- Individual wheel locks — locking device on each wheel permits fixed position use.
- Compact — folds up in seconds from an open-spread diameter of 46" to compact, easy to store unit just 10" in depth.
- Made in two models — screwdown, and spring-lock systems.

ULTRA 1™

- A simple, sturdy true-fluid motion picture and video camera/tripod system
- The light-duty tripod weighs only 7.5 lbs.; the total system weighs about 16 lbs., with 15-25 lb. capacity
- Finest quality parts and options to make the ideal system for each user
- Aluminum and Delrin bearings, Delrin and fiber lock and drag shoes offer long-lasting performance and durability
- Tripod/camera head is capable of tilting to a full 90° vertical position
- Positive, independent pan capability of a full 360°

Adjustable and Fixed Hi-Hat

- A lightweight, precision machined aluminum accessory, the Hi-Hat is fast mounting with three screws
- Adjustable from 7¾" closed to 9½" raised. Legs can be spread to achieve a minimum height of 3 inches
- Hi-Hat can be supplied with all Standard Junior Tops
- A Fixed Hi-Hat is available with an overall height of 7½"
- The Hi-Hat is economically priced.



35 MM ARRI BALL TOP



16 MM ARRI BALL TOP



MILLER REG. TOP



MILLER "F" TOP



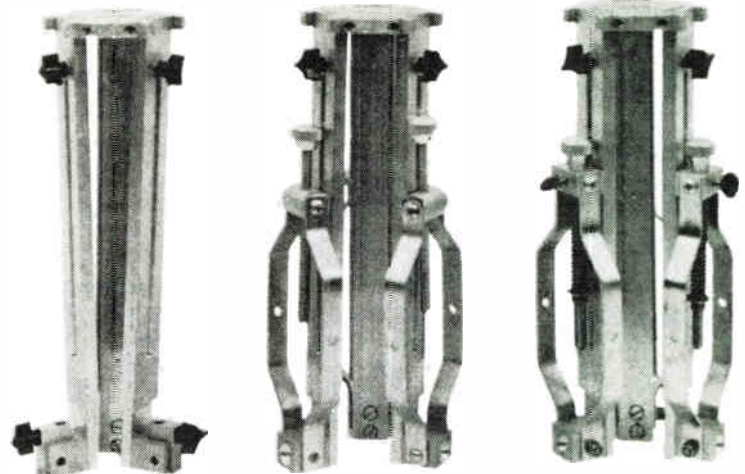
7" BALL TOP-NCE



JR. FLAT TOP



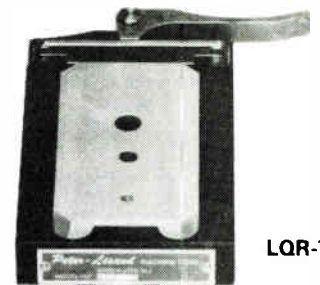
7" O'CONNOR C-B TOP
JUNIOR TRIPOD TOPS



TRIANGLES



SSP-73



LQR-75



MQR-76

Triangles

- Rugged—aluminum construction assures solid base for even the biggest and heaviest movie camera tripods
- Compact—folds up in seconds from an open-spread diameter of 48" to compact, easy to store unit just 14"
- Made in three models—screw-down, spring clamps, and spike-lock systems

Screw Down	\$132.00
Spring	136.00
Spike	121.00

Junior Tripod Tops

- Peter-Lisand can supply the Junior Tripods, wood or metal, to fit any domestic or foreign head
 - The tops are first quality aluminum castings and precision-machined for reliable service
 - Models include: 35mm Arri Ball Top; 16mm Arri Ball Top; Miller "F" Top; Miller Regular Top; "F" Ball Type NCE; Junior Flat Top; "F" O'Connor C-B Top
- Prices on Request.

Superior Shoulder Pod SSP-73

- Lightweight—aluminum and steel construction
 - Fully Adjustable—6 adjustments fit the pod to operator's body. 2 separate adjustments locate camera to operator's eye.
 - Easy handling—Operator's hands are free to zoom and focus.
 - Beautifully finished—All parts are machined and finished to eliminate glare.
 - Waist straps provided
- \$297.00**

VC-162

Quick-Release System

Fast, Fast mounting camera, regardless of size or weight, mounts securely and rigidly to tripod in several seconds. Simply set camera in place and close latch. You're ready to shoot. To remove camera from tripod, just open the latch.

Only Two parts to system. The lower section mounts on any tripod with a 1/4" or 3/8" threaded thumbscrew. The upper section mounts to the camera tripod socket.

Lightweight. Both the upper and lower blocks (with the exception of the latch) are precision-machined from aluminum, so that little extra weight is added to the camera/tripod combination.

For Most Cameras. Movie, television, press and view cameras (or even smaller cameras such as 2 1/4 and 35mm) can easily be equipped with the Quick-Release system.

Rugged and Long-Lasting. Quick-Release camera mounts are precisely machined and ruggedly constructed so that they will not break or wear out—even under the most demanding of operating conditions.

LQR-75 \$175.00

MQR-76 Medium Duty Quick-Release System

Rapid Mounting—Safety lock system secures camera in place rigidly on tripod or shoulder pod. Detaches instantly.

Lightweight—The anodized aluminum and stainless steel construction weighs only nine ounces.

Durable—The precision machined medium quick release provides the accuracy that makes it stand up to all kinds of operating conditions.

MQR76 \$165.00

Prices and Specifications Subject to Change Without Notice.

LISTEC TELEVISION EQUIPMENT CORPORATION

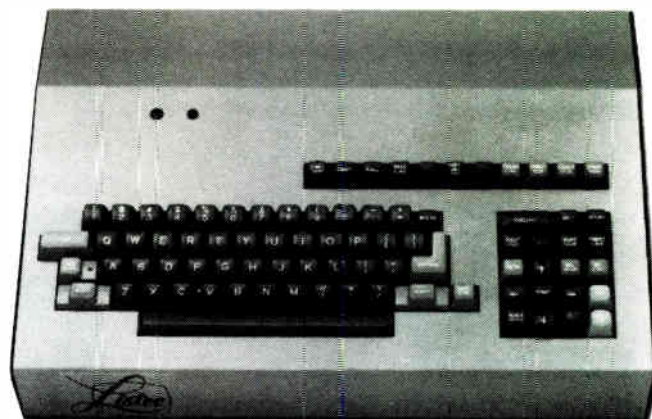
39 Cain Drive
Plainview, NY 11803
(516) 694-8963

TELEPROMPTER SYSTEM

A-2000 SERIES ON-CAMERA DISPLAY SYSTEM

FEATURES

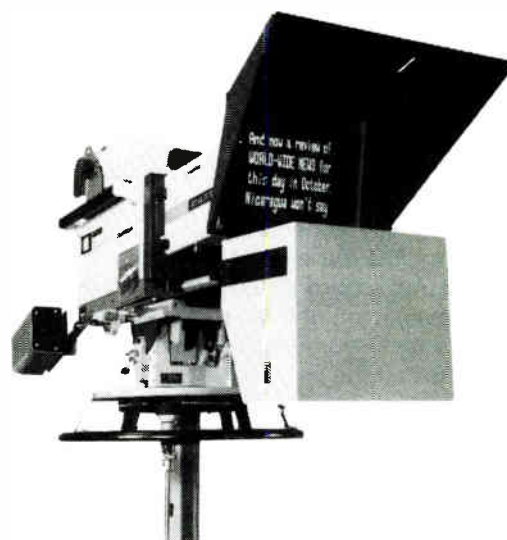
- Separate remote control module
- Rack mountable disk drive
- Separate keyboard
- 50 foot cable
- Optional large character printer
- Provides simultaneous viewing of on-air story and story editing
- EFP configuration available
- Monitor/Prompter has wide angle hood and mirror assembly
- Separate linear power supply
- Mounting hardware for all cameras



A-2100 SCRIPTWRITER KEYBOARD

SPECIFICATIONS

A-2015W	15" monitor prompter wide angle hood and mirror assembly Accommodates minimum focal lengths of 15mm on 1-1/4" format, 11mm on 1" format and 8mm on 2/3" format separate linear power supply and mounting hardware for all cameras (Not available as EFP configuration)
Video	Composite video: Standard EIA RS-170, .35 to 2V peak-to-peak
Power	Power from separate power supply, 120V AC, 50 watts nominal, 65 watts maximum
Monitor	24V DC 1.25A nominal, 1.5A maximum
Video Bandwidth	32 MHz (-3 dB)
Resolution	1,200 lines center, 950 lines corner at 40 ft. lamberts
External Controls	Vertical scan reversal, horizontal scan reversal, brightness, contrast
Video Input	One non-looping BNC connector
Dimensions	A-2015W Weight: 28 lbs., Monitor Size: 13" x 12" x 10-1/2", Vertical Adjustment: 6" A-2015 Weight: 26 lbs., Monitor Size: 13" x 12" x 10-1/2", Vertical Adjustment: 6"
A-2019W	As above, but with 19" monitor
A-2015	15" monitor prompter with standard hood for zoom lenses with minimum focal lengths not less than 18mm on 1-1/4" format, 13.5mm on 1" format. Otherwise as for A-2015W, above. Recommended for EFP configuration
A-2019	As A-2019W above, but with standard hood
A-2015SA	As A-2015 above, but mounted on roll-around dolly. Recommended for use with lightweight ENG cameras and small pan and tilt heads. (No EFP configuration available)
A-2019SA	As A-2015SA above, but with 19" monitor
A-2015CS	15" floor mounted prompter and separate stand with semi-reflective mirror for conference prompting
A-2019CS	As A-2015CS above, but with 19" monitor



A-2015W MONITOR PROMPTER WITH EXTRA WIDE-ANGLE HOOD

A-2200	Script Tables Long table, for end to end layout of individual 8-1/2" x 11" sheets. Includes 2/3" Vidicon Camera. Adjustable lighting, and remote variable speed (forward and reverse) conveyer belt control
A-2210	Short table, for continuous roll type scripts. Otherwise as A-2200 above
A-2220	Optional VDA with five outputs, non-looping. Can be mounted onto script table

A-2100	ScriptWriter System ScriptWriter comprising rack mountable disk drive and associated programmed electronics, separate keyboard. Total disk storage equivalent to 6,120 lines of text, 22 characters per line. Upper and lower case characters with reverse polarity and input from typical typewriter keyboard internal and external Sync standard, video output formatted to produce five lines of text on prompter monitors. Ability to view on-air story and story editing simultaneously. Disk access time less than 1.0 second. Separate remote control module with pause/start, next story, previous story, story reset and variable speed control with forward/reverse and 50' cable standard
A-2150	Optional large character printer, prints prompter copy to the right with production commands to the left, full 14" carriage with 1/4" high characters
A-2175	Optional 9" monitors for edit and preview, separate displays For optional VDA, see A-2220 above

A-3300	Special Systems Universal prompter support system including trapezoidal mirror, hood assembly and cradle for customer provided monitor. (Accepts 17" x 15" x 16" monitor).
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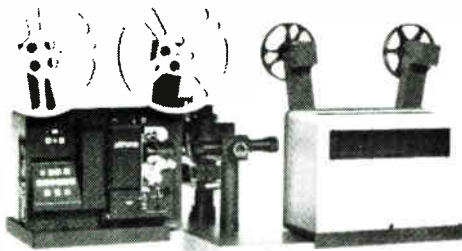


A-3300 STUDIO PROMPTER

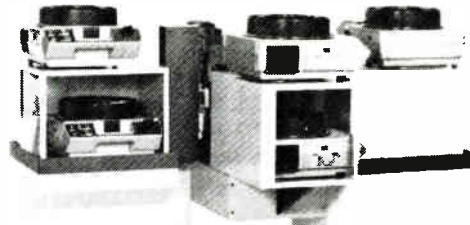
L-W INTERNATIONAL

50 West Easy Street
 Simi Valley, CA 93065
 (805) 522-3284
 TWX 286518 BAUD-UR

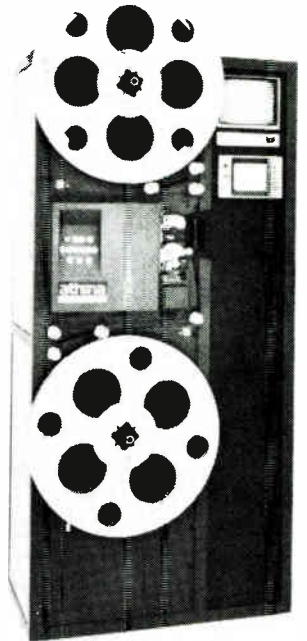
TELECINE SYSTEMS



TWO 16mm PROJECTORS



SIX SLIDE PROJECTORS



Complete as illustrated,
 including JVC 310U
 color camera.
 Price: \$39,500.00
 ATHENA® 6000 UNIPLEX

ATHENA® MULTI MEDIA TELECINE SYSTEMS DIPLEXING & MULTIPLEXERS

Up to six in/one out configurations. Novel 3 port, Athena optical multiplexer with 8:1 neutral density wheel and automatically controlled by camera electronics, is the heart of this flexible system. The Athena multiplexer is sealed, pre-aligned optical and electronic assembly accepting C mount lenses and bayonet mount TV cameras. No projector or camera lenses are used, for the Athena multiplexer prism and lenses focus on the projector gates; all exposed optical surfaces are therefore out of the image plane, greatly reducing dust and dirt problems. All three multiplexer ports are prism block assemblies and are always open, with any change in projector selection controlled by lamp control; no flip/flop mirror to delay source change or to produce mis-registration; also permits any rate of dissolve transition with any projector and the super-imposition of three projectors simultaneously.

Added versatility occurs with use of our 2" x 2" periscopic diplexer, doubling image inputs to any, or all, of the three multiplexer ports. Our 2" x 2" periscopic diplexer, though designed for Kodak Carousel or Ektagraphic use, can be used to input a variety of slide or filmstrip projectors. When used with Kodak projectors, all projector functions are exposed and trays can be easily changed, zeroed or manually advanced.

Additional quality and convenience results from our self-aligning pedestal and 2" x 2" diplexer modules permitting the interchangeability of projectors into any of the multiplexer ports. As an example, the configuration can be quickly changed from six 2" x 2" slides to two 16mm and two 2" x 2" slides, etc.

While best results generally occur with a dedicated camera, easy removal for other uses is encouraged through the use of a standard bayonet mount. Due to the wide ownership of TV cameras, Kodak slide projectors, etc., Athena multiplex systems can be ordered less these components. However, best results usually occur with a turn key system configured to your specific needs, producing a balanced system under our supervision.

VC-164

ATHENA 4500 UNIPLEX®

The Athena 4500 uniplexer is identical to the 4500 multiplexer except that it's an in-line right angle uniplexer for 16mm film use only. It also features the 8:1 neutral density wheel and controlled iris, but with a single prism input to the camera field. The optical and electronic assembly is also pre-aligned, sealed and back-focused upon the projector's gate. The 4500 can be used with any bayonet mount camera.

ATHENA® 6000 UNIPLEX

The Athena 6000 16mm uniplexer is designed for the ultimate in ease and quality in transferring film to different video formats. The Athena 6000 Uniplex System employs a clean, vertical rack format to minimize space requirements, to group all controls, function lights and monitor into a convenient and accessible cluster; it features built-in frame counter and picture and wave-form monitor. All components are modular and stocked as complete sub-assemblies.

BASIC MULTIPLEX COMPONENTS

Athena 4500 Telecine 16mm Projector	\$9,995.00
Athena Multiplex Pedestal System	1,800.00
Athena Prismatic Multiplexer, Filters & Mount	3,200.00
Athena Slide Diplexer and Mount	650.00
<small>(accepts one or two Kodak Slide Projectors)</small>	
Athena 16mm Plexer Lens	250.00
Athena Slide Projector Plexer Lens	250.00
Total	\$16,145.00

BASIC UNIPLEX SYSTEM

Athena 4500 Uniplex System complete (less camera)	\$14,045.00
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TYPICAL ACCESSORIES

Color Camera	\$6,000.00 - \$30,000.00
Kodak Slide Projector*	345.00
Kodak Dissolve Control*	550.00
Athena 4500 Remote Control Panel	495.00
9" B&W Alignment Monitor and Mount	500.00
Video Tape Recorder	1,000.00 & up
Camera Control Unit (exp. & color correction)	2,945.00

* Multiplex only.

Prices and Specifications Subject to Change Without Notice.

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 (805) 522-3284 TWX 286518 BAUD-UR

TELECINE PROJECTORS

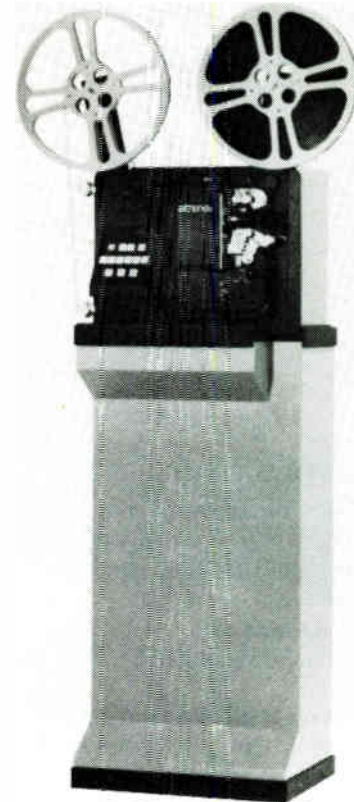
4500® 16mm Telecine Film Transport

The **Athena 4500®** is designed for use in cable, industrial, medical, training, production and all but the most demanding broadcast television applications.

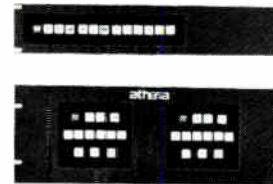
Electronic control, drive motors and reel drive sub-assemblies are mounted in a rigid horizontal and vertical base plate. Proven performance, ease of maintenance and low price are just a few benefits derived from owning the Athena 4500.

SPECIFICATIONS & FEATURES

- Flickerless projection of 16mm film at all frame rates
- Frame rates: 24 frames per second, forward or reverse (25 fps)
- Film Capacity 50-2000 feet (15.2-588 meters)
- Unlimited hold time on single frame without damage to film and without focus drift
- Instantaneous change of direction, forward or reverse
- Easy Film threading
- Projector control panel: Motor Stop, Forward, Reverse, Lamp, Still, Single Frame, Lighted Switches 1-2-4-6-8-12 frames per second (1, 2.1, 4.2, 6.3, 8.3, 12.5)
- Optional Remote Control Functions: Same as projector control panel, plus (optional) single button control of multiple functions or remote location delegation
- Shutter: Five-blade, constant speed at all frame rates and still (2 blades)
- Light application time: 30.6% per TV field-5ms (50% per TV field-10ms)
- Pulldown time: 5.5ms (5.3ms)
- Cooling system: Separate motor-driven fan and heat filter system prevent damage to film or focus drift, even during prolonged viewing
- Drive motors: two DC permanent magnet, servo controlled
- Optical and magnetic playback
- Sound output: Flat 600 ohm balanced +8 DBM
- Optical frequency response: 100 to 7 kHz ± 2 dB; signal to noise 60 dB; flutter .2% DIN; distortion less than .15%
- Magnetic frequency response: 50 to 10 kHz ± 2 dB; signal to noise 60 dB; flutter .2% DIN; distortion less than .15%
- Solid state preamp
- Light output: Variable, depending upon light source and optical configuration. 750W tungsten halogen standard, other wattages available
- Lamp intensity control (when used with accessory pedestal)
- Vertical and horizontal weave: Less than 0.2% of picture width
- Focusing: Rack and pinion
- Easy projector alignment: Four leveling screws (when used with accessory pedestal)
- Power requirements: 105-120 VAC, 60 Hz (210-240 VAC, 50 Hz) 10 amps. (7½ amps)
- Optical pickup: silicon solar cell
- Dimensions: (will full reels) 27¾" high x 30¾" wide x 13¼", deep
- Weight: Approx. 85- (38.5 kilograms)
- New solid-state plug-in timing circuit, easily replaced as a unit if necessary
- Critical operating parts self-lubricating
- Heavy duty optional pedestal. Optical center of lens to base 48" \pm .50"
- High-Low lamp switch
- Direct factory service
- Safety feature: Indicator light on master switch glows when power to projector has proper polarity



ATHENA® 4500



**SINGLE AND DUAL
 REMOTE CONTROL PANELS**

PEDESTAL
 →

ATHENA® 4500-DELUXE

Includes pedestal base and one lens, automatic cue system, 2000-foot reel capacity, EEX300 Watt lamp and one year warranty.

ATHENA® 4500-DELUXE \$11,150.00

ACCESSORIES

- Remote control panel rack mount (19"/4RU) \$575.00
- As above but with frame counter 775.00
- Remote control panel for dual projectors 970.00
- As above but with frame counters 1,350.00
- Remote control cable (per foot) 1.25

PROJECTION & EXCITER LAMPS

- EEX 300W, 120V (4500) \$43.50
- BSK Exciter 6.50

PROJECTION LENSES (Standard)

- 2.5 inch f/2.1 \$350.00
- 3.0 inch f/2.0 450.00
- 3.0 inch f/3.5 350.00
- 3.5 inch f/2.5 450.00
- 3.5 inch f/4.5 350.00
- 4.0 inch f/2.5 495.00
- 4.0 inch f/4.5 350.00

L-W INTERNATIONAL

50 West Easy Street
 Simi Valley, CA 93065
 (805) 522-3284 TWX 286518 BAUD-UR

TELECINE PROJECTORS

ATHENA® 6000 16mm TELECINE FILM TRANSPORT

The Athena 6000 is designed to meet most professional telecine requirements in NTSC, PAL and SECAM countries. Many of the features and benefits listed below are exclusive to the Athena 6000:

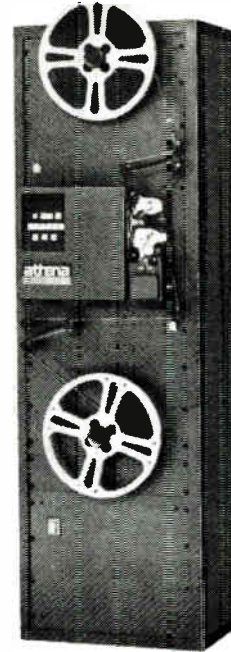
- Slow motion/still frame
- Automatically phase-locks to NTSC, PAL or SECAM field rates
- Unlimited hold time in still frame mode
- Precision adjustable film gate assembly with 8.73mm x 10.16mm aperture
- Cost-effective modular design
- Multi-voltage/multi-frequency
- Cueing sensor (stops film)
- 50 to 5,000-foot film capacity (15.2 meters - 1520 meters)
- Remote control option
- Automatic lamp change-over
- Moderate price
- Two year parts and workmanship warranty

The Athena 6000 is totally modular, enclosed in a RTMA rack 19 inches (480mm) wide by 69¼ inches (1.7 meters) high. Each module contains all related electronics. These modules are sold separately for emergency back-up inventory. All connections are plug-in to further facilitate easy servicing.

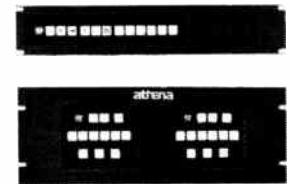
Solid-state technology reel tension sensors permit a wide range of reel sizes and film footage, from 50 feet (15.2 meters) to 5,000 feet (1520 meters). The result is gentle film handling. Upper and lower loop formers combined with an automatic stop feature (film break) further protects the film.

Dual projection lamps have automatic change-over feature. Illuminated pushbutton on control panel will enter flashing mode if change-over occurs. Dual exciter lamps are also equipped with automatic change-over.

Price includes follow-up visit by Athena Field Service Engineer at no charge, within the 48 contiguous States and District of Columbia, USA. Other locations require only per diem fee plus-transportation.



6000 TELECINE



SINGLE AND DUAL REMOTE CONTROL PANELS

ATHENA® 6000

Includes automatic cue system, automatic lamp change-over (projection and exciter), 5000-foot reel capacity. ELH 300 watt lamps, two year warranty \$20,250.00

ACCESSORIES

Remote control panel rack mount (19"/4RU) \$575.00
 As above but with frame counter 775.00
 Remote control panel for dual projectors 970.00
 As above but with frame counters 1,350.00
 Remote control cable (per foot) 1.25

PROJECTION & EXCITER LAMPS

ELH 300W, 120V \$19.50
 BSK Exciter 6.50

PROJECTION LENSES (Standard)

2.5 inch f/2.1 \$350.00
 3.0 inch f/2.0 450.00
 3.0 inch f/3.5 350.00
 3.5 inch f/2.5 450.00
 3.5 inch f/4.5 350.00
 4.0 inch f/2.5 495.00
 4.0 inch f/4.5 350.00

MAGNASYNC/MOVIOLA CORP.

5539 Riverton Avenue
North Hollywood, CA 91601
(818) 763-8441 Telex 67-3199

FILM-TO-TAPE TRANSFER SYSTEM



VIDEOLA® V-400 COMPACT FILM-TO-TAPE TRANSFER

The V-400 COMPACT is designed specifically for broadcast applications which require premium-quality video at an affordable price.

A single unit offers superb video transfers of 16mm films up to 3,000 feet in length. An interconnected pair can provide continuous video from multiple-reel films; the independent video outputs allow clean switching between reels. A dual installation occupies only 14 square feet of floor space.

Except for being limited to 16mm composite-sound films, the V-400 COMPACT offers all of the quality and value of the V-1000. Virtually silent in operation, it delivers superb Flickerless Prism® image quality, with no sign of flicker or jitter. The Videola transport is easy to load, and exceptionally gentle with film. Installation and maintenance are simple and straightforward.

SPECIFICATIONS

Transport: Modular dual sprocket servo drive systems. Crystal-controlled or variable sound speed. Hollow "FLICKERLESS PRISM®" type optical projection. All surfaces in critical areas recessed to prevent film damage. Composite optical and magnetic sound pickup. Film breakage interlock automatically shuts off transport and reel motors. Can be interlocked to compatible external pulse source. Manual inching provided.

Film Capacity: 2,000 ft. (610m) on lab core or 3,000 ft. (915m) standard projection reel.

Film Speed: Crystal-controlled sound speed forward 24 or 25 frames per second $\pm .01\%$ ($\pm .0024$ fps). Pushbutton switch-activated variable speed from less than two fps to six times sound speed in both forward and reverse directions. Controlled acceleration and deceleration for gentle film handling. Interlock mode to external source. Digital displayed film speed.

Torque System: Switch-selectable automatic or manual turn on/off for supply or takeup torque motor.

Audio System: Output-15 Watts RMS, 8 Ohms. 600 Ohm balanced transformer-isolated output for each track and 2,000 Ohm quasi line output also provided. Headphone output automatically disconnects external speakers. SMPTE or DIN equalization. Dampening arm system results in low wow and flutter. Sound head in line with picture.

Controls: All controls conveniently placed for minimum lost motion. INCHING button located on transport.

Control Panel: Power ON-OFF, PROJECTION LAMP switch. Selectable 24/25 fps SOUND SPEED switch. MASTER SOUND SPEED switch for sound speed and stop from sound speed. Pushbutton controls for variable speed forward/reverse direction. MASTER pushbutton control for variable speed forward/reverse. Electronic advance/retard control. Composite optical/magnetic audio level control. Exciter lamp switch. Video level control.

Input Panel: Line fuses, two each 10 amp, 3AG type for 120 VAC. Interlock remote input plug for slave operation. Interlock remote output jack for master operation. Speaker output. A/B wind selector switch for each torque motor.

Electronics: Power supply and electronics in removable chassis/card cage, mounted on pedestal base.

Optical Response: 50-7000 Hz \pm 3dB, SMPTE or DIN standards.

Wow and Flutter: Less than .08% RMS or DIN weighted.

Resolution: Video system limited.

Projection Aperture: Variable on monitor screen; selectable by adjustment.

Transfer Capability: 2 fps to 150 forward and reverse without flicker or jitter.

Picture Steadiness: Typical 0.2%, vertical and horizontal.

Input Power: 115/230 VAC, 50 or 60 Hz, 1200 Watts, typical maximum.

Dimensions:

Height 41"(1041mm)
Width 40"(1016mm)
Depth 29"(737mm)
Weight, net, uncrated 135 lbs. (62kg)

V-400-16 16mm Videola Compact® Film-to-Video
On-Line Broadcast System, "Master" \$39,975.00

V-400-16 16mm Videola Compact® Film-to-Video
On-Line Broadcast System, "Slave" \$35,975.00

Prices and Specifications Subject to Change Without Notice.

VC-167

MAGNASYNC/MOVIOLA CORP.

5539 Riverton Avenue
North Hollywood, CA 91601
(818) 763-8441 Telex 67-3199

FILM-TO-TAPE TRANSFER SYSTEMS

VIDEOLA® V-1000 FILM-TO-TAPE TRANSFER SYSTEM

- Resolution: Video System Limited
- Wow and Flutter: Less Than .06% RMS or DIN Weighted
- Magnetic Response: 50-10,000 Hz ± 3dB, SMPTE or DIN Standards
- Film Color Correction: Variable Color Temperature Light Source

The unique Flickerless Prism® optical system allows a smooth continuous film motion, and produces a video image consisting of frames dissolving one into the next. The transfer is completely independent of television synchronization and scanning rate, so the film can be transported at any speed while the video image remains sharp and clear, with no sign of flicker, jitter or frame lines.

Picture resolution is extremely high. Imaging is by a high-grade video camera, using the Videola optics. The machine can be supplied with or without a camera, so the user may employ an existing ENG/EPF camera. In either case, the camera may be readily removed for other purposes.

SPECIFICATIONS

Picture Transport: Modular dual sprocket servo drive system. Crystal controlled or variable sound speed. All surfaces in critical areas recessed to prevent film damage. Composite optical and magnetic sound pickup — 16mm; optical sound pickup — 35mm. Manual inching provided.

Sound Transport: Modular dual sprocket servo tach drive system. Crystal-controlled or variable sound speed. Can be interlocked to picture transport or compatible external pulse source. One 16mm edge track or center track SMPTE or DIN equalization. Sound head in line with picture. Manual inching provided. Edge-track heads standard. Interchangeable with optional 3-track (35mm) or 2-track EBU (16mm) heads.

Film Capacity: 2,000-ft. (610m) on lab core or 3,000-ft. (915m) standard projection reel.

Film Speed: Crystal-controlled sound speed forward 24 or 25 frames per second, ±.01% (± .0024 fps). Pushbutton switch-activated variable speed from less than two fps to six times (35mm) or ten times sound speed (16mm) in both forward and reverse directions.

Torque System: Switch-selectable automatic or manual turn on/off for each supply or takeup torque motor.

Audio System: Built-in control and mixing facilities for four audio tracks including composite optical or magnetic. Output: 15 Watts RMS, 8 Ohms. 600 Ohm balanced transformer-isolated output for each track and 2,000 Ohm quasi line output also provided.

Control Panel: Power ON-OFF, PROJECTION LAMP switch. LOCK switch for sound transport. Selectable 24/25 fps. SOUND SPEED switch for both transports. PICTURE MASTER SOUND SPEED switch for sound speed and stop from sound speed. PICTURE MASTER pushbutton control for variable speed forward/reverse. Electronic advance/retard control for each transport.

Audio Panel: Composite optical/mag level control. Magnetic level controls #1, #2, #3. Master audio level control. Exciter lamp switch. Servo iris control.

Input Panel: Line fuses, two each 10 amp, 3AG type for 120 VAC. Interlock remote input plug for slave operation. Interlock remote output jack for master operation. Speaker output. A/B wind selector switch for each torque motor.

Electronics: Power supply and electronics in removable chassis/card cage, mounted on pedestal base.

Optical Response: 16mm: 50-70,000 Hz ± 3dB, SMPTE standard. 35mm: 50-12,000 Hz ± 3dB, SMPTE standard.

Projection Aperture: Variable on monitor screen; selectable by adjustment. Anamorphic capability standard, manual pan-scan.

Picture Steadiness: Typical 0.2%, vertical and horizontal.



V-1000

Input Voltage: 115/230 VAC, 50 or 60 Hz.

Input Power: 1200 watts, typical maximum.

V-1016/35	16/35mm Combination Videola® Console Film-to-Tape Transfer System	\$69,500.00
V-1035	35mm Videola® Console Film-to-Tape Transfer System	\$52,950.00
V-1016	16mm Videola® Console Film-to-Tape Transfer System	\$49,950.00

VIDEOLA® V-500

A two-plate system for composite-sound films up to 6000' in length, the V-500 includes all of the quality and convenience features of the V-1000 in a very compact form.

Major components, including 16mm and 35mm transports are interchangeable with those of the V-1000. Transport and sound controls are combined in a single, centrally-located control panel. And, of course, the V-500 may be slaved to a V-1000 or other external system for control.

V-500-16/35	16/35mm Combination Videola® Console Film-to-Tape Transfer System	\$58,850.00
V-500-35	35mm Videola® Console Film-to-Tape Transfer System	\$47,500.00
V-500-16	16mm Videola® Console Film-to-Tape Transfer System	\$44,950.00

Options Available at Time of Manufacture:

16mm Sound Module with Two-Track EBU Magnetic Head in place of standard, add	\$1,830.00
35mm Sound Module with Three-Track Magnetic Head in place of standard, add	\$1,950.00
35mm Anamorphic Capability with Manual Pan and Scan	\$5,000.00

Accessories:

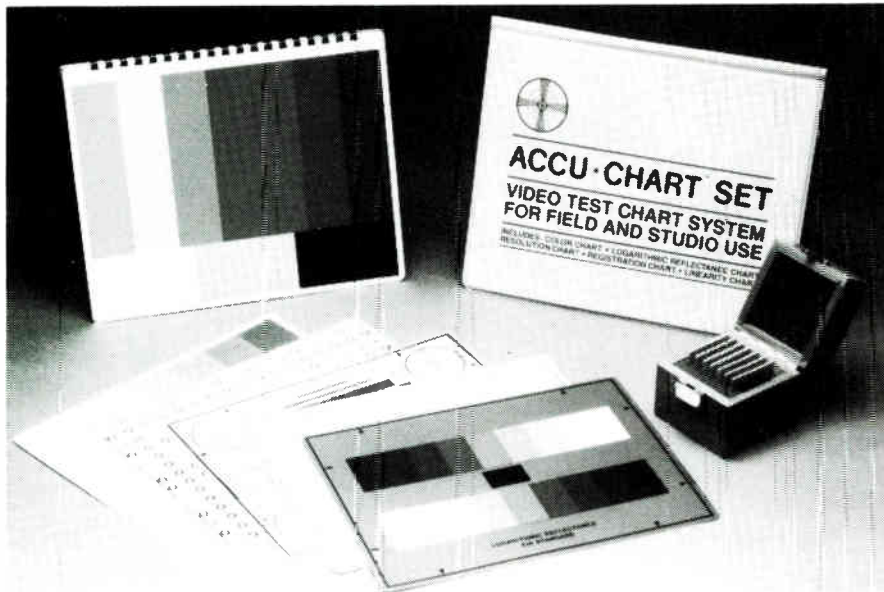
16mm Picture Module with Composite Optical/Magnetic Sound	\$13,750.00
35mm Picture Module with Composite Optical Sound	\$14,950.00
16mm Sound Module with Single Track Magnetic Head	\$4,450.00
35mm Sound Module with Single Track Magnetic Head	\$5,250.00

Videola is a registered trademark of
MAGNASYNC/MOVIOLA CORPORATION

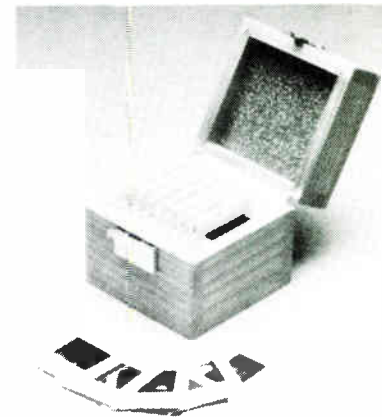
NALPAK VIDEO SALES, INC.

1937-C Friendship Drive
El Cajon, CA 92020
(619) 258-1200

TEST CHARTS/SLIDES



ACCU-CHART



ACCU-SLIDES

ACCU-CHART™ SET

Video Test Chart System for Field and Studio use includes: Color Chart, Logarithmic Reflectance Chart, Resolution Chart, Registration Chart, Linearity Chart.

ACC-2 Set of 5 charts with cover and pouch \$99.50

INDIVIDUAL 9" x 12" CHARTS

Grey Scale Chart

Basic standard for setting light response characteristics of cameras. Essential for balancing R, G and B channels in 3-tube color cameras. Chart consists of 2 sets of 9 neutral grey patches on uniform grey background. Reflectances vary from 3% to 60% according to EIA Logarithmic (2) Law. Dead black (R 0.5%) patch establishes black level.

AC-GS Grey Scale \$34.95

Color Reference Chart

A subjective reference chart for checking color rendition. Consists of three primary (Red, Green, Blue) and three secondary (Yellow, Cyan, Magenta) plus 4 grey levels. In color bar format, but not intended for quantitative use. Use to evaluate overall system color reproduction by comparing transmitter image with original chart. Also for use as a field standard; record image of chart at beginning of each tape and adjust monitor on playback for proper color rendition.

AC-CR Color Reference \$34.95

Linearity Chart

Standard EIA "Ball Chart" for adjustment of camera and monitor linearity. Use with electronically generated grating test pattern for quantitative measurements as specified in EIA RS-170.

AC-LN Linearity \$19.95

Resolution Chart

For evaluation of frequency response of video systems. Adapted from EIA standard chart, includes resolution targets for 200 to 800 TV lines in center and at four corners. Also, test objects to detect ringing and streaking. Continuous neutral grey background for shading adjustments.

AC-RS Resolution \$19.95

Registration Chart

Similar to EIA standard chart, used primarily for registration of 3-tube color cameras. Black square grid on white background includes 200-600 line resolution wedges and circular targets for evaluation of linearity.

AC-RG Registration \$19.95

ACCU-SLIDES™

Provides the same accuracy for use with Telecine set-up and alignment as the standard Accu-Chart system. Accu-Slides are available in either a positive or negative image. They are mounted in a 2" x 2" glass protected format which is supplied with approved pin registered television mounts and anti-Newton ring optical glass. The Accu-Slide set consists of the same five test patterns as the Accu-Chart set and comes in a custom designed wooden box. Accu-Slides are also available individually.

ACCU-SLIDES

Test Slides, available as positive or negative

AS-ST Set of 5 slides complete with wooden box \$80.00

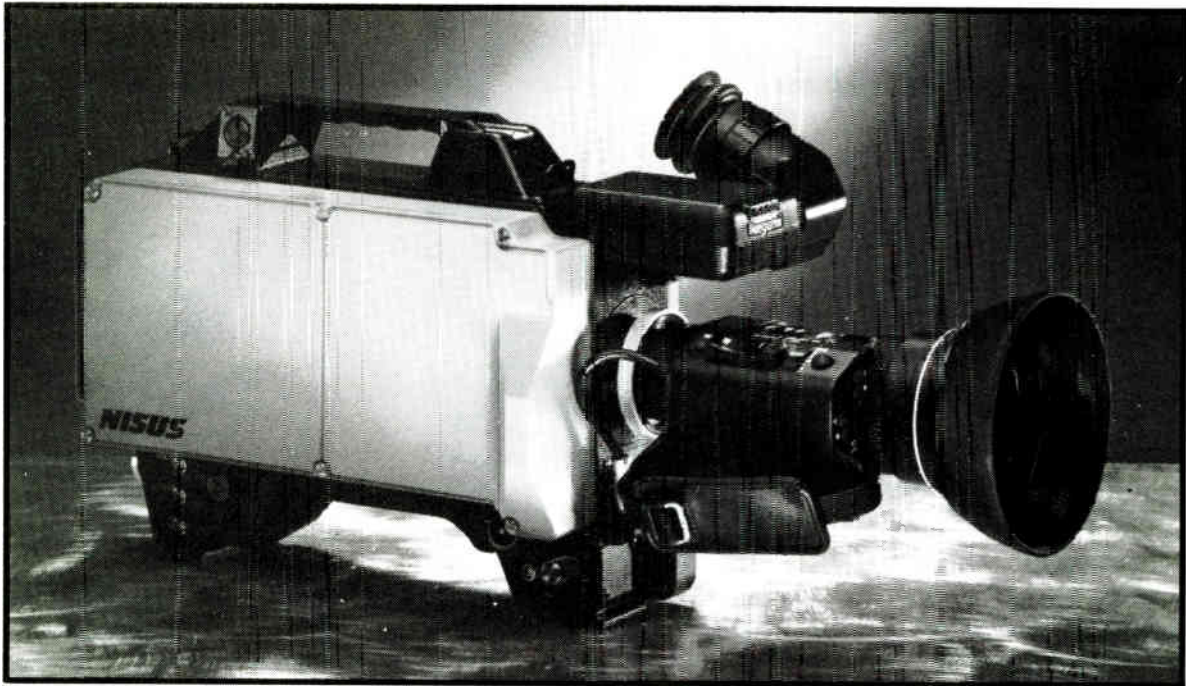
INDIVIDUAL SLIDES

AS-RG Registration \$11.00
AS-RS Resolution 11.00
AS-LN Linearity 11.00
AS-CR Color Reference 11.00
AS-GS Grey Scale 11.00
WB-1 Wooden Box, holds total of 7 slides 39.00

NISUS VIDEO, INC.

6329 Lomas NE
Albuquerque, NM 87110
(505) 268-4587

STOP ACTION VIDEO



N-79E

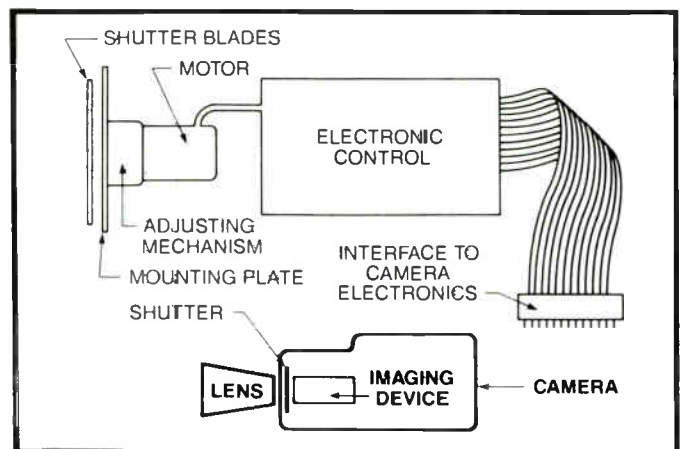
NISUS N-79E STOP ACTION VIDEO

Nisus stop-action video, is now available for the Ikegami HL-79E broadcast-quality ENG/EFM camera.

Widely-acclaimed Nisus shuttered video is now available on the world's most respected broadcast camera, the Ikegami HL-79E. Dramatic Nisus clarity in real-time and no-motion playback, superior color saturation and an absence of blur during zooms and pans combine with renowned Ikegami quality to give you the most reliable NTSC-standard video.

FEATURES

- Low-capacitance diode gun Plumbicons®.
- Significant performance advantages in sensitivity, signal-to-noise ratio, registration accuracy, resolution and RFI immunity.
- The Nisus shutter is continuously adjustable from 1/250th to 1/5000th of a second.
- Shutter speed may be changed at any time, either on the camera or remotely (with optional CCU), without stopping the camera.
- No background smear or loss of color saturation during pans or zooms.
- Superior image clarity during action sequences. Outstanding dynamic resolution.
- The shutter may also be turned off, thus allowing the camera to be used as a standard video camera.



SPECIFICATIONS

- Shutter:** Shutter system: rotary focal plane shutter with single opening.
Shutter speed: continuously adjustable from 1/250th to 1/5000th of a second (system may be turned off, thereby providing normal video).
- Scanning:** 525 lines/frame; 60 fields/second with or without shutter.
30 frames/second (2:1 interface) with or without shutter.
- HL79E Shutter for HL79E Series **\$29,600.00**

100 Kalmus Drive
Costa Mesa, CA 92626
(714) 979-3993 (213) 627-4057
Telex 685-641

SYSTEM 30

Model 30 fluid head with one handle,
Model 55M claw ball metal tripod with
spreader and spike guards **\$2098.00**
Same as above, except substituting
Model 55W claw ball wooden tripod **2019.00**
O'Connor molded system case for above (08143) . . **179.00** †
Anvil "ATA" case for above (00985) **279.00** †



SYSTEM 30

SYSTEM 50

Model 50 fluid head with two handles,
Model 55M claw ball metal tripod with
spreader and spike guards **\$3129.00**
Same as above except substituting
Model 55W wooden tripod **2998.00**
O'Connor molded system case for above (08143) . . **179.00** †
Anvil "ATA" case for above (00985) **279.00** †



SYSTEM 50



SYSTEM 100

SYSTEM 52

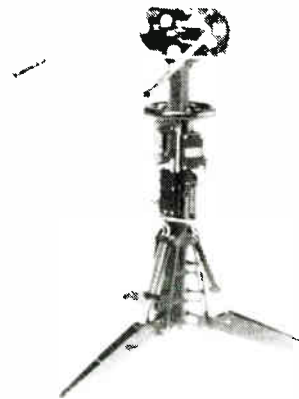
Model 50D fluid head with two handles,
Model 102B Hydro-Ped **\$7398.00**
Anvil "ATA" case for above (00986) **449.00**

SYSTEM 100

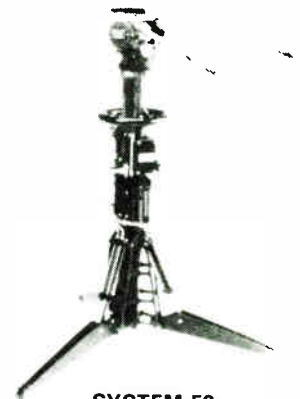
Model 100 fluid head with side loading
platform and two handles,
Model 55M claw ball metal tripod with
spreader and spike guards **\$4298.00**
Anvilite tripod case and Anvil "ATA"
fluid head case for above (100C-094 and 55-019) . . **404.00** †

SYSTEM 102

Model 100 fluid head with side loading
platform and two handles,
Model 102 Hydro-Ped **\$8685.00**
Anvil "ATA" cases for fluid head and
Hydro-Ped (100C-094 and 102B-112) **664.00** †



SYSTEM 102



SYSTEM 52

SYSTEM 105

Model 100 fluid head with side loading
platform and two handles, Model 155W
super claw ball wooden tripod with
spreader **\$4398.00**
Anvilite tripod case and Anvil "ATA"
fluid head case for above (100C-094 and 155-019) . **404.00**

SYSTEM 105-HD

Model 100C-HD fluid head with side loading platform
and two extendable handles, Model 155W Super
Claw Ball Tripod with spreader **\$5034.00**
Same as above except with
Mitchell Base and tripod **4955.00**
Anvil "ATA" cases for fluid head and Anvilite
tripod case for above (08172 and 155-019) **404.00**

SYSTEM 155

Model 150 fluid head with two handles,
Model 155W super claw ball wooden tripod
with spreader **\$7498.00**
Anvilite tripod case and Anvil "ATA" fluid
head case for above (155B-110 and 155-019) **458.00** †
† Price applies if purchased with Camera Support System

MODEL 30 FLUID CAMERA HEADS

Fluid Head with quick release adjustable camera platform and Claw Ball/Pro Jr Base with tiedown all assembly, one 10" handle, and counterbalance adjustment wrench **\$1395.00**
Extra Handle (1/2" x 10") **70.00**
Anvil "ATA" case for above (30B-066) **209.00†**

MODEL 50 FLUID CAMERA HEADS

Fluid Head with 150 in. lb. counterbalance spring, quick release adjustable camera platform and Claw Ball/Pro Jr Base with tiedown assembly, one 15" handle **\$2295.00**
Extra Handle (1/2" x 15") **80.00**
Anvil "ATA" case for above (50D-130) **239.00†**

MODEL 100 FLUID CAMERA HEADS

Fluid Head with 500 in. lb. counterbalance spring, Mitchell base with tiedown assembly, side loading platform and one 15" handle **\$3395.00**
Same as above except fixed camera platform **3150.00**
Super Claw Ball Base for either of above, add **80.00**
Extra Handle (5/8" x 15") **95.00**
Extended Handle (3/4" x 26") in place of 15" handle, add **70.00**
Anvil "ATA" case for above (100C-094) **295.00†**

MODEL 100-HD FLUID CAMERA HEADS

Fluid Head with 800 or 1000 in. lb. counterbalance spring, Mitchell base with tiedown side loading platform and one extendable handle **\$3950.00**
Same as above except fixed camera platform **3675.00**
Super Claw Ball Base for either of above add **75.00**
Extra extendable handle **199.00**
Anvil "ATA" case for above **295.00†**

MODEL 150 FLUID CAMERA HEADS

Fluid Camera Head with 1000 in. lb. counterbalance spring, Mitchell base with tiedown assembly, side loading platform and one 15" handle **\$6595.00**
Mitchell to Super Claw Ball Adaptor with tiedown **200.00**
Extra Handle (15") **95.00**
Extended Handle (3/4" x 26") in place of 15" handle, add **70.00**
Anvil "ATA" case (150B-110) **349.00†**

MODEL 102 HYDRO-PED

Complete Hydro-Ped with black polyurethane finish and Pro Jr top plate **\$5195.00**
OPTIONS
Mitchell top plate and white polyurethane finish **N/C**
Anvil "ATA" Hydro-Ped Case (102B-112) **369.00†**
HYDRO-PED ACCESSORIES
102B-116 Studio Wheels, set of three 6" Studio-Type Wheels **\$390.00**
Hydro-Ped Casters
102B-114 3-1/2" Wheels (2 fixed, 1 caster) **280.00**
102B-115 3-1/2" Wheels (3 casters) **280.00**
102B-004 Pro Jr Top Plate **130.00**
102B-016 Mitchell Top Plate **140.00**

MODEL 55M-B TRIPODS—Claw Ball

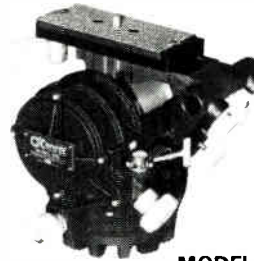
Claw Ball Metal Tripod Complete: (regular tripod, spreader and spike guards) **\$795.00**
Claw Ball Metal Tripod only:
Regular (56" to 24") **619.00**
Baby (24" to 18") **595.00**

MODEL 55W-B—TRIPODS—Claw Ball

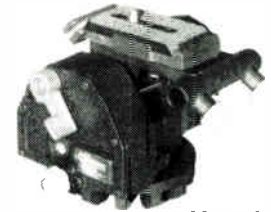
Claw Ball Wooden Tripod Complete: (regular or sawed off tripod, spreader and spike guards) **\$679.00**
Claw Ball Wooden Tripod only:
Regular (60" to 30") **495.00**
Sawed Off (43" to 19") **495.00**
Baby (22" to 17") **485.00**

MODEL 155W TRIPODS—Super Claw Ball or Mitchell

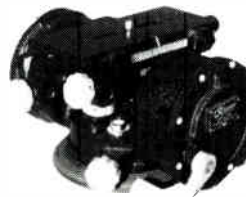
Super Claw Ball Wooden Tripod (Please specify Super Claw Ball or Mitchell top casting)
Regular (67" to 38") **\$739.00**
Sawed Off (58" to 34") **739.00**
Baby (38" to 26") **729.00**



MODEL 50



MODEL 30



MODEL 100



MODEL 55M-B, Regular and Baby

MODEL 45 HI HATS

Claw Ball Hi-Hat (5-1/2" height) **\$155.00**

MODEL 145 HI HATS

Super Claw Ball Hi-Hat (6" height) **\$225.00**

MODEL 53 TRIPOD Dolly

Tripod Dolly with 6" diameter wheels; choice of:
Regular (43" diameter) **\$1195.00**
Wide Stance (48" diameter) **1195.00**

MODEL 54 TRIPOD Spreader

Spreader, Internal adjustable with locking pins **\$169.00**

MOLDED CASES—For Systems and Tripods

Fits Systems 30 & 50 or Model 55 Reg (08143) **\$179.00†**
Fits Model 55 Baby (08144) **169.00†**
Fits System 30 & 50, wooden (08174) **184.00†**
Fits Model 155 Regular (08169) **199.00†**
Fits Model 155 Baby (08170) **193.00†**

TRIPODS—Cases

Fit all Model 55 (Metal or Wood)
Regular Length (55-019) **\$109.00†**
Baby Length (55-020) **99.00**
Fit all Model 155s
Regular & Sawed off Length (155-022) **149.00**
Baby Length (155-023) **149.00†**

MODEL 51 CLAW BALL/COLUMN ADAPTOR

Claw Ball to Round Column Adaptor (Please specify 1-3/4", 1-7/8", or 2") **\$195.00**

MODEL 21 VIDEO MONITOR SIDE MOUNT

A Universal Side Mount Plate for mounting any monitor beside a video camera, with 2-3/8-16 screws **\$175.00**

†price applies if purchased with system or tripod.

100 Kalmus Drive
Costa Mesa, CA 92626
(714) 979-3993 (213) 627-4057
Telex 685-641

TRIPOD — Components

00896	Retractable Spike Guards (set of 3)	\$ 29.00
55-009	Claw Ball Top Casting	125.00
155-001	Super Claw Ball Top Casting	195.00
155-017	Mitchell Top Casting	195.00
08119	Spare Stainless Steel Spike and Nut	4.50
08120	Spreader Lock Pins, ea.	5.70
55B-021	Tripod foot, w/spreader attachment	8.00

ADAPTORS

To mate base of Fluid Head to top casting of tripod.

155-024	Super Claw Ball to Mitchell, with tie-down	\$325.00
08111	Mitchell to Arri 35, with tie-down	295.00
100C-060	Mitchell to Super Claw Ball, with tie-down	200.00
00823	Pro Jr/Flat to Mitchell, with tie-down	145.00
50D-062	Pro Jr/Flat to Arri 16	125.00
00843	Pro Jr/Flat to Claw Ball with tie-down	130.00

FLUID HEAD COMPONENTS

Camera Platforms (handles not included)

For Model 30

30B-057	Lisand adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$320.00
30B-058	Cine 60 adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$320.00
30B-067	O'Connor adjustable Quick Release Platform Assembly, with Camera Plate with Screw (3/8" - 16")	\$320.00
30B-068	O'Connor Side Loading adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$385.00

For Model 50

50D-123	O'Connor adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$320.00
50D-096	Cine 60 adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$320.00
50D-095	Lisand adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$320.00
50D-131	O'Connor Side Loading adjustable Quick Release Platform Assembly, with Camera Plate and Screw (3/8" - 16")	\$385.00

For Model 100 or 100-HD

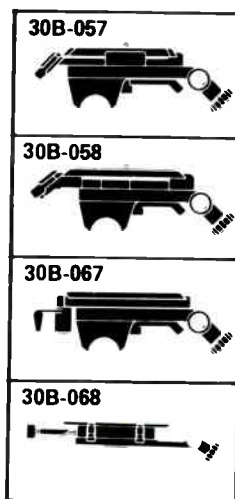
100C-074	Fixed Camera Platform with fixed Camera Screw	\$370.00
100C-087	O'Connor Side Loading adjustable Quick Release Platform with Camera Plate and Two Screws (3/8" - 16")	\$695.00

For Model 150

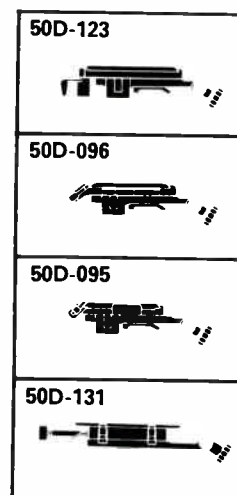
150B-109	O'Connor Side Loading adjustable Quick Release Platform with Removable Side Loading Camera Mounting Plate and Two Screws (3/8" - 16")	\$695.00
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Handles

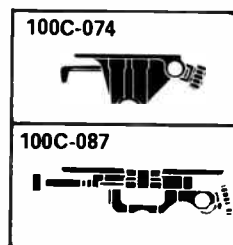
08093	Standard Handle for Models C or 30 (1/2" diameter, 10" length)	\$70.00
08094	Standard Handle for Model 50 (1/2" diameter, 15" length)	\$80.00
08095	Standard Handle for Model 100 or 150 (5/8" diameter, 15" length)	\$95.00
08122	Extended Handle for Video for Models 100 or 150 (3/4" diameter, 26" length)	\$170.00
00816	Dual Video Handle Set for Model 30 or 50 with fixed Single Point Platform	\$250.00



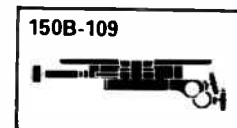
FOR MODEL 30



FOR MODEL 50



FOR MODEL 100



FOR MODEL 150

Camera Mounting Plates with Screws

08065	Lisand Type for Models 30 or 50	\$35.00
08066	Cine 60 Type for Models 30 or 50	35.00
18137	O'Connor Type for Models 30 or 50	35.00
08118	Side Mounting Type for Model 50	40.00
08107	Side Mounting Type for Models 100 or 150	125.00
08106	3/8" - 16" Replacement Screw	3.00
00841	1/4" - 20" Replacement Screw	3.00

Bases (tie-down assembly is included)

08068	Pro Jr/Flat Base for Models 30 or 50	\$130.00
100C-096	Pro Jr Base for Model 100	145.00
08067	Claw Ball/Pro Jr Base for Models 30 or 50	130.00
50D-060	Arri 16 Ball Base for Models 30 or 50	95.00
08121	Arri 35 Ball Base for Models 30 or 50	170.00
50D-128	Mitchell Base for Model 50	150.00
100C-090	Mitchell Base for Model 100	150.00
100C-092	Super Claw Ball Base for Model 100	225.00
08108	Flat Base for Models 30 or 50	55.00
100C-095	Arri 35 Ball Base for Model 100	170.00

Replacement Tie-Down Assemblies

08102	Pro Jr/Flat Base or Pro Jr/Flat to Arri 16 Adaptor	\$30.00
08070	Claw Ball/Pro Jr Base	45.00
08071	Pro Jr/Flat to Claw Ball Adaptor	45.00
08110	Pro Jr/Flat to Mitchell Adaptor or Mitchell Base	35.00
08112	Arri 35 Ball Base	55.00
08073	Super Claw Base or Mitchell to Super Claw Ball Adaptor	50.00
08113	Mitchell to Arri 35 Adaptor	55.00

OLYMPUS

145 Crossways Park West
Woodbury, NY 11797
(516) 364-1300 Telex 145-523

PORTABLE VIDEO SYSTEMS

COLOR VIDEO CAMERAS

Ease of operation puts video cameras from Olympus in a class of their own. Focus, white balance and exposure are all automated to make video photography with an Olympus video camera easy.

Automatic focusing

The video cameras from Olympus employ an active autofocus system using an infrared beam.

Continuous, fully automatic white balancing

The full-auto white balance control assures properly adjusted color indoors or out.

Automatic exposure

The exposure automatically and continuously adjusts to changing lighting conditions.

High resolution, extremely sensitive Newcosvicon pickup tube

Exceptional image definition and high resolution are the hallmarks of the Newcosvicon image pickup tube. This tube also offers excellent low-light performance.



VX-305

VX-305

Don't be fooled by this camera's light weight and easy operation. Inside this slim, 2.43 lb. camera reside the latest advances in electronic automation and pickup tube miniaturization to make it the lightest full-automatic video camera in the world.

- Detachable microphone
- Backlight compensation switch
- Fade button
- Auto/manual focus selector
- 6X Power zoom lens
- 1/2" B/W electronic viewfinder
- Date/time display selector
- Power standby/operate switch
- White balance switch
- Tripod mount

VX-305 Compact Color Video Camera with Auto Focus 6x f/1.2 Power Zoom Lens (Macro), VF-KG 1 Pistol Grip \$975.00



VX-304

VX-304

The VX-304 is a top-performance, fully automatic camera that lets you enjoy either the simplicity of point-and-shoot operation or the wide-open creative potential of full-manual override, ultra-low available-light shooting and a host of automated special effects. Its truly first-rate performance makes it ideal for professionals and advanced video photographers, as well as beginners.

Full-function viewfinder monitor

You can monitor nine functions essential for camera operation right on the viewfinder screen with the help of the OK Monitor.

Titling facilities

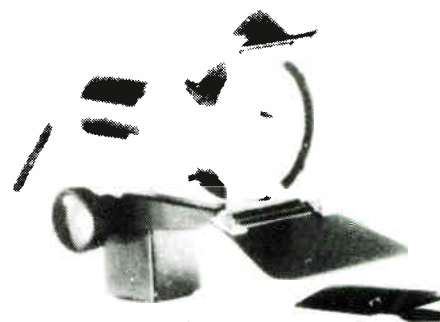
Under a cover on the camera's left side there's a flexible, easy-to-use character generator for titling. With simple keyboard operation, eight different titles can be composed and stored in memory.

FEATURES

- Stereo microphone
- Focus out button
- 8X Zoom lens
- Zoom lever/Macro setting knob
- Date/Stopwatch display mode selector
- Fade button
- Recording review button
- Recording start/stop button
- Auto/Manual focus selector
- VCR playback control buttons
- White balance selector
- Auto/Manual aperture control
- Stopwatch start-stop/lap-reset buttons

VX-304 Color Video Camera

with Stereo Audio
Recording Capability, Auto Focus 8x f/1.4
Power Zoom Lens (Macro), VF-KF4 Electronic Viewfinder
\$1350.00



WOODBURY VIDEOLITE

Finally, video lights designed for video. A must for all serious devotees of video photography, for that extra luminosity when it's needed. Without bulky, heavy, hot equipment to make supplementary lighting difficult.

FEATURES

- Cool operation for convenience, comfort, longer lamp life
- Lightweight and compact, a mere 8 ozs.
- 3400° K color temperature, correct for video
- Quartz Halogen lamp for full output throughout lamp life
- 40° light beam covers 99% of video tube requirements
- Adjustable barn doors for professional light pattern control

Model 120 for AC operation, provides 80 foot/candles (at 10 ft.)

Model 12L for DC operation, provides 75 foot/candles (at 10 ft.) (requires Battery Pack and Charger 12B)

Model 12L (DC) Woodbury VideoLite \$ 74.50

Model 12B Battery Pack 149.50

Model 120 (AC) Woodbury VideoLite 74.50

Model 12L Replacement Lamp for Woodbury VideoLite 29.95

Model 120 Replacement Lamp for Woodbury VideoLite 29.95

OMNIMOUNT SYSTEMS

10850 Vanowen Street
North Hollywood, CA 91605
(818) 766-9000 Telex 181149/West/LSA

MOUNTS



THE 100 SERIES OF OMNIMOUNT ASSEMBLIES

100WA
Wall Mount Assembly, with a maximum recommended load of 70 lbs.* The single-bend tube and clamp/flange unit attaches to the back of the device that is to be mounted.

100WA \$69.95

100WB
Wall Mount Assembly, with a maximum recommended load of 70 lbs.* There is a double-bend tube, with a clamp/flange unit that attaches to the bottom of the device that is to be mounted.

100WB \$73.95

100WBZ-802
Wall Mount Assembly, with a maximum recommended load of 70 lbs.* There is a double-bend tube. The unit is designed specifically for use with the BOSE® Model 802 speaker, and includes all necessary hardware for attaching it to the speaker.

100WBZ-802 \$76.50

101RWA/101CA
Both of these models are Ceiling Mount Assemblies with a maximum rated load of 60 lbs.* The 101CA has a ceiling plate for direct mounting into the ceiling. Where height extension is required, use the 101RWA. It is ideal for suspended ceiling installations, and mounts securely above the false ceiling line. The coupler has a standard 3/4" tapered female plumbing pipe thread at the open end. A finishing flange "dresses down" the ceiling tile.

101RWA \$71.50

101CA 69.95

101SWA
Short Tube Assembly, with flange has a maximum recommended load of 70 lbs.* This unit is for close mounting on walls, floors, or ceilings.

101SWA \$60.50

101STO
Short Tube Assembly, without flange; maximum recommended load of 70 lbs.* This unit comes with nuts and washers, for direct installation on the mounting surface.

101STO \$52.50

101VDM
Short Tube Assembly; maximum recommended load of 60 lbs.* Available for horn and driver combinations made by some leading manufacturers.

101VDM \$68.95

THE 50L SERIES OF OMNIMOUNT ASSEMBLIES

All Omnimount models bearing the "L" designation are made with a strong but thinner wall tubing, along with a more economical bonding process for the ball and tube.

These models are a cost-efficient and effective alternative for light-duty applications. Maximum recommended load on all of the 50L Series: 20 lbs.*

THE 50 SERIES OF OMNIMOUNT ASSEMBLIES

50LWA
Wall Mount Assembly, with a maximum recommended load of 20 lbs.* The single-bend tube attaches to the back of the device that is to be mounted.

50LWA \$38.95

50LWB
Wall Mount Assembly, with a maximum recommended load of 20 lbs.* There is a double-bend tube, with a clamp/flange unit that attaches to the bottom of the device that is to be mounted.

50LWB \$44.95

50LRWA/50LCA
These models are Ceiling Mount Assemblies with a maximum rated load of 20 lbs.* Ideal for suspended ceiling installations, and mount securely above the false ceiling line. The coupler has a standard 3/4" tapered female plumbing pipe thread at the open end. A finishing flange "dresses down" the ceiling tile.

50LRWA \$39.95

50LCA 37.95

50LSWA/50HSWA
Short Tube Assembly, with flange, has a maximum recommended load of 20 lbs.* This unit is for close mounting on walls, floors, or ceilings.

50LSWA \$28.95

50HSWA 32.95

50LSTO
Short Tube Assembly, without flange, maximum recommended load of 20 lbs.* This unit comes with nuts and washers, for direct installation on the mounting surface.

50LSTO \$24.95

OMNIMOUNT SPECIAL HANDLES

50H
For Series 50 Omnimount assemblies. It is for use where frequent adjusting is required, and makes unnecessary the use of a socket drive tool. The assemblies that use this handle have a maximum recommended load of about 20 lbs.*

50H \$6.40

ACCESSORIES

50PA
1/2" Plumbing pipe for 50 Series—7/16" x 20 locknut.

50PA \$9.50

75PA
Adapts standard Omnimount 5/8" x 18 N.F. threaded tube to standard 3/4" tapered plumbing pipe.

75PA \$9.50

500C
1" x 13 Internal thread for C clamp bolt. 5/8" x 18 Internal thread for 100 Series tubing (C clamp not included).

500C \$9.50

625T1
For Series 50 Omnimount assemblies. It adapts Series 50 tubing to 1375C, 1500C and 75 PA accessories. (5/8" x 18 external thread, 7/16 x 20 internal thread).

625T1 \$8.50

1375MC
Adaptor for use with tubular tripod stands using 1-3/8" diameter tubing. Omnimount tube and ball assembly coupled to top of stand affords angle adjustment unavailable with fixed-flange units.

1375MC \$11.50

1500C
Same as 1375C, except that it is for use with 1-1/2" diameter tubing.

1500C \$11.50

4375MC
For Series 50 Omnimount assemblies. It adapts 7/16" Series 50 tubing to a standard 5/8" x 27 microphone stand thread.

4375MC \$8.50

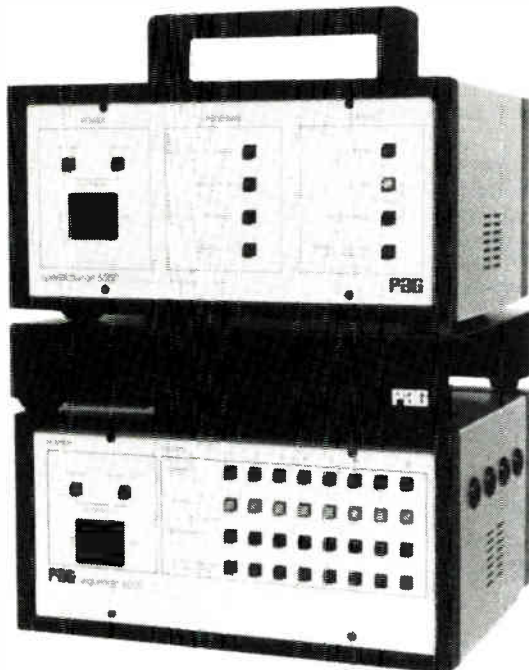
*All recommended loads are based on optimum conditions, sensible weight distribution, and proper installation.

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(704) 274-1438 Telex 353-481

BATTERY CHARGERS/ ACCESSORIES



SPEEDCHARGE 6000

Model #9407

- FAST & SLOW CHARGE BATTERIES AND BELTS
- REVITALIZE POOR BATTERIES
- CAMERA/VTR POWER SUPPLY

Built-in microprocessor selects correct charge for any NiCad battery or belt (some Lead Acid) of 10-15 Volts and 2-12Ah capacity. Automatic 110/220V switching. (Fast charges 4Ah battery in 1 hour). Charge via cable mounted XLR-4 pin. PP90 adaptor supplied. Other adaptors below.
Models in other ranges available. \$1095

SEQUENCER 6000

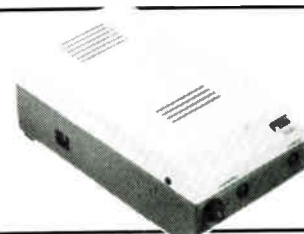
Model #9418

Connects to Speedcharge 6000 to sequentially charge any assortment of 8 NiCad batteries or belts (and some Lead Acid) in 10-15 volts; and 2-12Ah capacity. Status indicators for all eight channels. Eight PP90 sockets. See adaptors below. **\$825**

SOLO CHARGER

Model #9426

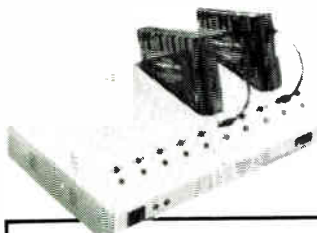
Lightweight low cost overnight battery charger. 400mA charge current for 4Ah (12-14V) batteries or belts. PP90 socket. See adaptors below.
(7Ah & 10Ah versions available. Also 24-30 volt models) \$175



10/90 MULTICHARGER

Model #9419

Charges up to ten PP90 type (12V/4Ah) batteries overnight simultaneously and independently. Reduces to trickle charge after 14 hours. Ten PP90 sockets. See adaptors below. **\$995**



ACCESSORIES AND ADAPTORS

(Other adaptors available)

For Speedcharge 6000 (has XLR-4 pin)

#9447	XLR-4 socket to PP90 socket adaptor	\$31
#9468	XLR-4 socket to PP60 socket adaptor	\$31
#9442	XLR-4 socket to Anton Bauer clip adaptor ...	\$39

For Sequencer 6000 or SoloCharger (has PP90 socket)

#9458	PP90 plug to Anton Bauer clip adaptor	\$39
#9455	PP90 plug to XLR-4 socket adaptor	\$22
#9488	PP90 plug to PP60 socket adaptor	\$29

#9469	Stacking Bracket (stacks Speedcharge and Sequencer)	\$19
#9472	Stand holds four PP90 batteries for charging	\$19
#9500	Shipping case for Speedcharge 6000 & Sequencer 6000	\$349

CAMERA BATTERY CLIPS

#9456	PAGCLIP 90. PP90 battery holder converts Anton Bauer back on any camera to accept PP90 battery (Ikegami, Sony, Hitachi, RCA, Philips, Sharp, JVC, Panasonic, etc., cameras) ..	\$159
#9463	PAGCLIP 90. Battery holder for Hitachi FP-22/SK-97	\$129
#9464	PAGCLIP 90. Battery holder for Hitachi FPZ-31 or FP-15	\$129
#9459	PAGCLIP 90. Battery holder for Sony M3	\$129
#9467	PAGCLIP 90. Battery holder for JVC 1900, 310, and 900 cameras	\$129
#9482	External mounting bracket for Sony Betacam battery PP3B	\$72



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PAGPAC BATTERIES/ PAGBELTS/PAGLIGHTS

PAGPAC BATTERIES

PAG batteries are high quality **NiCads** recommended by and used in most video equipment including Ampex, Fernseh, Hitachi, JVC, Philips, RCA and Sony. (All Pagpac batteries may be fast charged with Speedcharge 6000/Sequencer 6000 or appropriate Solo Charger.)

Batteries with Anton Bauer Mount

- | | | | |
|-------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| #9379 | PP79 | 12 volt 4Ah battery for Ikegami HL-79 series and HL-95, cameras with Anton Bauer mount. Same as PP86A but has multi-pin connector for charging with Ikegami fast charger. | \$459 |
| #9387 | PP86A | 13 volt 4Ah battery with Anton Bauer mount. Use with Sony M3, Ikegami HL-79 series, Sharp, RCA, all Hitachi, Panasonic and others that accept Anton Bauer mount. (Similar to Pro Pac™ 13.) | \$423 |
| #9386 | PP86 | 14 volt 4Ah battery with Anton Bauer mount. (Similar to Anton Bauer Pro Pac™ 14.) Use with Panasonic Recam and Ampex ARC-10, and cameras listed for PP86A | \$449 |



(Other batteries available or made to order)

On Board Batteries

- | | | | |
|-------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| #9390 | PP90 | 12 volt 4Ah approved replacement for Sony BP90 battery. Use to power Sony BVU series VTR's, Vidtek RM-5A monitor and with PAGCLIP to power most ENG cameras. | \$235 |
| #9360 | PP60 | 12 volt 2.5Ah NiCad replacement for Sony BP-60 Lead Acid. Use for Sony VO-4800 VTR. Can be recharged on Sony recharger. | \$199 |
| #9318 | PP125 | 12 volt 2.5Ah battery for RCA Hawkeye cameras. | \$259 |
| #9303 | PP3B | 13.2 volt 4Ah battery for Sony Betacam. Run time approximately 1 hr. 15 min. in full record mode. External mounting bracket (Model #9482) required. See Camera Battery Clips listing | \$379 |
| #9394 | PP94 | 12 volt 4Ah battery for Hitachi SK-97 camera. Mounts on Hitachi factory supplied camera back. | \$459 |
| #9400 | PP100 | 12 volt 4Ah battery for Hitachi HR-100 1" VTR. | \$279 |
| #9302 | PP2 | 12 volt 4Ah battery for JVC KY-2000/2700. | \$449 |

PAGBELTS

PAGBELTS are deep molded top quality leather encasing 4Ah, 7Ah, or 10Ah sealed NiCad cells with spot welded nickel inter-cell connecting strip. Available with or without lightweight internal 14 hour overnight charger (IC). (PAGBELTS may be fast charged with Speedcharge 6000/Sequencer 6000 or appropriate PAG Solo Charger.)

PAGBELTS WITH INTERNAL CHARGERS

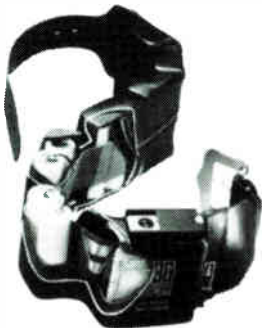
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|-------|----------------------------------------------------|---------------|
| #9203 | 12V/4Ah Belt (runs PAGLIGHT 100 for 26 min.) | \$621 |
| #9253 | 12V/7Ah Belt (runs PAGLIGHT 100 for 45 min.) | \$837 |
| #9283 | 12V/10Ah Belt (runs PAGLIGHT 100 for 65 min.) | \$1061 |

PAGBELTS WITHOUT INTERNAL CHARGERS

(Use Speedcharge 6000/Sequencer 6000)

- | | | |
|-------|----------------------------------------------------|--------------|
| #9103 | 12V/4Ah Belt (runs PAGLIGHT 100 for 26 min.) | \$501 |
| #9153 | 12V/7Ah Belt (runs PAGLIGHT 100 for 45 min.) | \$702 |
| #9123 | 12V/10Ah Belt (runs PAGLIGHT 100 for 65 min.) | \$945 |

(Other belts in other voltages and Ah are available)



PAGLIGHTS

Robust but lightweight handlamps tilt on removable handle for bounce light. 1/4" screw bush provided for mounting. Spare bulb and fuses store in handle. Comes with 2 fuses, filter ring, and barndoor holder.

- | | | |
|-------|----------------------------------|--------------|
| #9800 | PAGLIGHT 100 (12V/100 watts) ... | \$223 |
| #9820 | PAGLIGHT 250 (24V/250 watts) ... | \$231 |

PAGLIGHT KITS 100 WATTS OR 200 WATTS

(Includes PAGLIGHT, 2 bulbs, belt indicated with internal charger (IC), 3 fuses, and aluminum case.)

- | | | |
|-------|------------------------------------------------------------------|---------------|
| #9810 | PAGLIGHT Kit 100/4Ah (100 watt light & 12V/4Ah IC PAGBELT) ... | \$957 |
| #9811 | PAGLIGHT Kit 100/7Ah (100 watt light & 12V/7Ah IC PAGBELT) ... | \$1097 |
| #9816 | PAGLIGHT Kit 100/10Ah (100 watt light & 12V/10Ah IC PAGBELT) ... | \$1297 |
| #9823 | PAGLIGHT Kit 250/4Ah (250 watt light & 24V/4Ah IC PAGBELT) ... | \$1397 |

(Other Kits with different PAGBELTS are available)

ACCESSORIES

- | | | | | | |
|-------|-------------------------------------------------|-------------|-------|---------------------------------------------------------------------------------|-------------|
| #9801 | Bulb for PAGLIGHT 100 (100 watts/12 volts) | \$14 | #9809 | Lamphead Accessory Kit (4 Leaf Rotating Barndoors, and clear Safety Glass) | \$65 |
| #9821 | Bulb for PAGLIGHT 250 (250 watts/24 volts) | \$12 | | | |
| #9804 | Dichroic Filter (for PAGLIGHT 100 or 250) | \$59 | | | |

Prices and Specifications Subject to Change Without Notice.



S1 SUPER HI-RESOLUTION SINGLE

WV-6000 ENG/EFP

The S1 series: Three tube level performance with the economy and ease of operation of a single tube camera. Designed for the video professional: it is a camera system flexible enough for a myriad of applications — with advanced engineering never before incorporated in a single tube camera.

- 2/3" Pick-up Tube
- Weight: 9.9 lbs.
- 6 MHz Saticon Tube for 420 lines horizontal resolution

- 50 dB Signal-to-Noise Ratio
- Full System Operation with internal Gen Lock or optional WV-RC60 Studio Remote Control
- 2 lines Vertical Enhancement (standard)
- Minimum Illumination 20 Lux with f/1.6 12X Servo Zoom
- Color Bars; +6, +12 dB and switchable AGC
- Titler, VTR remote, Stereo Mic, F.B.C.
- Up-to-future design with magnesium alloy construction

WV-6000 \$2995.00

FEATURES		2/3" Pick-up Tube
MODEL*		WV-6000
(mount)		(c)
Suggested Retail Price ^①		\$2995
Weight (lbs)		9.9
IMAGE SENSING SYSTEM	Pick-Up Technology	6.0 MHz SATICON™
	Sensitivity ^② (fc)	2 at f1.6 ^③
	Resolution ^④	420
	Signal To Noise (dB)	50
	Zoom Ratio	12:1
	Focal Length (mm)	10.5 - 126
	Filter Dia. (mm)	72
	Auto Focus	
	White Balance	Auto, 2 Mem
	Viewfinder	1.5 B&W**
SPECIAL EFF.	Character Gen.	Yes
	Time/Date	Yes
	Stop Watch	Yes
	Key Effects	
	Neg./Positive	
	Fade In/Out	Yes
SPECIAL FEATURES	Rec/Review	Yes
	VTR Remote	
	Gen Lock w/SCH Adj.	Yes
	Color Bars	Yes
	RCU	Yes
	R-B Gain	Yes
	R-B Master Pedestal	Yes
JACKS	Audio	Stereo
	Video (BNC)	Yes
	Earphone	Yes



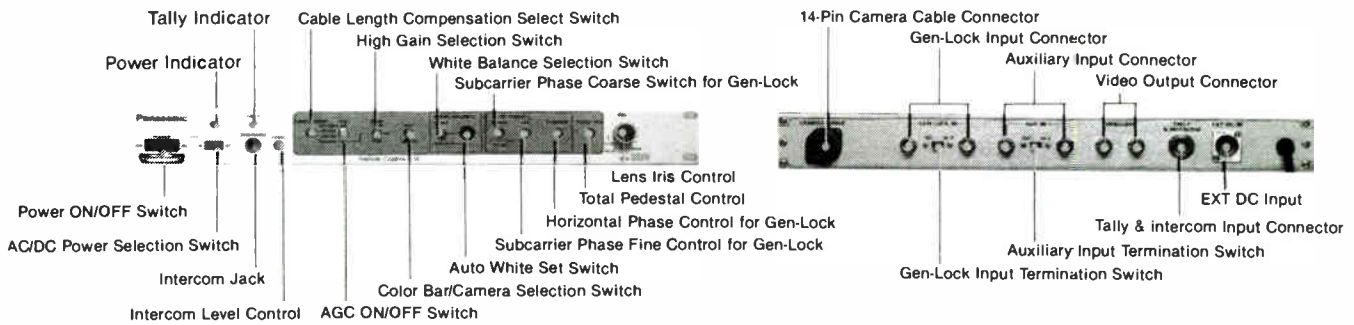
WV-6000

NOTES KEY:

1. Prices may change without notice
 2. Minimum lighting
 3. Horizontal
 4. 12 dB gain
- *Maximum Optional Cable length to VCR: 75 feet
 **5" B/W and 1.5" Color Optional
 Blank Space = No

TUBE COLOR SYSTEM CAMERA

Optional Remote Control Unit (RCU) WV-RC60

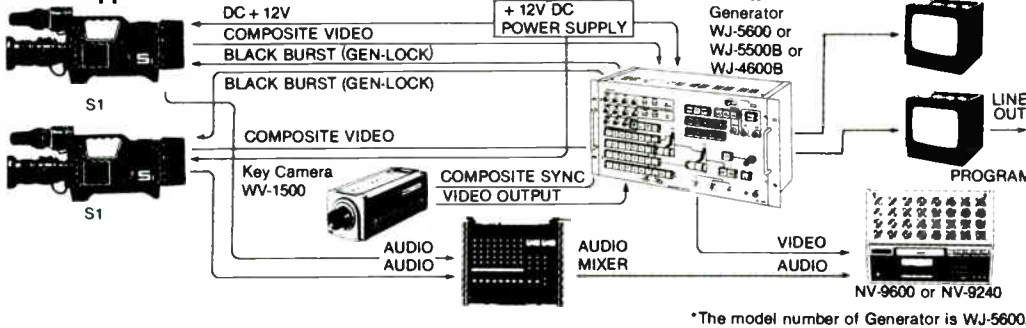


SYSTEM DIAGRAMS

ENG Application

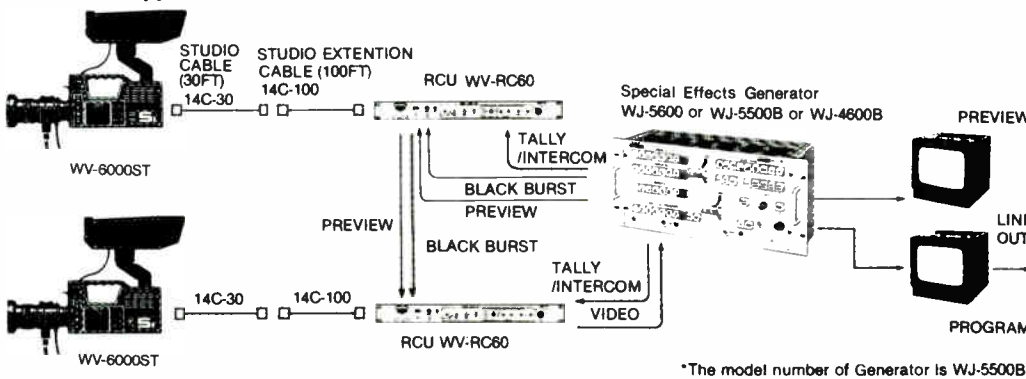


EFP Application



*The model number of Generator is WJ-5600.

STUDIO Application



*The model number of Generator is WJ-5500B.

STANDARD COMPOSITION

- ENG Color Camera WV-6000 . \$2995.00
- WV-6000H: Camera Head
- WV-VF60: 1.5" B/W Electronic Viewfinder
- WV-LZ12/12: 12:1 Servo Zoom Lens
- WV-CC60: Carrying Case
- WV-Q40A: Shoulder Pad
- WV-MC60: Stereo Microphone
- Camera Head WV-6000H . . . \$1995.00
- WV-6000H: Camera Head
- Studio Configuration
- WV-6000ST \$3995.00
- WV-6000H: Camera Head
- WV-RC60: Remote Control Unit
- WV-FV65: 5" B/W Electronic Viewfinder
- WV-LZ12/12: 12:1 Servo Zoom Lens
- WV-LK11: Lens Conversion Kit
- 14C-30: Studio Cable

OPTIONAL ACCESSORIES

WV-6000H	Camera Head	\$1995.00
WV-VF60	1.5" B/W Electronic Viewfinder	250.00
WV-VF61	1.5" C/L Electronic Viewfinder	550.00
WV-VF65	5" B/W Electronic Viewfinder	500.00
WV-LZ12/12	12:1 Servo Control Zoom Lens	650.00
WV-LK11	Studio Conversion Kit	450.00
WV-MC60	Stereo Microphone	25.00
WV-Q40A	Shoulder Pad	65.00
WV-PS60	Battery Pack	130.00
DE-1232	Battery Charger	49.95
WV-CC60	Carrying Case	170.00
14C-30	Studio Cable	100.00
14C-100	Studio Extension Cable	165.00
WV-CA14/10	VTR Cable	36.00
WV-CA14/14	VTR Cable	60.00
14H-30	VTR Extension Cable	70.00

HIGH QUALITY

**WV-3170/6X, WV-3240/8AF, WV-3240/12X,
WV-3245/8AF**

These Panasonic cameras offer an array of useful features destined to expand your creative ability.



WV-3170/6X

Sensitive Newvicon® tubes resist permanent burning and comet-tailing under bright lights, and give you clear images even under low light conditions. In fact, you can even take sharp videos in candlelight.

Title your videos with the built-in 7-color character generator, or shoot an external title and change the background color. A 2-frame memory function lets you set your messages in advance and display them when you want. Neg/Pos picture reversal adds a dramatic effect to any scene.

Other built-in functions such as "Date," "Time" and a lapping "Stop-watch" give vital information when recording important events such as birthdays or sports meets. And all these functions can be pre-set on a fold-away control panel. All the controls you'll need to engage them are located conveniently near the viewfinder, so it's a snap to add studio effects to your video creations.

Video and Audio Fade-In/Fade-Out gives your recordings a professional touch, allowing not only video fading to and from black, but also fading of audio input.

The viewfinder is movable to the forward/backward direction by 1.2" and to the left/right direction by 1.6" for your easy carrying. A look inside shows the "OK Monitor" in action. It lets you know of the shooting conditions, and the "Alarm Function" warns you of any problems during operation.

FEATURES		2/3" PICK-UP TUBE			
MODEL*		WV-3170/6X	WV-3240/8AF	WV-3240/12X	WV-3245/8AF
(mount)		(bayonet)	(bayonet)	(bayonet)	(bayonet)
Suggested Retail Price ^①		\$1195	\$1300	\$1375	\$1600
Weight (lbs)		4.4	4.8	5.0	5.5
IMAGE SENSING SYSTEM	Pick-Up Technology	5.0 MHz NEWVICON	5.0 MHz NEWVICON	5.0 MHz NEWVICON	5.0 MHz NEWVICON
	Sensitivity ^② (fc)	0.7 at f1.4	0.7 at f1.4	2 at f2.0	0.7 at f1.4
	Resolution ^③	350	350	350	350
	Signal To Noise (dB)	46	46	46	46
	Zoom Ratio	6:1	8:1	12:1	8:1
	Focal Length (mm)	12.6 - 75	10.5 - 84	10 - 120	10.5 - 84
	Filter Dia. (mm)	52	58	72	58
	Auto Focus		Yes		Yes
	White Balance	Auto	Auto	Auto	Auto
	Viewfinder	1.5" B&W	1.5" B&W	1.5" B&W	1.5" Color
SPECIAL EFF.	Character Gen.	Yes	Yes	Yes	Yes
	Time/Date	Yes	Yes	Yes	Yes
	Stop Watch	Yes	Yes	Yes	Yes
	Key Effects	Yes	Yes	Yes	Yes
	Neg./Positive	Yes	Yes	Yes	Yes
	Fade In/Out	Yes	Yes	Yes	Yes
SPECIAL FEATURES	Rec/Review	Yes	Yes	Yes	Yes
	VTR Remote		Yes	Yes	Yes
	Gen Lock w/SCH Adj.				
	Color Bars				
	RCU				
	R-B Gain				
	R-B Master Pedestal				
JACKS	Audio	Mic In/Uni-Dir	Stereo	Stereo	Stereo
	Video (BNC)				
	Earphone	Yes	Yes	Yes	Yes

NOTES KEY:

- ① prices may change without notice
- ① minimum lighting
- ③ horizontal
- ④ 12 dB gain

* maximum optional cable length to VCR 75 feet

** 5" B/W and 1.5" Color Optional
Blank Space No

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

LOW COST WITH PANASONIC PROLINE

Portable VTR operations, including rewind, forward, play, slow and still can be performed at the camera with the WV-3240 models, so you don't have to shoulder extra weight that can cramp your shooting style.

What's more, the WV-3240/8AF comes with an 8X Auto Focus lens, so you can shoot your moving subjects and pan without ever losing focus, and do it automatically. The WV-3245/8AF even comes with a color electronic viewfinder that allows you to see what you are videotaping in full color.

The WV-3240/12X offers a 12X lens, the WV-3170/6X a 6X lens, and all three models are capable of close-up "macro" shooting.

KEY FEATURES

- 1.5-inch Electronic Color Viewfinder (WV-3245/8AF)
- 7-Color Multiple Title Displays
- 5-MHz 2/3" NEWVICON®
- Ultrasonic Auto-Focus (WV-3245/8AF, WV-3240/8AF)
- Auto white balance
- Auto-manual IRIS control
- Two position stand-by switch
- Negative/Positive picture reversal
- Time/Date and stopwatch generator
- Video and Audio fade-in/fade-out
- Adjustable diopter on viewfinder (except WV-3245/8AF)
- Multi-status display viewfinder

FEATURES PLUS

- Adjustable hand grip
- Newly designed shoulder pad
- Remote control connector
- Stereo microphone (except WV-3170)
- VTR remote control
- Red and Blue gain control

Optional Accessories

10H-30AS	10 Pin Extension Cable 30' Audio (2ch) for all VHS ENG Cameras.....	\$70.00
10H-50AS	10 Pin Extension Cable 50' Audio (2ch) for all VHS ENG Cameras	\$110.00
NV-C45	Camera 10 Pin-VCR 14 Pin Cable for VHS Camera	\$60.00
WV-3203	AC Adaptor	\$50.00
WV-3203A	AC Adaptor (Stereo)	\$60.00
VP-10	Tripod for all VHS ENG Cameras	\$50.00
WV-T10	Mini Tripod for all VHS ENG Cameras	\$45.00
WV-AD10	Beta Format Converter Kit.....	\$55.00
WV-AD15	Film/Slide (Negative/Positive) Adaptor	\$150.00
WV-AD16	C-Mount Adaptor	\$15.00



WV-3240/8AF



WV-3240/12X



WV-3245/8AF

WV-LK10A	Lens Filter Kit not for use w/camera WV-3240/12X	\$100.00
WV-CR10	Camera Remote Control	\$65.00
WV-CC17	Soft Carrying Case	\$50.00
WV-CC26A	Carrying Case	\$125.00
WV-J10	Video Titler	\$695.00

Prices and Specifications Subject to Change Without Notice.

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

WV-EX1 CPD Color Camera

The WV-EX1 is the first commercially available Charged Priming Device (solid state) color camera designed for fast and easy operation. Its compact size lets you carry it anywhere. And you'll want to carry it everywhere when you see all the features that make it a snap to use. And your portable VCR won't get in your way because you can control it right from the camera. You can even name your features and record time and date with a built-in title generator.



WV-EX1

THE WV-EX1 PROVIDES YOU WITH

- Newly developed CPD technology. Burnless, no electronic image distortion, no warm-up time, and built to withstand shock.
- Advanced color sensor system. A line sequential color differential system and highly precise mosaic color filter.
- A variety of microprocessor controlled functions. Automatic tracing white balance (A.T.W.), VCR remote control, 41 character titler, and alphanumeric status display.

WV-EX1 \$1400.00

STANDARD ACCESSORIES

- 10-pin camera cable (8 feet) 1 pc
- Lens cap 1 pc
- SUM-3, AM3 or AA size dry battery 1 pc

OPTIONAL ACCESSORIES

- WV-3203:** Power Supply \$50.00
- 10H-30AS:** 10 Pin Extension Cable (For Stereo Audio; 33 feet) 70.00
- 10H-50AS:** 10 Pin Extension Cable (For Stereo Audio; 50 feet) 110.00
- WV-LK10A:** Lens Filter Kit 100.00
- WV-AD15:** NEG/POS Slide Adaptor 150.00
- WV-AD10:** Camera-VTR Adaptor for B Format VTR 55.00
- WV-CC17:** Soft Carrying Case 50.00
- WV-J10:** Video Titler 695.00

FEATURES		SOLID STATE PICK-UP DEVICE
MODEL*		WV-EX1
(mount)		(fixed)
Suggested Retail Price ^①		\$1400
Weight (lbs)		2.9
IMAGE SENSING SYSTEM	Pick-Up Technology	CPD Sensor
	Sensitivity ^② (fc)	3 at f1.4
	Resolution ^③	250
	Signal To Noise (dB)	46
	Zoom Ratio	6:1
	Focal Length (mm)	12.5 - 75
	Filter Dia. (mm)	52
	Auto Focus	
	White Balance	Auto/Continuous
	Viewfinder	1" B&W
SPECIAL EFF.	Character Gen.	Yes
	Time/Date	Yes
	Stop Watch	Yes
	Key Effects	
	Neg./Positive	
	Fade In/Out	Yes
SPECIAL FEATURES	Rec/Review	Yes
	VTR Remote	
	Gen Lock w/SCH Adj.	
	Color Bars	
	RCU	
	R-B Gain	
JACKS	R-B Master Pedestal	
	Audio	Mic In
	Video (BNC)	
	Earphone	Yes

NOTES KEY: 1. Prices may change without notice
 2. Minimum lighting
 3. Horizontal
 4. 12 dB gain
 Blank Space = No

*Maximum Optional Cable Length to VCR: 75 feet
 **5" B/W and 1.5" Color Optional

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

MODEL WV-3040 WV-3050

*SUPER
LOW LIGHT* **7 LUX**

**PRO
LINE**

Portable Color Video Cameras

- 6:1 Power Zoom Lens with Auto-Iris and TCL Auto Focus (CCD)
- Lightweight (2.9 lbs.), Portable (wrist strap)
- 4.3 MHz 1/2" Newvicon — 300 lines Resolution at Center
- Minimum Lighting Requirement .75C at f/1.2
- 46 dB S/N Ratio
- Adjustable Viewfinder with 1" CRT

FEATURES		1/2" PICK-UP TUBE	
MODEL*		WV-3040	WV-3050
(mount)		(fixed)	(fixed)
Suggested Retail Price ^①		\$795	\$995
Weight (lbs)		2.4	2.9
IMAGE SENSING SYSTEM	Pick-Up Technology	4.3 MHz NEWVICON	4.3 MHz NEWVICON
	Sensitivity ^② (fc)	0.7 at f1.2	0.7 at f1.2
	Resolution ^③	300	300
	Signal To Noise (dB)	46	46
	Zoom Ratio	6:1	6:1
	Focal Length (mm)	8.5 - 51	8.5 - 51
	Filter Dia. (mm)	49	49
	Auto Focus		Yes
	White Balance	Auto	Auto
	Viewfinder	1" B&W	1" B&W
SPECIAL EFF.	Character Gen.		
	Time/Date		
	Stop Watch		
	Key Effects		
	Neg./Positive		
SPECIAL FEATURES	Fade In/Out		
	Rec./Review	Yes	Yes
	VTR Remote		
	Gen Lock w/SCH Adj.		
	Color Bars		
	RCU		
	R-B Gain		
JACKS	R-B Master Pedestal		
	Audio	Mic In	Mic In
	Video (BNC)		
	Earphone		



PRICE

WV-3040	.....	\$795.00
WV-3050	.....	995.00

OPTIONAL ACCESSORIES

WV-Q41	Shoulder Pad	.....	\$45.00
WV-CC18	Soft Carrying Case	.....	50.00
WV-LK10A	Lens Filter Kit	.....	100.00
WV-T10	Compact Tripod	.....	45.00
VP-10	Tripod	.....	50.00
10H-30AS	30' Extension Cable (stereo audio)	.....	70.00
10H-50AS	50' Extension Cable (stereo audio)	.....	110.00
WV-3203	AC Adaptor	.....	50.00
WV-3203A	Power Supply	.....	60.00
WV-AD10	VTR Adaptor for Beta VCRs	.....	55.00

NOTES KEY:

- ① prices may change without notice
- ② minimum lighting
- ③ horizontal
- ④ 12 dB gain
- * maximum optional cable length to VCR 75 feet
- ** 5" B & W and 1.5" Color Optional
- Blank Space No

Prices and Specifications Subject to Change Without Notice.

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

3500 System: WV-3500 Industrial Color Camera w/ Gen Lock

The 3500 Production

WJ-3500 System Switcher

The 3500 System is composed of the WV-3500, a low cost gen lockable color camera; and the WJ-3500, an economical System Switcher which has titling, SEG and Audio Mixing functions.

The WV-3500 and WJ-3500 are designed to enhance each others usefulness; but both possess complete compatibility with other Panasonic gen lock cameras and SEG's.

WV-3500 \$1750.00

WJ-3500 Video Titler \$1150.00

SPECIFICATIONS:

Special Effects Generator WJ-3500

Color Camera Input: x 2, (10-pin Connector)
Video Input Level: 1.0Vp-p NTSC composite/75 ohms
Audio Input Level: -20dB, High impedance
Output Power: 12V DC, Max. 0.6A for CAMERA 1 and 0.5A for CAMERA 2

Line Input

Video Input Level: 1.0Vp-p NTSC composite/75 ohms, BNC Connector x 1
Audio Input Level: -6dB, High impedance, Pin Jack x 1
Key Camera Input: x 1, (10-pin Connector)
Video Input Level: 1.0Vp-p USA TV system composite/75 ohms
Output Power: 12V DC, 0.3A

External Sound Input

Mic Input Level: -72dB, High impedance, Phone jack x 1

Line Input Level: -20dB, High impedance, Pin jack x 1

Video Output Level: 1.0Vp-p NTSC composite/75 ohms, BNC Connector x 1

Monitor Output Level: 1.0Vp-p NTSC composite/75 ohms BNC Connector x 1

Audio Output Level: -20dB, High impedance, Pin jack x 1

Black Burst Output: 0.45Vp-p composite/75 ohms, BNC Connector x 1

Effects: Mixing, Wipe: , Key

Superimpose: Yes

Color Selection for Superimpose and Back Color: White, Red, Yellow, Green, Cyan, Blue, Magenta

Maximum Cable Length of CAMERA 1 and CAMERA 2:

20m

Frequency Response: ± 1dB at 3.58MHz

Gen-lock Range: Sync: 15.734KHz ± 120Hz

Burst: 3.579545MHz ± 50Hz

Power Source: 120V AC, 60Hz or 12V DC 1.8A

Power Consumption: 33W (with color cameras)

Ambient Temperature: +32° F to +104° F (0°C to +40°C)

Ambient Humidity: Less than 90%

Dimensions: 400(W) x 88(H) x 188(D)mm

15-3/4" (W) x 3-7/16" (H) x 7-3/8" (D)

Approx. 3.14kg (6.95 lbs)

Weight:

Key Camera

Pick-up Tube: 2/3" static focus, magnetic deflection vidicon tube

Scanning: 525 lines/60 fields/30 frames

Synchronizing: External 2:1 supplied from the system switcher

Horizontal Resolution: more than 450 lines

Automatic Light Compensation: 10,000:1

Video Output Level: 1.0Vp-p, 75 ohms

Signal-to-Noise Ratio: 42dB

Lens: 2 times variable focal lens

Power Source: 12V DC supplied from the system switcher

Ambient Operating Temperature: +32° F to +104° F (0°C to +40°C)

Dimensions: 89(W) x 164(H) x 261(D)mm (incl. lens)

3-1/2" (W) x 6-7/16" (H) x 10-1/4" (D)

Approx. 0.7kg (1.5 lbs)

Optional Accessories

10H-30AS	10 Pin Extension Cable 30'	\$70.00
10H-50AS	10 Pin Extension Cable 50'	110.00
WV-3203	AC Adaptor	50.00
NV-B51	AC Adaptor	135.00
4C-10	Camera AC Adaptor (NV-B51)	
	Junction Cable (10 ft.)	30.00
WV-AD10	BETA Format Converter Kit	55.00
WV-AD15	Film/Slide (Negative/Positive)	
	Adaptor	150.00
WV-AD16	C-Mount Adaptor	15.00
WV-CC25	Carrying Case	125.00

FEATURES		2/3" Pick-up Tube
MODEL*		WV-3500
(mount)		(bayonet)
Suggested Retail Price ^①		\$1750
Weight (lbs)		7.1
IMAGE SENSING SYSTEM	Pick-Up Technology	5.0 MHz SATICON™
	Sensitivity ^② (fc)	3 at f2.0
	Resolution ^③	350
	Signal To Noise (dB)	46
	Zoom Ratio	12:1
	Focal Length (mm)	10 - 120
	Filter Dia. (mm)	72
	Auto Focus	
	White Balance	Auto
	Viewfinder	1.5" B & W
SPECIAL EFF.	Character Gen.	
	Time/Date	Yes
	Stop Watch	Yes
	Key Effects	
	Neg./Positive	Yes
	Fade In/Out	Yes
SPECIAL FEATURES	Rec/Review	Yes
	VTR Remote	
	Gen Lock w/SCH Adj.	Yes
	Color Bars	
	RCU	
	R-B Gain	
	R-B Master Pedestal	
JACKS	Audio	Mic In/Audio Out
	Video (BNC)	Yes
	Earphone	Yes

NOTES KEY:

- Prices may change without notice
 - Minimum lighting
 - Horizontal
 - 12 dB gain
- *Maximum Optional Cable Length to VCR: 75 feet
**5" B/W and 1.5" Color Optional
Blank Space = No

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

System for Special Effects Without a Special Budget



WV-3500

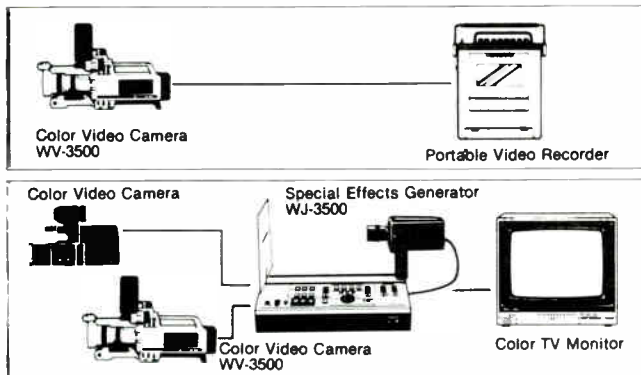


WJ-3500

WV-3500 Industrial Color Camera w/Gen Lock

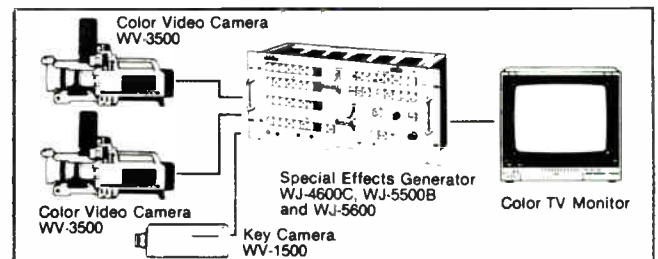
- Built-in Gen Lock (BNC and 10 Pin)
- 2/3" 5MHz Saticon® Tube w/350 lines resolution
- 12X f/2.0 Bayonet Mount Power Zoom
- SC/H Phase External Adjustment
- 5 fc Minimum Illumination; 46 dB SN
- Stopwatch/Time-Date Generator
- Multi-Function Alphanumeric Viewfinder Readouts
- Adjustable H and V Blanking

System Applications



WJ-3500 System Switcher

- Low Cost Titler/Special Effects Generator
- Video Mix, Wipe and Key Functions
- Audio Mixing Capability with mic and line inputs
- Built-in Digital Gen Lock Sync Generator w/Black Burst Output
- Built-in Seven Color Generator for Background and Key
- Integrated Title Camera w/2X Zoom and Title Stand
- Accepts Camera #1(10P) or line input as Gen Lock reference
- 12 VDC or 120 VAC Power
- Gen Locks WV-3500 through 10P Cable or Coax



"800 Series" Three Tube Cameras with Middle Index Prism System

FEATURES		WV-888PRO	WV-888ST ²	WV-890	WV-890ST ²
SPECS	PICK-UP TUBE	SATICON™	SATICON™	PLUMBICON*	PLUMBICON*
	ILLUMINATION REQUIRED: (fc) ⁵	190 ⁸	190 ⁸	190 ⁸	190 ⁸
	+ 9dB (fc) ⁵	11	11	—	—
	+ 12dB (fc)	—	—	—	—
	+ 18dB (fc)	6	6	4	4
	MAX. CABLE LENGTH ³	1000 ¹	1000 ¹	1000 ¹	1000 ¹
	S/N (2000 lux at F4.0)	57dB	57dB	59dB	59dB
	VERTICAL ENHANCER	2H type	2H type	2H type	2H type
	HORIZONTAL RESOLUTION ⁴	650	650	600	600
	REGISTRATION (%) ⁹	.1/.2/.4	.1/.2/.4	.1/.2/.4	.1/.2/.4
POWER CONSUMPTION ¹⁰	21	21	21	21	
W	WEIGHT (lb) ⁸	19.9	20.3	20.3	20.7
CONTROLS ON CAMERA	GAIN SWITCH (+ dB)	9/0/18	9/0/18	9/0/18	9/0/18
	AUTO CENTERING SET	YES	YES	YES	YES
	AWC/ABC	AUTO PULSE CANCEL	AUTO PULSE CANCEL	AUTO PULSE CANCEL	AUTO PULSE CANCEL
	R/B H-CENTERING	YES	YES	YES	YES
	R/B V-CENTERING	YES	YES	YES	YES
	BAR/CAMERA	YES	YES	YES	YES
	BRIGHT ¹¹	YES	YES	YES	YES
	CENTERING MANUAL AUTO	YES	YES	YES	YES
	CONTRAST ¹¹	YES	YES	YES	YES
	INTERCOM LEVEL	YES	YES	YES	YES
	LEVEL IND. ON/OFF	YES	YES	YES	YES
	R/G/B SELECT	YES	YES	YES	YES
	POWER	YES	YES	YES	YES
	STAND/BY OPERATE	YES	YES	YES	YES



JACKS ON CAMERAS

FEATURES	WV-555	WV-888 PRO WV-890
	AUDIO MONITORING	YES	YES
EXT DC	YES	YES
GEN/LOCK (BNC)	or PIX	YES
INTERCOM	YES	YES
MIC	YES	YES
PIX/GEN-LOCK (BNC)	YES	—
PIX OUT (BNC)	or Gen Lock	YES
VIDEO OUT (BNC)	YES	YES
VTR/RCU (32 PIN)	YES	YES

NOTE: ALL PANASONIC INDUSTRIAL THREE TUBE CAMERAS INCLUDE NTSC YIQ OUTPUT FOR USE WITH PROFESSIONAL 1 2" M-FORMAT EQUIPMENT.

Number Keys In Above Chart:

- 1. Suggested retail price
- 2. Studio composition
- 3. For RCU and with compensator
- 4. Green signal at center
- 5. 2000 Lux at f/4.0
- 6. Head only = 10.3 lbs.
- 7. f/2.8
- 8. f/4.0
- 9. Zone I, II, III
- 10. Camera head in watts
- 11. Viewfinder
- 12. Includes WV-Q37
* Without lens

COLOR VIDEO CAMERAS

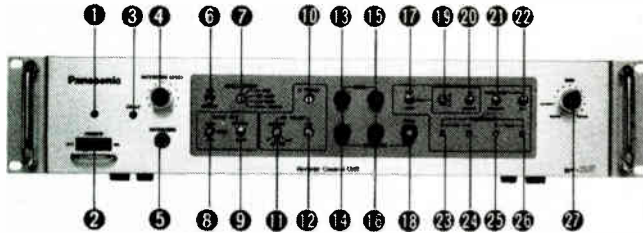
Panasonic
AUDIO-VIDEO SYSTEMS GROUP

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

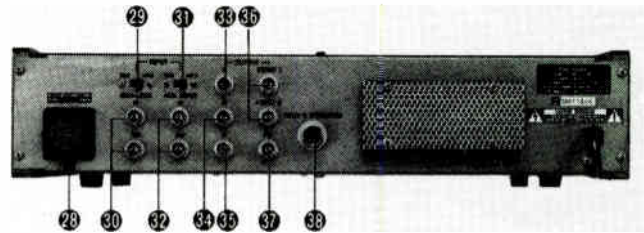
WV-800 Series (888 Pro, 888ST, 890, 890ST) Cont'd

OPTIONAL REMOTE CONTROL UNIT (RCU) WV-RC31

FRONT PANEL



REAR PANEL



- ① Power Indicator
- ② Power ON/OFF Switch (POWER)
- ③ Tally Indicator (TALLY)
- ④ Intercom Level Control (INTERCOM LEVEL)
- ⑤ Intercom Jack (INTERCOM)
- ⑥ Color Bar/Camera Selection Switch (BAR/CAMERA)
- ⑦ Cable Length Compensation Switch (CABLE COMP)
- ⑧ Auto White/Auto Black Set Switch (AWC/HOLD/ABC)
- ⑨ Auto/Manual Selection Switch (AUTO/MANUAL)
- ⑩ Horizontal Phase Control for Gen-Lock (H PHASE)
- ⑪ Subcarrier Phase Coarse Switch for Gen-Lock (SC PHASE COARSE)
- ⑫ Subcarrier Phase Fine Control for Gen-Lock (SC PHASE FINE)

- ⑬ Red Gain Control (R GAIN)
- ⑭ Red Pedestal Control (R PEDESTAL)
- ⑮ Blue Gain Control (B GAIN)
- ⑯ Blue Pedestal Control (B PEDESTAL)
- ⑰ Monitoring Signal Selection Switch (ENC/REG/AUX)
- ⑱ Total Pedestal Control (TOTAL PEDESTAL)
- ⑲ Registration Switch (R/G/B)
- ⑳ -G/DETAIL ON/OFF Switch (-G/DETAIL)
- ㉑ Auto/Manual Centering Selection Switch (AUTO CENT/MANUAL)
- ㉒ Auto Centering Set Switch (AUTO CENT, SET)
- ㉓ Red Horizontal Centering Control (R HOR-CENTERING)
- ㉔ Blue Horizontal Centering Control (B HOR-CENTERING)
- ㉕ Red Vertical Centering Control (R VERT-CENTERING)

- ㉖ Blue Vertical Centering Control (B VERT-CENTERING)
- ㉗ Lens Iris Control (IRIS AUTO-CLOSE/OPEN)
- ㉘ 32-Pin Camera Cable Connector
- ㉙ Gen-Lock Input Termination Switch (75 /Hi-Z)
- ㉚ Gen-Lock Input Connector (BNC) (GEN-LOCK IN/OUT)
- ㉛ Auxiliary Input Termination Switch (75 /Hi-Z)
- ㉜ Auxiliary Input Connector (BNC) (AUX INPUT IN/OUT)
- ㉝ Red Output Connector (BNC) (R OUTPUT)
- ㉞ Green Output Connector (BNC) (G OUTPUT)
- ㉟ Blue Output Connector (BNC) (B OUTPUT)
- ㊱ Video Output Connectors (BNC) (VIDEO OUT)
- ㊲ Monitoring Video Output (BNC) (PIX OUT)
- ㊳ Tally and Intercom Input Connector (TALLY & INTERCOM)

OPTIONAL ACCESSORIES FOR WV-888 PRO/WV-890

WV-LZ30/12 12X Zoom, Auto/Manual Iris, Servo Zoom, 10-120mm, f/1.6	\$1,300.00
J13X9B1E2 Canon 13X Zoom, Auto/Manual Iris, Servo Zoom, 9-118mm, f/1.6, 2X Extender	\$4,650.00
J15X95BV Canon 15X Zoom, Auto/Manual Iris, Servo Zoom, 9.5-143mm, f/1.8	\$1,400.00
A10X10BRMV Fujinon 10X Zoom, Auto/Manual Iris, Servo Zoom, 10-100mm, f/1.6	\$1,175.00
A12X9BERM2 Fujinon 12X Zoom, Auto/Manual Iris, Servo Zoom, 9-108mm, f/1.7, 2X Extender	\$2,400.00
A14XBERMV Fujinon 14X Zoom, Auto/Manual Iris, Servo Zoom, 9-126mm, f/1.7, 2X Extender	\$4,875.00
A14X10BRMV Fujinon 14X Zoom, Auto/Manual Iris, Servo Zoom, 10-140mm, f/1.7	\$1,350.00
WV-CA32/10 VCR (10 Pin) Cable for VHS VCR NV-9400	\$70.00
WV-CA32/14 VCR (14 Pin) Cable for 3/4" VCR	\$80.00

WV-CA32/26 VCR (26 Pin) Cable for RECAM System	\$120.00
10H-30AS 10 Pin Extension Cable 30' for WV-CA32/10	\$70.00
10H-50AS 10 Pin Extension Cable 50' for WV-CA32/10	\$110.00
14H-30 14 Pin Extension Cable 30' for WV-CA32/10	\$70.00
WV-Q35 Tripod Mounting Adaptor	\$90.00
WV-PS36 Detachable Battery Pack (4AH)	\$400.00
SQ-13FV Anton/Bauer Quick-on NiCad Battery (4AH)	\$500.00
WV-BC30 Battery Charger for WV-PS36	\$70.00
CH-13V Slow Charger for SQ-13FV	\$100.00
L5FC Anton/Bauer Fast Charger for SQ-13FV	\$550.00
WV-PS35S Anton/Bauer Battery Mounting Adaptor	\$100.00
WV-PS30 Detachable AC Adaptor	\$260.00

NV-B450 AC Adaptor for WV-888, WV-890 and NV-9450	\$370.00
WV-MC31 Microphone	\$150.00
WV-CC31 Carrying Case	\$250.00
32A-25 Remote Control Unit Cable (25')	\$300.00
32A-50 Remote Control Unit Cable (50')	\$400.00
32A-100 Remote Control Unit Cable (100')	\$600.00
WV-LK30 Lens Rear Control Kit for WV-LZ30/12	\$500.00
SPB-2076V Lens Rear Control Kit for J13X9B1E2, J15X95BV	\$950.00
FC-S14 Lens Rear Control Kit for A14X9BERMV	\$1,350.00
FC-S10 Lens Rear Control Kit for A10X10BRMV, A14X10BRMV, A12X9BERM2 (2X Extender)	\$975.00
WV-VF32 1.5" View Finder for WV-888	\$300.00
WV-VF32B 1.5" View Finder for WV-890	\$300.00

STANDARD COMPOSITION

ENG Color Camera WV-890	\$9,700.00
WV-890H: Camera Head	1 set
WV-VF32B: 1.5" Electronic View Finder	1 set
WV-CC34: Carrying Case	1 pc
WV-Q35: Tripod Mounting Adaptor	1 pc
Rain Coat	1 pc
Registration and White Balance Chart	1 pc
Color Sheet	1 pc

PCB Extender	1 pc
Studio Configuration	
WV-890ST	\$11,000.00
WV-890H: Camera Head	1 set
WV-VF37B: 5" Electronic Viewfinder	1 set
WV-RC31: Remote Control Unit	1 set
32A-25: Studio Cable	1 pc

WV-Q35: Tripod Mounting Adaptor	1 pc
Registration and White Balance Chart	1 pc
Color Sheet	1 pc
PCB Extender	1 pc

STANDARD COMPOSITION

ENG Color Camera WV-888 Pro	\$7,400.00
WV-888H: Camera Head	1 set
WV-VF32: 1.5" Electronic Viewfinder	1 set
WV-CC34: Carrying Case	1 pc
WV-Q35: Tripod Mounting Adaptor	1 pc
Rain Coat	1 pc
Registration and White Balance Chart	1 pc
Color Sheet	1 pc

PCB Extender	1 pc
UM-3/AA Size Battery for Microphone	1 pc
Operating Instructions	1 pc
Studio Configuration	
WV-888ST*	\$8,800.00
WV-888H: Camera Head	1 set
WV-VF37: 5" Electronic Viewfinder	1 set
WV-RC31: Remote Control Unit	1 set

32A-25: Studio Cable	1 pc
WV-Q35: Tripod Mounting Adaptor	1 pc
Registration and White Balance Chart	1 pc
Color Sheet	1 pc
PCB Extender	1 pc
Operating Instructions	1 pc

*Not available in Canada.

Prices and Specifications Subject to Change Without Notice.

VC-187

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

WV-555A, WV-555B, WV-555BST, WV-555BHQ, WV-555BN, WV-555BNH

"500 SERIES" THREE TUBE CAMERAS WITH MIDDLE INDEX PRISM SYSTEM



FEATURES		WV-555A	WV-555B	WV-555BST*	WV-555BHQ	WV-555BN	WV-555BNH
SPECS	PICK-UP TUBE	SATICON	SATICON	SATICON	SATICON	NEWVICON	NEWVICON
	ILLUMINATION REQUIRED (fc)*	140'	140'	140'	140'	140*	140*
	+ 6dB/9dB (fc)*	15 (6dB)	15 (6dB)	15 (6dB)	15 (6dB)	— (9dB)	— (9dB)
	+ 12dB (fc)	8	8	8	8	—	—
	+ 18dB (fc)	—	—	—	—	2	2
	MAX. CABLE LENGTH ²	300'	300'	300'	300'	300'	300'
CONTROLS ON CAMERA	S/N (2000 lux at F4.0)	54dB	54dB	54dB	54dB	56dB	56dB
	VERTICAL ENHANCER	1H type	2H type	2H type	2H type	2H type	2H type
	HORIZONTAL RESOLUTION*	600	600	600	600	600	600
	REGISTRATION (%)*	1 3 6	1 3 6	1 3 6	1 3 6	1 2 5	1 2 5
	POWER CONSUMPTION ¹⁰	17.4	17.4	17.4	17.4	18	18
	W WEIGHT (lb)	14.3	14.3	16.1	7.7	14.3	7.7
	GAIN SWITCH (dB)	6 0 12	6 0 12	6 0 12	6 0 12	9 0 18	9 0 18
	AUTO CENTERING SET	YES	YES	YES	YES	YES	YES
	AWC/ABC	YES	YES	YES	YES	AUTO PULSE CANCEL	AUTO PULSE CANCEL
	R B H-CENTERING	YES	YES	YES	YES	YES	YES
R B V-CENTERING	YES	YES	YES	YES	YES	YES	
BAR/CAMERA	YES	YES	YES	YES*	YES	YES	
BRIGHT**	YES	YES	YES		YES		
CENTERING MANUAL AUTO	YES	YES	YES	YES	YES	YES	
CONTRAST**	YES	YES	YES		YES		
INTERCOM LEVEL	YES	YES	YES	YES	YES	YES	
LEVEL IND. ON OFF	YES	YES	YES	YES	YES	YES	
MONITOR R-G/Y/B-G	YES	YES	YES	YES	YES	YES	
POWER	YES	YES	YES	YES	YES	YES	
STAND-BY OPERATE	YES	YES	YES	YES	YES	YES	

JACKS ON CAMERAS

NOTE: ALL PANASONIC INDUSTRIAL THREE TUBE CAMERAS INCLUDE NTSC YIQ OUTPUT FOR USE WITH PROFESSIONAL 1/2" M FORMAT EQUIPMENT

FEATURES	WV-555	WV-888 PRO WV-890
AUDIO MONITORING	YES	YES
EXT DC	YES	YES
GEN/LOCK (BNC)	or PIX	YES
INTERCOM	YES	YES
MIC	YES	YES
PIX/GEN-LOCK (BNC)	YES	—
PIX OUT (BNC)	or Gen Lcck	YES
VIDEO OUT (BNC)	YES	YES
VTR/RCU (32 PIN)	YES	YES

Number Keys In Above Chart:

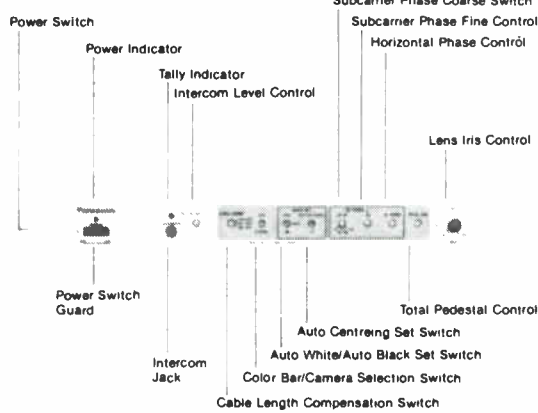
- 1. Suggested retail price
 - 2. Studio composition
 - 3. For RCU and with compensator
 - 4. Green signal at center
 - 5. 2000 Lux at f/4.0
 - 6. Head only = 10.3 lbs.
 - 7. f/2.8
 - 8. f/4.0
 - 9. Zone I, II, III
 - 10. Camera head in watts
 - 11. Viewfinder
 - 12. Includes WV-Q37
- * Without lens

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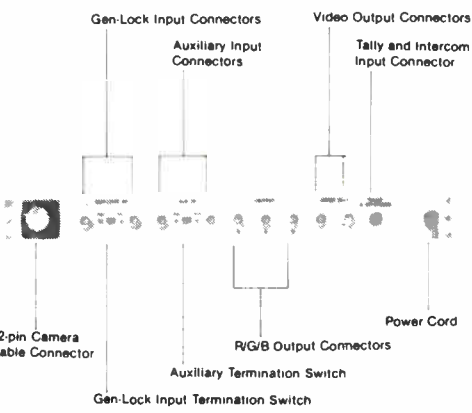
WV-500 SERIES (Cont'd)

Optional Remote Control Unit (RCU) WV-RC32

Front Panel



Rear Panel



OPTIONAL ACCESSORIES

WV-555B/BN	
WV-LZ32/10	10x Zoom, Auto/Manual Iris Servo Zoom 8-80mm f/1.4 \$ 950.00
PH15X7B	Canon 15x Zoom Auto/Manual Iris Servo Zoom 7-10mm f/1.4 \$1400.00
WV-LZ30/12	12x Zoom, Auto/Manual Iris Servo Zoom 6.6-79.2mm f/1.4 \$1275.00
S12X66BRM	Fujinon 12x Zoom Auto/Manual Iris Servo Zoom (2x Extender) 6.6-79.2mm f/1.4 \$2300.00
S12X66BERM	Fujinon 12x Zoom Auto/Manual Iris Servo Zoom (2x Extender) 6.6-92.4mm f/1.4 \$4900.00
S14X66BERM	Fujinon 14x Zoom Auto/Manual Iris Servo Zoom (2x Extender) 6.6-92.4mm f/1.4 \$4650.00
WV-LZ30/12	12x Zoom, Auto/Manual Iris, Servo Zoom, 10-120mm, f/1.6 (WV-AD32 needed) \$1300.00
J13X9BIE2	Canon 13x Zoom, Auto/Manual Iris, Servo Zoom, 9-118mm, f/1.6, 2x Extender (WV-AD32 needed) \$4650.00
J15X95BV	Canon 15x Zoom, Auto/Manual Iris, Servo Zoom, 9.5-143mm, f/1.8 (WV-AD32 needed) \$1400.00
A10X10BRMV	Fujinon 10x Zoom, Auto/Manual Iris, Servo Zoom, 10-100mm, f/1.6 (WV-AD32 needed) \$1175.00
A12X9BERM2	Fujinon 12x Zoom, Auto/Manual Iris, Servo Zoom, 9-108mm, f/1.7, 2x Extender (WV-AD32 needed) \$2400.00

A14X9BERMV	Fujinon 14x Zoom, Auto/Manual Iris, Servo Zoom, 9-126mm, f/1.7, 2x Extender (WV-AD32 needed) \$4875.00
A14X10BRMV	Fujinon 14x Zoom, Auto/Manual Iris, Servo Zoom, 10-140mm, f/1.7 (WV-AD32 needed) \$1350.00
WV-CA32/10	VCR (10 Pin) Cable for VHS VCR NV-9400 \$ 70.00
WV-CA32/14	VCR (14 Pin) Cable for 3/4" VCR \$ 80.00
WV-CA32/26	VCR (26 Pin) Cable for RECAM System \$ 120.00
10H-30AS	10 Pin Extension Cable 30' for WV-CA32/10 \$ 70.00
10H-50AS	10 Pin Extension Cable 50' for WV-CA32/10 \$ 110.00
WV-PS37	Detachable Battery Pack (2 AH) \$ 200.00
WV-PS36	Detachable Battery Pack (4 AH) \$ 400.00
SQ-13FV	Anton/Bauer Quick-on NiCad Battery (4 AH) \$ 500.00
WV-BC32	Battery Charger for WV-PS37 \$ 70.00
WV-BC30	Battery Charger for WV-PS36 \$ 70.00
CH-13V LSFC	Slow Charger for SQ-13FV \$ 100.00
WV-PS35S	Anton/Bauer fast charger for SQ-13FV \$ 550.00
WV-PS30	Anton/Bauer Battery Mounting Adaptor \$ 100.00
NV-B450	Detachable AC Adaptor \$ 260.00
	AC Adaptor for WV-555B and NV-9450 \$ 370.00

WV-MC31	Microphone \$ 150.00
WV-LK32	Lens Rear Control Kit for WV-LZ32/10 \$ 500.00
WV-LK30	Lens Rear Control Kit for WV-LZ30/12 \$ 500.00
SPB-2076V	Lens Rear Control Kit for J13X9BIE2, PH15X7B, J15X95BV \$ 950.00
FC-S14	Lens Rear Control Kit for A14X9BERMV, S14X66BERM \$1350.00
FC-S10	Lens Rear Control Kit for A10X10BRMV, A14X10BRMV, A12X9BERM, (2x Extender), S12X66BRM, S12X66BERM \$ 975.00
32A-25	Remote Control Unit Cable (25') \$ 300.00
32A-50	Remote Control Unit Cable (50') \$ 400.00
32A-100	Remote Control Unit Cable (100') \$ 600.00
WV-VF32	1.5" Viewfinder for WV-555A, WV-555B Series \$ 300.00
WV-VF32B	1.5" Viewfinder for WV-555BN Series \$ 300.00
WV-Q37	Tripod Mounting Adaptor for WV-555A Series, WV-555B Series, WV-555BN Series \$ 90.00
WV-RC32	Remote Control Unit \$ 950.00
WV-AD32	Lens Mount for 2/3" Tube Size Lens \$ 275.00
WV-LZ32/10	10x Zoom, Auto/Manual Iris Servo Zoom 8-80mm, f/1.4 \$ 950.00
WV-VF37	Studio 5" Viewfinder for WV-555A, WV-555B \$ 450.00

Standard Composition

ENG Color Camera WV-555A*

- WV-555AH:** Camera Head
- WV-VF32:** 1.5" Electronic Viewfinder
- WV-Q37:** Tripod Mounting Adaptor
- WV-CC32:** Carrying Case
- Rain Coat
- Registration and White

- Balance Chart
- Color Sheet
- PCB Extender

ENG Color Camera Head WV-555BHQ

- WV-555BH:** Camera Head
- WV-Q37:** Tripod Mounting Adaptor

Studio Configuration WV-555BST*

- WV-555BH:** Camera Head
- WV-VF37:** 5" Electronic Viewfinder
- WV-RC32:** Remote Control Unit

- WV-Q37:** Tripod Mounting Adaptor
- 32A-25:** Studio Cable
- Registration and White
- Balance Chart
- Color Sheet
- PCB Extender

*Not available in Canada

ENG Color Camera WV-555B

- WV-555BH:** Camera Head
- WV-VF32:** 1.5" Electronic Viewfinder
- WV-PS37:** Battery Pack (2AH)
- WV-BC32:** Battery Charger
- WV-Q37:** Tripod Mounting Adaptor
- WV-CC32:** Carrying Case
- Rain Coat
- Registration and White
- Balance Chart
- Color Sheet
- PCB Extender

ENG Color Camera WV-555BN

- WV-555BNH:** Camera Head with WV-Q37
- WV-VF32B:** 1.5" Electronic Viewfinder
- WV-PS37:** Battery Pack (2AH)
- WV-BC32:** Battery Charger
- WV-CC32:** Carrying Case
- Registration and White
- Balance Chart
- Color Sheet
- PCB Extender

Camera Head WV-555BNH

- Camera Head with Tripod Mounting Adaptor (WV9-37)



WV-140/WV-144
(shown with optional lens)

WV-140/120VAC
WV-144/24VAC
Black and White 1/2" Vidicon

Key Features

- A choice of models for 120VAC operation (WV-140) and 24VAC operation (WV-144)
- Compact and lightweight design for versatile mounting
- Highly sensitive separate mesh 1/2-inch Vidicon pick-up tubes in both cameras
- Internal or line locked sync system
- Minimum illumination of one footcandle (10 lux) with optional f/1.4 lens
- Automatic light compensation circuit allows use under a wide variety of lighting conditions
- Mechanical focus externally adjustable
- Top or bottom mounting flexibility
- Standard C-mount allows for use of interchangeable lenses
- White clip circuit

The Panasonic WV-140 and WV-144 black and white CCTV cameras have been specifically designed to provide reliable, cost-effective operation without compromising on performance quality. The highly sensitive 1/2-inch separate mesh Vidicon tubes that are incorporated in these cameras offer a minimum illumination of only one foot-candle so they perform extremely well under most lighting conditions. In addition, both cameras offer more than 500 lines of horizontal resolution for highly detailed image reproduction. And, the WV-140 and WV-144 can be easily installed.

Reliability is a key factor when purchasing CCTV cameras. The WV-140 and WV-144 black and white CCTV cameras are the result of extensive research and development on behalf of Panasonic to provide high quality CCTV systems components.

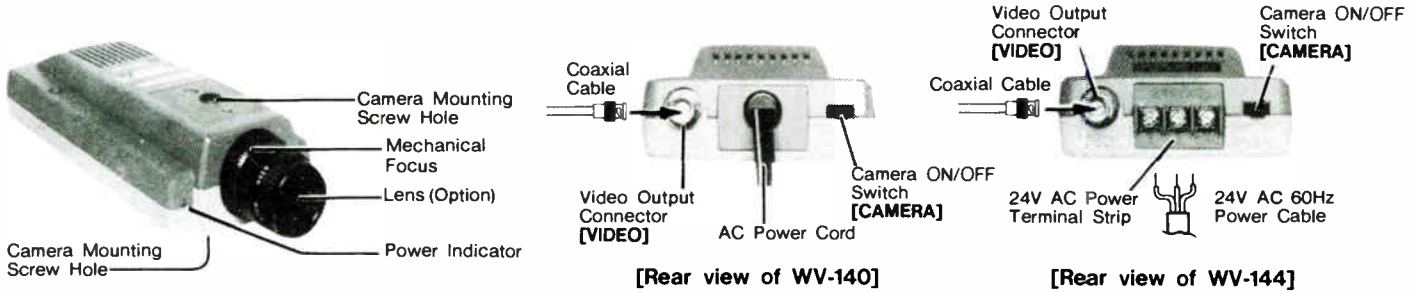
WV-140/WV-144 \$210.00

CCTV CAMERAS

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

WV-140 and WV-144 (cont'd.)

APPEARANCE



SPECIFICATIONS

	WV-140	WV-144
Power Source:	120V AC, 60Hz (108 to 132V)	24V AC, 60Hz (21 to 28V)
Power Consumption:	Approx. 3.1W	Approx. 3.2W
Pick-up Tube:	1/2" Static Focusing, Magnetic Deflection, Separate Mesh Vidicon (S4152)	
Syncronizing:		
Line Locked Random Interlace	Yes	Switchable Internally
2:1 Interlace	Yes	
Scanning Standard:	525 lines, 60 fields, 30 frames	
Horizontal Resolution at center:	More than 500 lines	
Signal to Noise Ratio:	43 dB (Typical with 4.5 MHz filter)	
Gamma Correction:	1.0 (fixed)	
Required Minimum Illumination:	More than 1 footcandle (10 lux with f1.4 lens used under incandescent light)	
Recommended Illumination:	10 footcandles (100 lux)	
Video Output:	1.0Vp-p composite/75 ohms (BNC connector)	
Ambient Operating Temperature:	+14°F to +122°F (-10°C to +50°C)	
Ambient Operating Humidity:	Less than 90%	
External Control:	Camera ON/OFF Mechanical Focus, Beam, Focus	
Lens Mount:	Standard C Mount	
Dimensions (W) x (H) x (D):	3-9/16" x 1-7/8" x 7-5/8" [90mm x 47.5mm x 194mm]	3-9/16" x 1-7/8" x 7-13/16" [90mm x 47.5mm x 198mm]
Weights:	1.2 lbs (0.55kg) (including power cord)	1.0 lbs (0.45kg)

LENS INFORMATION

For CCTV camera with a 1/2" pick-up tube

The required lens for the CCTV camera with a 1/2" pick-up tube can be selected from the following graph depending on the distance between camera and object, and required field of view.

C-Mount Lens



Standard Lens
WV-LM12/2
12mm f1.4



Telephoto Lens
WV-LM16
16mm f1.6



Telephoto Lens
MN-518
50mm f1.8



Wide Angle Lens
MN-815
8.5mm f1.5

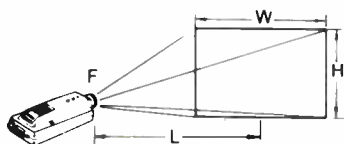


Wide Angle Lens
WV-CL51
0.5X
(for WV-LM12/2)



Wide Angle Lens
VZ-ML10
0.5X
(for WV-LM16)

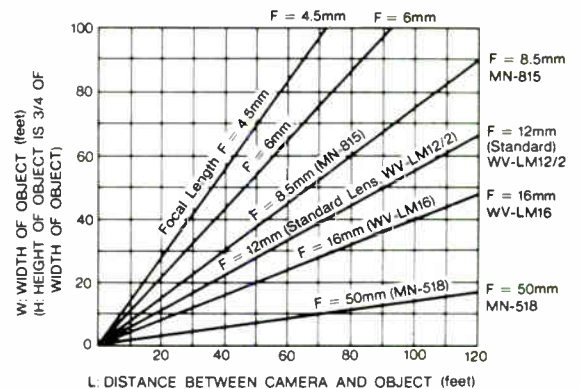
Wide-Angle Lens Adaptor



$$F = \frac{6.4 \cdot L}{W} \quad F = \frac{4.8 \cdot L}{H}$$

$$W = \frac{6.4 \cdot L}{F} \quad H = \frac{4.8 \cdot L}{F}$$

W: Width of object (in feet)
H: Height of object (in feet)
L: Distance between camera and object (in feet)
F: Required focal length (in mm)



Prices and Specifications Subject to Change Without Notice.

VC-191

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

**The Panasonic Mini-CCTV System...
the economical "do-it-yourself" surveillance system.**

Panasonic introduces our Mini-CCTV System. Designed to be a practical, reliable, and economical TV surveillance set-up, the system's most important feature is its simple "do it yourself" installation. Whatever your application is — home safety, retail sales, manufacturing, business and office use — the Mini-CCTV System offers a host of surveillance oriented features that rival costlier, more complex systems. The system's design incorporates some important features. These include, single coaxial cable camera to monitor connection for power and video. This simplifies wiring. The monitor has a built-in adjustable sequential camera switcher. You can connect your Mini-CCTV System to intercoms or alarm sensors in addition to a time-lapse VTR for maximum effectiveness. Automatic outputs are provided to wire warning lights and buzzers. All CCTV electronics are housed in a handsome, high performance, desk-top monitor which fits easily into any environment. And the cameras are very compact, easy-to-mount and attractive. So, if you need a CCTV surveillance system but cannot get involved in costly equipment and installation, the Panasonic Mini-CCTV System is ideally suited for you.

Video Monitor



Additional Camera Adaptor WV-83

Vidicon Camera WV-80



Newvicon Camera WV-85

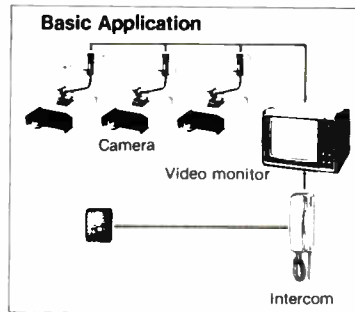


Virtually Endless Applications

The Panasonic Mini-CCTV System can be used for virtually unlimited applications. In the home, you can monitor from your kitchen, your child's bedroom, the front door, or just about any area which could use surveillance. The basic system features three CCTV cameras but for more demanding applications you can expand the system to six cameras. Other important applications include convenience stores, gift shops, or any retail outlet that could use CCTV monitoring, without the high cost of conventional CCTV systems. The Mini-CCTV System is also perfect for light industry, warehousing and educational applications. Thanks to its design, this system requires a minimum of wiring, and its main monitor unit is easy to use and offers high quality performance.

Design Your Own System

The Mini-CCTV System is simple to install and easy to operate. Just attach the camera mounting bracket to the wall or ceiling, aim the camera and focus. A single coaxial cable between the camera and the monitor carries the video signal from the camera and supplies it with power. The system is completely versatile for it will connect with alarms, intercoms, up to six cameras (with optional adaptor) and a time lapse recorder.



Optional accessories

Additional camera adaptor WV 83



Remote control box WV-438



Panning head WV-435



Weather proof housing WV 95



Wide angle lens VZ ML10

Auto-iris lens



WV LA85



WV LA25

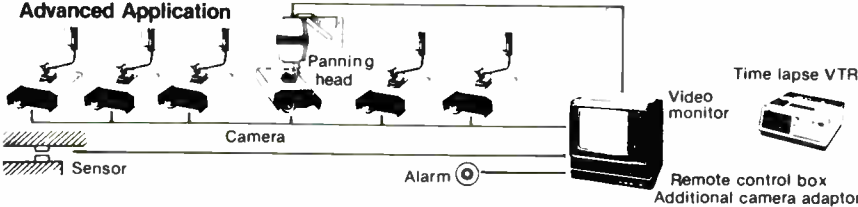


WV LA16



WV LA50

Advanced Application



WV-80/KT2	2 piece mini camera (WV-80); 1 video monitor; 2 piece camera mounting bracket.	\$ 995.00
WV-85/KT2	2 piece mini camera (WV-85); 1 video monitor; 2 piece camera mounting bracket.	1895.00
WV-80	Vidicon camera (with 16mm, f/1.6 lens) and one mounting bracket	200.00
WV-85	Newvicon camera (less lens) with one mounting bracket	595.00
WV-83	Camera extension adaptor unit permits adding up to three additional cameras to system.	250.00
WV-95	Weather proof housing	125.00
WV-435	Indoor panning head	110.00
WV-438	Remote control unit for panning head	125.00
WV-LA16A	(16mm f/1.6) auto-iris lens	235.00
WV-LA25A	(25mm f/1.4) auto-iris lens	245.00
WV-LA50A	(50mm f/1.8) auto-iris lens	245.00
WV-LA8A	(8mm f/1.5) auto-iris lens	270.00
VZ-ML10	Wide angle lens	40.00

Newvicon cameras in this series (Models WV-85/KT2, WV-85) Require Optional Lenses. Models WV-LA16A, WV-LA25A, WV-LA50A, WV-LA8A described in optional accessories section.

Key Features

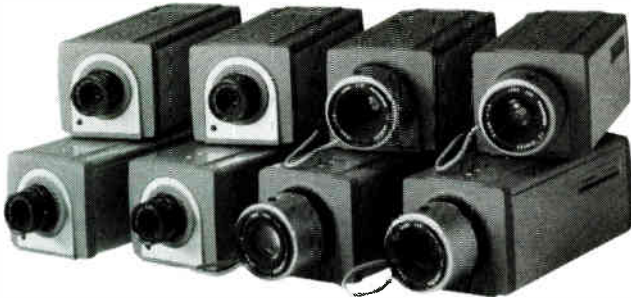
CCTV Camera WV-80

- Single cable connection
- Cable distance from camera to monitor can be extended up to 2640 ft. (with proper cable)
- Camera uses BNC connector
- Automatic light compensator allows use under broad variety of lighting conditions
- Excellent picture quality with horizontal resolution of 500 lines
- Compact, lightweight and handsomely styled
- 2/3" high sensitivity pick-up tube with minimum illumination of only 1 footcandle

CCTV Monitor

- As many as three cameras can be connected to one monitor/switcher unit
- Video output displays each camera in sequence or any camera manually selected
- Monitor has a 9" (mea. dia.) monochrome screen
- Sequential switching interval manually adjustable from 1 to 60 seconds
- Inputs for three monitor controls: intercom, alarm sensor and switch
- Built-in camera/monitor protection circuit
- Alarm control output for warning buzzer or chime
- Alarm period manually adjustable from 1 to 30 seconds

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HIGH PERFORMANCE CCTV CAMERAS
WV-1500, WV-1504, WV-1550, WV-1554

Vidicon CCTV Cameras — Black & White

WV-1410
2/3" general purpose Vidicon Camera with switchable line lock random interface or internal 2:1 EIA RS-170 sync, adjustable vertical phase, automatic focus control, automatic beam control, and accepts an optional camera identification generator board (WV-Q90), 120VAC, 60Hz.
WV-1410 \$270.00

WV-1414
2/3" general purpose, low voltage Vidicon Camera with switchable line lock random interface or internal 2:1 EIA RS-170 sync, adjustable vertical phase, automatic focus control, automatic beam control, and accepts an optional camera identification generator board (WV-Q90), 24VAC, 60Hz.
WV-1414 \$270.00

WV-1500
2/3" high performance Vidicon Camera with 16mm, f/1.6 C-mount lens, line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 120VAC 60Hz.
WV-1500 \$370.00

WV-1504
2/3" high performance, low voltage Vidicon Camera with 16mm, f/1.6 C-mount lens, line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 24VAC, 60Hz.
WV-1504 \$370.00

WV-1500X
2/3" high performance Vidicon Camera without lens, line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 120VAC, 60Hz.
WV-1500X \$350.00

WV-1504X
2/3" high performance, low-voltage Vidicon Camera without lens, line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 24VAC, 60Hz.
WV-1504X \$350.00

Newvicon CCTV Cameras — Black & White (Body Only)

WV-1460
2/3" general purpose Newvicon Camera (body only; without lens), switchable line lock random interface or internal 2:1 EIA RS-170

**GENERAL PURPOSE
CCTV CAMERAS**
WV-1410, WV-1414
WV-1450, WV-1454



SINGLE CABLE CCTV CAMERAS
WV-1600/WV-1650

sync, automatic focus control, automatic beam control, adjustable vertical phase, accepts an optional camera identification generator board (WV-Q90), 120VAC, 60Hz.

WV-1460 \$735.00

WV-1464
2/3" general purpose, low voltage Newvicon Camera (body only; without lens), switchable line lock random interface or internal 2:1 EIA RS-170 sync, automatic focus control, automatic beam control, adjustable vertical phase, accepts an optional camera identification generator board (WV-Q90), 24VAC, 60Hz.
WV-1464 735.00

WV-1550
2/3" high performance Newvicon Camera (body only; without lens), line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 120VAC, 60Hz.
WV-1550 850.00

WV-1554
2/3" high performance, low voltage Newvicon Camera (body only; without lens), line lock random or internal 2:1 interface (RS-170) or external sync (Genlock RS-170), black clamp, L.L. Phase, video level control, accepts an optional splitter board, AGC on/off switch, 24VAC, 60Hz.
WV-1554 \$850.00

Single Cable Compact CCTV Camera Systems

WV-1600/KT1
Single-cable 2/3" Vidicon Camera with 16mm f/1.6 C-mount lens, internal line lock random interface, AC power camera control box, AC 120V, 60Hz.
WV-1600/KT1 \$350.00

WV-1600/KT2
Single-cable 2/3" Vidicon Camera with 16mm f/1.6 C-mount lens, internal random interface, DC power camera control box, DC 12V.
WV-1600/KT2 \$350.00

WV-1650/KT1
Single-cable 2/3" Newvicon Camera (body only; without lens), C-mount (optional Auto Iris lens required), internal line lock random interface, AC power camera control box, AC 120V, 60Hz.
WV-1650/KT1 \$800.00

WV-1650/KT2
Single-cable 2/3" Newvicon Camera (body only; without lens), C-mount (optional Auto Iris lens required), internal random interface, DC power camera control box, DC 12V.
WV-1650/KT2 \$800.00

Drone Camera

WV-1410D
Dummy lens, pilot lamp, on/off switch, 3-prong grounded power cord, 6 ft.
WV-1410D \$60.00

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WV-CD10
(shown with optional lens)



WV-CD80
(shown with optional lens)

WV-CD10/80
High Technology Solid State
Black and White CPD Cameras

Key Features

- Compact and lightweight design incorporates solid state single-chip Charged Priming Device Image Sensors
- Solid-state components with metal casings provide long life and high reliability
- No image distortion or burn-in
- Very short lag
- Not effected by magnetic fields
- Constructed for protection against shock and vibration
- Expanded CCTV applications include medical, scientific, military, robotics and general surveillance operations

Built with a new generation of advanced engineering, the Panasonic WV-CD10 and WV-CD80 black and white CPD cameras redefine performance parameters in industrial CCTV applications. Incorporating innovative Charged Priming Device (CPD) single-chip image sensors, these cameras perform superbly and offer improved maintenance-free operation.

Applications for the WV-CD10 and WV-CD80 CPD cameras are virtually endless. Their design characteristics make them ideal for use in medical and industrial applications—especially in the new field of robotics—because they do not produce image distortion like conventional cameras. In addition, their compact design allows them to be mounted in tight places.

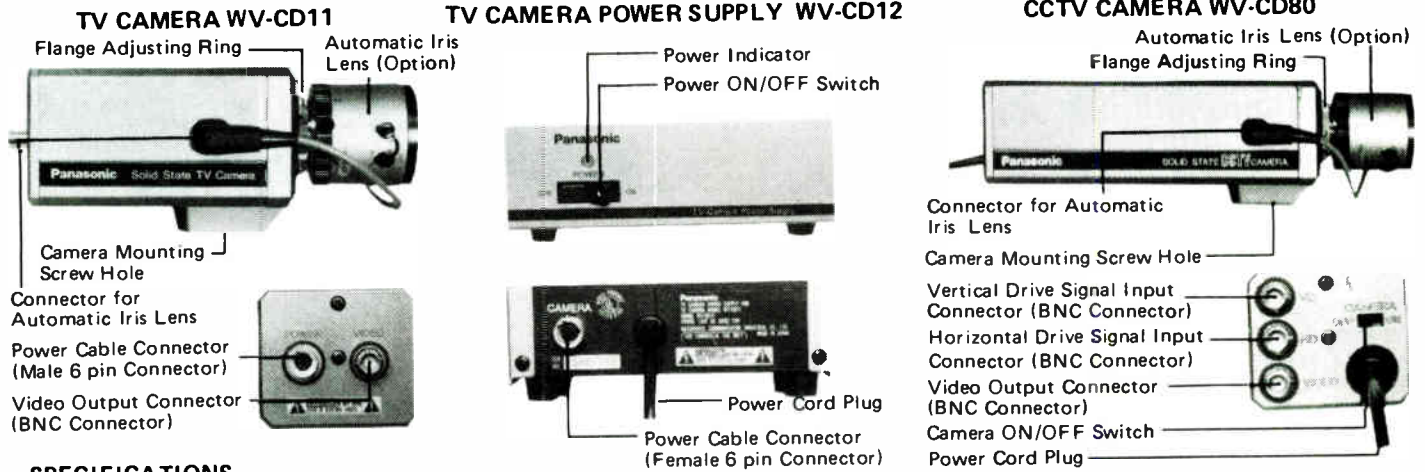
WV-CD10.....\$795.00
WV-CD80.....895.00

BLACK AND WHITE CPD CAMERAS

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

WV-CD10 and WV-CD80 (cont'd.)

APPEARANCE



SPECIFICATIONS

	WV-CD10	WV-CD80
Pick-up Element:	404(H) x 256(V) CPD Type Solid-State single chip image sensor	
Scanning Area:	6.6 x 8.8mm ² (Equivalent to scanning area of 2/3" pick-up tube)	
Synchronization:	Internal RS-170	Internal or External (HD, VD 4Vp-p) RS-170
Scanning System:	Progressive Scanning	
Scanning:	EIA Standard 525 Lines/60 Fields/30 Frames	
Horizontal:	15.734kHz	
Vertical:	59.9Hz	
Resolution:	280 lines at center	
Horizontal:	190 lines at center	
Vertical:	1.0Vp-p Composite/BNC Connector	
Video Output:	1.0Vp-p Composite/BNC Connector	
Signal to Noise Ratio:	46dB (AGC ON with 4.5MHz LPF)	50dB (AGC OFF with 4.5MHz LPF)
Minimum Illumination:	Usable picture (-20dB) 1 footcandles (10 lux) at F1.4 with IR filter	Usable picture (-20dB) 0.5 footcandles (5 lux) at F1.4 with IR filter
Recommended Illumination:	10 footcandles (100 lux) at F1.4 with IR filter	
Connectors:	BNC Connector x 1 - Video 6P Connector x 1 - Power	BNC Connector x 3 - Video, HD, VD
Lens Mount:	C-Mount	
Ambient Temperature:	+14°F to +122°F (-10°C to +50°C)	
Power Source:	120V AC 60 Hz	
Power Consumption:	7 Watts	
Power Requirement:	DC 10.5V, 450mA	
Dimensions:	2-11/16"(W) x 2-3/8"(H) x 4-3/4"(D) (69(W) x 60(H) x 120(D) mm)	2-11/16"(W) x 2-3/8"(H) x 7-3/4"(D) (69(W) x 60(H) x 197(D) mm)
Weight (without lens):	1.32 lbs (0.6 kg)	2.9 lbs (1.3 kg)

TV Camera Power Supply for WV-CD10

Power Source:	120V AC 60Hz
Power Consumption:	15 Watts
Connector:	6 pin connector x 1 for Power Source of TV camera
Ambient Operating Temperature:	+14° to +122° F (-10° C to +50° C)
Dimensions:	5-1/2"(W) x 2"(H) x 5-1/8"(D) (140(W) x 51(H) x 130(D)mm)
Weight:	2.86 lbs (1.3 kg)

COMPOSITION OF WV-CD10

- TV Camera WV-CD11..... 1 set
- TV Camera Power Supply WV-CD12..... 1 set

COMPOSITION OF WV-CD80

- TV Camera WV-CD80..... 1 set

Auto Iris Lenses [OPTION]



**Standard Lens
WV-LA16A**
16mm, f/1.4
with auto-iris



**Telephoto Lens
WV-LA50A**
50mm, f/1.8
with auto-iris



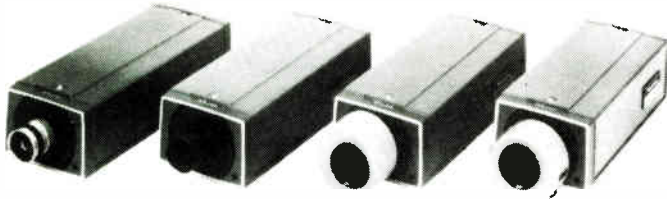
**Telephoto Lens
WV-LA25A**
25mm, f/1.4
with auto-iris



**Wide Angle Lens
WV-LA8A**
8mm, f/1.4
with auto-iris

Prices and Specifications Subject to Change Without Notice.

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WV-1800 **WV-1804** **WV-1850** **WV-1854**



WV-1900 **WV-1904**

High Resolution Cameras—Black & White (Body Only)

WV-1800

1" separate mesh Vidicon camera (body only, without lens), horizontal resolution more than 800 lines at center, built-in EIA RS-170 LSI sync generator, genlock feature, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Automatic switching of internal/external sync modes, Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 120V AC, 60 Hz

WV-1800 **\$875.00**

WV-1804

1" separate mesh Vidicon camera (body only, without lens), horizontal resolution more than 800 lines at center, built-in EIA RS-170 LSI sync generator, genlock feature, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Automatic switching of internal/external sync modes, Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 24V AC, 60 Hz

WV-1804 **\$875.00**

WV-1850

1" extended Red Newvicon camera (body only; without lens), extremely high sensitivity; usable picture 0.01 footcandles (0.1 lux); recommended illumination 0.1 footcandles (1 lux), low blooming and low image retention, horizontal resolution more than 800 lines at center, built-in EIA RS-170 LSI sync generator, Genlock feature, automatic switching of internal/external sync modes, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 120V AC, 60 Hz, optional auto iris and motorized lenses available

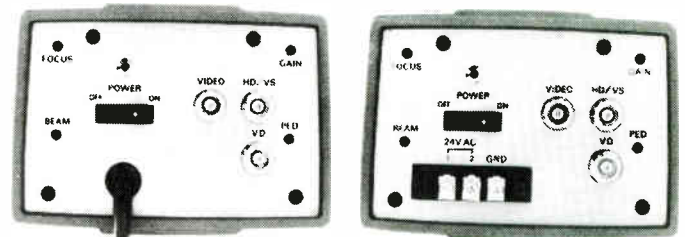
WV-1850 **\$1575.00**

WV-1854

1" extended Red Newvicon camera (body only; without lens), extremely high sensitivity; usable picture 0.01 footcandles (0.1 lux); recommended illumination 0.1 footcandles (1 lux), low blooming and low image retention, horizontal resolution more than 800 lines at center, built-in EIA RS-170 LSI sync generator, Genlock feature, Automatic switching of internal/external sync modes, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 24V AC, 60 Hz, optional auto iris and motorized lenses available

WV-1854 **\$1575.00**

LUNAR LITE CAMERAS



WV-1900 **WV-1904**

1" Low Light Cameras—Black & White (Body Only)

WV-1900

Lunar-Lite low light level camera with single stage Image Intensifier and 1" Newvicon (body only; without lens), extremely high sensitivity operation; usable picture 3×10^{-4} footcandles (3×10^{-3} lux); recommended illumination 3×10^{-3} footcandles (3×10^{-2} lux), horizontal resolution more than 600 lines a center, S/N45dB, low blooming and low image retention, built-in RS-170 LSI sync generator, Genlock feature, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Automatic switching of internal/external sync modes, Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 120V AC, 60 Hz, optional auto iris and motorized zoom lenses available

WV-1900 **\$6400.00**

WV-1904

Lunar-Lite low light level camera with single stage Image Intensifier and 1" Newvicon (body only; without lens), extremely high sensitivity operation; usable picture 3×10^{-4} footcandles (3×10^{-3} lux); recommended illumination 3×10^{-3} footcandles (3×10^{-2} lux), horizontal resolution more than 600 lines a center, S/N45dB, low blooming and low image retention, built-in RS-170 LSI sync generator, Genlock feature, Automatic Beam Control (ABC), Automatic Electronic Focus Control, Automatic Black Clamp Circuit, Automatic Gain Control (AGC), Automatic switching of internal/external sync modes, Internal sweep reversal connector for mounting position flexibility, sweep protection circuit, heavy duty die-cast chassis, 24V AC, 60 Hz, optional auto iris and motorized zoom lenses available

WV-1904 **\$6400.00**

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

**WV-4050
Color Surveillance Camera**

- * Pick-up Tube : Newvicon
- * Minimum Required Illumination : Only 1 footcandle
- * Horizontal Resolution : More than 270 lines
- * Signal to Noise Ratio : Better than 46 dB
- * Automatic White Balance : on both Camera and RCU
- * R/B Gain Control : on both Camera and RCU
- * 200 meters : Maximum distance between Camera and RCU
- * 6 Times Zoom Lens **OPTIONAL**
Controlled from RCU of pan/tilt mechanism
- * Applicable with Panasonic CCTV Accessories (WV-7000 series)
- * Industrial Design for surveillance (Metal Case, Top or bottom mounting)

Specifications

CAMERA

- Pick-up Tube : 1/2" 3.9MHz Newvicon
- Sync : 2:1 internal interlace
- Horizontal Resolution : 270 lines at center
- Video Output : 1.0Vp-p / 75 ohm BNC connector
- Minimum Illumination : 1 footcandle (10 Lux)
- Signal-to-Noise Ratio : Better than 46 dB
- Lens :
 - Zoom Ratio : 6 Times (f=9-54mm)
 - Aperture : F1.2
 - Mount : N-Bayonet
 - Filter Size : 52mm
 - Iris : Auto/Manual
 - Remote Control : Zoom, Focus, Iris

- Controls :**
- Indoor/Outdoor Select Switch (On camera)
 - R/B Gain Control (On camera and RCU)
 - Auto White Balance Control (Momentary push button, on camera and RCU)

- Maximum cable Length : 200 meters
- Power Source : DC 12V 0.3A
- Dimensions : 85 (W) x 81 (H) x 252 (D) mm
- Weight : 1.1kg

RCU

- Power Source : AC 120V 60Hz
- Power Supply : DC 12V to the camera head
- Power Consumption : 9.3W
- Dimensions : 138 (W) x 44 (H) x 153 (D) mm
- Weight : 1.8kg

WV-4050 With Remote Control Unit	\$995.00
WV-4051 Head Only	895.00
WV-4052 Remote Control Unit	150.00
WV-LZ80/6 Lens	295.00
WV-AD16 C-Mount Adaptor	15.00

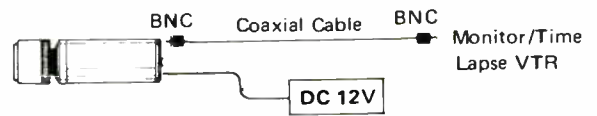
Camera Head



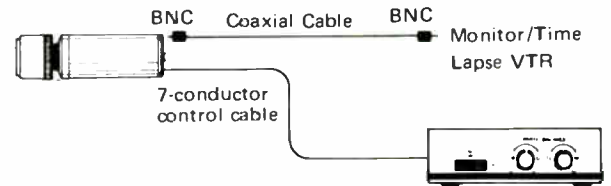
Remote Control Unit (RCU, Included)

SYSTEM DIAGRAM

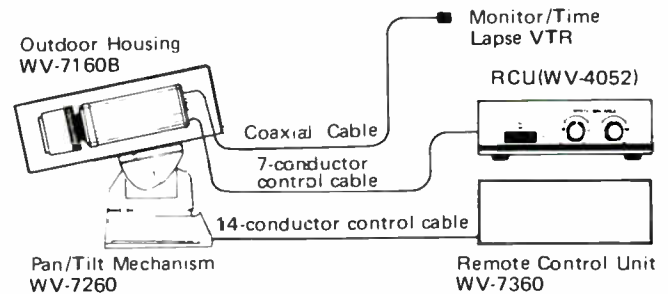
● Basic System 1



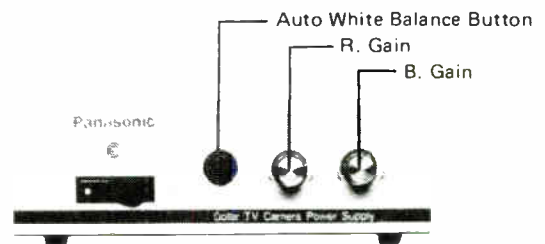
● Basic System 2



● Application System (Outdoor Use)



● RCU



One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



(shown with optional lens)
\$1595.00

WV-CD120
High Technology Solid State
Color CPD Camera

Key Features

- Solid-state CPD offers extremely long-life and high reliability as compared to conventional tubes
- No image distortion, burn-in, lag, or blooming
- Compact, lightweight construction with protection against shock and vibration
- Minimum fixed pattern noise as compared to MOS image sensors
- Broader dynamic range than conventional CCD image sensors
- A Line Sequential Color Differential System is employed with a highly precise mosaic color filter on the CPD imaging area to pick-up the 4 primary colors (Green, Cyan, Magenta and Yellow)

Panasonic complements its already outstanding line of CPD CCTV cameras with the introduction of the WV-CD120.

The WV-CD120 is a quality, compact color camera that offers some of the most advanced features available today.

Incorporating innovative Charged Priming Device (CPD) single-chip sensors, this camera performs superbly and offers improved maintenance-free operation.

In addition, the compact design of the WV-CD120 allows it to be mounted in areas of limited space.

Applications for the WV-CD120 CPD CCTV camera are virtually endless.

The WV-CD120 is perfect for use in the new field of Robotics because it does not produce image distortion like conventional cameras.

This makes the WV-CD120 a highly accurate camera for scanning, measurement and observation purposes.

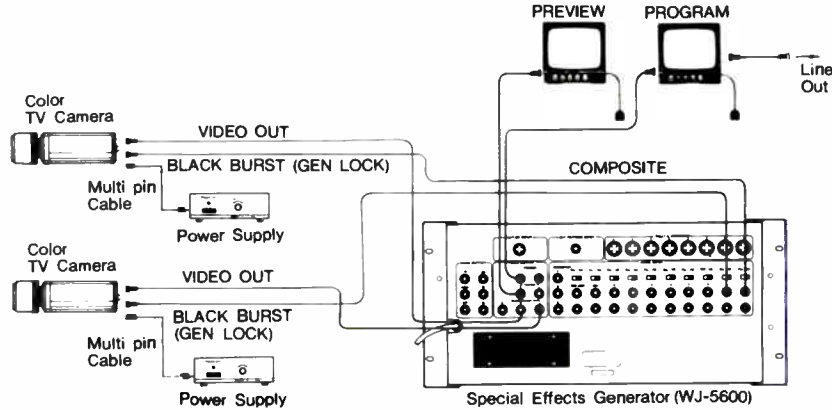
Expanded CCTV applications also include medical, scientific, military, and general surveillance operations.

WV-CD120 **\$1595.00**

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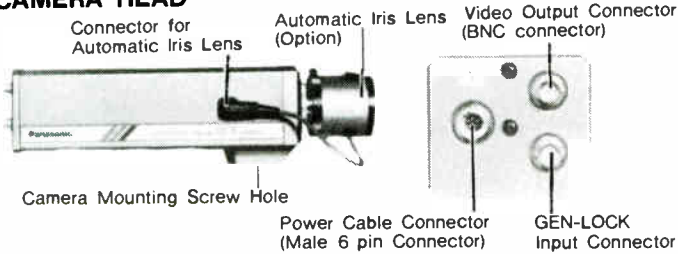
WV-CD120 (cont'd.)

SYSTEM (GEN-LOCK APPLICATION)



APPEARANCE

CAMERA HEAD



<SIDE VIEW>

<REAR VIEW>

<FRONT VIEW>

<REAR VIEW>

SPECIFICATIONS

Camera Head

Pick-up element:	398 (H) × 496 (V)
Scanning Area:	6.83 mm (V) × 9.07 mm (H)
Lens Mount:	C-mount
Syncronization:	Internal/External 2:1 interlace.
Scanning Frequency:	15.734 kHz
Horizontal	59.9 Hz
Vertical	
Video Output:	1.0Vp-p composite/75 ohms (BNC connector)
Resolution:	
Horizontal	More than 250 lines at center
Vertical	More than 350 lines at center
Gen-lock Input:	VBS 1.0Vp-p/75 ohms
Minimum Illumination:	3 footcandles (30 lux with F1.4)
Recommended Illumination:	120 footcandles (1200 lux with F1.4)
Light Control:	Depending on optional Auto Iris Lens used
S/N Ratio:	More than 46 dB
The length between Camera and CCU:	Maximum 656 ft. (200 m) (AWG 24)
Power Source:	DC 10.5V, Approx. 600 mA (6P connector)
Ambient Temperature:	+32°F to +104°F (0°C to +40°C)
Dimensions:	2-11/16" (W) × 2-3/8" (H) × 8-1/4" (D) (69 (W) × 60 (H) × 210.5 (D) mm) (Excluding Lens)
Weights:	2.09 lbs (0.95 kg) Excluding Lens

Power Supply

Power Source:	AC 120V, 50/60 Hz
Power Consumption:	Approx. 26W (when used 200m cable) (AWG 24)
White Balance:	B (Blue) - R (Red) Adjustable
Ambient Temperature:	+32°F to +104°F (0°C to +40°C)
Dimensions:	5-1/2" (W) × 2" (H) × 5-1/8" (D) (140(W) × 51(H) × 130(D) mm)
Weights:	Approx. 2.86 lbs (1.3kg)

OPTIONAL LENSES C-MOUNT LENSES

STANDARD LENS WV-LA16A



16mm, f1.4
with Auto-Iris

WIDE ANGLE LENS WV-LA8A



8mm, f1.4
with Auto-Iris

TELEPHOTO LENS WV-LA25A



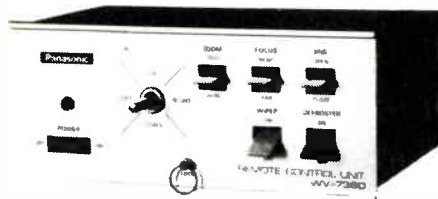
25mm, f1.4
with Auto-Iris

TELEPHOTO LENS WV-LA50A

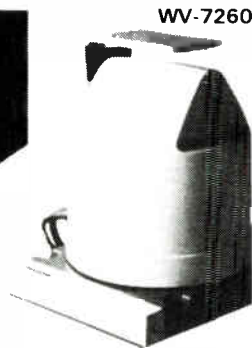


50mm, f1.8
with Auto-Iris

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



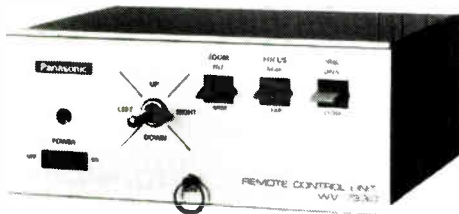
WV-7360



WV-7260



WV-7490B



WV-7330



WV-7230B



WV-7465

WV-7435

Panning Units

WV-7220B

Standard Indoor Panning Head, mountable on ceiling or bracket-mount on flat surface, adjustable panning angle 20° - 320°, requires optional remote control unit, WV-7320

\$185.00

WV-7230B

Deluxe indoor remote controlled Pan/Tilt mechanism head, ceiling or bracket mount on flat surface, adjustable panning angle, tilting angle up 45°, down 45°, pan speed 6.0°/sec., tilt speed 3.0°/sec., supplies 24V AC power to low voltage camera, requires remote control unit (WV-7330, WV-7430, or WV-7490 with relay box WV-7435)

\$495.00

WV-7260

Heavy duty outdoor remote controlled pan/tilt mechanism head, requires bracket mount on flat surface, adjustable panning angle 10° - 340°, tilting angle, up 15°, down 60°, pan speed 7.0°/sec., supplies 24V AC power to low voltage camera and housing, requires remote control unit (WV-7360, WV-7460, or WV-7490 with relay box WV-7465)

\$850.00

WV-7430

Remote control unit for WV-7230. Controls on/off (24V AC) power for TV camera, focusing, iris for zoom and pan/tilt mechanism, rack mountable with optional rack mount frames, joystick control for panning & tilting, requires relay box WV-7435

\$125.00

WV-7360

Remote control unit for WV-7260 control on/off (24V AC) power for TV camera, zooming, focusing, iris for zoom lens, pan/tilt mechanism, defroster & wiper for outdoor housing, rack mountable with optional rack mount frame, joystick controls for panning and tilting

\$340.00

WV-7460

Remote control unit for WV-7260 control on/off (24V AC) power for TV camera, zooming, focusing, iris for zoom lens, pan/tilt mechanism, defroster & wiper for outdoor housing, rack mountable with optional rack mount frame, joystick controls for panning and tilting, requires relay box WV-7465

\$185.00

WV-7490B

Remote control unit for WV-7260 and WV-7230, controls on/off (24V AC) power for TV camera, zooming, focusing, iris for zoom lens, pan/tilt mechanism, defroster and wiper for outdoor housing, controls 6 sets of pan/tilt mechanism, zoom lenses and housing, rack mountable with optional rack mount frame, joystick controls for pan & tilt, requires relay box WV-7435 (indoor) or WV-7465 (outdoor)

\$395.00

WV-7435

Relay box, indoor, with 24V AC power built-in for TV camera and pan/tilt mechanism, for use with WV-7230 pan/tilt mech; WV-7430 remote control or WV-7490 remote control

\$285.00

WV-7465

Relay box, outdoor, extends control between pan/tilt mechanism and remote control unit, for use with WV-7260 pan/tilt mechanism, WV-7460 remote control, WV-7490 remote control

\$350.00

Remote Control Units and Relay Boxes

WV-7320

Remote control unit for operating optional WV-7220 panning head, control on/off (24V AC) power for TV camera and panning mechanism, rack mountable with optional rack mount frame

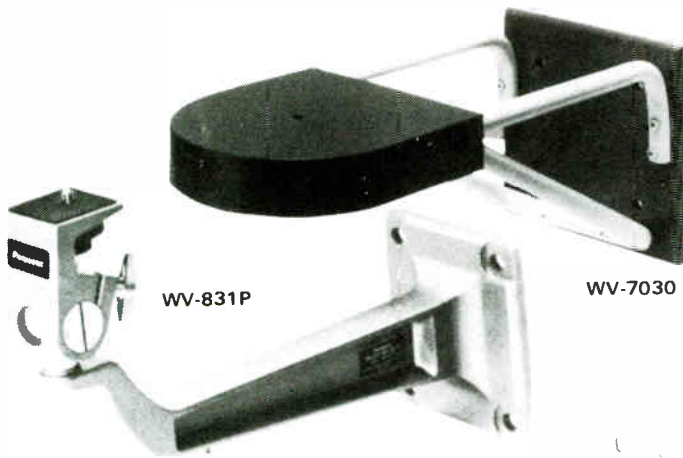
\$135.00

WV-7330

Remote control unit for WV-7230 pan/tilt mechanism. Controls on/off (24V AC) power for TV camera, zoom, focusing and iris for zoom lens and pan/tilt mechanism, rack mountable with optional rack mount frame, joystick control for pan & tilt

\$285.00

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



WV-831P

WV-7030

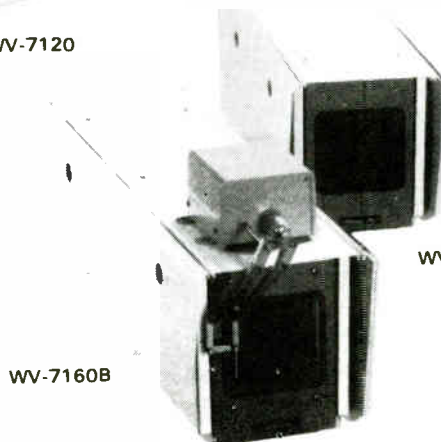


WV-7015

WV-7060

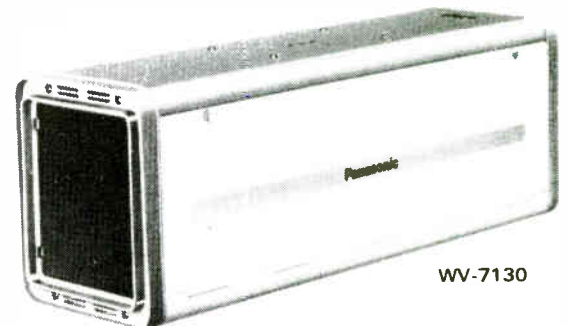


WV-7120



WV-7150B

WV-7160B



WV-7130

Model Number & Description	Use With
WV-7010 Ceiling bracket, light weight, heavy duty, indoor, universal head \$17.50	WV-1000/1000A series fixed focal lines WV-7120 Housing WV-1400/WV-1500 series WV-1600/WV-1650KT1 series
WV-7015 Wall bracket, light weight, heavy duty, indoor, universal head \$25.00	WV-1600/WV-1650KT1 series WV-1000/1000A series w/fixed focal lens WV-7120 Housing WV-1400/1500 series
WV-831P Wall bracket, medium weight, indoor universal head \$40.00	WV-1000/1000A series w/zoom lens. WV-7130 Housing WV-1400/1500 series WV-1600/WV-1650KT1 series
WV-7030 Wall mount, heavy duty indoor \$55.00	WV-7220 Pan mechanism WV-7230 Pan/tilt mech. WV-7130 Housing
WV-7060 Outdoor mount, heavy duty, mounts on flat surface, has pan and tilt adjustments \$37.50	WV-7150 Housing WV-7160 Housing
WV-7120 Dustproof indoor housing, mounts from top \$60.00	WV-1000/1000A series w/fixed focal lens
WV-7130 Dustproof indoor housing, mounts from top \$100.00	WV-1000/1000A series w/zoom lens WV-1400/1500 series WV-1600/WV-1650KT1 series
WV-7150B Outdoor camera housing, contains thermostatically controlled heater & fan \$350.00	WV-1000/1000A series w/fixed focal lens WV-7060 Mount WV-1400/1500 series WV-1600/WV-1650KT1 series
WV-7160B Outdoor camera housing, contains thermostatically controlled heater & fan, built-in defroster \$450.00	WV-1000/1000A series TV Camera w/ zoom lens WV-7060 Mount WV-7260 Pan/tilt mech.
WV-Z50 Wiper assembly \$150.00	WV-7160 Camera housing
WV-1710 Outdoor, drip-free housing for single cable cameras \$85.00	WV-1600 WV-1650

Prices and Specifications Subject to Change Without Notice.

VC-201

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

Model Number & Description	Use With	Model Number & Description	Use With
MN-518 Telephoto lens f/1.8, 50mm w/iris. \$80.00	All Panasonic 2/3" cameras (except WV-260P and all Newvicon cameras)	C10X16AMND 10X motorized zoom lens, 16mm-160mm f/1.8 with wedge filter, iris, focus and zoom remote motorized \$3300.00	WV-1800/1804 WV-1850/1854
MN-815 Wide angle lens f/1.5, 8.5mm w/iris. \$95.00	All Panasonic 2/3" cameras (except WV-260P and all Newvicon cameras)	CZ-40C Remote control unit for C10X16AMND Auto-iris or manual iris selectable, Iris, focus and zoom control \$500.00	C10X16AMND
KF-LA16A Auto Iris lens, 16mm, f/1.6 standard. \$320.00	WV-1050/1050A WV-1054/1054A WV-1150/1150A WV-1154/1154A	WV-1350/1350A WV-1354/1354A WV-1650/KT1 WV-1650/KT2	
KF-LA25A Auto Iris lens, 25mm, f/1.4 telephoto. \$340.00	WV-1050/1050A WV-1504/1504A WV-1150/1150A WV-1154/1154A	WV-1350/1350A WV-1354/1354A WV-1650/KT1 WV-1650/KT2	
KF-LA50A Auto Iris lens, 50mm, f/1.8 telephoto. \$340.00	WV-1050/1050A WV-1054/1054A WV-1150/1150A WV-1154/1154A	WV-1350/1350A WV-1354/1354A WV-1650/KT1 WV-1650/KT2	
KF-LA8A Auto Iris lens, 8.5mm, f/1.5 wide angle. \$350.00	WV-1050/1050A WV-1054/1054A WV-1150/1150A WV-1154/1154A	WV-1350/1350A WV-1354/1354A WV-1650/KT1 WV-1650/KT2	
WV-LA16A Auto Iris lens, 16mm, f/1.6 standard. \$235.00	WV-1450 WV-1454	WV-1550 WV-1554	
WV-LA25A Auto Iris lens, 25mm, f/1.4 telephoto. \$245.00	WV-1450 WV-1454	WV-1550 WV-1554	
WV-LA50A Auto Iris lens, 50mm, f/1.8 telephoto. \$245.00	WV-1450 WV-1454	WV-1550 WV-1554	
WV-LA8A Auto Iris lens, 8.0mm, f/1.5 wide angle. \$270.00	WV-1450 WV-1454	WV-1550 WV-1554	
CF-125ASND Wide angle fixed focal 12.5mm f/1.4 with wedge filter and auto iris. \$475.00	WV-1850/1854 WV-1900/1904		
CF-25BSND Standard fixed focal 25mm f/1.4 with wedge filter and auto iris. \$475.00	WV-1850/1854 WV-1900/1904		
CF-50BSND Telephoto fixed focal 50mm f/1.4 with wedge filter and auto iris. \$485.00	WV-1850/1854 WV-1900/1904		
C10X16ASND 10X motorized zoom lens, 16mm-160mm f/1.8 with wedge filter and auto iris. Auto iris closed circuit (focus and zoom remote motorized) \$3400.00	WV-1850/1854 WV-1900/1904		
		CZ-50C Remote control unit for C10X16ASND, focus and zoom control \$175.00	C10X16ASND
		WJ-140B Pulse distribution amplifier, bridge connection input, 6 outputs, BNC connectors \$185.00	Sync Generator
		WJ-300B Distribution amplifier with selectable 1 input to 6 output or 2 channel with 1 input to 3 output each channel. BNC Connectors \$250.00	All Video Cameras & System Equip.
		WJ-901B Junction box for line view function from 10p connector to UHF connectors (Video out, H drive, V drive) 4-pin (tally light and intercom) and 6-pin (H drive, V drive tally and intercom). BNC Connectors \$65.00	WV-220P WV-240P WV-250P/A WV-340/341P WV-350P WV-360/361P WV-370P WJ-540P/A VY-922/A WJ-120P WV-612P WJ-545P
		10H-25 10-pin multiconnector extension cable w/male & female connectors (25 ft.) \$70.00	WV-1100/1100A WV-1104/1104A WV-1300/1300A WV-1304/1304A WV-1150/1150A WV-1154/1154A WV-1350/1350A WV-1354/1354A
		10H-50 10-pin multiconnector extension cable w/male & female connectors (50 ft.) \$110.00	WV-1100/1100A WV-1104/1104A WV-1300/1300A WV-1304/1304A WV-1150/1150A WV-1154/1154A WV-1350/1350A WV-1354/1354A
		JC-1B Junction Cable 10-pin and 2 UHF connectors. \$27.50	WV-1100 1100A WV-1104 1104A WV-1300 1300A WV-1304 1304A WV-1150/1150A WV-1154/1154A WV-1350/1350A WV-1354/1354A
		WJ-A01 3 1/2" Rack Mount Frame \$50.00	WJ-120P WJ-190P WJ-140P WJ-500 501P WV-690P WV-7320 WV-7330 WV-7430 WV-7360 WV-7460
		WJ-B01 3 1/2" H x 2 3/4" W Blank Panel \$17.50	WJ-A01

PEERLESS SALES CO.

1950 Hawthorne Ave.
Melrose Park, IL 60160
(312) 865-8870

CAMERA MOUNTS SMALL SCREEN HARDWARE 16" - 25" DESK SWIVELS

CAMERA MOUNTING BRACKETS



4000-000



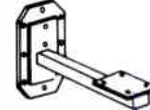
4002-000



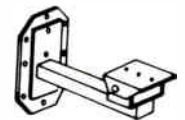
4004-050



4005-000



4020-130



4040-130

STOCK

4000-000	Small, Light Duty Interior Camera Mount for wall, ceiling, or shelf. Die cast aluminum, finished black	14.00ea.
4002-000	Larger, Light Duty Interior Camera Wall Mount. Steel tubing, finished black	20.50ea.
4004-050	False Ceiling Small Camera Mount, 5" long, finished black	20.00ea.
4004-090	False Ceiling Small Camera Mount, 9" long, finished black	22.00ea.
4005-000	Largest, Light Duty Satin Chrome Interior Camera Mount Works equally well on ceiling or wall	38.50ea.

STOCK

All 4020 Series Mounts are designed for exterior mounting of pan tilt and scanner units

4020-130	Heavy Duty with a 13" arm	19.50ea.
4020-180	Heavy Duty with a 16" arm	31.50ea.
4020-200	Heavy Duty with a 20" arm	51.00ea.
4020-240	Heavy Duty with a 24" arm	70.00ea.

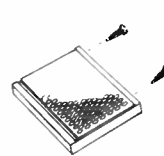
All 4040 Series Mounts are designed for exterior mounting. They are provided with a pan tilt bracket for proper mounting of camera housing or scanner unit.

4040-130	Heavy Duty with a 13" arm	34.00ea.
4040-180	Heavy Duty with a 16" arm	46.00ea.
4040-200	Heavy Duty with a 20" arm	78.50ea.
4040-240	Heavy Duty with a 24" arm	97.50ea.

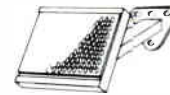
SMALL SCREEN MONITOR/ RECEIVER MOUNTING HARDWARE

The following three brackets have a mounting tray 9" x 9". Products are attached to a random perforated inner tray which is secured with concealed tamper proof screws. Capacity approximately 20 lbs.

1209-000	Small Screen Monitor Desk Top Swivel and Tilt Security Mount	29.00ea.
1150-000	Small Screen Monitor Wall Mount. Swivels and tilts with a security tray	47.25ea.



1209-000



1150-000



1180-000

1180-000	Small Screen Monitor Ceiling Mount. Swivels and tilts with a security tray. 12" clearance to ceiling. Order 1445-000 extension column if additional clearance is required	62.00ea.
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10" TO 16" MONITOR/ RECEIVER MOUNTING HARDWARE

The following three mounts have a tray 15 1/2" W x 11 1/2" D. Products are mounted to a random perforated inner tray which is secured with a key type locking bracket. Capacity approximately 35 lbs.

1212-000	Desk Top Swivel and Tilt with universal security tray	43.50ea.
1153-000	Wall Swivel and Tilt Bracket with universal security tray	51.50ea.



1212-000



1153-000



1183-000

1183-000	Ceiling Mount Bracket swivels and tilts with universal security tray	86.75ea.
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16" TO 25" MONITOR/ RECEIVER MOUNTING HARDWARE

DESK TOP SWIVELS

2242-220	Universal Locking Desk Top Swivel for 16"-19" receivers. Features random perforated security tray, 21 1/2" W x 12" D with key-type locking bracket	41.50ea.
2216-000	Non-locking Desk Top Swivel with universal tray designed for all 16" color TV sets. 19 1/4" W x 15" D	19.25ea.
2221-000	Non-locking Desk Top Swivel with universal tray designed to hold all 19" color TV sets. 24" W x 13 1/2" D	19.25ea.
2221-111	Non-Locking Desk Top Swivel with beautiful walnut wood grain shelf designed to hold all 19" color TV sets 24" W x 13 1/2" D	26.00ea.
2225-000	Non-locking Jumbo Desk Top Swivel with universal tray designed to hold all 25" color TV sets. 29 1/2" W x 18" D	36.00ea.
1219-000	Non-locking Desk Top Swivel with universal tray designed for all 19" B/W TV sets. 21" W x 10" D	15.00ea.
1429-000	Suction Cup Adaptor for stock #2242-220, 2221-111, 2216-000, 1219-000, or 2221-000 Desk Top Swivels. Eliminates need to drill holes in desk. Add model number of desk swivel selected to order. Must be factory assembled	8.50ea.

2416-000	Non-Locking Desk Top Swivel eliminates need to drill holes in furniture with security glue pad and still provides security from theft. Has universal tray designed for all 16" color TV sets 19 1/4" W x 15" D	28.00ea.
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2421-000	Non-Locking Desk Top Swivel with glue pad eliminates need to drill holes in furniture and still provides security from theft. Has universal tray designed to hold all 19" color TV sets. 24" W x 13 1/2" D	28.00ea.
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2442-220	Universal Locking Desk Top Swivel for 16"-19" receivers with glue pad eliminates need to drill holes in furniture and still provides security from theft. Features random perforated security tray, 21 1/2" W x 12" D with key-type locking bracket	49.75ea.
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2421-111	Non-Locking Desk Top Swivel with beautiful walnut wood-grain shelf for 19" color TV and glue pad. Eliminates need to drill holes in furniture. 24" W x 13 1/2" D	34.75ea.
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Prices and Specifications Subject to Change Without Notice.

VC-203

PEERLESS SALES CO.

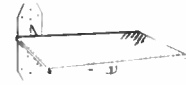
1950 Hawthorne Ave.
Melrose Park, IL 60160
(312) 865-8870

16" - 25" WALL BRACKETS CEILING MOUNTS

16" TO 25" MONITOR/ RECEIVER MOUNTING HARDWARE

WALL SWIVEL BRACKETS

Peerless offers three distinct styles of wall brackets. Each particular design has features which could make one most desirable for your installation. Select the proper bracket for your application after comparing their features.



SINGLE ARM DESIGN

SINGLE ARM DESIGN

FEATURES: Simple design - few parts. • Easiest to assemble - quick installation. • Provides security - cannot be disassembled once receiver is secured. • Provides good swivel. • Limited to 19" screen size maximum. • Less headroom - arm protrudes below receiver. • Does not look as well from bottom

STOCK #	Description	Price
2142-210	Universal Locking Wall Swivel Bracket for 16" - 19" receivers. Tray measures 21 1/2" W x 12" D. Key-type lock	59.50ea.
2142-211	Universal Locking Wall Swivel Bracket with fixed 10 degree tilt for 16" - 19" receivers. Tray measures 21 1/2" W x 12" D	62.00ea.
2126-212	Universal Locking Wall Swivel Bracket with adjustable tilt features. Designed for 16" - 19" receivers. Tray measures 21 1/2" W x 12" D. Key-type locking bracket	81.75ea.

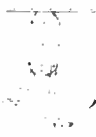
STOCK

2171-000	Non-locking Wall Swivel Bracket with universal tray for all 19" color TV receivers. Tray measures 24" W x 13 1/2" D	33.00ea.
2171-111	Non-locking wall swivel bracket with walnut woodgrain vinyl tray for all 19" color TV receivers. Tray measures 29" W x 13 1/2" D	39.75ea.
2172-000	Same as model 2171 except tray has fixed 10° tilt	35.00ea.
2173-000	Same as model 2171 except tray has adjustable tilt from 0° to 15°	45.00ea.
2176-000	Non-locking Wall Swivel Bracket for all 16" color receivers. Universal tray measures 19 1/4" W x 15" D	30.50ea.

DOUBLE ARM DESIGN

FEATURES: Good appearing - most of the bracket is behind the TV receiver. • Tray covers unsightly bottom of receiver. • Provides good head clearance. • Somewhat limited swivel. • Not as secure - can be disassembled. • More complex design. • More time to assemble and install. • Limited to 21" screen size maximum.

DOUBLE ARM DESIGN

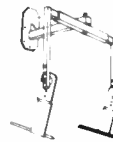


2121-000	Non-locking Universal Wall Swivel Bracket for all 19" color receivers. Tray measures 24" W x 13 1/2" D	35.00ea.
2121-010	Same as model 2121, with fixed 10 degree tilt	37.00ea.
2116-000	Non-locking Universal Wall Swivel Bracket for all 16" color receivers. Tray measures 19 1/4" W x 15" D	32.50ea.
2123-000	Non-locking Universal Wall Swivel Bracket for 21" color receivers and 19" units with very large cabinets. Tray measures 25-7/8" W x 15-3/4" D	43.75ea.
1100-000	Non-locking Universal Wall Swivel Bracket for all 19" B/W receivers. Tray measures 21" W x 10" D	30.50ea.

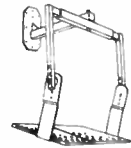
YOKE BRACKET DESIGN

FEATURES: Handles all large receivers with ease. • Unlimited swivel - unlimited tilt. • Provides maximum head clearance. • Good appearing - bracket is behind and over receiver. • Fairly secure - difficult to disassemble. • More complex design • More time to assemble and install.

1469-170	Small Yoke Wall Bracket for 16" receivers. Complete with 13" deep random perforated telescoping tray for easy mounting. Width of yoke adjusts from 13 3/4" to 22". Height from 12" to 18"	145.00ea.
1469-000	Same as stock #1469-170 except without adjustable tray. Yoke attaches with brackets, each side of cabinet on bottom	111.00ea.
1470-171	Yoke Bracket for 19" receivers. Complete with 13" deep adjustable perforated tray for easy mounting. Width adjusts from 22" to 36". Height from 12" to 18"	150.00ea.
1470-172	Same as stock #1470-171 above except without adjustable tray. Yoke attaches with brackets, each side of cabinet on bottom	105.00ea.



YOKE BRACKET DESIGN



YOKE BRACKET DESIGN

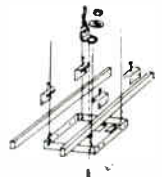
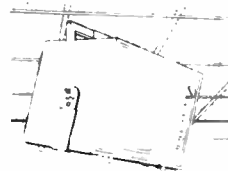
1470-173	Yoke Style Mounting for 21" - 25" color receivers or other large products. Complete with 13" deep adjustable perforated tray for easy mounting. Width of yoke adjusts from 22" to 36". Height from 18" to 24"	150.00ea.
1470-000	Same as stock #1470-173 above except does not have adjustable mounting tray. Yoke attaches with brackets, each side of cabinet on bottom	105.00ea.

CEILING BRACKETS

FALSE CEILING MOUNTS

This is the easy, safe way to mount receivers, monitors, etc., in areas where you have a 2' x 2' or 2' x 4' exposed grid false ceiling system. What's our secret? We just simply spread the load out over a large area. Extra safety factors are added to the installation with more tie wires plus a safety cable. Each kit is supplied complete with instructions and all hardware for a safe, simple installation. Yoke style mounting bracket can be extended down to a lower position by using #1445 extension column.

1449-150	Mount 16" and other small size units utilizing a 13" deep random perforated telescoping tray for easy mounting. Width of yoke adjusts from 13 1/2" to 22". Height adjusts from 12" to 18"	220.00ea.
1449-000	Same as #1449-150 except without telescoping tray. Unit is mounted by using cabinet mounting plates which attach to the bottom of the cabinet on each side	186.00ea.
1450-151	Yoke Bracket designed to hold most 19" color receivers. Includes random perforated 13" deep telescoping tray for easy mounting. Width adjusts from 22" to 36". Height from 12" to 18"	225.00ea.
1450-152	Same as #1450-151 except does not have telescoping tray. Cabinet is attached with mounting bracket on each side, on bottom	180.00ea.

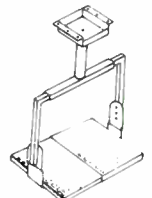
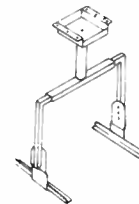


1450-153	Yoke Bracket for 25" receiver and other large units. Supplied complete with 13" deep adjustable width tray for easy mounting. Width adjusts from 22" to 36". Height from 18" to 24"	225.00ea.
1450-000	Same as stock #1450-153 except does not have adjustable telescoping tray for mounting. Unit mounts with side cabinet mounting brackets that attach to the bottom edge of the cabinet	180.00ea.

STRUCTURAL CEILING MOUNTS

Mount directly to a beam, slab or true ceiling with this structural ceiling mount. Yoke bracket can be extended down to a lower position by using #1445 extension column.

1459-140	Mount small units using this yoke bracket which is supplied complete with a random perforated adjustable width tray measuring 13" deep. Yoke bracket adjusts in width from 13 3/4" to 22". Height from 12" to 18"	145.00ea.
1459-000	Same bracket as #1459-140 except does not have telescoping mounting tray. Units are mounted with side cabinet mounting plates that attach under the bottom edges of the cabinet	111.00ea.
1460-141	Mount 19" color receivers and other products similar in size utilizing this adjustable width bracket, complete with random perforated 13" deep telescoping universal tray. Yoke bracket adjusts in width from 22" to 36". Height from 12" to 18"	150.00ea.
1460-142	Same as #1460-141 above except does not have telescoping mounting tray. Units are mounted with side cabinet mounting plates which attach under the bottom edges of the cabinet	105.00ea.



1460-143	Mount 25" receiver and other items of similar size using this unit. Supplied complete with random perforated 13" deep adjustable width tray. Width adjusts from 22" to 36". Height from 18" to 24"	150.00ea.
1460-000	Same as #1460-143 above except supplied without mounting tray. Units are mounted with cabinet mounting plates that attach to the bottom edge of the cabinet	105.00ea.

PEERLESS SALES CO.

1950 Hawthorne Ave.
Melrose Park, IL 60160
(312) 865-8870

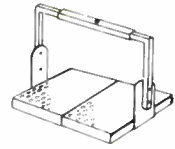
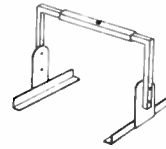
CEILING MOUNTS INTERIOR MOUNTING PLATES SECURITY LOCKS

16" TO 25" MOUNTING HARDWARE CEILING BRACKETS





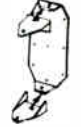
YOKE BRACKETS ONLY

Yoke brackets alone are available for installations where something has already been provided to support the yoke assembly. Yoke brackets are normally supplied with a 1/2" mounting hole in the center. 3/4" hole is available when requested.


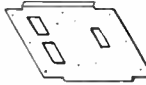

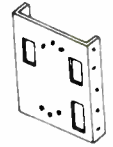
STOCK #			STOCK #	
1479-180	Small Yoke Bracket for 16" receivers. Complete with 13" deep random perforated telescoping tray for easy mounting. Width of yoke adjusts from 13 3/4" to 22". Height from 12" to 18"	120.00ea.		
1479-000	Same as #1479-180 except without adjustable tray. Yoke attaches with brackets, each side of cabinet on bottom	86.00ea.	1480-163	Yoke Style Mounting for 21" - 25" color receivers or other large products. Complete with 13" deep adjustable perforated tray for easy mounting. Width of yoke adjusts from 22" to 36". Height from 18" to 24"
1480-161	Yoke Bracket for 19" receivers. Complete with 13" deep adjustable perforated tray for easy mounting. Width adjusts from 22" to 36". Height from 12" to 18"	125.00ea.	1480-000	Same as #1480-163 above except does not have adjustable mounting tray. Yoke attaches with brackets, each side of cabinet on bottom
1480-162	Same as #1480-161 above except without adjustable tray. Yoke attaches with brackets, each side of cabinet on bottom	80.00ea.		125.00ea. 80.00ea.



MISCELLANEOUS

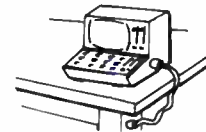
					
	1415-000	1416-000	1409-000	1397-000	1403-000
1415-000	Back Up Plate for wall brackets. Mounts on opposite side of wall. Recommended for stock #1470-173, 1470-000 whenever possible		1409-000	Inside Corner Adaptor for all Peerless Wall Brackets, except when mounting 23" and 25" receivers	
					13.25ea.
1416-000	Converts Double Arm Design Wall Brackets into a quick mount design. Install and remove receiver bracket assembly from a room easily and quickly. Order with wall bracket selected. Add to price of wall bracket	12.00ea.	1397-000	Sliding Bracket Adaptor for desk swivels models 2242-220, 2216-000, 2221-000, 1219-000 and 2221-111. Unit travels 13". Must be factory assembled. Add to cost of desk swivel	43.50ea.
			1403-000	Increases swivel of Peerless double arm design wall brackets. stock #2116-000, 2121-000, 2121-010, 2123-000, and 1100-000	12.00ea.

INTERIOR MOUNTING PLATES

				
	1410-000	1414-000	1414-130	1414-145
1410-000	Interior/Exterior Wall Mounting Plate. 18" W x 10" H Plate can be used internally or on surface of existing wall to distribute the load over a larger area	12.25ea.	1414-130	Interior Wall Mounting Plate has provisions for 2 single gang boxes. Mounts flush with face of 2 studs with a spacing of 13" inside to inside
			1414-145	Interior Wall Mounting Plate has provisions for 3 single gang boxes. Mounts flush with face of studs on 16" centers. 14 1/2" inside to inside
1414-000	Interior Wall Mounting Plate has provisions for 3 single gang boxes. Mounts on surface of studs on 16" centers	18.75ea.		21.00ea.

EQUIPMENT CABLE LOCK

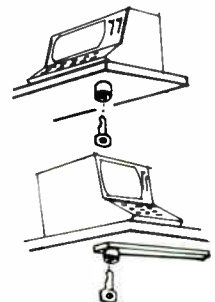
3054-000	Tie down movable equipment with a five foot, vinyl sheathed aircraft cable security lock. Easily installed. No holes need be drilled in desk top. Requires special key to unlock.	33.00ea.
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EQUIPMENT LOCKS

Use these easy to install equipment locks with Peerless yoke style brackets for additional security. When used on a desk or counter they are inconspicuous and hidden from sight. Requires 1/4" hole drilled in desk or counter top.

3050-000	Single unit for small equipment supplied complete with key.	18.00ea.
3052-000	Ties equipment down at 2 points. Designed for larger equipment.	47.00ea.



Prices and Specifications Subject to Change Without Notice.

VC-205

PELCO SALES, INC.

4790 W. Jacquelyn Ave.
Fresno, CA 93711
(209) 275-5561

CAMERA ENCLOSURES

INDOOR ENCLOSURES

EHTP2	Tamper Resistant. Locking drop sides.	USER
		136.00
WB	Wall Mounting Bracket for EHTP2	20.00
CB	Ceiling Mounting Bracket for EHTP2	18.00
EH44	Tamper Resistant for 2/3" and small 1" cameras with auto iris or fixed focal length lens. Max. camera/lens size: 6.50"W x 4.50"H x 17"L. Use with EM22 wall mount, MM22 ceiling or pedestal mount.	80.00

2/3" CAMERA ENVIRONMENTAL ENCLOSURES

EH55	Environmental enclosure with sun shroud for 2/3" and small 1" camera. Max. camera/lens size: 5.50"W x 5"H x 15"L. All aluminum construction. Use with EM22 wall mount, MM22 or MM103C ceiling or pedestal mount.	165.00
EH55B	EH55 with thermostatically controlled Blower.	210.00
EH55H	EH55 with thermostatically controlled Heater.	220.00
EH55HB	EH55 with thermostatically controlled Blower & Heater.	286.00

1" CAMERA ENVIRONMENTAL ENCLOSURES

EH66	Environmental enclosure with removable lid. Max. camera/lens size: 7"W x 7"H x 22"L. All aluminum construction. Use with EM22 or EM102W wall mount, MM22 or MM103C ceiling or pedestal mount.	210.00
EH66B	EH66 with thermostatically controlled Blower.	275.00
EH66H	EH66 with thermostatically controlled Heater.	264.00
EH66HB	EH66 with thermostatically controlled Blower & Heater.	330.00
EH66L	EH66 with Tamper Resistant Key Locks.	253.00
EH66BL	EH66 with thermostatically controlled Blower & Tamper Resistant Key Locks.	320.00
EH66HL	EH66 with thermostatically controlled Heater & Tamper Resistant Key Locks.	308.00
EH66HBL	EH66 with thermostatically controlled Blower & Heater and Tamper Resistant Key Locks.	375.00

ACCESSORIES FOR EH66 SERIES ENCLOSURES

S66	Sun Shroud	60.00
WW66	Window Wiper and Washer Assembly	260.00
WD66	Window Defroster and Defogger. (Must be used in conjunction with heater assembly.)	130.00
Ti66	Thermal Insulation	28.00

EXTRA LONG 1" CAMERA ENVIRONMENTAL ENCLOSURES

EH66X	Extra-long environmental enclosure with removable lid. All aluminum construction. Max. camera/lens size: 7"W x 7"H x 33"L. Use with EM22 or EM102W wall mount, MM22 or MM103C ceiling or pedestal mount.	USER
		253.00
EH66XB	EH66X with thermostatically controlled Blower.	320.00
EH66XH	EH66X with thermostatically controlled Heater.	310.00
EH66XHB	EH66X with thermostatically controlled Blower & Heater.	375.00
EH66XL	EH66X with Tamper Resistant Key Locks.	297.00
EH66XBL	EH66X with thermostatically controlled Blower & Tamper Resistant Key Locks.	363.00
EH66XHL	EH66X with thermostatically controlled Heater & Tamper Resistant Key Locks.	352.00
EH66XHBL	EH66XHBL with thermostatically controlled Blower & Heater and Tamper Resistant Key Locks.	420.00

ACCESSORIES FOR EH66X ENCLOSURES

S66X	Sun Shroud	66.00
WW66	Window Wiper and Washer Assembly	260.00
WD66	Window Defroster and Defogger. (Must be used in conjunction with heater assembly.)	130.00
Ti66X	Thermal Insulation	30.00

NOTE: *Available on Special Order Only



EHTP-2



EH-44



EH-66

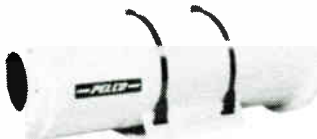
EXPLOSION PROOF ENCLOSURES—CERTIFIED

(N.E.C. Class I, Div. I, Groups C,D—Class II, Div. I, Groups E,F,G)

EHX6	Explosion proof, 6" dia. x 24" long, non-pressurized. Use with EM102W wall mount, MM103C ceiling or pedestal mount	\$760.00
EHX8	Explosion proof, 8" dia. x 24" long, non-pressurized. Use with EM102W wall mount, MM103C ceiling or pedestal mount	825.00
EHX10	Explosion proof, 10" dia. x 24" long, non-pressurized. Use with EM102W wall mount, MM103C ceiling or pedestal mount	Quote

ACCESSORIES FOR EXPLOSION PROOF ENCLOSURES

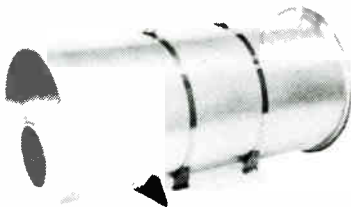
E700H	Thermostatically controlled heater kit for EHX6 & EHX8 enclosures. (Installation required)	\$80.00
EHSX6	Sun shroud for EHX6 enclosure	77.00
EHSX8	Sun shroud for EHX8 enclosure	80.00



EHX8

DUST TIGHT ENVIRONMENTAL ENCLOSURES

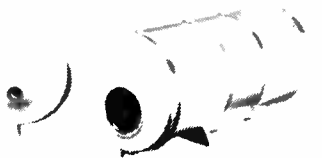
E706-16	Dust tight environmental enclosure, 6" dia. x 16" long, all aluminum construction. Use with EM22 wall mount, MM22 ceiling or pedestal mount	\$280.00
E706-24	Dust tight environmental enclosure, 6" dia. x 24" long, all aluminum construction. Use with EM22 wall mount, MM22 ceiling or pedestal mount	300.00
E706-24P	E706-24 with purge fittings, requires a filtered compressed air supply. Provides positive pressure internal air circulation	360.00
E706-24S	Same as E706-24, except Type 304 stainless steel construction	400.00
E706-24PS	E706-24S with purge fittings	460.00
E708-24	Dust tight environmental housing, 8" dia. 24" long, all aluminum construction. Use with EM22 wall mount, MM 22 ceiling or pedestal mount	400.00
E708-24P	E708-24 with purge fittings, requires a filtered compressed air supply. Provides positive pressure internal air circulation	440.00
E708-24S	Same as E708-24, except Type 304 stainless steel construction	500.00
E708-24PS	E708-24S with purge fittings	560.00



MT10

ACCESSORIES FOR E700 SERIES ENCLOSURES

E700H	Thermostatically controlled heater kit. (Installation required)	\$ 80.00
E700B	Thermostatically controlled fan kit for internal air circulation (Installation required)	80.00
E700A	Air funnel kit, provides positive pressure air flow across face of front window. (Installation and filtered compressed air supply required)	160.00
E706S	Sun shroud for E706-16 & E706-24 series enclosures	60.00
E706SS	Type 304 stainless steel sun shroud for E706-24S & E706-24PS enclosures	90.00
E708S	Sun shroud for E708-24 series enclosures	70.00
E708SS	Type 304 stainless steel sun shroud for E708-24S & E708-24PS enclosures	100.00
E706V	Sun visor for E706-16 & E706-24 series enclosures	24.00
E706VS	Type 304 stainless steel sun visor for E706-24S & E706-24PS enclosures	42.00
E708V	Sun visor for E708-24 series enclosures	26.00
E708VS	Type 304 stainless steel sun visor for E708-24S & E706-24PS enclosures	48.00



HT10

WATER COOLED ENCLOSURES

MT10P	Medium temperature water-cooled enclosure w/Pyrex glass for furnace or kilns. See data sheet for exact temperature ratings. 10" dia. x 24" long	\$ 860.00
HT10V	High temperature water-cooled enclosure w/Vycor glass for furnace or kilns. See data sheet for exact temperature ratings. 10" dia. x 24" long	1400.00

ACCESSORIES FOR WATER COOLED ENCLOSURES

WCRC	*Infrared reflective coating for HT10V Vycor glass	\$100.00
E700A	*Air funnel kit, provides positive pressure air flow across face of front window. (Requires installation and filtered compressed air supply.)	160.00
WCAL	*Alarm thermostat kit, provides a contact closure upon internal temperature rise. (Installation required.)	60.00

MISCELLANEOUS ACCESSORIES

EHCM	*Cradle mount for EH66 for inverted mounting	\$ 60.00
EHRC	*Relay module for low voltage control of wiper/washer & camera on/off. Requires MEH24DT control module	60.00
EB1	Elevation block 1"	10.00
EB2	Elevation block 2"	10.00

NOTE: *Available on Special Order Only

PELCO SALES, INC.

4790 W. Jacquelyn Ave.
Fresno, CA 93711
(209) 275-5561

LENSES



PINHOLE LENSES



TV8.5EE

TV8.5ES



TV-J6A



M2J8A



M26B

PINHOLE LENSES

2/3" FORMAT

MFJP9.5	9.5mm wide angle pinhole lens, f3.5	270.00
MFJP9.5R	9.5mm wide angle pinhole lens, f3.5 for right angle viewing.	330.00
MFJP9.5RES	9.5mm wide angle pinhole lens, f3.5 for right angle viewing with ES filter and auto iris	QUOTE

CDS METER MOVEMENT FIXED FOCAL LENGTH LENS

2/3" FORMAT

TV8.5EE	8.5mm wide angle lens, f1.5	260.00
TV16EE	16mm standard lens, f1.6	240.00

1" FORMAT

TV12.5EE	12.5mm wide angle lens, f1.4	260.00
TV25EE	25mm standard lens, f1.4	240.00
TV50EE	50mm semi-telephoto lens, f1.8	260.00

AUTO IRIS FIXED FOCAL LENGTH LENSES WITH ES FILTER

2/3" FORMAT

TV8.5ES	8.5mm wide angle lens, auto iris, ES filter, f1.3	260.00
TV16ES	16mm standard lens, auto iris, ES filter, f1.3	240.00

1" FORMAT

TV12.5ES	12.5mm wide angle lens, auto iris, ES filter, f1.3	270.00
TV25ES	25mm standard lens, auto iris, ES filter, f1.4	250.00
TV50ES	50mm semi-telephoto lens, auto iris, ES filter, f1.8	250.00
TV75ES	75mm telephoto lens, auto iris, ES filter, f1.8	290.00

MANUAL ZOOM LENSES

2/3" FORMAT

MZJ6A	6X manual zoom lens, 12.5-75mm, f1.8	192.00
MZJ6B	6X manual zoom lens, 12.5-75mm, f1.4	205.00
MZJ8A	8X manual zoom lens, 11.5-90mm, f2.0	274.00
MZJ10A	10X manual zoom lens, 11-110mm, f1.8	460.00

1" FORMAT

MZ5A	5X manual zoom lens, 20-100mm, f1.8	
MZ6A	6X manual zoom lens, 17-102mm, f2.0	230.00
MZ6B	6X manual zoom lens, 18-108mm, f1.6	530.00
MZ8A	8X manual zoom lens, 18-144mm, f2.0	990.00
MZ10A	10X manual zoom lens, 15-150mm, f1.8	950.00
MZ10B	10X manual zoom lens, 16-160mm, f1.8	1010.00
MZ10C	10X manual zoom lens, 15-150mm, f2.8	1050.00
MZ15A	15X manual zoom lens, 15-225mm, f2.8	1580.00
MZ14A	14X manual zoom lens, 25-350mm, f3.5	3130.00

MOTORIZED ZOOM LENSES

2/3" FORMAT

TVJ6A	6X motorized zoom lens, 12.5-75mm, f1.8	630.00
TVJ6B	6X motorized zoom lens, 12.5-75mm, f1.4	640.00
TVJ8A	8X motorized zoom lens, 11.5-90mm, f2.0	710.00
TVJ10A	10X motorized zoom lens, 11-110mm, f1.8	1100.00

NOTE: *Available on Special Order Only

PELCO SALES, INC.

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LENSES



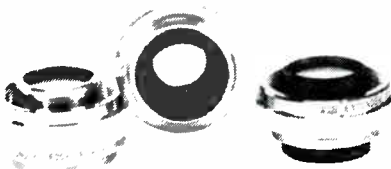
TV6A



TV8AND



TVJ10AND



EXTENDERS

1" FORMAT

TV5A	5X motorized zoom lens, 20-100mm, f1.8	720.00
TV6A	6X motorized zoom lens, 17-102mm, f2.0	600.00
TV6B	6X motorized zoom lens, 18-108mm, f1.6	1200.00
TV8A	8X motorized zoom lens, 18-144mm, f2.0	1280.00
TV10A	10X motorized zoom lens, 15-150mm, f1.8	1650.00
TV10B	10X motorized zoom lens, 16-160mm, f1.8	1700.00
TV10C	10X motorized zoom lens, 15-150mm, f2.8	1900.00
TV15A	15X motorized zoom lens, 15-225mm, f2.8	2400.00
TV25A	14X motorized zoom lens, 25-350mm, f3.5	4950.00

MOTORIZED ZOOM LENS WITH NEUTRAL DENSITY SPOT FILTER

2/3" FORMAT

TVJ6AND	6X motorized zoom lens, ND filter, 12.5-75mm, f1.8	730.00
TVJ6BND	6X motorized zoom lens, ND filter, 12.5-75mm, f1.4	740.00
TVJ8AND	8X motorized zoom lens, ND filter, 11.5-90mm, f2.0	810.00
TVJ10AND	10X motorized zoom lens, ND filter, 11-110mm, f1.8	1200.00

1" FORMAT

TV5AND	5X motorized zoom lens, ND filter, 20-100mm, f1.8	890.00
TV6AND	6X motorized zoom lens, ND filter, 17-102mm, f2.0	760.00
TV8AND	8X motorized zoom lens, ND filter, 18-144mm, f2.0	1380.00
TV10AND	10X motorized zoom lens, ND filter, 15-150mm, f1.8	1750.00
TV10BND	10X motorized zoom lens, ND filter, 16-160mm, f1.8	1800.00
TV10CND	10X motorized zoom lens, ND filter, 15-150mm, f2.8	2000.00
TV15AND	15X motorized zoom lens, ND filter, 15-225mm, f2.8	2500.00
TV25AND	14X motorized zoom lens, ND filter, 25-350mm, f3.5	5050.00

AUTO IRIS CONTROL BOX

AI700	Auto iris servo assembly can be added to any motorized lens with "ND" in the part number. Allows for fully automatic iris operation with manual override when used with MLZ6 lens control module	120.00
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RADIATION RESISTANT LENSES

1" FORMAT

TV5LRAD	Motorized zoom lens, 30-150mm, f2.7	QUOTE
CF12.5N	12.5mm wide angle lens, f2.0	870.00
CF25N	25mm standard lens, f2.0	720.00
CF50N	50mm semi-telephoto fixed length lens, f2.0	770.00

OPTIONS FOR 2/3" AND 1" FORMAT LENSES

LPP	Position feedback modification (limited models per function)	100.00
F1.5X	1.5X range extender**	120.00
F2X	2X range extender**	120.00
		120.00

**Please call factory with manufacturer and model of lens to be used with range extender.

NOTE: * Available on Special Order Only

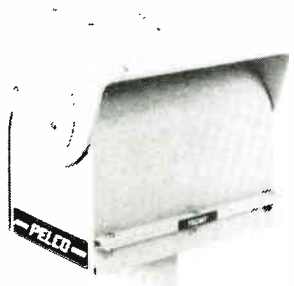
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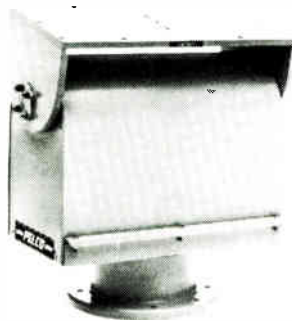
PAN AND TILTS



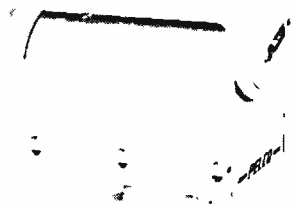
PT-270-P



PT-175-P



PT-1250-P



PT-570-24P

INDOOR PAN & TILTS

- PT270P Light Duty—"Mini". 115VAC operation for loads up to 15 lbs. Requires MPT115DT joystick control or MPTA115DT joystick control for auto/random scan operation. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount \$ 390.00
- PT270-24P Light Duty—"Mini". 24VAC operation for loads up to 15 lbs. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount 390.00
- PT280-24P Light Duty—"Mini". High speed pan and tilt 24VAC operation for loads up to 15 lbs. Engineered for discreet surveillance enclosures. Factory prewired feed-through for all control functions—pan & tilt, motorized zoom lenses, camera power (24VAC) & video. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount 450.00
- PT175-24P Medium Duty—24VAC operation for loads up to 20 lbs. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM105 wall mount, PM102C/PM102A ceiling or pedestal mount . . . 620.00
- PT180-24P Medium Duty 24VAC operation for loads up to 20 lbs. Factory prewired feed-through for all control functions—pan & tilt, motorized zoom lenses, camera power (24VAC) & video. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM105 wall mount, PM102C ceiling or pedestal mount. 690.00

INDOOR/OUTDOOR PAN & TILTS

- PT550P Medium Duty/Weatherproof. 115VDC variable speed operation for loads up to 40 lbs. Requires MPT1510 series control modules. Use with PM102W wall mount, PM102C ceiling or pedestal mount \$ 935.00
- PT570P Medium Duty/Weatherproof. 115VAC operation for loads up to 40 lbs. Requires MPT115DT joystick control or MPTA115DT joystick control for auto/random scan operation. Use with PM102W wall mount, PM102C ceiling or pedestal mount 910.00
- PT570-24P Medium Duty/Weatherproof. 24VAC operation for loads up to 40 lbs. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM102W wall mount, PM102C ceiling or pedestal mount 910.00
- PT1250P Heavy Duty/Weatherproof. 115VAC operation for loads up to 100 lbs. Requires MPT115DT joystick control or MPTA115DT joystick control for auto/random scan operation. Use with PM1000W wall mount, PM1000C ceiling or pedestal mount 1375.00
- PT1250DC Heavy Duty/Weatherproof. 115VDC variable speed and autoscan operation for loads up to 100 lbs. Requires MPT1510 series control modules. Use with PM1000W wall mount, PM1000C ceiling or pedestal mount 1430.00
- PT2000L Extra Heavy Duty/Weatherproof. 115VDC variable speed operation for loads up to 150 lbs. Requires MPT2000DT joystick control. Use with PM1000W wall mount, PM1000C ceiling or pedestal mount 2420.00
- PT580P Medium Duty/Weatherproof, extra rugged construction. 115VAC operation for loads up to 40 lbs. Factory prewired feed-through for all control functions—pan & tilt, motorized zoom lenses, camera power, enclosure accessories & video. Requires MPT115DT joystick control or MPTA115DT joystick control for auto/random scan operation. Use with PM102W wall mount, PM102C ceiling or pedestal mount. (/PP, /HB Options available on special order only.) 990.00
- PT580-24P Medium Duty/Weatherproof, extra rugged construction. 24VAC operation for loads up to 40 lbs. Factory prewired feed-through for all control functions—pan & tilt, motorized zoom lenses, camera power (24VAC), enclosure accessories & video. Requires MPT24DT joystick control or MPTA24DT joystick control for auto/random scan operation. Use with PM102W wall mount, PM102C ceiling or pedestal mount. (/PP, /HB Options available on special order only.) 990.00
- PT2501P Super Heavy Duty/Weatherproof. 115VDC operation for loads up to 500 lbs. Requires MPT2000DT joystick control QUOTE

EXPLOSION PROOF

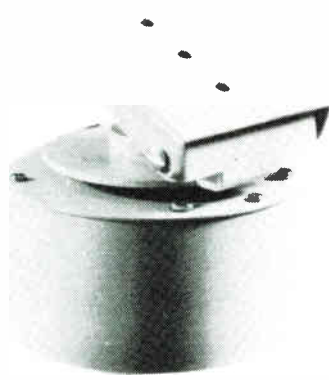
- PT1250EX Explosion Proof/Weatherproof. 115VAC operation for loads up to 100 lbs. Per N.E.C. Class I, Div. I, Groups C-D—Class II, Div. I, Groups E,F,G. Requires MPT115DT joystick control or MPTA115DT joystick control for auto/random scan operation. Use with PM1000W wall mount, PM1000C ceiling or pedestal mount \$1980.00

NOTE: *Available on Special Order Only

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(209) 275-5561

PAN AND TILTS



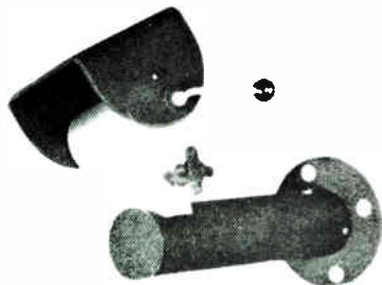
PS7-24



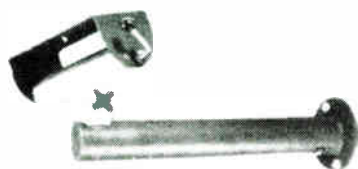
PS-30-24



CM-14



CM101W



EM102W

ANTENNA POSITIONING SYSTEM

AP2500 * All Weather/Complete Positioning System. For antennas up to 6 feet in diameter. Designed to operate in wind force of 65-70 MPH and withstand winds of 110-115 MPH. Includes MPT2500R control, with joystick, variable speed & Azimuth/Elevation indicators **4950.00**

SPECIAL ORDER OPTIONS AND ACCESSORIES

/PP * Position feedback modification. Requires special order control for Preset Position. Four additional conductors required. Available for PT550P, PT570P, PT570-24P, PT1250P, PT1250DC **300.00**

/SEC * Sector scan modification for PT1250P and PT1250DC permits scanning only within preset limits but allows manual override for scanning outside limits. **220.00**

/RAD * Radiation resistant wiring & white epoxy paint for PT550P, PT570P, PT570-24P, PT1250P, PT1250DC. Low level radiation resistant up to 10⁶ Rads. **320.00**

/HB * Spot & blanket heaters. Allows operations to -50F. For PT550P, PT570P, PT570-24P, PT1250P, PT1250DC. **220.00**

/FGP * Special hi-speed gears: 9 /sec pan speed. For PT570P, PT570-24P, PT1250P, PT1250DC only. **110.00**

/FGT * Special hi-speed gears: 4.59 /sec tilt speed. For PT570P, PT570-24P, PT1250P, PT1250DC only. **110.00**

/FG * Special hi-speed pan & tilt gears: 9 /4 59 per sec pan/tilt speed. For PT570P, PT570-24P, PT1250P, PT1250DC only. **200.00**

/SS * Type 304 Stainless Steel Construction for PT1250P, PT1250DC **QUOTE**

SCANNERS

INDOOR SCANNERS

PS7 Light Duty — "Mini" Scanner. 115 vac operation for loads up to 15 lbs. Auto-scan operation ONLY — 6 ft. line cord furnished. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount **132.00**

PS7A Light Duty — same as PS7. Requires MPS5DT control. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount. **132.00**

PS7-24 Light Duty — same as PS7, except operates on 24 vac. Requires MPS524DT control. Use with PM14 or PM105 wall mount, PM200C ceiling or pedestal mount. **132.00**

INDOOR/OUTDOOR SCANNERS

PS30 Medium Duty/Weatherproof. 115 vac operation for loads up to 50 lbs. Auto-scan operation only — 6 ft. line cord furnished. Use with PM102W wall mount, PM102C ceiling or pedestal mount. **430.00**

PS30A Medium Duty. Same as PS30. Requires MPS5DT control. Use with PM102W wall mount, PM102C ceiling or pedestal mount. **430.00**

PS30-24 Medium Duty. Same as PS30, except operates on 24 vac. Requires MPS524DT control. Use with PM102W wall mount, PM102C ceiling or pedestal mount. **430.00**

MOUNTS

CAMERA MOUNTS

CM14 Light duty wall mount. Ball/swivel adjustable head. Supports up to 20 lbs. **22.00**

CM16 Light duty ceiling mount. Ball/swivel adjustable head. Supports up to 20 lbs. **30.00**

CM101W Heavy duty wall mount. Manually adjustable swivel head. Supports up to 40 lbs. **74.00**

CM101C Heavy duty ceiling or pedestal mount. Manually adjustable swivel head. Supports up to 40 lbs. **74.00**

ENCLOSURE MOUNTS

EM22 Medium duty wall mount for EH44, EH55, and EH66 Series enclosures and light to medium weight cameras. Manually adjustable swivel head. Supports up to 40 lbs. **38.00**

MM22 Medium duty pedestal or ceiling mount for EH44, EH55, EH66 Series enclosures, and light to medium weight cameras. Manually adjustable swivel head. Supports up to 40 lbs. **38.00**

EM102W Heavy duty wall mount for EH66, EH66X, EHX6, EHX8, E706, E708 Series enclosures, and medium to heavy weight cameras. Manually adjustable swivel head. Supports up to 75 lbs. **80.00**

MM103C Heavy duty ceiling or pedestal mount for EH66, EH66X, EHX6, EHX8, E706, and E708 Series enclosures and medium to heavy weight cameras. Manually adjustable swivel head. Supports up to 130 lbs. **80.00**

Prices and Specifications Subject to Change Without Notice.

NOTE: * Available on Special Order Only

VC-211



PM1000W



MR-U



MM100W

SCANNER/PAN & TILT MOUNTS

PM14	Light duty wall mount for PS7, PS7A, PS7-24, PT270P, PT270-24P, PT280-24P. Supports up to 25 lbs.	\$ 22.00
PM105	Medium duty wall mount for PS7, PS7A, PS7-24, PT175-24P, PT270P, PT270-24P, PT280-24P. Supports up to 40 lbs.	24.00
PM200C	Light duty ceiling or pedestal mount for PS7, PS7A, PS7-24, PT270P, PT270-24P, PT-280-24P. Supports up to 25 lbs.	18.00
PM102W	Medium duty wall mount for PS30, PS30A, PS30-24, PT550P, PT570P, PT570-24P. Supports up to 75 lbs.	60.00
PM102C	Medium duty ceiling or pedestal mount PS30, PS30A, PS30-24, PT550P, PT570P, PT570-24P. Supports up to 75 lbs.	50.00
PM1000W	Heavy duty wall mount for PT1250P, PT1250DC, PT1250EX, PT2000L. Supports up to 125 lbs. (ST1 strut recommended for loads over 125 lbs.)	60.00
PM1000C	Ceiling or pedestal mount for heavy duty pan & tilts—PT1250P, PT1250DC, PT1250EX, PT2000L. Supports up to 175 lbs.	50.00

OPTIONAL SUPPORT STRUT

ST1	Optional support strut. Enables EM102W, PM102W, and PM1000W to support up to 175 lbs. Also increases horizontal stability when two or more are used with PM102C or PM1000C.	\$34.00
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ADAPTORS FOR CORNER MOUNTING

CM100	Corner mount adaptor for EM102W, PM102W, and PM1000W. (Note: Must order SCM100 below for use with PM1000W)	\$40.00
SCM100	Strut corner mount adaptor for ST1 strut	30.00

ADAPTORS FOR POLE MOUNTING

PA100	Pole mount adaptor for CM14 and EM22 wall mounts. Minimum pole diameter: 1.50"	\$24.00
PA102	Pole mount adaptor for PM102W, PM1000W, and EM102W. Minimum pole diameter: 3"	30.00
SPA102	Pole adaptor for ST1 strut. Minimum pole diameter 3"	24.00

PARAPET ADAPTOR MOUNT

PP100	Adaptor mount secures to inside of parapet at least 18" high. Positions equipment anywhere on parapet, including corners. Universal adaptor for medium to heavy duty Pelco wall mounts. Supports up to 175 lbs.	\$125.00
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MONITOR MOUNTS

MM100W	Universal wall mount for 9" & 12" monitors. Adjustable horizontally and vertically. Supports up to 40 lbs.	\$ 50.00
MM200P	Universal pedestal mount for 9" and 12" monitors. Adjustable horizontally and vertically. Supports up to 40 lbs.	50.00
MM300	Ceiling mount for 9" & 12" monitors. Adjustable horizontally & vertically. Supports up to 40 lbs.	QUOTE
MRU1	Monitor/receiver mount with 32"W x 16.125"D monitor support pan. Designed for use in educational institutions, churches, hospitals, and homes. Supports up to 150 lbs.	120.00
MRU3	Monitor/receiver mount. Same as MRU1 but with a 26"W x 12.25"D monitor support pan.	120.00
MRU4	Monitor/receiver mount. Same as MRU1 but with a 20"W x 16"D monitor support pan.	120.00
MRWA	Wall adaptor for MRU series	36.00
MRCA	Ceiling adaptor for MRU series	22.00
MRU	Monitor/receiver mount without monitor support pan. For use with monitor/receivers with side mounting holes.	90.00

PELCO SALES, INC.

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(209) 275-5561

SHORT DISTANCE CONTROLS, HARDWARE

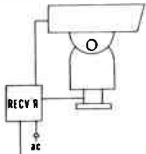
RELAY BOXES

- RB24** Relay box for 24VAC pan & tilts and scanners. Extends control's operating distance up to a maximum of 15,000 ft. **\$250.00**
- RB115** Relay box for 115VAC pan & tilts and scanners. Extends control's operating distance up to a maximum of 15,000 ft. **250.00**

DUAL STATION CONTROL SYSTEM

Dual Station Control System is compatible with all Pelco short distance control modules. When ordering, specify control series (priced separately) and components listed below:

- MDS100DT** *Desk top dual station control module (2 required, 1 per control panel.) . . \$100.00
Select appropriate J-Box (1 per dual station system)
- DS100-24** *Dual Station J-Box for 24VAC systems. Wired for pan & tilt, zoom lens, auto iris, and auto/random scan functions. **200.00**



CONTROLS CAXITRON™

COAXITRON TRANSMITTER & CONTROL MODULES

- MPT9000PZ** Transmitter/control with pan & tilt joystick, zoom lens and 4 accessory function controls. Rack mounted. **\$460.00**
- MPT9000CZ** Transmitter/control. Same as MPT9000PZ, except desk top model. . . . **460.00**
- MPT9111PZ** Computron transmitter/control integrates Compuswitch switching system & Coaxitron control system. Same operational features as MPT9000PZ **Quote**
- MPT9111CZ** Transmitter/control. Same as MPT9111PZ, except desk top model. **Quote**

COAXITRON RECEIVER & SUPPLY OPTIONS

- CX9024RX** Coaxitron receiver in weatherproof box for 24VAC pan & tilts with power supply for pan & tilt, zoom lens and 4 accessory functions. (3 latching and 1 momentary.) **\$490.00**
- CX9115RX** Coaxitron receiver/power supply. Same as CX9024RX, except for 115VAC pan & tilts. **490.00**

AUTO/RANDOM SCAN MODULE

- A9024** Auto/Random Scan plug-in module for CX9024RX Coaxitron receivers. . \$100.00
- A9115** Auto/Random Scan plug-in module for CX9115RX Coaxitron receivers. . **100.00**

TEST/MANUAL BOARD

- CX900TLC** System test and receiver manual control board plug-in module for all CX9000RX series receivers **\$100.00**

CONTROLS LONG DISTANCE

DIGITAL MULTIPLEXOR PANELS AND DESK TOP CABINETS

- M5CP** Rack panel (1.75"H x 19"L) for up to 5 modules **\$66.00**
- M5CDT** Desk top cabinet for up to 5 modules **66.00**

CONTROL MODULES

- MAD3200** Address module for up to 32 locations **\$60.00**
- MPT3200** Pan & Tilt joystick control module **60.00**
- MA3200** Auto/Random Scan control module **60.00**
- MV3200** Variable speed control module **60.00**
- MLZ3200** Pelco lens control module **60.00**
- MAI3200** Pelco lens control module with Auto-iris **Quote**
- MEH3200** *Enclosure control module (camera on/off, wiper/washer) **60.00**
- MG3200** *Gate control module (open, close, stop) **60.00**

DIGITAL TRANSMITTER

- DM3200TX** Digital Multiplexor transmitter **\$850.00**

DIGITAL RECEIVER

- DM3224RX** Digital multiplexor — up to 24 function receiver **\$1280.00**

Note: *Available on Special Order Only

Prices and Specifications Subject to Change Without Notice.

VC-213



COAX CABLE ONLY
1500 FT. ON RG 59U
4000 FT. ON RG 11

MINI-LINE SERIES CONTROL MODULES

All Mini-Line Series controls are desk top mounted. Rack mounting is available at additional cost. Specify Rack Kit No. when ordering. R100 (Single)/R200 (Dual)/R300 (Triple) **\$20.00 ea.**

PAN & TILT CONTROLS

For short distance control of 24VAC pan & tilts — PT270-24P, PT280-24P, PT570-24P

- MPT24DT Desk top joystick control module **\$165.00**
- MPTA24DT Desk top joystick control module with Auto/Random scan operation . **230.00**

For short to medium distance control of 115VAC pan & tilts — PT270P, PT570P, PT1250P, PT1250EX

- MPT115DT Desk top joystick control module **\$165.00**
- MPTA115DT Desk top joystick control with Auto/Random scan operation **210.00**

For short to medium distance control of 115VDC pan & tilts — PT550P, PT1250DC

- MPT1510DT Desk top joystick control module **\$165.00**
- MPTV1510CZ Desk top joystick control with variable speed and zoom lens control. . **280.00**
- MPTV1510PZ Rack mount joystick control with variable speed and zoom lens control. **280.00**

- MPTV1510CA *Desk top joystick control with variable speed, auto scan, and zoom lens control. (For PT1250DC only) **380.00**

- MPTV1510PAZ *Rack mount joystick control with variable speed, auto scan, and zoom lens control. (For PT1250DC only) **380.00**

- VR1500DT *Desk top variable rate joystick control module (3.50" panel height). Specify rack mounting or desk top. **280.00**

For short distance control of PT2000L pan & tilt

- MPT2000DT Desk top joystick control module **\$165.00**
- MPTV2000DT *Desk to joystick control with variable speed **280.00**
- VR1500DT *Desk top variable rate joystick control module (3.50" panel height). Specify rack mounting or desk top **280.00**

SCANNER CONTROLS

- MPS5DT Desk top control modules for 115VAC scanners PS7A, PS30A **\$110.00**
- MPS524DT Desk top control for 24VAC scanners PS7-24, PS30-24 **110.00**

MULTIPLE LOCATION SCANNER CONTROLS

- PS506-24DT *Multiple position control for up to 6 scanners. 24VAC operation for PS7-24 & PS30-24 **\$480.00**

MULTIPLE LOCATION PAN/TILT/LENS CONTROLS

- PT506-24DT *Multiple position control for up to 6 pan/tilts and zoom lenses for 24VAC pan & tilt units **\$1100.00**

LENS CONTROLS FOR PELCO MOTORIZED ZOOM LENSES

- MLZA6DT Desk top zoom lens control with auto-iris operation **\$420.00**
- MLZ6DT Desk top zoom lens control module with auto/manual iris control for use with AI700/AI701 auto-iris servo assembly **180.00**

ENCLOSURE CONTROLS

- MEHDT Desk top enclosure control module for 115VAC camera on/off windshield wiper/washer **\$70.00**
- MEH24DT Desk top enclosure control module for 24VAC camera on/off windshield wiper/washer. (Requires EHRC in enclosure.) **80.00**

NOTE: *Available on Special Order Only



MPT24-PZ



MPS5DT

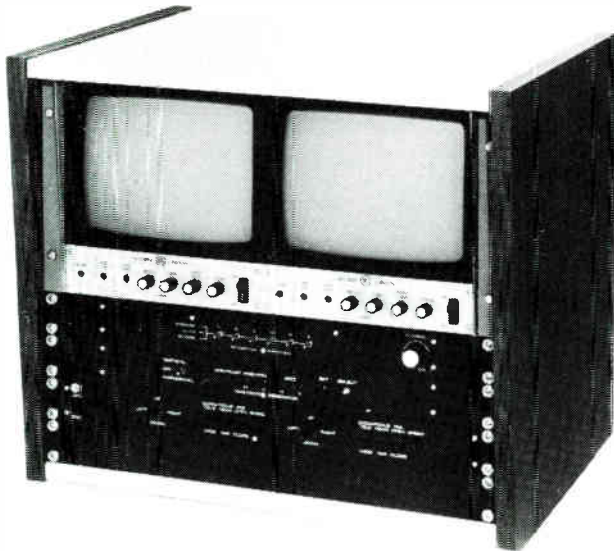


PS506

PELCO SALES, INC.

4790 W. Jacquelyn Ave.
Fresno, CA 93711
(209) 275-5561

DESK TOP CONSOLES/LENSES



CE600W



MF5.5



MF25A

Desk Top Consoles

CE400W	Wood grain console, 7" of vertical rack space	\$190.00
CE600W	Wood grained console, 15.25" of vertical rack space	280.00
CE700W	Wood grained console, 28" of vertical rack space	320.00

MODULAR COMPONENTS FOR DESK TOP CONSOLES

CE400E	Console extender kit expands CE400W horizontally one full width for each extender added	\$120.00
CE600E	Console extender kit expands CE600W horizontally one full width for each extender added	140.00
CE700E	Console extender kit expands CE700W horizontally one full width for each extender added	160.00
CE45W	45° wedge filler for all consoles*	QUOTE
CE90W	90° wedge filler for all consoles*	QUOTE

BLANK PANEL INSERTS

P1	Blank panel, 1.75"H x 619"W	\$15.00
P3	Blank panel, 3.50"H x 619"W	20.00
P5	Blank panel, 5.25"H x 619"W	25.00
P7	Blank panel, 7.00"H x 619"W	25.00
P10	Blank panel, 10.50"H x 619"W	25.00
P12	Blank panel, 12.25"H x 619"W	25.00

Miscellaneous

INFRARED ILLUMINATORS

LL22NS	Low light level infra-red illuminator with narrow spot lamp	\$800.00
LL22WF	Low light level infra-red illuminator with wide flood lamp	800.00

ACCESSORIES

LL22M	Mounting bracket to mount LL22 on PT500 and PT1200 Series pan and tilts	\$48.00
PAR56NS	Narrow spot replacement lamp, 500 watt	80.00
PAR56MF	Medium flood replacement lamp, 500 watt	80.00
PAR56WF	Wide flood replacement lamp, 500 watt	80.00

Lenses

MANUAL FIXED FOCAL LENGTH LENSES

2/3" Format

MFJ4	4mm super wide angle lens, f/1.4	\$142.00
MFJ6	6mm wide angle lens, f/1.8 without focus	TBA
MFJ8	8mm super wide angle lens, f/1.3	70.00
MFJ9	9mm wide angle lens, f/1.4	90.00
MFJ16	16mm standard lens, f/1.4	82.00
MFJ16A	16mm standard lens without iris	22.00
MFJ16B	16mm standard lens with iris, f/1.6	TBA
MFJ35	35mm semi-telephoto lens, f/1.7	80.00

1" Format

MF5.5	5.5mm super wide angle lens, f/1.5	\$154.00
MF6.5	6.5mm wide angle lens, f/1.8	TBA
MF12.5	12.5mm wide angle lens, f/1.3	102.00
MF25A	25mm standard lens, f/1.4	70.00
MF25B	25mm standard lens, f/.85	254.00
MF40	40mm semi-telephoto lens, f/1.7	120.00
MF50	50mm semi-telephoto lens, f/1.3	104.00
MF75A	75mm telephoto lens, f/1.4	154.00
MF75	75mm telephoto lens, f/1.8	124.00
MF135	135mm telephoto lens f/1.8 with C-mount adaptor	274.00

NOTE: *Available on Special Order Only

PENTAX CORP. COSMICAR LENS DIV.

35 Inverness Dr. E.
Englewood, CO 80112
(303) 799-8000 Telex 4322099

LENSES

COSMICAR EE TYPE AUTO-IRIS LENS SERIES FOR 2/3 AND 1 INCH VIDICON CAMERAS

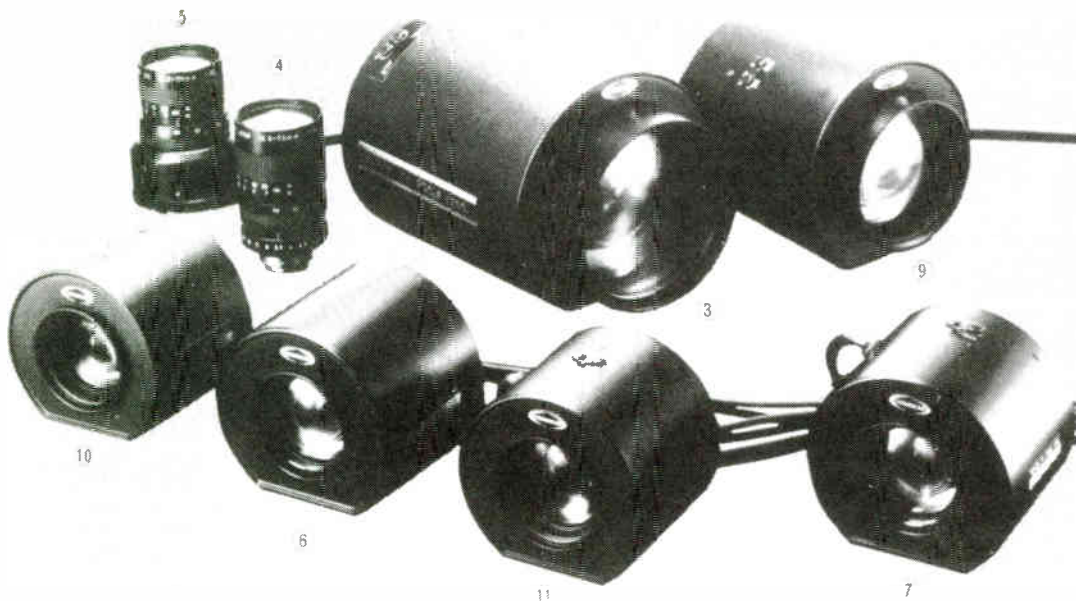


1"		
1. C21208	12.5mm	f1.4
2. C22513	25mm	f1.4
3. C25009	50mm	f1.8
2/3"		
4. C30814	8mm	f1.4
5. C31621	16mm	f1.4

The EE series of lenses incorporates a CdS sensor, which measures light volume in variable situations. Aperture size is controlled quickly from the information determined by the sensor. Developed by Asahi

Precision, Co., Ltd., EE lenses are compact in size and light in weight. Offering a range from wide-angle to telephoto, the lenses are available for both 1" and 2/3" standard vidicon cameras.

COSMICAR ZOOM LENS SERIES FOR 1/2, 2/3 AND 1 INCH VIDICON CAMERAS



Cosmicar high performance zoom lenses are available to satisfy a wide range of applications. Constructed to the highest standards of design, Cosmicar zoom lenses are compact and lightweight, enabling a perfect balance with any camera.

Method of operation ranges from manual focus, zoom and aperture control to the exclusive new lenses having remote facilities and incorporating the new auto iris system with peak to average response adjustment.

To establish your exact requirements, please refer to the specification tables for zoom ratio and operation type.

1"		
1. C21506	15- 90mm	f1.8
2. C21507	15- 90mm	f1.8
3. C21501	15-180mm	f1.9
2/3"		
4. C31204	12.5- 75mm	f1.8
5. C31205	12.5- 75mm	f1.8
6. C31209	12.5- 75mm	f1.8
7. C31208	12.5- 75mm	f1.8
8. C31001	10.5-105mm	f1.4
9. C31000	10-140mm	f1.9
1/2"		
10. C60800	8- 48mm	f1.2
11. C60801	8- 48mm	f1.2

PENTAX CORP.

COSMICAR LENS DIV.

35 Inverness Dr. E.
Englewood, CO 80112
(303) 799-8000 Telex 4322099

LENSES

COSMICAR MONOFOCAL TYPE LENS SERIES FOR 2/3 AND 1 INCH VIDICON CAMERAS



1"		
1. C20612	6.5mm	f1.8
2. C20800	8.5mm	f1.5
3. C21211	12.5mm	f1.4
4. C21212	12.5mm	f1.8
5. C22514	25mm	f1.4
6. C22516	25mm	f1.8
7. C25011	50mm	f1.4
8. C25010	50mm	f1.8
9. C27509	75mm	f1.4
2/3"		
10. C30401	4.8mm	f1.8
11. C30808	8mm	f1.4
12. C30811	8.5mm	f1.5
13. C31616	16mm	f1.6
14. C31619	16mm	f1.4
15. C30900	9mm	f3.4
16. C30901	9mm	f3.4
1/2"		
17. C60600	6mm	f1.2
18. C61200	12mm	f1.2
19. C61202	12mm	f1.4

Cosmicar offers a wide selection of monofocal, manual iris, lenses to satisfy any applications from an extremely wide angle view using a 4.8mm lens to very distant surveillance

and close-up situations requiring a 75mm lens. Select any Cosmicar lens to suit your particular application.

COSMICAR ES AND EX TYPE AUTO-IRIS LENS SERIES FOR 2/3 AND 1 INCH VIDICON CAMERAS



The conventional automatic iris lenses limit the metering method to either an Average or a Peak response against camera's video signal level. Now Cosmicar's ES-3 and EX Series allows you choices at any optional response weighting between Average and Peak signal level. As a result, even in a

picture area where brightness of an individual object is extremely adverse, any objects, bright or dark, you want to observe can be delivered sharply in image by adjusting the ALC screw of our ES-3 and EX lens series.

1"			
1. C21215	12.5mm	f1.4	EX
2. C22517	25mm	f1.4	ES-3
3. C25013	50mm	f1.8	ES-3
4. C27508	75mm	f1.8	ES-3
2/3"			
5. C30813	8mm	f1.4	EX
6. C31623	16mm	f1.4	EX
7. C30902	9mm	f3.4	EX S
8. C30903	9mm	f3.4	EX RA
1/2"			
9. C60601	6mm	f1.2	EX
10. C61201	12mm	f1.2	EX

Prices and Specifications Subject to Change Without Notice.

VC-217

Remarks: Symbols in Model No.

- ES, EX : Automatic Diaphragm for L.L.L. Cameras by hollow motor.
- E : EE Iris Control with CdS
- NR : Without iris and variable focus.
- M2 : Motorized Zoom, Focus.
- X : Fixed Focus.

FOR 2/3 INCH VIDICON CAMERA

Model No.	Focal Length	Relative Aperture	Type	Max. Angular Field of View		Shortest Focusing Distance	Field of View in Closest Distance		Back Focal Length	Effective Diameter			Mechanical Dimension			Note
				Tele	Wide		Tele	Wide (cm)		Front Lens	Rear Lens	Filter Size	Max. Dia	Length	Weight	
	mm	F				m			mm	mm	mm	mm	mm	mm	gr.	
C418AX (C30410)	4.8	1.8 16 C	Manual	110		0.2	36 25		9.2	25.4	10.4		42	32	100	Fixed Focus
C814 (C30808)	8	1.4 16 C	Manual	70 30		0.2	16 12		14.6	24.0	14.8	40.5 0.5	42	58	150	
C815B (C30811)	8.5	1.5 16 C	Manual	67 04		0.2	17 12		10.9	27.6	12.6	40.5 0.5	42	40	120	
C1616DNR-2 (C31610)	16	1.6	Manual	38 03		0.25	12 9		8.3	10.2	10.8	30.5 0.5	37	25.5	40	W O Diaphragm
C1614 (C31619)	16	1.4 16 C	Manual	38 03		0.3	14 11		13.2	14.0	15.4	40.5 0.5	42	40	90	
C814BEX (C30813)	8	1.4-360	Auto Iris	70 30		(0.2)	(16 X 12)		14.5	27.5	15.4	43 0.75	46.5	51.1	184	For L.L.L. Camera V.S or V DC8-16V
C1614EX (C31623)	16	1.4 360	Auto Iris	38 03		(0.5)	(25 X 19)		13.2	14.0	15.4	43 0.75	46.5	46.7	160	Av-Pk Type
C814BE (C30814)	8	1.4 16 C	EE Lens	70 30		0.2	16 12		14.5	27.5	15.4	67 0.75	75.5	48	285	DC 6V
C1614E (C31621)	16	1.4 16 C	EE Lens	38 03		0.3	14 11		13.2	14.0	15.4	67 0.75	75.5	48	265	
C6Z1218 (C31204)	12.5 75	1.8-22	Manual	8 19	49 12	1.0	10 X 7 ~ 59 X 44		18.4	43.3	10.5	49 0.75	51	90	320	
C6Z1218ES (C31205)	12.5 75	1.8-360	Auto Iris	8 19	49 12	1.0	10 X 7 ~ 59 X 44		18.4	43.3	10.5	49 0.75	68	90	500	
C6Z1218M2ES (C31207)	12.5 75	1.8-360	Motorized Auto Iris	8 19	49 12	1.0	10 X 7 ~ 59 X 44		18.4	43.3	10.5	49 0.75	89	90	720	For L.L.L. Camera V.S or V DC9-18V
C10Z1120M2ES (C31102)	11 110	2.0-360	Motorized Auto Iris	5 34	54 50	1.5	10 X 7 ~ 103 X 77		17.9	70.0	13.0	77 0.75	114.5	144	1460	
C934P (C30900)	9	3.4 22	Manual	63 47		0.3	11 9		11.8	2.7	7.8		34	164	175	Prism Lens Straight Type
C934PL (C30901)	9	3.4 22	Manual	63 47		0.3	11 9		11.8	2.7	7.8		34	164	210	Prism Lens Right Angle Type
C934PEX (C30902)	9	3.4 360	Auto Iris	63 47		0.3	11 9		11.8	2.7	7.8		46.5	164	235	Prism Lens Right Angle Type
C934PEX (C30903)	9	3.4 360	Auto Iris	63 47		0.3	11 9		11.8	2.7	7.8			164	270	Prism Lens Right Angle Type
C2V1616LS (C31614)	16 32	1.6 360	Auto Iris	20 20	38 03	1.0	27 20 54 42		14.0	21.0	12.6	40.5 0.5	55.5	61	295	For L.L.L. Camera V.S or V DC8-16V

FOR 2/3 & 1 INCH VIDICON CAMERA

B618CX (C20612)	6.5	1.8 16 C	Manual	116 24		0.2	37 25		10.2	29.5	12.4		48	42	128	Fixed Focus
B815A (C20800)	8.5	1.5 16	Manual	93 59		0.2	25 18		12.9	39.5	16.9		54	50.5	170	
B1214D-2 (C21211)	12.5	1.4 16 C	Manual	65 48		0.3	26 19		14.4	30.7	14.2	40.5 0.5	42	50	135	
B1218-2 (C21212)	12.5	1.8 16 C	Manual	65 48		0.3	26 19		10.1	16.0	11.6	40.5 0.5	42	40	95	
B2514C-2 (C22514)	25	1.4 16 C	Manual	35 14		0.6	28 21		16.5	17.9	14.2	40.5 0.5	42	40	100	
B2518 (C22516)	25	1.8 16 C	Manual	35 14		0.6	28 21		14.9	14.5	9.6	40.5 0.5	42	40	87	
B5014A (C25011)	50	1.4 16 C	Manual	17 52		1.0	23 17		18.1	35.8	16.2	46 0.75	48	48	180	
B5018A-3 (C25010)	50	1.8 16 C	Manual	17 52		1.0	23 17		31.4	27.0	15.5	40.5 0.5	42	51	130	
B7514C (C27509)	75	1.4 16 C	Manual	11 50		1.2	18 13		18.5	53.6	22.0	58 0.75	62	79	450	
B1214DEX (C21215)	12.5	1.4 360	Auto Iris	65 48		(0.3)	(26 X 19)		14.4	30.7	14.2	43 0.75	46.5	47.5	184	For L.L.L. Camera V.S or V DC8-18V
B2514CES-3 (C22517)	25	1.4-360	Auto Iris	35 14		(0.6)	(28 X 21)		16.5	17.9	14.2	49 0.75	62	51	270	Av-Pk Type
B5018AES-3 (C25013)	50	1.8-360	Auto Iris	17 52		(1.0)	(23 X 17)		31.4	27.0	15.5	49 0.75	62	51	290	*EX DC8-16V
B7518ES-3 (C27508)	75	1.8-360	Auto Iris	11 50		(2.5)	(40 X 30)		28.3	41.7	18.0	49 0.75	62	70	350	
B1214DE (C21208)	12.5	1.4 16 C	EE Lens	65 48		0.3	26 19		14.4	30.7	14.2	67 0.75	75.5	48	290	DC 6V
B2514CE (C22513)	25	1.4 16 C	EE Lens	35 14		0.7	28 21		16.5	17.9	14.2	67 0.75	75.5	48	275	
B5018AE-2 (C25009)	50	1.8 16 C	EE Lens	17 52		3.0	23 17		31.4	27.0	15.5	67 0.75	75.5	48	295	
B4Z2215A (C22208)	22.5 90	1.5 22	Manual	10 02	38 18	1.5	18 X 13 ~ 75 X 56		16.3	66.0	19.4	72 0.75	75	154	910	DC 6V
B4Z2215AM3 (C22209)	22.5 90	1.5 22	Motorized	10 02	38 18	1.5	18 X 13 ~ 75 X 56		16.3	66.0	19.4	72 0.75	107	154	1500	
B4Z2215AM2EL (C22210)	22.5 90	1.5 220	Motorized Auto Iris	10 02	38 18	1.5	18 X 13 ~ 75 X 56		16.3	66.0	19.4	72 0.75	107	154	1500	For L.L.L. Camera V.S or V DC9-18V
B12Z1519M2EM (C21501)	15 180	1.9 1400	Motorized Auto Iris	5 02	56 28	2.8	18 X 13 ~ 202 X 151		31.3	99.0	17.5	107 1.0	149.7 X 136.7	228	3450	For L.L.L. Camera V.S or V DC8-12 Av-Pk Type

LENS CHART FOR 2/3" VIDICON

Dimension of Objective Filling Image Format

LENS (FEET) DISTANCE	4.8mm	6.5mm	8.5mm	12.5mm	16mm	25mm	50mm	75mm
	H x V	H x V	H x V	H x V	H x V	H x V	H x V	H x V
4	7'04" x 5'06"	5'04" x 4'00"	4'01" x 3'01"	2'09" x 2'01"	2'02" x 1'07"	1'04" x 1'00"	0'08" x 0'06"	0'05" x 0'04"
6	11'00" x 8'03"	8'01" x 6'01"	6'02" x 4'07"	4'02" x 3'02"	3'03" x 2'05"	2'01" x 1'07"	1'00" x 0'09"	0'08" x 0'06"
8	14'08" x 11'00"	10'09" x 8'01"	8'03" x 6'02"	5'07" x 4'02"	4'04" x 3'03"	2'09" x 2'01"	1'04" x 1'00"	0'11" x 0'08"
10	18'03" x 13'09"	13'06" x 10'01"	10'04" x 7'09"	7'00" x 5'03"	5'06" x 4'01"	3'06" x 2'07"	1'09" x 1'03"	1'02" x 0'10"
12	22'00" x 16'06"	16'02" x 12'02"	12'05" x 9'03"	8'05" x 6'04"	6'07" x 4'11"	4'02" x 3'02"	2'01" x 1'07"	1'04" x 1'00"
16	29'03" x 22'00"	21'07" x 16'02"	16'06" x 12'05"	11'03" x 8'05"	8'09" x 6'07"	5'07" x 4'02"	2'09" x 2'01"	1'10" x 1'04"
20	36'08" x 27'06"	27'00" x 20'03"	20'08" x 15'06"	14'00" x 10'06"	11'00" x 8'03"	7'00" x 5'03"	3'06" x 2'07"	2'04" x 1'09"
25	45'10" x 34'04"	33'10" x 25'04"	25'10" x 19'04"	17'07" x 13'02"	13'09" x 10'03"	8'09" x 6'07"	4'04" x 3'03"	2'11" x 2'02"
30	55'00" x 41'03"	40'07" x 30'05"	31'00" x 23'03"	21'01" x 15'10"	16'06" x 12'04"	10'06" x 7'11"	5'03" x 3'11"	3'06" x 2'07"
35	64'02" x 48'01"	47'04" x 35'06"	36'02" x 27'02"	24'07" x 18'05"	19'03" x 14'05"	12'03" x 9'02"	6'01" x 4'07"	4'01" x 3'00"
40	73'04" x 55'00"	54'01" x 40'07"	41'04" x 31'00"	28'01" x 21'01"	22'00" x 16'06"	14'00" x 10'06"	7'00" x 5'03"	4'08" x 3'06"
45	82'06" x 61'10"	60'11" x 45'08"	46'07" x 34'11"	31'08" x 23'09"	24'09" x 18'06"	15'10" x 11'10"	7'11" x 5'11"	5'03" x 3'11"
50	91'08" x 68'09"	67'08" x 50'09"	51'09" x 38'09"	35'02" x 26'04"	27'06" x 20'07"	17'07" x 13'02"	8'09" x 6'07"	5'10" x 4'04"
60	110'00" x 82'06"	81'02" x 60'11"	62'01" x 46'07"	42'02" x 31'08"	33'00" x 24'09"	21'01" x 15'10"	10'06" x 7'11"	7'00" x 5'03"
70	128'03" x 96'03"	94'09" x 71'00"	72'05" x 54'04"	49'03" x 36'11"	38'06" x 28'10"	24'07" x 18'05"	12'03" x 9'02"	8'02" x 6'01"
80	146'08" x 110'00"	108'03" x 81'02"	82'09" x 62'01"	56'03" x 42'02"	44'00" x 33'00"	28'01" x 21'01"	14'00" x 10'06"	9'04" x 7'00"
90	165'00" x 123'09"	121'10" x 91'04"	93'02" x 69'10"	63'04" x 47'06"	49'06" x 37'01"	31'08" x 23'09"	15'10" x 11'10"	10'06" x 7'11"
100	183'03" x 137'06"	135'04" x 101'06"	103'06" x 77'07"	70'04" x 52'09"	55'00" x 41'03"	35'02" x 26'04"	17'07" x 13'02"	11'08" x 8'09"
200	366'08" x 275'00"	270'09" x 203'00"	207'00" x 155'03"	140'09" x 105'07"	110'00" x 82'06"	70'04" x 52'09"	35'02" x 26'04"	23'05" x 17'07"
300	550'00" x 412'06"	406'01" x 304'07"	310'07" x 232'11"	211'02" x 158'04"	165'00" x 123'09"	105'07" x 79'02"	52'09" x 39'07"	35'02" x 26'04"
400	733'04" x 550'00"	541'06" x 406'01"	414'01" x 310'07"	281'07" x 211'02"	220'00" x 165'00"	140'09" x 105'07"	70'04" x 52'09"	46'11" x 35'02"
500	916'08" x 687'06"	676'11" x 507'08"	517'07" x 388'02"	352'00" x 264'00"	275'00" x 206'03"	176'00" x 132'00"	88'00" x 66'00"	58'08" x 44'00"

LENS CHART FOR 1" VIDICON

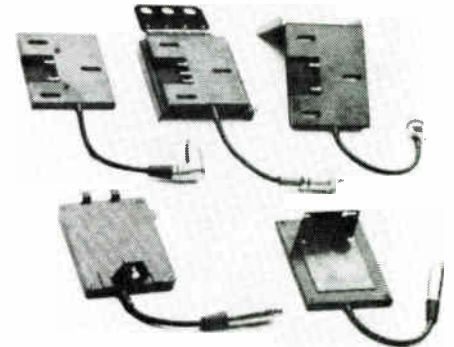
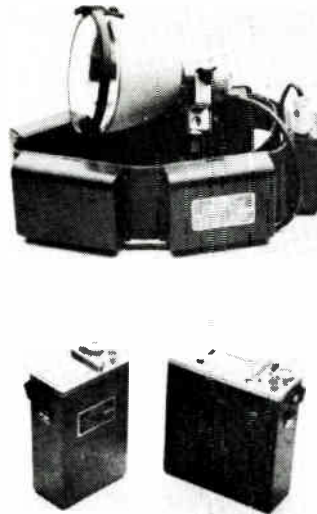
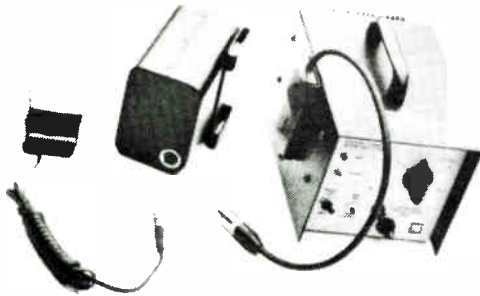
Dimension of Objective Filling Image Format

LENS (FEET) DISTANCE	6.5mm	8.5mm	12.5mm	25mm	50mm	75mm	90mm	160mm
	H x V	H x V	H x V	H x V	H x V	H x V	H x V	H x V
4	7'09" x 5'10"	5'11" x 4'05"	4'00" x 3'00"	2'00" x 1'06"	1'00" x 0'09"	0'08" x 0'06"	0'06" x 0'05"	0'03" x 0'02"
6	11'08" x 8'09"	8'11" x 6'08"	6'01" x 4'06"	3'00" x 2'03"	1'06" x 1'01"	1'00" x 0'09"	0'10" x 0'07"	0'05" x 0'04"
8	15'07" x 11'08"	11'11" x 8'11"	8'01" x 6'01"	4'00" x 3'00"	2'00" x 1'06"	1'04" x 1'00"	1'01" x 0'10"	0'07" x 0'05"
10	19'06" x 14'07"	14'11" x 11'02"	10'01" x 7'07"	5'00" x 3'09"	2'06" x 1'10"	1'08" x 1'03"	1'04" x 1'00"	0'09" x 0'07"
12	23'05" x 17'06"	17'11" x 13'05"	12'02" x 9'01"	6'01" x 4'04"	3'00" x 2'03"	2'00" x 1'06"	1'08" x 1'03"	0'11" x 0'08"
16	31'03" x 23'05"	23'10" x 17'11"	16'03" x 12'02"	8'01" x 6'01"	4'00" x 3'00"	2'08" x 2'00"	2'03" x 1'08"	1'03" x 0'11"
20	39'00" x 29'03"	29'10" x 22'04"	20'03" x 15'02"	10'01" x 7'07"	5'00" x 3'09"	3'04" x 2'06"	2'09" x 2'01"	1'07" x 1'02"
25	48'10" x 36'07"	37'04" x 28'00"	25'04" x 19'00"	12'08" x 9'06"	6'04" x 4'09"	4'02" x 3'02"	3'06" x 2'07"	1'11" x 1'05"
30	58'07" x 43'11"	44'09" x 33'07"	30'05" x 22'10"	15'02" x 11'05"	7'07" x 5'08"	5'00" x 3'09"	4'02" x 3'02"	2'04" x 1'09"
35	68'04" x 51'03"	52'03" x 39'02"	35'06" x 26'07"	17'09" x 13'03"	8'10" x 6'07"	5'11" x 4'05"	4'11" x 3'08"	2'09" x 2'00"
40	78'01" x 58'07"	59'09" x 44'09"	40'07" x 30'05"	20'03" x 15'02"	10'01" x 7'07"	6'09" x 5'00"	5'07" x 4'02"	3'02" x 2'04"
45	87'11" x 65'10"	67'02" x 50'04"	45'08" x 34'03"	22'10" x 17'01"	11'05" x 8'06"	7'07" x 5'08"	5'04" x 4'09"	3'06" x 2'08"
50	97'08" x 73'02"	74'08" x 56'00"	50'09" x 38'00"	25'04" x 19'00"	12'08" x 9'06"	8'05" x 6'04"	7'00" x 5'03"	3'11" x 2'11"
60	117'02" x 87'10"	89'07" x 67'02"	60'11" x 45'08"	30'05" x 22'10"	15'02" x 11'05"	10'01" x 7'07"	8'05" x 6'04"	4'09" x 3'06"
70	136'09" x 102'06"	104'07" x 78'04"	71'01" x 53'03"	35'06" x 26'07"	17'09" x 13'03"	11'10" x 8'10"	9'10" x 7'04"	5'06" x 4'01"
80	156'03" x 117'02"	119'06" x 89'07"	81'03" x 60'11"	40'07" x 30'05"	20'03" x 15'02"	13'06" x 10'01"	11'03" x 8'05"	6'04" x 4'09"
90	175'10" x 131'09"	134'05" x 100'09"	91'05" x 68'06"	45'08" x 34'03"	22'10" x 17'01"	15'02" x 11'05"	12'08" x 9'06"	7'01" x 5'04"
100	195'04" x 146'05"	149'04" x 112'00"	101'07" x 76'01"	50'09" x 38'00"	25'04" x 19'00"	16'11" x 12'08"	14'01" x 10'06"	7'11" x 5'11"
200	390'09" x 292'11"	298'09" x 222'00"	203'02" x 152'03"	101'07" x 76'01"	50'09" x 38'00"	33'10" x 25'04"	28'02" x 21'01"	15'10" x 11'10"
300	586'01" x 439'04"	448'02" x 336'00"	304'09" x 228'05"	152'04" x 114'02"	76'02" x 57'01"	50'09" x 38'00"	42'04" x 31'08"	23'09" x 17'10"
400	781'06" x 585'10"	597'07" x 448'00"	406'04" x 304'07"	203'02" x 152'03"	101'07" x 76'01"	67'08" x 50'09"	56'05" x 42'03"	31'09" x 23'09"
500	976'11" x 732'03"	747'00" x 560'00"	508'00" x 380'09"	254'00" x 190'04"	127'00" x 95'02"	84'08" x 63'05"	70'06" x 52'10"	39'08" x 29'09"

PEP, INC.

25 West 54th Street
New York, NY 10019
(212) 246-2490

ENG/EFP POWER UNITS AND ACCESSORIES



30 Volt DC Portable Battery Packs

- F-30-EC** "Frezzi Belt" battery pack. 30 volt. 4 AH output capacity. Includes internal battery charger (14 hours) **\$545.00**
- F-30-EXFA** "Frezzi-Belt" battery pack. 30 volt. 4 AH output capacity. Re-charges in 1 hour or less with "Frezzi-Fast" Charger (see below). Also includes internal battery charger (14 hours). **\$595.00**
- BC-30C** Fully charges 30 volt "Frezzi-Belt" Model F30-EXF Battery Pack (above) in 1 hour or less. Requires 120 / 240 volt, 60hz AC input **\$450.00**

Battery Mounting Brackets

- HM300** Battery Mounting Brackets for BVP 300/330 and Thompson MC601. Mounts ON-BOARD batteries H12, H14, L12, and L14 **\$105.00**
- HM76B/C** Battery Mounting Bracket for RCA TK76B and TK76C. Mounts ON-BOARD battery H14 **\$155.00**
- HM77** Battery Mounting Bracket for HL77. Mounts ON-BOARD battery H77 **\$145.00**

Six (6) AMP-HR Power Belts

- F-12-EXF** (12V) 6 AH Recharges in 1 hour or less with PEP model UF1 Universal Safety Charger also includes internal battery charger (14 hours) **\$475.00**
- F-14-EXF** (14.4V) 6 AH Recharges in 1 hour or less with PEP model UF1 Universal Safety Charger also includes internal battery charger (14 hours) **\$495.00**

12 Volt OB Lights

- FL12V** Lighthead with cable terminated in 2-pin amp connector for use with PEP model V90 FAST charge VTR battery. Includes FAV 100 watt bulb, 1/4 - 20 TV camera mount stud and removable handle **\$195.00**
- FL12C** Lighthead with cable terminated in Sony VTR plug in-line connector for use with V90N standard charge battery. Includes FAV 100 watt bulb, 1/4 - 20 TV camera mount stud and removable handle **\$195.00**

- FL12G** Lighthead with cable terminated in 3-pin amphenol connector for use with B12G battery. Includes FAV 100 watt bulb, 1/4 - 20 TV camera mount stud and removable handle **\$195.00**

- FL12S** Lighthead with 24" cable terminated in XLR4 rt. angle connector for use with PEP model B12S BRICK battery. Includes FAV 100 watt bulb, 1/4 - 20 TV camera mount stud and removable handle **\$195.00**

Belt Holsters

- BHV** Belt Holster for V90 battery, use with FL12 light **\$35.00**
- BHC** Belt Holster for ER6 / V90N battery with retainer for in-line DC plug and mate, use with FL12C light **\$45.00**
- BHG** Belt Holster for ER6 V90N battery to 3-pin amphenol output, use with FL12 G light **\$55.00**
- BU** Belt, 2" Leather, cut to length **\$25.00**

Lamps

- FAV** 100 watts / 11.5 volts DC **\$30.00**
- FBT** 150 watts 30 volts DC **\$37.00**
- FBV** 250 watts 30 volts DC **\$39.00**

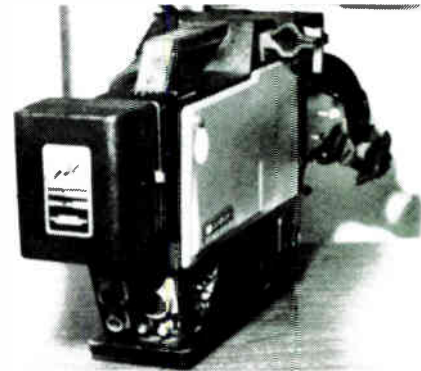
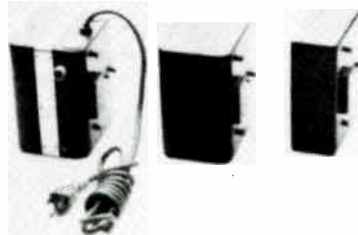
Model FL Portable Light

- FL30** Lighthead with 30 volt DC 150 watt Model FBT lamp, handle, power cable with plug (Lighthead accepts 150 or 350-watt lamps — see below) **\$195.00**
- FLDF-101** Dichroic Filter (swing away) **\$88.00**
- FLS-101** Scrim (swing away) **\$44.00**
- FLCM-101** 1/4 - 20 Video Camera Mount Stud **\$12.00**
- FLCM-102** Dove-Tail Film (cine) Camera Mount **\$45.00**
- FLSS-101** Lightstand **\$68.50**
- FLH-101** Replacement Handle **\$12.00**

PEP, INC.

25 West 54th Street
New York, NY 10019
(212) 246-2490

ENG/EFP POWER UNITS AND ACCESSORIES



ON-BOARD Camera Power

H12	ON-BOARD battery, 4 AH 12 volt	\$400.00
H14	ON-BOARD battery, 4 AH 14.4 volt	\$440.00
H77	ON-BOARD battery, 4 AH + 7.2 volt for HL77 Camera	\$450.00
HAC3	ON-BOARD AC Adaptor, 40 watts 13.5 volts	\$495.00

BRICK Pack Batteries

B12G	BRICK Pack battery for 12V Sun Gun, 4 AH 12 volt with 3-pin amphenol connector	\$395.00
B12	BRICK Pack battery, 4 AH 12 volt with 5-pin XLR	\$395.00
B14	BRICK Pack battery, 4 AH 14.4 volt with 4-pin XLR	\$425.00

FAST Charge Nicad VTR Batteries

V90	FAST Charge VTR battery for BVU 50/110, a direct replacement for Sony BP90—will also charge from the BC 210 Nicad charger or overnight charge	\$295.00
V90N	Standard Charge VTR battery for BVU 50/110, a direct replacement for Sony BP90—will charge from the BC 210 Nicad charger or overnight charge	\$275.00
V60	VTR battery for V04800 etc., FAST charge Nicad	\$210.00

Universal FAST Charger

UF1	Universal Safety Charger, 100/120/220/240 volt 50/60 Hz, FAST charges all PEP batteries*	\$450.00
*ON-BOARD models H14 and H12 as well as Anton/Bauer 4 AH Nicad "Snap-on" batteries mount directly on charger battery bracket for charging. All other batteries require charge adapter cable for connection		
HL	Charge adapter cable for 2 AH ON-BOARD batteries L12 and L14 to UF1 charger	\$30.00
HS	Charge adapter cable for 4 AH BRICK Pack batteries B12G, B12 and B12S and for FAST charge VTR batteries V20, V44 and V60	\$30.00

HC	Charge adapter cable for V90 FAST charge BVU 50/110 battery	\$30.00
HX	Charge adapter cable for B14 BRICK Pack	\$30.00

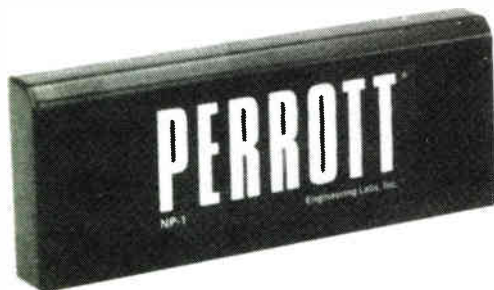
Battery Charging Stations

BCS 5	Simultaneously FAST charges up to five (5) PEP ON-BOARD or Anton/Bauer "Snap-on" 4 AH Nicad batteries in less than one (1) hour	\$1595.00
BCS 90	Simultaneously Overnight Charges up to eight (8) PEP V90 N or Sony BP90 batteries	\$395.00
BCS 5/90	Simultaneously FAST charges up to five (5) PEP ON-BOARD or Anton/Bauer "Snap-on" 4AH Nicad batteries in less than one (1) hour, and at the same time, overnight charges eight (8) PEP V90 or Sony BP90 batteries in twelve (12) hours	\$2090.00

Overnite Trickle Chargers

N12H	Overnite (14 hr.) trickle charger with H connector for 4 AH 12 volt ON-BOARD battery H12	\$75.00
N14H	Overnite (14 hr.) trickle charger with H connector for 4 AH 14.4 volt battery H14	\$75.00
N122L	Overnite (14 hr.) trickle charger with L connector for 2 AH ON-BOARD 12 volt battery L12	\$75.00
N142L	Overnite (14 hr.) trickle charger with L connector for 2 AH ON-BOARD 14.4 volt battery L14	\$75.00
N12S	Overnite (14 hr.) trickle charger with SEN connector for 4 AH BRICK 12 volt batteries B12G, B12 and B12S	\$75.00
N122S	Overnite (14 hr.) trickle charger with SEN connector for 2 AH VTR batteries V20, V44 and V60	\$75.00
N12C	Overnite (14 hr.) trickle charger for V90 and V90N VTR battery	\$75.00
N14X	Overnite (14 hr.) trickle charger for B14 BRICK battery	\$75.00

7201 Lee Highway
Falls Church, VA 22046
(703) 532-0700



NP-1

NiCad® Battery

- Authentic original equipment.
- Can be charged in about one hour.
- Circuit breaker and thermostat protected.
- Reasonably priced.
- Off-the-shelf delivery.
- Top quality fast charge NiCad® cells.

SPECIFICATIONS

Volts (nominal): 12.0

Capacity & typical running time:

Available Watts	Amp Hours	Hours
(BVP-1/BVU-1) 18	1.5	.8
(BVP-3/BVU-1) 18	1.5	.5
(Thomson) MC-611 18	1.5	.8
(Thomson) MC-613 18	1.5	.5

Weight: 1.5 lbs.

Size: 7-1/4" x 1" x 2-7/8".

Connectors: Spring contacts.

Charger: Use with Sony/Thomson charger.

\$60.00



PE-62

NiCad® Ampex VTR Battery

- For your VPR-20
- Direct replacement for the Ampex battery.
- Less than half the Ampex battery price.
- Top quality fast-charge NiCad cells.
- Sturdy lightweight aluminum frame.
- High impact molded case.
- 100% quality control inspected, electronically and manually.

SPECIFICATIONS

Volts (nominal): 13.2

Capacity & Typical Running Time:

Available Watts	Amp Hours	Hours
105.6	8.0	1.2

Weight: 8.0 lbs.

Size: 8-1/4" x 5-1/4" x 2-3/4"

Connectors: 6-pin Ampex-type connector (TRW)

Minicharger®: Use PE-8200 or PE-8204.

\$495.00

Replacement Batteries

- Top quality lead acid cells.
- Authentic OEM "pigtail" connectors.
- Moderate price.
- 100% quality control inspected, electronically and manually.

SPECIFICATIONS

For Your Camera	Minipack	Nominal Voltage	Capacity AH	Running Time (hrs.)	Weight (lbs.)	Charger
Sony DXC-1600	PE 39 Pack	12	2.5	.6	3	Use Sony Charger
Sony DXC-1610	PE 60 Pack	12	2.5	2.7	3	Use Sony Charger
Sony DXC-1640	PE 60 Pack	12	2.5	2.5	3	Use Sony Charger

NOTE: The PE 60 Battery will power the DXC-1640 camera and the VO-4800 Recorder simultaneously for 1 hour. Running time is estimated using a new fully charged battery.



PE 39
\$63.00

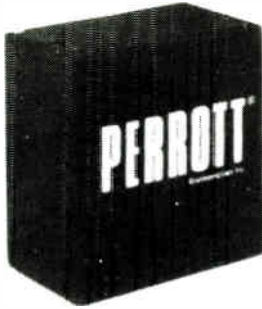


PE 40
\$63.00



PE 60
\$64.00

7201 Lee Highway
Falls Church, VA 22046
(703) 532-0700



PE200 KWIK KLIP® or PRB 200 Snap On™ will power:

Ampex: FPR-10

Harris

Ikegami: except HL77

JVC: KY310

RCA

Hitachi: SK81, SK91

Sony: BVP series, Betacam series

Thomson: including Betacam

Toshiba: PK60

PE201 KWIK KLIP® or PRB201 Snap On™ will power:

Hitachi: except FP-10, SK-81, SK-91

JVC: KY-1900, KY-2700

Panasonic: AK-710, AK-750, AK-760,

AK-100, WV-777, B-100 Recam

PE 220 KWIK KLIP® PRB220 Snap On™ will power:

Harris

Hitachi

Ikegami: except HL77

JVC: KY-1900, KY-2700, KY-310,

Panasonic: AK-710, AK750, AK760,

AK-100

RCA: HC-1

Sharp

Sony

Thomson

PE-200

Kwik-Klip® NiCad® Camera/VTR Battery

The only NiCad® battery you'll want behind your camera.

- Complete flexibility with Kwik-Klip® or Snap-On™ battery mounts.
- Reliable Minicharger® built right in.
- Full overcharge safety protection.
- Top quality fast-charge NiCad® cells.
- Impact resistant all metal case.
- Moderate price.
- 100% quality control inspected, electronically and manually.
- Dual Voltage 115/230 AC switchable, except PE 220.

SPECIFICATIONS

Volts (nominal): 13.2 (PE-201) or 14.4 (PE-200) or 12.0 (PE-220)

Capacity & Typical Running Time:

Available Watts	Amp Hours	Hours*
(13.2 V) 52.8	4.0	2.3
(14.4 V) 57.6	4.0	2.5
(12.0 V) 26.4	2.2	1.0

Weight: 4.75 lbs. (13.2 V); 5.00 lbs. (14.4 V); 2.5 lbs (12.0 V)

Size: 5¼" x 3" x 5" (13.2 V and 14.4 V) 4" x 2" x 5½" (12.0 V)

Connectors: Mates with Kwik-Klip® or Snap-On™ battery mounts.

Minicharger®: Use built-in, PE-8200 or PE-8204.

\$495.00

* Camera run time is estimated using 23 watts.

PE-90

NiCad® VTR Battery

The industry's most versatile battery.

- Preferred by professionals since 1978.
- Direct replacement for Sony BP-90 VTR battery.
- Can even run your camera.*
- Top quality fast-charge NiCad® cells.
- High impact molded case—completely sealed.
- Moderate price.
- 100% quality control inspected, electronically and manually.

SPECIFICATIONS

Volts (nominal): 12.0

Capacity & Typical Running Time:

Available Watts	Amp Hours	Hours**
48	4.0	4.0

Weight: 3.5 lbs.

Size: 4¾" x 6½" x 1 7/16"

Connectors: Authentic Sony pigtail connectors.

Minicharger®: Use PE-38, PE-8200 or PE-8204

\$220.00

* When used with the convenient Perrott 9037 battery carrier, will power camera and camera /recorder combinations.

** Running time is estimated using Sony BVU-50 VTR.



With PE9037 KWIP KLIP® or PRB 9037 Snap On™ will power:

Ampex: except FPR-10

Harris

Hitachi: except SR-1, SR-10

Ikegami

JVC

Panasonic: except B-100 Recam

RCA Sony

Sharp Thomson

Will power:

Sony VTR's

BVU-50

BVU-100

BVU-110

BVH-500

VO-3800

PE-52-4 NiCad® Dual Output Belt

It can run your light or your camera.

- Four hour charger built right in.
- Runs 30 volt light with 4 AH of power—or runs camera with 8 AH of power.
- Powers your Perrott Lite® 90 minutes.
- Top quality fast-charge NiCad® cells.
- Full grain cowhide leather pouches and strap.
- Half-inch spacing between pouches for flexibility and comfort.
- 100% quality control inspected, both electronically and manually.

SPECIFICATIONS

Available Watts	Amp Hours	Hours
(14.4 V Camera) 115.2	8.0	5.0
(14.4 V 75W light) 115.2	8.0	1.5
(30 V 250W light) 115.2	4.0	.4

Weight: 11.0 lbs.

Size: Pouches: 28½" x 2" x 4¼"

Belt: Adjustable

\$675.00

Connectors: 5-pin XLR for 14.4 V, 8AH.



Prices and Specifications Subject to Change Without Notice.

VC-223

PORTA-PATTERN

INCORPORATED

P.O. Box 38945
750 North Highland Ave.
Los Angeles, CA 90038 U.S.A.
(213) 461-3561

TWX 910-321-4049 TV CHARTS LSA CABLES: TVCHARTS

TELEVISION OPTICAL TEST MEDIA



- 014-10 EFP Three Chart System with three Black & White Geometric Test Patterns, including case \$220.00
- 014-11 EFP Three Chart System with two Black & White Geometric & one Nine-Step Log Chip Chart, including case 250.00
- 014-12 EFP Three Chart System with one Black & White Geometric, one Log Chip & one of either Color Bar, BBC #61P Flesh Tone or Pulse Bar Chart, including case 280.00

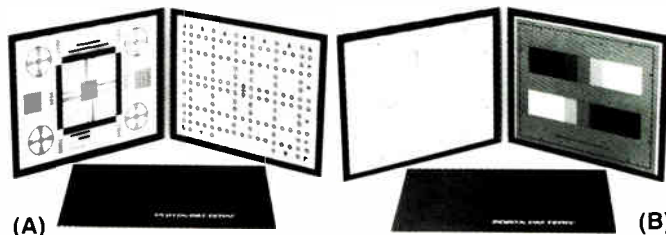
PORTA-PATTERN® DUOCHART™ SYSTEMS

The PORTA-PATTERN DUOCHART System is a lightweight, durable portable video test chart package in the convenient PORTA-PATTERN 9" x 12" image size. Each chart is recess-mounted on lightweight, heavy-duty expanded PVC Foamex™ and hinged to fold face-to-face when not in use. Black Velcro™ provides a light and dirt seal when the system is closed. Each system includes a black vinyl case for carrying and storage. There are three DUOCHART systems to provide the right information for the required set-up and evaluation.

(A) RESOLUTION/LINEARITY. This system contains the standard Resolution and Linearity Charts. The Resolution Image is designed as a standard reference for measuring and evaluating overall camera resolution as well as testing for camera streaking, ringing, interlace and aspect ratio. The Linearity Image is designed for measuring and adjusting scan linearity. The image is a matrix of circles that provide reference when combined with the proper electronically generated grating signal.

(B) REGISTRATION/LOG GREY SCALE. This system contains the standard Registration and Log Grey Scale Charts. The Registration Image is designed for adjustment of scan timing (registration) in multiple tube color cameras. The Log Grey Scale contains two rows of nine paint chips each, providing the range of reflectance from TV white (60%) to TV black (3%), scaled in increments to approximate the transfer characteristics of the color picture tube.

(C) MULTI-BURST/FLESH TONE REFERENCE. This system contains the Multi-Burst Chart and the BBC #61P Color Flesh Tone Chart. The Multi-Burst Image is a dual range grouping of bursts. The full scan range is from 1 MHz to 8 MHz in 1 MHz steps. The half scan range is from 0.5 MHz to 4 MHz in 0.5 MHz steps. The bursts are spaced by a solid black bar for separation of burst information on a waveform monitor. The BBC #61P Color Flesh Tone Image has been developed to provide a standard color reference for matching and evaluating cameras after normal color balance is achieved. The image is manufactured in close cooperation with the Research Department of the BBC with advanced electronic color separation to assure spectral characteristics and long lasting chromaticity.



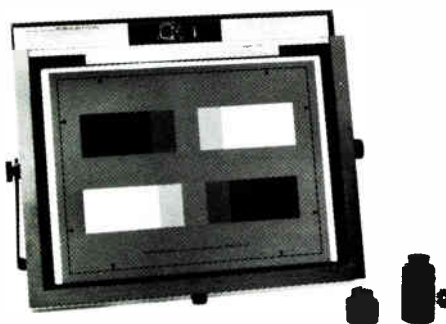
- 020-10 Resolution Linearity \$130.00
- 020-11 Registration Nine-Step Log Grey Scale 160.00
- 020-12 Multi-Burst BBC #61P Flesh Tone Reference 195.00

PORTA-PATTERN® TEST CHART SYSTEM

The PORTA-PATTERN Test Chart System is a convenient, portable 9" x 12" chart package for studio or field use. The system has been designed to offer maximum versatility and protection for the Test Charts, thus providing faster, easier camera set-up and alignment.

The light weight self-standing aluminum Chart Holder provides three point positional alignment. A spirit level is an integral part of the unit's design for horizontal alignment accuracy. Optional Microphone and Light Stand Mounting Adapters allow the system to be stand mounted with the same alignment capabilities.

The system contains one each Resolution, Linearity, Registration and Logarithmic Reflectance Charts. The charts are mounted in recessed, high-impact plastic frames for chart surface protection. Each chart frame is color coded for ease of location in the holder. Charts are placed in order of usage. After use the front chart can be reversed so all chart surfaces are protected.



- 001-10* Four Chart System with NO adaptors \$310.00
- 001-11* Four Chart System with microphone stand adaptor 325.00
- 001-12* Four Chart System with light stand adaptor 335.00
- 001-13* Four Chart System with mic and light stand adaptors 350.00
- (*Includes Charts indicated)
- 001-15 Microphone stand adaptor 33.00
- 001-16 Light stand adaptor 36.00
- 001-17 Aluminum frame assembly, complete w/o adaptors 190.00
- 001-50 Dual system carrying case 85.00
- 001-51 Single Chart carrying case 60.00
- 001-24* Resolution Chart 75.00
- 001-25* Linearity (Ball) Chart 75.00
- 001-26* Registration Chart 75.00
- 001-27* Nine-Step Log Chip Chart 100.00
- 001-28 Production Slate 60.00
- 001-29 Blank plastic chart frame 50.00
- 001-30 BBC Zone Plate Chart, 525 line 150.00
- 001-31 BBC Zone Plate Chart, 625 line 150.00
- 001-32 Multi-Burst Chart 75.00
- 001-33 Window Chart 75.00
- 001-34 Chess Board Chart 75.00
- 001-35 Reverse Registration Chart 75.00
- 001-36 BBC #61P Flesh Tone Reference Chart 150.00
- 001-37 Pulse Bar Chart 160.00
- 001-38 CCIR Linearity (Ball) Chart 75.00
- 001-39 Auto-Registration Chart 75.00
- 001-40 Lens Focus Chart 75.00
- 001-42 Line Resolution Chart 75.00
- 001-43 Full-Field Color Bar Chart 145.00
- 001-44 Eleven-Step Log Chip Chart 110.00
- 001-45 Depth of Modulation Chart (Rev. 1984) 75.00

PORTA-PATTERN® ELECTRONIC FIELD PRODUCTION THREE CHART SYSTEM

In order to provide a greater range of available test patterns in a package better adapted to the portability of EFP camera systems, PORTA-PATTERN has developed a Three Chart System which will accept any combination of three charts presently available in the PORTA-PATTERN catalogue.

The system consists of three protective plastic frames, similar to those used for all individual PORTA-PATTERN Test Charts, uniquely hinged end-to-end which allows the frames to be folded upon themselves, thus providing complete surface protection for all three charts, and, when closed, takes up no more space than a single PORTA-PATTERN Test Chart.

The entire system is held closed by a Velcro™ closure system and a vinyl coated nylon case is included to provide a complete Three Chart System in a package 15" high x 18" wide x 1 1/2" thick.

Prices and Specifications Subject to Change Without Notice.

PORTA-PATTERN

INCORPORATED

P.O. Box 38945

750 North Highland Ave.

Los Angeles, CA 90038 U.S.A.

(213) 461-3561

TWX 910-321-4049 TV CHARTS LSA CABLES: TVCHARTS

PORTA-PATTERN®

ENG TWO CHART SYSTEM

The PORTA-PATTERN ENG Chart System has been designed to provide basic alignment, registration, color balance and Auto-White balance information for fast electronic news gathering or field camera set-up.

The system consists of a Registration Chart and a specially designed Color Balance Chart, mounted on durable white acrylic. The two acrylic frames are hinged together, and the charts are folded face-to-face when not in use. Black Velcro™ provides a light and dirt seal when the system is closed, and the white acrylic has a non-reflective surface for Auto-White balance use.

008-10 ENG Portable Two-Chart System, Registration and Color Balance, including Carrying Case. **\$185.00**

PORTA-PATTERN®

TEST SLIDES AND TEST SLIDE SYSTEMS

The PORTA-PATTERN Test Slides and Slide System provide the same accuracy and convenience for Color and Black & White Telecine set-up and alignment as the industry standard PORTA-PATTERN Test Charts. These Slides are available in either a 2" x 2" glass protected format, for use with slide projectors, or a 3 1/4" x 4" Field Lens format for use with large image Telecine systems.

002-10P*	Test Slide System, Positive, 8 Slides with Hardwood Case	\$175.00
002-10N*	Test Slide System, Negative, 8 Slides with Hardwood Case (*Includes Slides as Shown)	175.00
002-20	Hardwood Slide Case, 10 Slide Capacity	65.00
002-24P*	Resolution Slide, Positive	15.00
002-24N	Resolution Slide, Negative	15.00
002-25P*	Linearity (Ball) Slide, Positive	15.00
002-25N	Linearity (Ball) Slide, Negative	15.00
002-26P*	Registration Slide, Positive	15.00
002-26N	Registration Slide, Negative	15.00
002-27	Nine-Step Log Grey Scale Slide	130.00
002-32P*	Multi-Burst Slide, Positive	15.00
002-32N	Multi-Burst Slide, Negative	15.00
002-33*	Window Slide	15.00
002-34P*	Chess Board Slide, Positive	15.00
002-34N	Chess Board Slide, Negative	15.00
002-36*	BBC #61P Type Flesh Tone Reference Slide	65.00
002-38P	CCIR Linearity (Ball) Slide, Positive	15.00
002-38N	CCIR Linearity (Ball) Slide, Negative	15.00
002-41P	Depth of Modulation Slide, Positive	15.00
002-41N	Depth of Modulation Slide, Negative	15.00
002-43*	Full-Field Color Bar Slide	65.00

16MM BLACK & WHITE ALIGNMENT FILM

The PORTA-PATTERN 16mm Alignment Film contains the Chess Board Image to be used as a universal test film for operational alignment and evaluation of Telecine projector optical resolution and geometry, film transport jitter and weave, and travelling ghosts

16MM BBC #61P TYPE COLOR FLESH TONE REFERENCE FILM

The PORTA-PATTERN 16mm Color Flesh Tone Reference Film contains the BBC #61P TYPE Image to be used for subjective evaluation of 16mm Color Telecine systems

005-10	16mm Black & White Chess Board Alignment Film, 50 Feet	\$130.00
005-12	16mm BBC #61P Type Flesh Tone Reference Film Loop, 10 Feet	90.00
005-20	35mm B & W Chess Board Aspect Ratio Transfer Alignment Film, 100 Feet	395.00

PORTA-PATTERN®

SPHERICAL TRANSPARENCY ILLUMINATOR

The PORTA-PATTERN Spherical Transparency Illuminator provides a laboratory-type test standard in a practical, video-oriented test package. It is a unique approach to 8" x 10" format transparency illumination for testing, set-up and evaluation of color television camera systems.

A wide range of ultra-stable color temperatures and illumination levels are easily achieved by the use of two front panel controls. The modified 20" integrating sphere produces a flat illumination field throughout a cone angle of greater than 20 degrees without any additional adjustments.

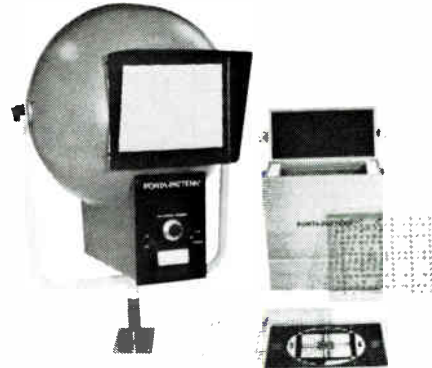
The light source is a low-voltage, regulated DC controlled quartz iodine lamp that assures a constant color temperature independent of AC line variations. This light source illuminates the interior of the sphere, which is coated with high efficiency Eastman BaSO₄ sphere coating.

The illumination level is varied by adjusting the light source position inside the sphere, employing the principle of the inverse square law. A precision lamp position assembly, controlled by a numerically calibrated, vernier knob, enables the selection of established illumination levels without the use of a light meter.

Constant color temperature is achieved by the regulated DC power source, which

TELEVISION OPTICAL TEST MEDIA

is controlled by a front panel adjustment and is calibrated by an easily read meter. The PORTA-PATTERN Spherical Transparency Illuminator mounts on any light stand that will accept an 1 1/8" stud. The unit includes a yoke, hood and transparency holder and 10-foot power cord.



010-10	Spherical Transparency Illuminator, including Hood, Yoke and spare lamp, 117 Volt, 60 Hz	\$2750.00
010-11	Same as above, 230 Volt, 50 Hz <i>Note: Above Illuminators shipped via COLLECT AIRFREIGHT ONLY</i>	2750.00
010-60	Vinyl coated nylon fitted dust cover	140.00
010-75	Test Bench Mount	60.00
010-99	12 Volt, 50 Watt Replacement Lamp for above	17.50

PORTA-PATTERN®

8" x 10" ILLUMINATOR TRANSPARENCIES

The PORTA-PATTERN 8" x 10" Transparencies represent advanced state-of-the-art technology using emulsioned high-impact acrylic. The Geometric Images are direct reading to the camera. There is no glass between the Camera Lens and the Image to cause distortion or light loss. The elimination of the normal "sandwich" type of construction prevents buckling of the image surface and moisture collection.

This all acrylic construction eliminates the danger and high cost of breakage under normal operating conditions. Neither image emulsion nor acrylic base is subject to heat distortion or damage under usual operating conditions.

Highest quality photographic reproduction insures accurate resolution and maximum and minimum density stability. Dimensional stability and resolving power are in excess of 0.010 percent. All Geometric Image transparencies include tube scan information to aid in camera set-up. Geometric Images are available in standard positive image transparencies or negative image transparencies for lower Average Picture level.

006-20	Hardwood Transparency Case, 10 Transparency Capacity	\$150.00
006-24P	Resolution Transparency, Positive	185.00
006-24N	Resolution Transparency, Negative	172.50
006-25P	Linearity (Ball) Transparency, Positive	185.00
006-25N	Linearity (Ball) Transparency, Negative	172.50
006-26P	Registration Transparency, Positive	185.00
006-26N	Registration Transparency, Negative	172.50
006-27	Nine-Step Log Grey Scale Transparency	240.00
006-30P	BBC Zone Plate Transparency, 525 Line, Positive	185.00
006-31P	BBC Zone Plate Transparency, 625 Line, Positive	185.00
006-32P	Multi-Burst Transparency, Positive	185.00
006-32N	Multi-Burst Transparency, Negative	172.50
006-33P	Window Transparency, Positive	185.00
006-33N	Window Transparency, Negative	172.50
006-34P	Chess Board Transparency, Positive	185.00
006-34N	Chess Board Transparency, Negative	150.00
006-36	BBC #61P Type Flesh Tone Reference Transparency	190.00
006-37P	Pulse Bar Camera Transparency, Positive	180.00
006-37N	Pulse Bar Camera Transparency, Negative	187.50
006-38P	CCIR Linearity (Ball) Transparency, Positive	185.00
006-38N	CCIR Linearity (Ball) Transparency, Negative	172.50
006-39P	Auto-Registration Transparency, Positive	185.00
006-39N	Auto-Registration Transparency, Negative	172.50
006-40P	Lens Focus Transparency, Positive	185.00
006-40N	Lens Focus Transparency, Negative	172.50

006-42P	Line Resolution Transparency, Positive	165.00
006-42N	Line Resolution Transparency, Negative	172.50
006-43	Full-Field Color Bar Transparency	190.00
006-44	Eleven-Step Log Grey Scale Transparency	275.00
006-45P	Depth of Modulation Transparency, (Rev. 1984), Positive	165.00

Prices and Specifications Subject to Change Without Notice.

VC-225

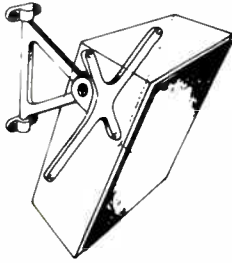
20 RAINBOW POND DRIVE, SUITE A-2
WALPOLE, MA 02081 / (617) 668-8770

Pivotelli wall brackets are made of the finest materials and offers a 5 year parts and labor guarantee. You can use Pivotelli Swivel Support Arms with complete confidence.

All Brackets are available in gloss white or matt black durable nylon coating. Prices subject to change without notice.

UNIVERSAL STEREO BRACKETS

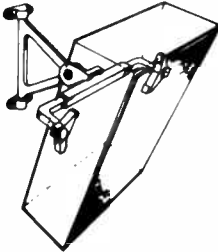
Wall mounted brackets designed to support two stereo speakers. Maximum weight: 88 lbs. (sold only in pairs)



WITH SCREW-IN BASEPLATES
Model PU \$69.50 Pair

UNIVERSAL STEREO BRACKETS

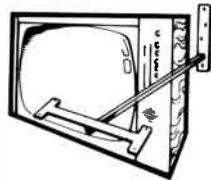
Wall mounted brackets designed to support two stereo speakers. Maximum weight: 88 lbs. (sold only in pairs)



WITH LIMPET BASEPLATES
Model PULUP (7½"-11") \$89.50 Pair
Model PULUM (11"-17¾") \$99.50 Pair

SINGLE PIVOTELLI

Straight arm wall mounted bracket. Maximum weight: 176 lbs.

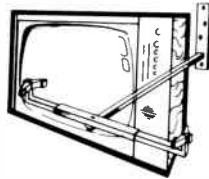


12" ARM WITH SCREW-IN BASEPLATE
Model M \$49.95

18" ARM WITH SCREW-IN BASEPLATE
Model S \$49.95

SINGLE PIVOTELLI

Straight arm wall mounted bracket. Maximum weight: 176 lbs.

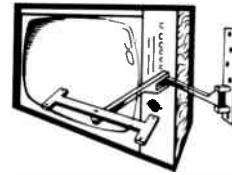


12" ARM WITH LIMPET BASEPLATE
MEDIUM (11"-17¾") Model MLUM \$69.95
STANDARD (17¾"-30") Model MLUS \$69.95

18" ARM WITH LIMPET BASEPLATE
MEDIUM (11"-17¾") Model SLUM \$69.95
STANDARD (17¾"-30") Model SLUS \$69.95
LARGE (27"-47") Model SLUL \$69.95

DOUBLE PIVOTELLI

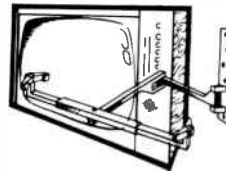
12" Double joint flex-arms (24" Total) Maximum weight: 176 lbs.



WITH SCREW-IN BASEPLATE
Model D \$119.95

DOUBLE PIVOTELLI

12" Double joint flex-arms (24" Total) Maximum weight: 176 lbs.



WITH LIMPET BASEPLATE
MEDIUM (11"-17¾") Model DLUM \$139.95
STANDARD (17¾"-30") Model DLUS \$139.95
LARGE (27"-47") Model DLUL \$139.95

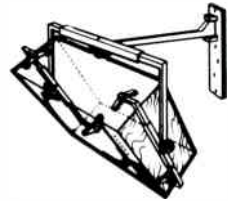
DOUBLE PIVOTELLI

Light Weight Model
12" Double Joint flex-arms (24" Total) Maximum weight: 22 lbs.

WITH LIMPET BASEPLATE
MEDIUM (11"-17¾") Model DSLUM \$99.95
STANDARD (17¾"-30") Model DSLUS \$99.95

TRIPLE PIVOTELLI WITH WALL MOUNT

Provides viewing/listening direction adjustments in all three directions, including tilt.



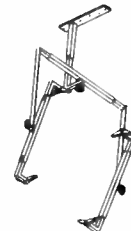
MEDIUM
Fits cabinet heights (11"-17¾")
Fits cabinet widths (11"-17¾")
Model TMU \$179.95

STANDARD
Fits cabinet heights (11"-17¾")
Fits cabinet widths (17¾"-33½")
Model TSU \$189.95

LARGE
Fits cabinet heights (17¾"-30")
Fits cabinet widths (17¾"-33½")
Model TLU \$199.95

TRIPLE PIVOTELLI

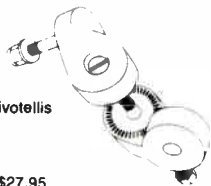
WITH TELESCOPIC CEILING



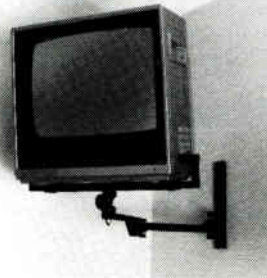
MEDIUM Model TTM \$179.95
STANDARD Model TTS \$189.95
LARGE Model TTL \$199.95

SWING 'N TILT UNIVERSAL JOINT

For use with 12", 18" and Double Pivotellis
To angle the TV, Speaker or Monitor up or down.



MODEL UL \$27.95



CHOICE OF BASEPLATE?

SCREWTYPE—an effective way to support wood-based equipment. Support is provided by the "H" shaped baseplate to which equipment is fastened by four wood screws. Also if wood platform is desired.

LIMPET—The Pivotelli Limpet actually grips the cabinet of the equipment with rubber-lined clamps and is adjusted by you to support equipment in its exact center of balance.

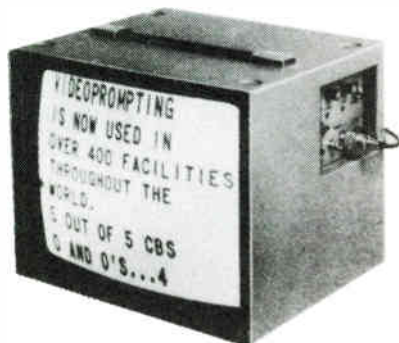
Pivotelli wall brackets mount onto wood or metal studs and masonry walls.



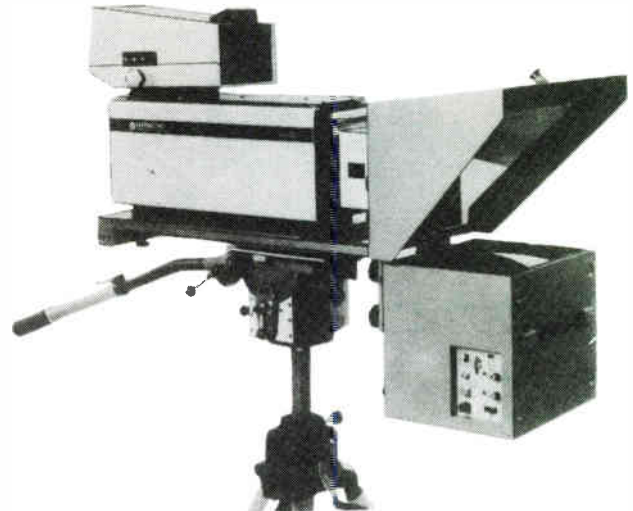
A DIVISION OF Q-CO INDUSTRIES, INC.

104 E. 25th St.
New York, NY 10010
(212) 460-9050

VIDEO PROMPTER SYSTEMS



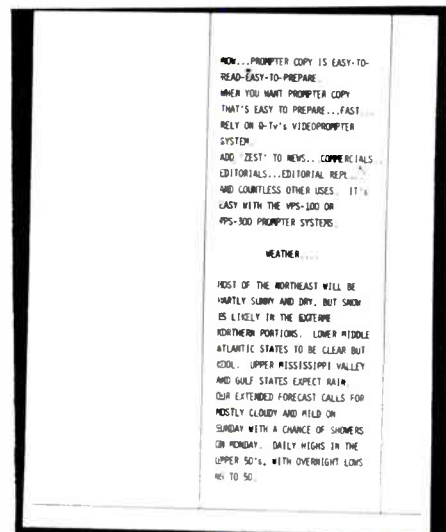
Q-TV's/SC Monochrome Video Monitors are 100% solid-state with professional quality features which make them ideally suited for use in high quality display applications. The equipment is designed for operation from either composite video sync signals, or from systems in which external sync is provided. Monitor cabinet construction is steel with a baked, vinyl finish.



A compact, economically priced prompting system that is unmatched in performance, versatility and reliability.



Successful speech presentation starts here with Q-TV's "Speech-Cue" System. Step behind it and you're in total command of your speech material...in total command of your audience. The "Speech Cue" System provides you with the most favorable conditions for "Face-to-Face" communications.

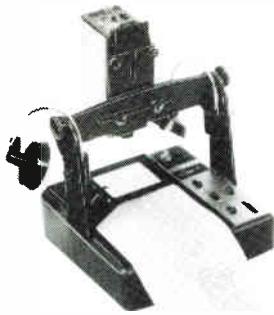


No special prompter paper required...No special prompter ribbons necessary...No special typewriter needed...It all means savings! Use any standard wide bond paper or handy "snap-packs" for typing prompter scripts.



VIDEO PROMPTER SYSTEMS

A DIVISION OF Q-CO INDUSTRIES, INC.
 104 E. 25th St.
 New York, NY 10010
 (212) 460-9050

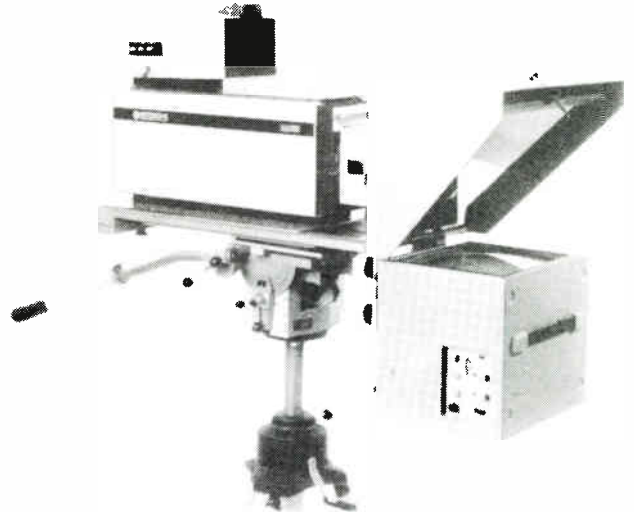


VPS-100 CONSOLE TRANSPORT

We have simplified prompting! By eliminating elements such as the large-size typewriter, special paper, special ribbons, replacing broken keys, typewriter adjustments, and transposing copy, we figured what can't go wrong, won't go wrong.

These unique prompting systems offer the broadcast industry and its allied fields, a versatile, efficient and rapid method for providing prompter copy through a video signal.

Prompter copy is prepared on standard 8-1/2" x 11" single sheets of paper using any manual or electric typewriter. The prompter script is conveniently fed through the aperture of the VPS-100 by means of 'taping' the individual sheets into a continuous roll; or by placing the individual sheets of copy on the conveyor belt of the VPS-300, thus eliminating the need for 'taping'.

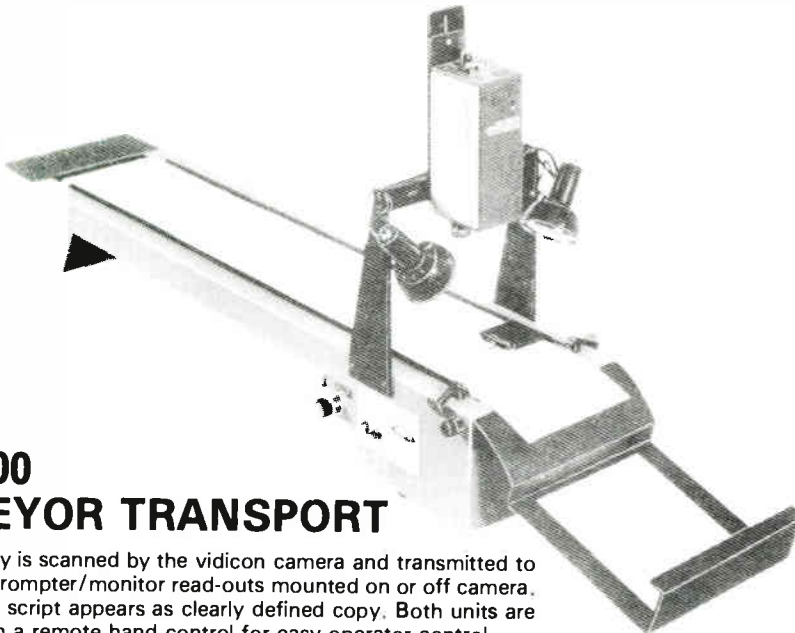


ONE VPS-100 PROMPTER SYSTEM

- 1 VPS-100 Console Transport
- 1 Vidicon Camera w/lens
- 1 14" Prompter/Monitor
- 1 Remote Hand Control
- 1 25' Coaxial Cable
- 1 Prompter Camera Mount
- 1 Camera Balancing Assembly
- 1 VPS Eye-Line
- 1 Instruction Manual **\$4750.00**

TWO VPS-100 PROMPTER SYSTEM

- 1 VPS-100 Console Transport
- 1 Vidicon Camera w/lens
- 2 14" Prompter/monitor
- 1 Remote Hand Control
- 2 25' Coaxial Cable
- 2 Prompter Camera Mount
- 2 Camera Balancing Assembly
- 2 VPS Eye-Line
- 1 Instruction Manual **\$6500.00**



VPS-300 CONVEYOR TRANSPORT

Prompter copy is scanned by the vidicon camera and transmitted to one or more prompter/monitor read-outs mounted on or off camera. The prompter script appears as clearly defined copy. Both units are equipped with a remote hand control for easy operator control.

When used with the VPS Eye-Line, prompter copy is superimposed directly over the taking lens of the television camera for direct "Eye-to-Eye" contact with the viewing audience. The high brilliance image is clearly visible to the speaker but in no way detectable by the camera lens.

The adaptability of the VPS systems over conventional prompting equipment enables you to derive maximum returns both technically and financially because of the reduction in preparation of prompter copy and general running costs.

ONE VPS-300 PROMPTER SYSTEM

- 1 VPS-300 Conveyor Transport
- 1 Vidicon Camera w/lens
- 1 14" Prompter/Monitor
- 1 Remote Hand Control
- 1 25' Coaxial Cable
- 1 Prompter Camera Mount
- 1 Camera Balancing Assembly
- 1 VPS Eye-Line
- 1 Instruction Manual **\$5350.00**

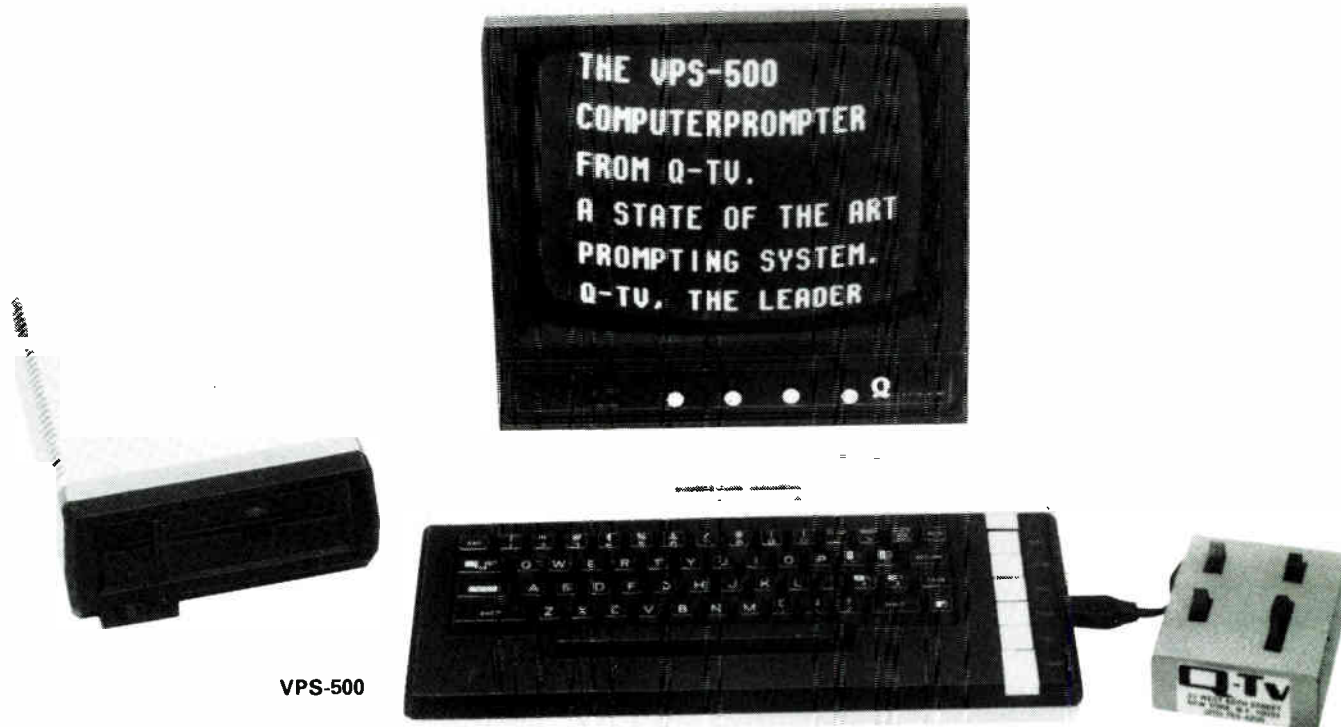
TWO VPS-300 PROMPTER SYSTEM

- 1 VPS-300 Conveyor Transport
- 1 Vidicon Camera w/lens
- 2 14" Prompter/Monitor
- 1 Remote Hand Control
- 2 25' Coaxial Cable
- 2 Prompter Camera Mount
- 2 Camera Balancing Assembly
- 2 VPS Eye-Line
- 1 Instruction Manual **\$7100.00**



A DIVISION OF Q-CO INDUSTRIES INC.
 104 E. 25th St.
 New York, NY 10010
 (212) 460-9050

COMPUTERPROMPTER SYSTEM



VPS-500

VPS-500 ComputerPrompter System Features

- Word processing capability
- Easy-to-read font
- Rapid access to all lines of copy
- The VPS-500 ComputerPrompter is implemented on the Atari 800XL and 1050 Disk Drive
- Optional printer for hard copy
- Positive or negative display
- Variable speed control
- Multi-language
- Various fonts
- User friendly design

The VPS-500 ComputerPrompter is a new generation prompting system suitable for both production and news applications. The VPS-500 ComputerPrompter is designed to perform the three major functions of production prompting.

1. Text Entry and Editing
2. Variable Speed Scrolling
3. Variable Fonts

The VPS-500 ComputerPrompter accomplished this and maintains basic simple operation. A prompter operator controls the operation of the VPS-500 with a variable speed control; can call up previous pages, future pages or re-start present page. No cryptic codes are needed. This illustrates simple keystroke controls.

VPS-500 ComputerPrompter System

- 1 Computerprompter Mainframe
- 1 Disc Drive
- 1 VPS-500 Software Package
- 1 Variable Speed Script Control
- 1 Interconnecting Cable
- 1 Manual

VPS-500\$3600.00



PROMPTERS

A DIVISION OF Q-CO INDUSTRIES, INC.
 104 E. 25th St.
 New York, NY 10010
 (212) 460-9050

MINI-Q-PROMPTER II

FEATURES

- Hi-Efficiency Optical Reading Surface for Easy-To-Read Copy
- Copy Reading Surface: 9-3/4" x 9-5/8"
- 7 Lines of Text in Reading Area for "Complete Thought" Preview
- Shadow-Free Lighting Illuminated by Two 50W Hi-Intensity Lamps
- Script Capacity: 30 Feet
- No Special Paper Required. Uses Standard 8-1/2" Wide Bond Paper
- The Compact Miniaturized Motor is "Sound-Take" Silent
- Miniature Variable Speed Hand Control Measures 4-1/2" x 1" with 25' Cable
- Universal Camera Mount
- Solid State Circuitry
- Power: 12V Battery-Pack Belt, 5 Amps; or AC to DC Power Converter
- Weight: 9 lbs. Less Mount

MINI Q PROMPTER

QUANTITY	ITEM	PRICE
1	Mini Q Prompter	\$2595.00
1	Hand Control w/25' Ext. Cable	
1	Camera Mount	
1	Power Cable (unterminated)	
1	Equipment Case	
1	Instruction Manual	

Mini Q Prompter Spare Parts

Hi-intensity Halogen Lamp	\$ 12.00
DC Power Supply	150.00



MINI Q PROMPTER

Prompter Paper, Line Continuous form, 300' per roll	24.00
Front Surface Mirror	35.00
Optical See-Thru	45.00
Hand Control w/25' Ext. Cable	245.00
Power Cable (unterminated)	55.00

... TO MEET THE REQUIREMENTS OF THE
 SMALL PROFESSIONAL STUDIO

MVP 706 MINI VIDEO PROMPTER

FEATURES

- Simple to Operate
- Compact and Realistically Priced
- Variable Speed Forward/Reverse Script Drive
- Vidicon Pick-Up Camera
- Can Be Located in the Control Room or Studio Floor
- Houses a Lightweight 9" Prompter Monitor and Over-the-Lens Beam-Splitter
- Readable from Distances up to 8-10'
- Mounts with Adjustable Bracket onto the Camera Pan and Tilt Head

MVP 706 \$3700.00



MVP 706

SYSTEM 2000 MODULAR TRIPOD

System 2000 was planned and built with the Broadcaster in mind. It will provide efficient, versatile service when used with any Electronic News Gathering (ENG), Electronic Field Production (EFP), or film camera.

System 2000 is not only limited to broadcast applications. It will provide reliable, stable support for virtually any type of instrumentation requiring a tripod: microwave transmissions, laser equipment and electro-optical equipment.

The Basic System 2000

System 2000 starts with a set of basic components: a multi-purpose mounting plate and extendable crutch legs. Revolutionary is the best word to describe the System 2000 mounting plate. Computer-assisted design techniques have been used to create a plate which will accept either a ball-base or pro junior base. This means that virtually any fluid head can be used without cumbersome or expensive adaptors. In addition, the plate will accept a geared elevation column module.

Crutch Legs — Strong. Lightweight. Durable. Easy to extend and retract. The basic tripod height is 55" when fully extended, 33" when retracted. A precise calibration scale on each leg assures uniform extension on all three legs when required. Legs are equipped with non-slip rubber tip pads and are designed to accept System 2000's unique retractable spike tip module and/or strut assembly.

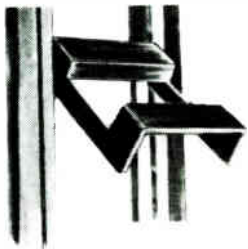
"Quick-Lock" Leg Locking System — The most extraordinary design feature of System 2000's crutch leg is its extension locking device. There are no knobs, twist mechanism or protruding handles to strip, freeze or break off on impact. An exclusive cam-action pressure plate assures a positive lock, even with heavy loads on the tripod. The pressure plate is activated and released with a simple, semi-recessed flip lever which has been human-engineered for easy use, even while wearing bulky gloves. The "Quick-Lock" system is a standard feature on all crutch legs.



MOUNTING PLATE



**GEARED
ELEVATION
COLUMNS**



**"QUICK-LOCK"
LEG LOCKING SYSTEM**



FIXED/ARM DOLLY

Model	Product Code	Description	User Price
TRIPODS (All tripods accept pro jr. & ball base heads as well as geared elevator column module. All tripods include extendable struts)			
Q2000T-1	20010	Full Size Calibrated Crutch Leg 75 Lb Cap	\$525.00
Q2000T-3	20050	Baby Size Calibrated Crutch Leg 75 Lb Cap	515.00
DOLLY (Standard non-extendable arms with non-removable 4" wheels and two axis locks)			
Q2000D-3	22030	Dolly	170.00
ACCESSORIES			
Q2000-EC	23010	Geared Elevator Column Assembly (includes leg brace/strut), 35 Lb Cap	245.00
Q2000-SS	22020	Expandable Calibrated Strut	50.00

3650 Woodhead Drive
Northbrook, IL 60062
(312) 498-0700 Telex 72-4362

(QL) QUICKSET LIGHTWEIGHT



QLT LIGHTWEIGHT TRIPODS

QLT-1 95534 - 2 section legs
QLT-3 95542 - 3 section legs
QLT-5 95549 - 4 section legs
Load Capacity Up to 17 lbs.
(7.7 kg)
Height Extended 57" - 72"
(144.8 - 182.9 cm)
Height Telescoped 23" - 31"
(58.4 - 78.7 cm)
(Dependent on model)
Column Rise 16" (40.6 cm)
Tilt Angle 60° up, 90° down
Pan Rotation 360°
Weight 7 lbs. (3.2 kg)

All have anti-drop columns and counterbalanced heads included.

For remote or studio applications. Use with QLD-1 dolly for mobility.



QLT-7 TRIPOD WITH STRUTS

QLT-7 95565
Load Capacity 20 lbs. (9.1 kg)
Maximum Height 57" (144.8 cm)
Minimum Height 29 1/2" (74.9 cm)
Column Height 16" (40.6 cm)
Weight 7 lbs. (3.1 kg)

For location and studio work with video cameras. Furnished with Safety Pan/Tilt Head.



QLT-9 TROLLEY

QLT-9 95810
Load Capacity 20 lbs. (9.1 kg)
Maximum Height 58 1/2" (148.6 cm)
Minimum Height 43-3/8" (110.2 cm)
Column Height 16" (40.6 cm)
Weight 9 1/4 lbs. (4.2 kg)
Wheel Circle 38" (96.5 cm)

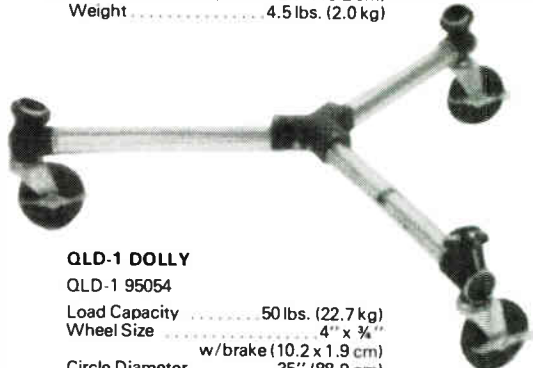
For location and studio work with video cameras. Furnished with Safety Pan/Tilt Head.

LIGHT WEIGHT TRIPODS/TROLLEY/HEADS/DOLLY



QLH-7 MINI FLUID HEAD

QLH-7 72803
Load Capacity 15 lbs. (6.8 kg)
Tilt Angle +/- 90°
Pan Rotation 360°
Dimensions 4" x 5" x 6"
(10.2 x 12.7 x 15.2 cm)
Weight 4.5 lbs. (2.0 kg)



QLD-1 DOLLY

QLD-1 95054
Load Capacity 50 lbs. (22.7 kg)
Wheel Size 4" x 3/4"
w/brake (10.2 x 1.9 cm)
Circle Diameter 35" (88.9 cm)
Folds to 4" x 6" x 19"
(10.2 x 15.2 x 48.3 cm)
Weight 8 lbs. (3.6 kg)

Model	Product Code	Description	User Price
TRIPODS & TROLLEY (All include Spring Loaded Counterbalance Heads & Safety Columns)			
QLT-1	95534	Tripod, 2 Section Legs	\$195.00
QLT-3	95542	Tripod, 3 Section Legs	205.00
QLT-5	95549	Tripod, 4 Section Legs	225.00
QLT-7	95565	Tripod, 2 Section Legs w/Struts	220.00
QLT-9	95810	Trolley, Struts, 3" Wheels	265.00
LEGS—NO HEADS (Columns Are Safety Type)			
QLT-11	95000	Tripod w/o Column, 2 Section Legs	130.00
QLT-13	95031	Tripod w/Column, 3 Section Legs	145.00
QLT-15	95065	Tripod w/Column, Struts, 2 Sec. Legs (Suggested for QLH-7 Mini Fluid Head)	145.00
DOLLY			
QLD-1	95054	Dolly, w/4" Wheels	100.00
HEADS ONLY			
QLH-7	72803	Fluid Head, 10 Lb. Cap., Use w/QLT-13	350.00
QLH-9	90504	TV Head for Tripods QLT-13, 15	115.00
QLH-11	90550	3D Photographic Head for Tripods QLT-13, 15	125.00
ACCESSORIES			
QLCC	90055	Carrying Case for QL Tripods (except QLT-9 and 21)	40.00
PHOTOGRAPHIC TRIPODS (All with 3-dimensional pan, tilt and side tilt heads)			
QLT-17	95580	"Elevator" 3 Section Legs	210.00
QLT-19	95540	"Stubby" 4 Section Legs	220.00
QLT-21	95581	"HiBoy" 4 Section Legs	220.00
QLT-23	95560	"Lift" 3 Section Legs (Manual Column Adjustment)	200.00

QuickSet



MEDIUM WEIGHT TRIPODS/PEDESTALS/ COLUMNS/HEADS/DOLLIES

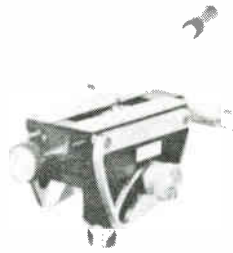
3650 Woodhead Drive
Northbrook, IL 60062
(312) 498-0700 Telex 72-4362



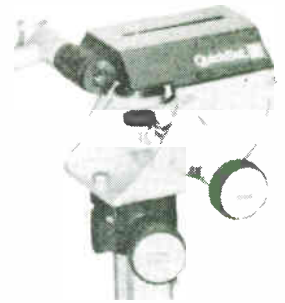
QM T-3 TRIPOD



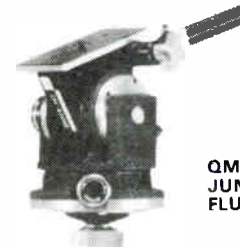
QM T-1 TRIPOD



QMH-5
CAM HEAD



QMH-1
FRICTION HEAD



QMH-13
JUNIOR
FLUID HEAD

(QM) QUICKSET MEDIUM WEIGHT (FORMERLY "SAMSON")

QMT-1 TRIPOD FOR ENG AND CINE

QMT-1 70150

Load Capacity 70 lbs. (31.8 kg)
Maximum Height 58" (147.3 cm)
Minimum Height 32" (81.3 cm)
Weight 9 lbs. (4.1 kg)

For ENG, EFP, and Cine applications.
Use with fluid heads for studio or remote. Add QM dolly for mobility.



QM T-9
TROLLEY

QMT-3 TRIPOD

QMT-3 73010

Load Capacity 40 lbs. (18.2 kg)
Maximum Height 76" (193 cm)
Minimum Height 34" (86.4 cm)
Column Rise 18" (45.7 cm)
Weight 10 lbs. (4.5 kg)

A 3/4 size version is available under 73500.

Maximum Height 55" (139.7 cm)
Minimum Height 21" (53.3 cm)

For studio and remote applications. Use with any QM panhead and dolly.

QMT-9 TROLLEY

QMT-9 74810

Load Capacity 40 lbs. (18.2 kg)
Maximum Height 54" (137.2 cm)
Minimum Height 36" (91.4 cm)
Column Rise 18" (45.7 cm)
Weight 13 lbs. (5.9 kg)
Wheel Circle 34" (86.4 cm)

For studio applications. Use with any QM panhead.

QM H-5 CAM HEAD

QM H-5 72300

Load Capacity 40 lbs. (18.1 kg)
Tilt Angle 30° up, 40° down
Pan Rotation 360°
Dimensions 8 1/2" x 6 1/2" x 4 1/2"
(21.6 x 16.6 x 11.5 cm)
Weight 5 lbs. (2.3 kg)
Mountings 1/4" x 20 Camera
Screw. Adjustable Fore and Aft
3 1/2" (8.9 cm) Mounting surface
3 1/2" x 6" (8.9 x 15.2 cm)

3/8" x 16 mounting screw available on special order.

For studio and remote applications. Use with any QM tripod, pedestal or column.

QM H FRICTION HEADS

Load Capacity 25-35 lbs.
(11.4 - 15.9 kg)
Tilt Angle 45° up, 90° down
Pan Rotation 360°
Dimensions 5 1/2" x 6 1/2" x 6 1/2"
(14.1 x 16.6 x 16.6 cm)
Weight 2 1/2 lbs. (1 kg)

QM H-1 72011 Standard Counterbalance Spring (25 lb. cap.)

QM H-3 72013 Heavy Duty Counterbalance Spring (35 lb. cap.)

3/8" x 16 mounting screw available on special order.

For studio and remote applications. Use with any QM tripod, pedestal or column.

QM H JUNIOR FLUID HEADS

Load Capacity 30 lbs. (13.6 kg)
Tilt Angle +1-85°
Pan Rotation 360°
Dimensions 4" x 6" x 6"
(10.2 x 15.2 x 15.2 cm)
Weight 7.0 lbs. (3.2 kg)

QM H-13 72850 Jr. Fluid Head with Pro Jr. Base

QM H-15 72851 Jr. Fluid Head with Ball Base

QM H-17 72852 Jr. Fluid Head with QM Column Base

QM H-19 72853 Jr. Fluid Head with Pro Jr. Base

No 3/8" Stud (For use with QM T-1 ENG/EFP Tripod)

For ENG/EFP and Cine applications. Use with any QM tripod, pedestal or column.

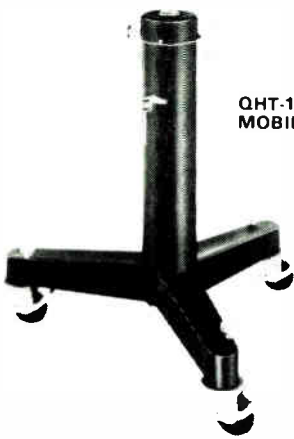
Model	Product Code	Description	User Price
TRIPODS, PEDESTALS, TROLLEY & COLUMNS			
QMT-1	70150	ENG/EFP Tripod—For use with QLH-7, QMH-19, QHH-19 or QHH-27	\$335.00
QMT-3	73010	Tripod with Elevator	375.00
QMT-5	73500	1/4 Size Tripod with Elevator	465.00
QMT-7	73520	1/4 Size Tripod with Elev & Spike Tips	550.00
QMP-1	74500	Mobile Pedestal	415.00
QMT-9	74810	Trolley	
QMC-1	75810	Stationary Column Unit (Includes side arm & panhead)	265.00
QMP-3	78100	Stationary Pedestal	395.00
QMC-3	79000	Elevator Column Unit (for bench or cart mount)	220.00
HEAD—FRICTION, CAM & GEAR TYPE			
QMH-1	72011	Friction Head w/Counterbalance Spring (Second Control Arm optional QSH-1)	175.00
QMH-3	72013	Friction Head w/Heavy Duty Counterbalance Spring (Second Control Arm optional QSH-1)	185.00
QMH-5	72300	Cam Head	465.00
QMH-7	72411	Still Head	190.00
QMH-9	72512	Geared Still Head	325.00
QMH-11	72612	Geared Movie Head	305.00
QMH-13	72910	Semi-Permanent Friction Head	120.00
FLUID HEADS—MINI (Wt. Cap. 10 Lbs.)			
QLH-1	72800	Pro Jr. Base	350.00
QLH-3	72801	Ball Base	395.00
QLH-5	72802	QM Column Base	370.00
QLH-7	72803	For use with QMT-1 ENG/EFP Tripod	350.00
FLUID HEADS—JUNIOR (Wt. Cap. 30 Lbs.)			
QMH-13	72850	Pro Jr. Base	725.00
QMH-15	72851	Ball Base	765.00
QMH-17	72852	QM Column Base	740.00
QMH-19	72853	For use with QMT-1 ENG/EFP Tripod	725.00
DOLLIES, CABLE GUARDS			
QMD-1	76010	Dolly—for use w/QMT-1 and QMT-3 Tripods	155.00
QMD-CG	76110	Cable Guard—for QMD-1 (Set of 3)	37.00
ACCESSORIES			
QSH-1	75081	Second Control Handle for Friction, Cam & Fluid Heads	48.00
QM-SA	75010	Side Arm—12" Offset w/stud to accept Friction Cam & Fluid Heads	70.00
QM-ST	75110	Spike Tips (Set of 3)	55.00
QM-HH	75350	Hi-Hat	100.00
ADAPTERS			
QMA-1	75450	QM Column to Pro Jr. Base	105.00
QMA-2	75750	QM Column to QH Panhead	60.00
QMA-3	75760	QH Column to QM Panhead	60.00
QMA-4	75910	Transit Adapter (ASA 3/2" x 8 Thread)	130.00

Prices and Specifications Subject to Change Without Notice.

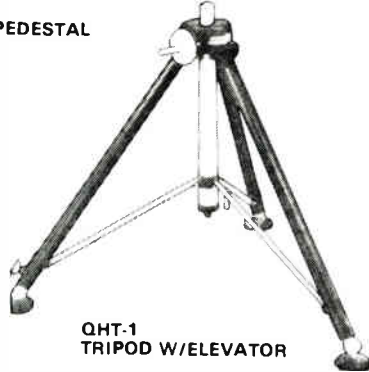
VC-233

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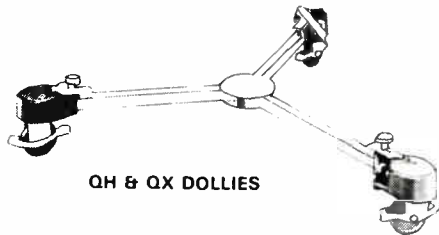
HEAVY WEIGHT TRIPODS/PEDESTALS/ COLUMNS/HEADS/DOLLIES



**QHT-1
MOBILE PEDESTAL**



**QHT-1
TRIPOD W/ELEVATOR**



QH & QX DOLLIES



QH HYDRO FLUID HEAD



**QH "SUPER-HYDRO"
FLUID HEAD**



QHH-5 CAM HEAD

(QH) QUICKSET HEAVY WEIGHT

QHT-1 TRIPOD WITH ELEVATOR QHT-1 53021

Load Capacity 150 lbs. (68.2 kg)
Maximum Height 73" (185.4 cm)
Minimum Height 33" (83.8 cm)
Column Rise 18" (45.7 cm)
Weight 19 lbs. (8.6 kg)

A 3/4 size version is available under
QHT-3 53220

Maximum Height 55" (139.7 cm)
Minimum Height 26" (66.0 cm)

*For studio or remote application. Use
with any QH panhead. Dolly provides
mobility.*

QHP-1 MOBILE PEDESTAL QHP-1 54504

Load Capacity 80 lbs. (36.4 kg)
Maximum Height 56" (142.3 cm)
Minimum Height 38" (96.5 cm)
Weight 35 lbs. (15.9 kg)
Wheel Circle 34" (86.4 cm)

*For studio application. Use with any
QH panhead.*

QH AND QX DOLLIES

QHD-1 56020
Load Capacity 500 lbs. (226.8 kg)
Wheel Size Diameter 4" x 1"
(10.2 x 2.5 cm)
Wheel Circle Diameter 45" (114.3 cm)
Folds to 7" x 13" x 28"
(17.8 x 33.0 x 71.1 cm)
Weight 17 lbs. (7.7 kg)

The same dolly w/4" wheels is available
in a 3/4 size version under QHD-3 56100

QHH-23 FLUID HEADS - SUPER HYDRO QHH-23 52815

Load Capacity 50 lbs.
Tilt Angle + / -80°
Pan Rotation 360°
Dimensions 6 3/4" x 6" x 7"
(171 x 152 x 178 cm)
Weight (Incl. Handle) 10 3/4 lbs.
(4.9 kg)

QHH HYDRO FLUID HEADS

Load Capacity 40 lbs. (18.8 kg)
Tilt Angle + / -80°
Pan Rotation 360°
Dimensions 6" x 5" x 6"
(15.2 x 12.7 x 15.2 cm)
Weight 8.5 lbs. (3.9 kg)

QHH-13 52810 Hydro Fluid Head
with Pro Jr. Base
QHH-15 52811 Hydro Fluid Head
with Ball Base
QHH-17 52812 Hydro Fluid Head
with QM Column Base
QHH-19 52813 Hydro Fluid Head
with Pro Jr. Base
No 3/8" Stud
(For use with QMT-1 ENG/EFP Tripod)

*For ENG/EFP and Cine applications.
Use with any QM tripod, pedestal or
column.*

QHH-5 CAM HEAD QHH-5 52304

Load Capacity 80 lbs. (36.3 kg)
Tilt Angle 35° up, 45° down
Pan Rotation 360°
Dimensions 5" x 9" x 10"
(12.7 x 22.9 x 25.4 cm)
Weight 21 lbs. (9.5 kg)

*For studio and remote applications. Use
with QH tripod and dolly for remote, QH
and QX pedestals for studio work.*

Model	Product Code	Description	User Price
TRIPODS, PEDESTALS, COLUMNS			
QHT-1	53021	Tripod with Elevator	9740.00
QHT-3	53220	1/4 Tripod with Elevator	725.00
QHP-1	54504	Mobile Pedestal	980.00
QHP-3	58001	Stationary Pedestal	656.00
QHC-1	59001	Elevator Column Unit (for bench mount)	480.00
HEADS—FRICTION, CAM & GEAR TYPE			
QHH-1	52021	Friction Head	480.00
QHH-3	52211	Gear Head	700.00
QHH-5	52304	Cam Head, Wt. Cap 80 Lbs (Second Control Arm Optional QSH-2)	770.00
QHH-7	52330	Cam Head, Wt. Cap 140 Lbs (Second Control Arm Optional QSH-2)	1065.00
QHH-9	52611	Dualok Video Head	630.00
QHH-11	52926	Calibrated Pan & Tilt Head, Verniers on Pan & Tilt	1485.00
FLUID HEADS—HYDRO (Wt. Cap 40 Lbs.)			
QHH-13	52810	Pro Jr. Base	995.00
QHH-15	52811	Ball Base	1040.00
QHH-17	52812	QM Column Base	1025.00
QHH-19	52813	For use with QMT-1 ENG/EFP Tripod	995.00
FLUID HEADS—SUPER HYDRO (Wt. Cap 50 Lbs.)			
QHH-21	52814	Pro Jr. Base	1275.00
QHH-23	52815	Ball Base	1320.00
QHH-25	52816	QM Column Base	1305.00
QHH-27	52817	For use with QMT-1 ENG/EFP Tripod	1275.00
DOLLIES, CABLE GUARDS			
QHD-1	56020	Full Size Dolly, 4 Wheels	430.00
QHD-3	56100	1/4 Dolly, 4 Wheels	430.00
QHD-CG	56120	Cable Guards for QHD-1 or QHD-3 Dollies	65.00
QHD-5	56160	1/4 Dolly, 8 Wheels w/Cable Guards	825.00
QHD-7	56450	Full Size Dolly, 8 Wheels w/Cable Guards	835.00
ACCESSORIES			
QSH-1	75081	Second Handle for all Fluid Heads	48.00
QSH-2	55040	Second Handle for QHH-5, 7	60.00
QH-WPA	65920	Wedge Plate and Adapter Assembly for QHH-5, 7 Heads	300.00
QH-ST	55110	Spike Tips	65.00
QH-HH	55310	Hr-Hat	135.00
QH-CX	55810	Column Extension 18"	70.00
QH-Q1	57500	Quick-On Instrument Mount, Wt. Cap 60 Lbs	175.00
QH-Q2	57510	Quick-On Instrument Mount, Wt. Cap 20 Lbs	160.00
MICROSCOPE STAND			
QH-MS	59750	Microscope Stand with Tilt Head	400.00
QH-MSB	59800	Base For Above	55.00
ADAPTERS			
QHA-1	55410	QH Column to Pro Jr. Base	115.00
QHA-3	55860	QH Head to Mitchell Adapter	135.00
QHA-5	55861	QH Column to Mitchell Base	135.00
QHA-7	55901	Transit Adapter (ASA 3/8" x 8 Thread)	115.00
QXA-9	69010	QH Head to QX Column	60.00
QXA-11	69020	QH Column to QX Panhead	60.00

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EXTRA HEAVY WEIGHT TRIPODS/ PEDESTALS/COLUMNS/HEADS/DOLLIES

(QX) QUICKSET EXTRA HEAVY WEIGHT

QXT-5 TRIPOD WITH ELEVATOR

QXT-5 63020

Load Capacity 200 lbs. (90.7 kg)
Maximum Height 85" (215.9 cm)
Minimum Height 42" (106.7 cm)
Weight 42 lbs. (19.1 kg)

A 3/4 size version is available under
63120.

Maximum Height 65" (165.1 cm)
Minimum Height 30" (76.2 cm)

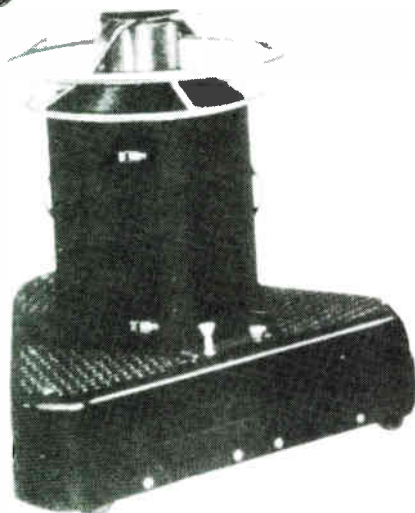


*For studio and remote applications. Use
with any QX panhead.*

QXT-3 HEAVY DUTY FIELD/STUDIO TRIPOD

QXT-3 60450

Load Capacity 400 lbs. (181.8 kg)
Maximum Height 42 1/2" (108 cm)
Minimum Height 25-5/8" (64.8 cm)
Weight 24 lbs. (10.9 kg)

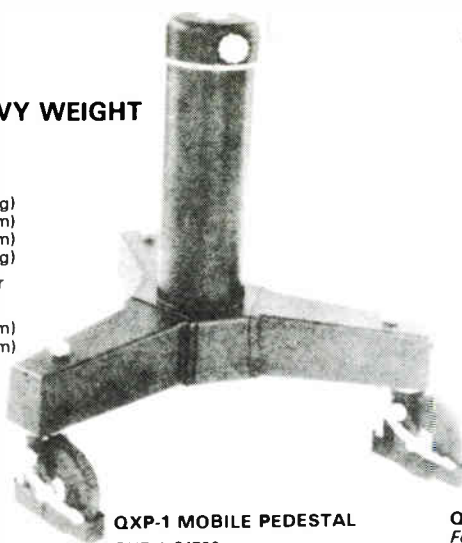


QXP-5 COUNTERBALANCE PEDESTAL

QXP-5 64860

Load Capacity 260 lbs. (118.2 kg)
Maximum Height 57" (144.8 cm)
Minimum Height 36" (91.4 cm)
Doorway Width 38 1/2" (97.8 cm)
Steering Wheel Dia. 30" (76.2 cm)
Weight 596 lbs. (270.9 kg)

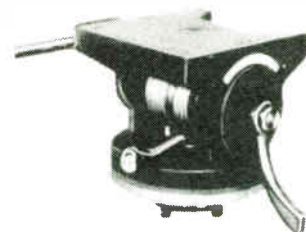
*For studio application. Use with QX Cam
or Cradle Heads.*



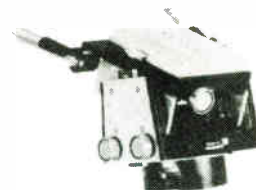
QXP-1 MOBILE PEDESTAL

QXP-1 64500

Load Capacity 200 lbs. (90.7 kg)
Maximum Height 60" (152.4 cm)
Minimum Height 42" (106.7 cm)
Weight 96 lbs. (43.5 kg)
Wheel Circle 38" (96.5 cm)



QX MICROWAVE RELAY TILT HEAD



QX CAM HEAD

*For remote and studio applications. Use
with QX Field Tripod for remote work.
Use with counterbalance pedestal for
studio work.*

Model	Product Code	Description	User Price
TRIPODS, PEDESTALS, COLUMNS			
QXT-1	60420	Heavy Duty Field/Studio Tripod w/Spike Tips. Wt Cap 400 Lbs	\$ 990.00
QXT-3	60450	Heavy Duty Field/Studio Tripod Wt Cap 400 Lbs	880.00
QXT-5	63020	Tripod with Elevator	1,350.00
QXT-7	63120	3/4 Size Tripod with Elevator	2,380.00
QXP-1	64500	Mobile Pedestal	4,120.00
QXP-3	64850*	Counterbalance Pedestal, Wt Cap 150 Lbs	5,350.00
QXP-5	64860*	Counterbalance Pedestal, Wt Cap 260 Lbs	910.00
QXP-7	68000	Stationary Pedestal with Elevator	
HEADS			
QXH-1	62050	Microwave Relay/Tilt Head (Control handle QCH-M optional)	735.00
QXH-3	62225	Geared Head	1,350.00
QXH-5	62302	Cam Head, Heavy Duty, Wt Cap 3/5 Lbs (Wedge Plate Adapter included)	2,350.00
QXH-7	62922	Geared Head w/Calibrated Pan, Calibrated Tilt	1,820.00
QXH-9	62926	Geared Head w/Calibrated Pan w/Vernier, Calibrated Tilt w/Vernier	2,070.00
DOLLIES AND CABLE GUARDS			
QHD-1	56020	Full Size Dolly 4" Wheels	430.00
QHD-7	56450	Full Size Dolly, 8" Wheels and Cable Guards	835.00
QHD-CG	56120	Cable Guards for QHD-1	65.00
ACCESSORIES			
QX-WPA	65701	Wedge Plate Adapter	170.00
QX-WP	65901	Wedge Plate	110.00
QCH-M	65330	Handle for Relay/Tilt Head	65.00
QSH-5	65350	Telescoping Right Control Handle for QX Cam Head	100.00
QX-ST	65110	Spike Tips (Set of 3)	80.00
QX-HH	65310	Hi-Hat	130.00
QX-CX	66810	Column Extension 18"	80.00
ADAPTERS			
QXA-1	65810	Adapter for Mitchell Type Camera Base to QX Column	130.00
QXA-3	65840	Spacer Adapter Between QXH-5 and QXT-1 or 3	155.00
QXA-5	65850	Adapter QXH-3 7/9 Panhead to QXT-1 3 or QXP-5	150.00
QXA-7	65910	Transit Adapter (ASA 3 1/2" x 8 Thread)	130.00
QXA-9	69010	QH Head to QX Column	60.00
QXA-11	69020	QX Head to QH Column	60.00

*Additional Counterweights—40" Box (Specify Pedestal Code Number) # 55 00/LB

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Model	Product Code	Description	User Price
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PAN AND TILT DRIVES AND ACCESSORIES

ENVIRONMENTAL - MEDIUM DUTY (Integrated System; Pre-Wired for Power, Lens & Video Functions)

QPTMAS-24	56100	Complete integrated system consisting of pan/tilt driver, camera housing and wall mount. Pre-wired — For loads to 30 lbs. 24VAC Autoscan (Use with QJAS-24 control.)	\$1,345.00
QPTM-24	56200	Same as above — 24VAC Non-Autoscan (Use with QJ-24 control)	1,270.00
QPTMAS-115	56500	Complete integrated system consisting of pan/tilt driver, camera housing and wall mount. Pre-wired — For loads to 30 lbs. 115VAC Autoscan (Use with QJAS-115 control)	1,345.00
QPTM-115	56600	Same as above — 115VAC Non-Autoscan (Use with QJ-115 control)	1,270.00

INDOOR - LIGHT DUTY

QPT15-24	07500	INDOOR WITH AUTOSCAN - 24VAC operation for loads to 15 lbs. (Use with QPAS-15 or QJAS-15 controls)	405.00
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ENVIRONMENTAL - MEDIUM DUTY (Pre-Wired for Power, Lens & Video Functions)

QPT30AS-24	57920	WEATHERPROOF WITH AUTOSCAN - 24VAC operation for loads to 30 lbs. Pre-wired (Use with QJAS-24 control)	1,100.00
QPT30-24	57930	WEATHERPROOF - 24VAC operation for loads to 30 lbs. Pre-wired (Use with QJ-24 control)	1,035.00
QPT30AS-115	57900	WEATHERPROOF WITH AUTOSCAN - 115VAC operation for loads to 30 lbs. Pre-wired (Use with QJAS-115 control)	1,100.00
QPT30-115	57910	WEATHERPROOF - 115VAC operation for loads to 30 lbs. Pre-wired (Use with QJ-115 control)	1,035.00

ACCESSORIES FOR ABOVE WHEN QWBM-18 (Wall Mount) IS NOT USED

QECM-30	57990	ENVIRONMENTAL CONNECTOR MODULE	60.00
QEGM-30	57995	ENVIRONMENTAL GLAND MODULE	40.00

ENVIRONMENTAL - HEAVY DUTY

QPT90AS-115	58000	WEATHERPROOF WITH AUTOSCAN - 115VAC operation for loads to 90 lbs. (Use with QJAS-115 control)	1,550.00
QPT90-115	59210	WEATHERPROOF - 115VAC operation for loads to 90 lbs. (Use with QJ-115 control)	1,460.00
QPT90AS-24	58100	WEATHERPROOF WITH AUTOSCAN - 24VAC operation for loads to 90 lbs. (Use with QJAS-24 control)	1,550.00
QPT90-24	59215	WEATHERPROOF - 24VAC operation for loads to 90 lbs. (Use with QJ-24 control)	1,460.00
QPT90DC-115	59200	WEATHERPROOF - 115VDC operation for loads up to 90 lbs. (Use with QJDC-115 or QJDCVS-115 controls)	1,550.00
QPT90DC-24	59000	WEATHERPROOF - 24VDC operation for loads up to 90 lbs. (Use with QJDC-24 or QJDCVS-24 controls)	1,600.00

ENVIRONMENTAL - EXTRA HEAVY DUTY

QPT200-115	56000	WEATHERPROOF WITH AUTOSCAN - 115VAC operation for loads up to 200 lbs. (Use with QJ-115 or QJAS-115 controls)	3,150.00
QPT200DC-115	56050	WEATHERPROOF - 115VDC operation for loads up to 200 lbs. (Use with QJDC-115 or QJDCVS-115 controls)	4,100.00
QPT500-115	60000	WEATHERPROOF WITH AUTOSCAN - 115VAC operation for loads up to 500 lbs. (Use with QJ500-115 or QJAS500-115 controls)	3,675.00
QPT500DC-115	60050	WEATHERPROOF - 115VDC operation for loads up to 500 lbs. (Use with QJ500-DC 115 or QJ500DCVS 115 controls)	4,450.00

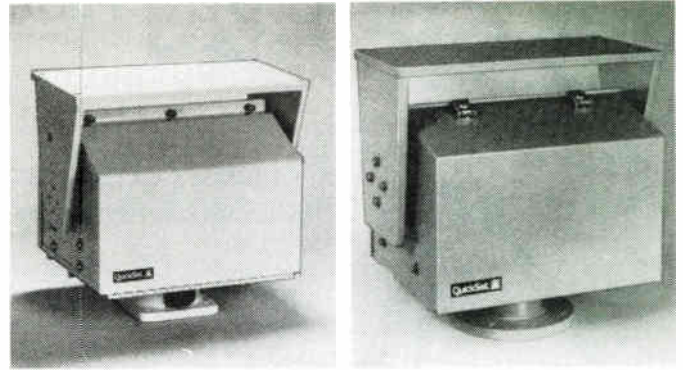
ANTENNA POSITIONER - HARD WIRE CONTROL

QPT500AP	65000	WEATHERPROOF - 115VDC operation for antenna packages or wind loading to 500 lbs. (Complete assembly includes Pan/Tilt Drive, Joystick Control with Variable Speed, Azimuth/Elevation Indicators, Potentiometers and Power Supply)	7,025.00
QPT500APT	65001	RF/TELEPHONE/TWISTED PAIR CONTROL WEATHERPROOF - 115VDC operation for Antenna Package or wind loads up to 500 lbs. (Complete assembly includes pan/tilt driver, push button azimuth/elevation control with variable speed, digital azimuth/elevation readout, potentiometers and power supply)	10,000.00

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Prices and Specifications Subject to Change Without Notice.

CCTV ACCESSORIES



PAN/TILT SCANNERS

Model	Product Code	Description	User Price
		For RF-Duplex Transmitter/Receiver Required:	
QRFD-500	47670	RF Duplex Link - 5 Mi.	6,000.00
QRFD-600	47671	RF Duplex Link - 20 Mi.	7,200.00

RADIATION RESISTANT (10⁶ Rad.)

QPT90RR-115	58310	RADIATION RESISTANT - 115VAC operation for loads to 90 lbs. (Use with QJ-115 control.)	2,460.00
QPT200RR-115	56015	RADIATION RESISTANT - 115VAC operation for loads to 200 lbs. (Use with QJ-115 control.)	4,500.00
		■ Available in higher capacity and/or stainless steel on special order.	
		■ Autoscan available on special order	
		■ 24 VAC available for QPT90RR on special order	

PRESSURIZED

QPT90P-115	59220	PRESSURIZED - 115VAC operation for loads up to 90 lbs. (Use with QJAS-115 control.)	3,350.00
QPT500P-115	60020	PRESSURIZED - 115VAC operation for loads up to 500 lbs. (Use with QJAS500-115 control.)	4,725.00
		■ Available in stainless steel on special order.	
		■ Autoscan available on special order.	

BULLET PROOF (STOPS 7.62mm ROUND)

QPT500BP-115	60070	BULLETPROOF WITH AUTOSCAN - 115VAC operation for loads up to 500 lbs. (Use with QJAS-500 115)	5,100.00
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ENVIRONMENTAL - SPECIAL HEAVY DUTY, BULLETPROOF (Integrated System)

QBPC-500	68000	BULLETPROOF - integrated system consisting of pan/tilt driver, camera housing and wall/pole mount. Pre-wired — For high security bulletproof requirements, 115VAC with Autoscan (Use with QJAS500-115 control)	9,000.00
QBPCDC-500	68500	Same as above — 115VDC variable speed available (Use with QJ500-DC115 or QJ500DCVS-115 control)	9,000.00

PAN AND TILT DRIVE ACCESSORIES

P30	58620	Presets/Potentiometers for all 30 lb. capacity units	190.00
P90	58600	Presets/Potentiometers for all 90 lb. capacity units	195.00
P2500	60203	Potentiometers for all 200 and 500 lb. capacity units	300.00
ATP-3090	58610	Arctic Temperature package for all 30 lb. and 90 lb. capacity units. (Includes heater, insulation and special lubrication)	255.00
ATP-2500	60201	Arctic Temperature package for all 200 and 500 lb. capacity units. (Includes heaters, insulation and special lubrication)	475.00
SSDC	59300	Sector Scan kit for all DC Pan/Tilt Drives	160.00

SCANNERS

LIGHT DUTY (FOR INDOOR USE)

QLS-115	06000	INDOOR SCANNER - 115VAC operation for loads to 20 lbs. (with 6-ft. line cord)	150.00
QLS-24	06500	INDOOR SCANNER - 24VAC operation for loads to 20 lbs. (Use with QLSAP-24 control)	150.00

MEDIUM DUTY (FOR INDOOR/OUTDOOR USE) - Pre-Wired for Power, Lens & Video Functions

QESM-115	06010	WEATHERPROOF SCANNER - 115VAC operation for loads to 30 lbs. (with 6-ft. cord)	595.00
QESM-24	06015	WEATHERPROOF SCANNER - 24VAC operation for loads to 30 lbs. (Use with QESAP-24 control)	605.00

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Model	Product Code	Description	User Price
HEAVY DUTY			
QESH-115	08000	WEATHERPROOF SCANNER - 115VAC operation for loads to 90 lbs. (with 6-ft. line cord).	630.00
QESH-24	08010	WEATHERPROOF SCANNER - 24VAC operation for loads to 90 lbs. (Use with QESAP-24 control.)	650.00

SCANNER ACCESSORIES

Preset/Potentiometer, Arctic Package QUOTE

VIDEO SWITCHERS (Manual)

TERMINATED

Model	Product Code	Description	User Price
QTM4	41040	4-Position Pushbutton	81.00
QTM8	41080	8-Position Pushbutton	137.00
QTM12	41120	12-Position Pushbutton	179.00

LOOPING

Model	Product Code	Description	User Price
QLM4	42040	4-Position Pushbutton	110.00
QLM8	42080	8-Position Pushbutton	156.00
QLM12	42120	12-Position Pushbutton	205.00
QRM-H	44000	■ Rack Mount - Option for 4/8 Position Switchers	35.00
QRM-F	44002	■ Rack Mount - Option for 12 Position Switchers	30.00

VIDEO SWITCHERS (Automatic)

HOMING

Model	Product Code	Description	User Price
QHS2	44020	2-Position	219.00
QHS4	44040	4-Position	235.00
QHS6	44060	6-Position	284.00
QHS8	44080	8-Position	326.00
QHS12	44120	12-Position	423.00

BRIDGING

Model	Product Code	Description	User Price
QBS4	46040	4-Position	262.00
QBS6	46060	6-Position	305.00
QBS8	46080	8-Position	358.00
QBS12	46120	12-Position	455.00

LOOPING

Model	Product Code	Description	User Price
QLS2	45020	2-Position	241.00
QLS4	45040	4-Position	273.00
QLS6	45060	6-Position	332.00
QLS8	45080	8-Position	380.00
QLS12	45120	12-Position	481.00
QRM-H	44001	■ Rack Mount - Option for 2/4/6/8 Position Switchers	35.00
QRM-F	44002	■ Rack Mount - Option for 12 Position Switchers	30.00

HOUSINGS AND ENCLOSURES

INDOOR

Model	Product Code	Description	User Price
QITH	27100	INDOOR THEFTPROOF (5" x 7" x 20")	90.00

WEATHERPROOF

Model	Product Code	Description	User Price
QEH-S	00700	SMALL ENVIRONMENTAL 6" x 6" x 22"	170.00
QEH-M	00800	MEDIUM ENVIRONMENTAL 8" x 7" x 25"	260.00
QEH-L	00805	EXTRA LONG ENVIRONMENTAL 8" x 7" x 36"	380.00

PRESSURIZED

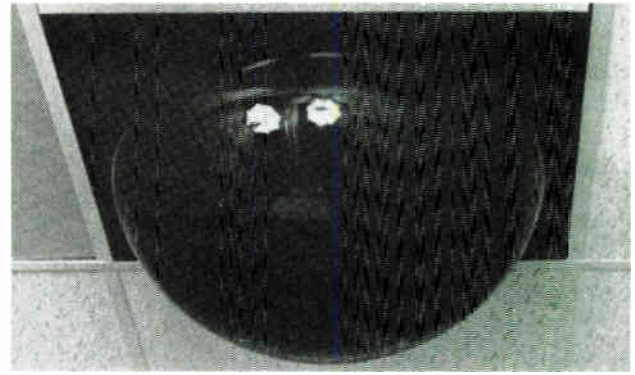
Model	Product Code	Description	User Price
QPH-8	00703	PRESSURIZED 8" diameter	1 000.00
QPH-10	00704	PRESSURIZED 10" diameter	1 250.00

Any diameter and length available on special order

BULLETPROOF (STOPS 7.62mm ROUND)

Model	Product Code	Description	User Price
QBPH	00705	BULLETPROOF 8" x 7" x 30"	1 500.00

Any length width height available on special order



QSD-1

Model	Product Code	Description	User Price
MAXIMUM SECURITY, VANDAL PROOF, BULLETPROOF			
QMSH	00706	MAXIMUM SECURITY 8" x 7" x 30" Any length, width, height available on special order	2 200.00

ENVIROGARD - FOR EXTREME HEAT CONDITIONS

Model	Product Code	Description	User Price
QEGH	00713	SOLID STATE THERMOELECTRIC COOLING SYSTEM 40° F differential cooling sealed against dust side contamination. System includes camera housing, thermostat, sunshield and separate power supply. Works on 115, 60 Hz or 220, 50 Hz. Internal size 8" x 8" x 28"	8 500.00

SECURITY DOME - INDOOR DISCREET HOUSING

Model	Product Code	Description	User Price
QSD-1	00900	Indoor Security Dome Housing	430.00
QVC-1	00910	Coiled Video Cable (JHF to UHF)	25.00
QVC-2	00920	Coiled Video Cable (UHF to BNC)	25.00
QVC-3	00930	Coiled Video Cable (BNC to BNC)	25.00
QFP-1	00940	Acrylic finishing plates	70.00
QTR-1	00950	Trim kit for hard ceilings	70.00
QPK-1	00960	Pendant kit	60.00
QWK-1	00970	Wall mount kit	110.00

HOUSING ACCESSORIES

HEATER AND THERMOSTAT ASSEMBLIES

Model	Product Code	Description	User Price
QEHH-115	00735	HEATER AND THERMOSTAT assembly for QEH-S, -M, -L (115VAC)	60.00
QEHH-24	00737	HEATER AND THERMOSTAT assembly for QEH-S, -M, -L (24VAC)	60.00
QPH-H	00746	HEATER AND THERMOSTAT assembly for QPH-8 and QPH-10	80.00
QBP-H	00747	HEATER AND THERMOSTAT assembly for QBPH and QMSH	80.00

BLOWER AND THERMOSTAT ASSEMBLIES

Model	Product Code	Description	User Price
QEBH-115	00736	BLOWER AND THERMOSTAT assembly for QEH-S, -M, -L (115VAC)	70.00
QEBH-24	00738	BLOWER AND THERMOSTAT assembly for QEH-S, -M, -L (24VAC)	70.00
QBH-B	00748	BLOWER AND THERMOSTAT assembly for QBPH and QMSH	105.00

SUNSHIELD ASSEMBLIES

Model	Product Code	Description	User Price
QEHS-S	00725	SUNSHIELD for QEH-S	60.00
QEHM-S	00825	SUNSHIELD for QEH-M	70.00
QEHL-S	00835	SUNSHIELD for QEH-L	80.00
QPH8-S	00749	SUNSHIELD for QPH-8	80.00
QPH10-S	00750	SUNSHIELD for QPH-10	90.00
QMSH-S	00751	SUNSHIELD for QBPH and QMSH	95.00

WINDOW WIPER AND WASHER ASSEMBLIES

Model	Product Code	Description	User Price
QEHS-W	00711	WINDOW WIPER accessory for QEH-S	160.00
QEHS-WW	00712	WINDOW WASHER accessory for QEH-S	145.00
QEHML-W	00752	WINDOW WIPER accessory for QEH-M and QEH-L	185.00
QEHML-WW	00753	WINDOW WASHER accessory for QEH-M and QEH-L	180.00

Prices and Specifications Subject to Change Without Notice.

VC-237

3650 Woodhead Drive
Northbrook, IL 60062
(312) 498-0700 Telex 72-4362

Model	Product Code	Description	User Price
LOW TEMPERATURE INSULATION			
QEHS-I	00726	INSULATION for QEH-S	55.00
QEHM-I	00826	INSULATION for QEH-M	60.00
QEHL-I	00836	INSULATION for QEH-L	65.00

TAMPER PROOF LOCKS

QEHS-L	00734	SECURITY LOCKS (2 Keys) for QEH-S, -M, -L	45.00
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ACCESSORIES

QCS-RB	00715	CAMERA SUPPORT - Riser block for cameras with low optical axis. For use with ALL camera housings	20.00
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MOUNTING ACCESSORIES

WALL MOUNTS

INDOOR DECORATIVE AND INDUSTRIAL

QIB-CS-10	17700	LIGHTWEIGHT, INDOOR - 10 lb. capacity (Adjustable Ball)	16.00
QIB-40	17800	MEDIUM WEIGHT, INDOOR - 40 lb. capacity (Pan and Tilt Head included)	30.00
QIB-D	17900	DECORATIVE, INDOOR for QPT15-24, QLS-115 and QLS-24 Hidden wall mount.	18.00

MONITOR MOUNT

QMM	19033	MONITOR MOUNT - 100 lb. capacity For most monitors up to 21"	180.00
QMM-A	19034	ADAPTER - for Wall Mounting	60.00

OUTDOOR INDUSTRIAL

QWBM-18	17500	ENVIRONMENTAL WALL MOUNT - For pan/tilt drivers 57920, 57930, 57900, and 57910	75.00
QWCB-12	17412	ENVIRONMENTAL WALL AND CEILING MOUNT (12" long)	65.00
QWCB-18	17418	ENVIRONMENTAL WALL AND CEILING MOUNT (18" long)	85.00
QWCB-24	17424	ENVIRONMENTAL WALL AND CEILING MOUNT (24" long)	90.00

COLUMN MOUNTS - HEAVY DUTY

QCM-12	17403	HEAVY DUTY FLOOR AND CEILING FIXED MOUNTS - 12" long For medium and heavy duty Pan/Tilts or Scanners	65.00
QCM-24	17404	HEAVY DUTY FLOOR OR CEILING FIXED MOUNT - 24" long For medium and heavy duty Pan/Tilts or Scanners	90.00
QCM-48	17405	HEAVY DUTY FLOOR OR CEILING FIXED MOUNT - 48" long For medium and heavy duty Pan/Tilts or Scanners	160.00

PAN/TILT HEAD FOR MOUNTS AND COLUMNS

QPH	15502	HEAVY DUTY PAN/TILT HEAD for QWCB-12, -18, -24 mounts and QCM-12, -24, -48 Allows 360° rotation and ±180° tilt	60.00
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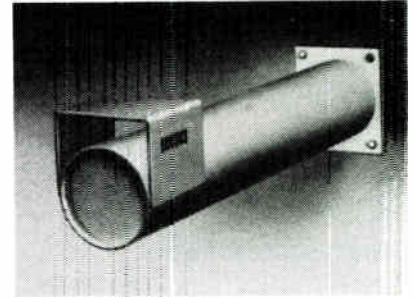
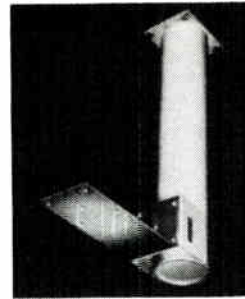
MOUNTING ACCESSORIES

QCM	19022	CORNER MOUNT - Allows all mounts to be fixed to 90° outside corner.	35.00
QSM	17401	SIDE MOUNT - Enables medium and heavy duty Pan/Tilts and Scanners to be used with all mounts and columns in standard position when inverted positioning is not acceptable	40.00

CONTROLS (Single-Hardwire)

All controls are desk top in half or full rack size (except QPAS-15 indoor pan/tilt control and QLSAP-24 indoor scanner control). As a general rule, all AC controls (115VAC or 24 VAC) are in the 1 3/4" "slim-line" height. DC controls are 3 1/2" in height. For rack mounting "slim-line" controls two one-half rack size controls can be combined together with provided hardware. Rack mounting "ears" are available under model #QRM-H to convert a half rack size desk unit to a rack mounted configuration and QRM-F converts a full width desk top unit or the combination of two half rack size units to a rack mounted configuration.

Code Key... 3 1/2" = 3 1/2" high unit H = 1/2" rack size
1 3/4" = 1 3/4" high unit F = Full rack size



MOUNTING BRACKETS

Model	Product Code	Description	User Price
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FOR PAN AND TILT DRIVES

QPAS-15	36800	Paddle Switch (Autoscan) for QPT15 (24VAC) [Desk top only]	165.00
QJAS-15	37810	Joystick (Autoscan) for QPT15 (24VAC) [1 3/4", H]	245.00
QJ-24	37510	Joystick (Non-Autoscan) for QPT30, QPT90, QPT200 (24VAC) [1 3/4", H]	325.00
QJ-115	37500	Joystick (Non-Autoscan) for QPT30, QPT90, QPT200 (115VAC) [1 3/4", H]	250.00
QJAS-24	37800	Joystick (Autoscan) for QPT30, QPT90, QPT200 (24VAC) [1 3/4", H]	350.00
QJAS-115	37700	Joystick (Autoscan) for QPT30, QPT90, QPT200 (115VAC) [1 3/4", H]	270.00
QJDC-115	38200	Joystick (Non-Autoscan) for QPT90 (115VDC) [3 1/2", H]	270.00
QJDCVS-115	38300	Joystick (Non-Autoscan) Variable Speed For QPT90 (115VDC) [3 1/2", H]	350.00
QJDC-24	38320	Joystick (Non-Autoscan) for QPT90 (24VDC) [3 1/2", H]	410.00
QJDCVS-24	38330	Joystick (Non-Autoscan) Variable speed For QPT90 (24VDC) [3 1/2", H]	490.00
QJ500-115	37501	Joystick (Non-Autoscan) for QPT500 (115VAC) [3 1/2", H]	330.00
QJDC500-115	38201	Joystick (Non-Autoscan) for QPT500 (115VAC) [3 1/2", H]	500.00
QJAS500-115	37701	Joystick (Autoscan) for QPT500 (115VAC) [3 1/2", H]	395.00
QJDC500VS-115	38301	Joystick (Non-Autoscan) Variable Speed, for QPT500 (115VDC) [3 1/2", H]	760.00
QRM-C-H	52508	■ Rack Mount - Option for Controls	35.00
QRM-C-F	52507	■ Rack Mount - Option for Controls	30.00

FOR SCANNER DRIVES

QLSAP-24	45400	Paddle Switch (Autoscan) for QLS Indoor Scanner (24VAC) [Desk top only]	90.00
QESAP-24	45500	Paddle Switch (Autoscan) for QES Environmental Scanners (24VAC) [1 3/4", H]	165.00

FOR MOTORIZED LENSES

QZLC	42500	PADDLE SWITCH - Control for all QuickSet Motorized Zoom Lenses. Provides separate zoom, focus and iris functions [3 1/2" H or 1 3/4", H]	185.00
QZLC-AI	42600	PADDLE SWITCH - Incorporates Automatic Iris control for QuickSet "Spot" Lenses along with separate zoom and focus functions [3 1/2", H]	470.00

■ Instruct factory to combine with Joystick into single half width control if desired. If not specified, lens control will come as a "stand-alone" in a half width desk top enclosure.

MISCELLANEOUS SINGLE CONTROLS

QWWC	46510	WASHER/WIPER CONTROL at console panel [1 3/4" H]	90.00
QAEM	47000	AZIMUTH/ELEVATION METERS at console panel (Potentiometers P30, P90 or P2500 must be installed in the Pan/Tilt drivers) [3 1/2", H]	450.00

Model	Product Code	Description	User Price
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CONTROLS (Multiple)

MULTIPLE DRIVE CONTROLS

FOR OPERATION OF MORE THAN ONE UNIT WITH A SINGLE CONTROL

QMP6-24	45010	CONTROL, UP TO 6 PAN AND TILTS COMBINED WITH ZOOM LENS FUNCTIONS. Features joystick with autoscans, lens functions with speed control and 6 pushbutton site select. 24VAC. [In rack mount.]	1,150 00
QMP6V-24	45015	CONTROL, UP TO 6 PAN AND TILTS COMBINED WITH ZOOM LENS FUNCTIONS. Same as above with video switching	1,400 00
QMP6-115	45011	CONTROL, UP TO 6 PAN AND TILTS COMBINED WITH ZOOM LENS FUNCTIONS. Features joystick with autoscans, lens functions with speed control and 6 pushbutton site select. 115VAC. [In rack mount.]	990 00
QMP6V-115	45016	CONTROL, UP TO 6 PAN AND TILTS COMBINED WITH ZOOM LENS FUNCTIONS. Same as above with video switching.	1,240 00
QMP4S-24	45001	CONTROL, UP TO 4 PAN AND TILT COMBINED WITH ZOOM LENS FUNCTIONS. Features joystick, zoom lens control and independent (select) control for each site. Use with any 24VAC pan/tilt. [In rack mount.]	890 00
OPM4S-115	45002	CONTROL, UP TO 4 PAN AND TILT COMBINED WITH ZOOM LENS FUNCTIONS. Features joystick, zoom lens control and independent (select) control for each site. Use with any 115VAC pan/tilt. [In rack mount.]	870 00
QMS6-24	45501	CONTROL, UP TO 6 SCANNERS (INDOOR AND/OR WEATHERPROOF). Drives QLS-24, QESM-24, QESH-24. [In rack mount.]	680 00
QMS6-115	45510	CONTROL, UP TO 6 SCANNERS (WEATHER-PROOF). Drives QESM-115, and QESH-115. [In rack mount.]	590 00

DUAL STATION CONTROLS

FOR OPERATION OF A SINGLE PAN/TILT DRIVE FROM TWO REMOTE LOCATIONS

QDS-NA	46550	SYSTEM FOR CONTROLLING A PAN/TILT COMBINED WITH ZOOM LENS. Consists of two separate units. Combines joystick and zoom lens controls. Identical controls at each of two locations. Use with either 24VAC or 115VAC pan/tilt. [In rack mount.]	1,250 00
QDS-AS	46560	SYSTEM FOR CONTROLLING A PAN/TILT WITH AUTOSCAN COMBINED WITH ZOOM LENS. Consists of two separate units. Combines joystick with autoscans and zoom lens controls. Identical controls at each of two locations. Use with either 24VAC autoscans or 115VAC autoscans pan/tilt.	1,325 00

COAXSET SYSTEM

TRANSMITTERS - CONTROL OF MULTIPLE REMOTE SITES

QCST-8	49080	CONTROL OF 8 PAN/TILTS WITH AUTOSCAN AND ZOOM LENS FUNCTIONS. Features joystick with autoscans, zoom, focus, iris and four auxiliary functions. [In rack mount.]	745 00
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TRANSMITTER - CONTROL OF ONE REMOTE SITE

QCST-1	49010	CONTROL OF A SINGLE PAN/TILT WITH AUTOSCAN AND ZOOM LENS FUNCTIONS. Features joystick with autoscans, zoom, focus, iris and four auxiliary functions. [1 3/4" H]	630 00
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RECEIVER

QCS-R	49500	RECEIVER - One required at each remote site. Specify 24VAC or 115VAC pan/tilt when ordering. 115VAC required for receiver.	675 00
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LOW VOLTAGE SYSTEM (12VDC)

CONTROL OF UP TO 10 REMOTE SITES - FOR EXTRA LONG RUNS

QLVS-10	46810	CONTROL OF 10 PAN/TILTS WITH AUTOSCAN AND ZOOM LENS FUNCTIONS UP TO 10,000 FEET. Features joystick with autoscans, zoom, focus, iris, camera power and 10-site rotary select. System is addressable. Latching memory for autoscans and camera power functions. Allows cost effective long distance runs with small gauge wire. Use with all 115VAC Pan/Tilt Drivers. Remote Box required at each site. [In rack mount.]	685 00
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Model	Product Code	Description	User Price
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RECEIVER

QLVS-R	46730	RECEIVER - One required at each remote site. 115VAC required for receiver operation.	465 00
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CONTROL OF UP TO 5 REMOTE SITES FROM TWO SEPARATE CONTROL SITES - FOR EXTRA LONG RUNS

QLVS-MS	48150	SYSTEM CONTAINS THE SAME ELEMENTS AS THE QLVS-10 for 5 Pan/Tilt Sites from two separate control panels. Receiver QLVS-R required at each remote site.	QUOTE
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ZOOM LENSES

MOTORIZED ZOOM

1-INCH FORMAT

Q17-102M	70003	17-102mm Fast., fl 8, 6X	740 00
Q16-160M	70014	16-160mm Fast., fl 8, 10X	1,790 00

3/8-INCH FORMAT

Q12-75M	70004	12.5-75mm Fast., fl 8, 6X	660 00
Q11-90M	70006	11.5-90mm Fast., fl 8, 8X	870 00
Q10-100M	70008	10-100mm Fast., fl 8, 10X	1,200 00
Q17-102M	70003	17-102mm Fast., fl 8, 6X	740 00
Q16-160M	70014	16-160mm Fast., fl 8, 10X	1,790 00

MOTORIZED ZOOM WITH SPOT FILTER

1-INCH FORMAT

Q17-102MS	70012	17-102mm Fast., fl 8, 6X	940 00
Q16-160MS	70015	16-160mm Fast., fl 8, 10X	1,860 00

3/8-INCH FORMAT

Q12-75MS	70005	12.5-75mm Fast., fl 8, 6X	720 00
Q11-90MS	70007	11.5-90mm Fast., fl 8, 8X	1,000 00
Q10-100MS	70009	10-100mm Fast., fl 8, 10X	1,250 00
Q17-102MS	70012	17-102mm Fast., fl 8, 6X	940 00
Q16-160MS	70015	16-160mm Fast., fl 8, 10X	1,860 00

MOTORIZED ZOOM WITH SPOT FILTER AND AUTO IRIS

1-INCH FORMAT

Q17-102MSI	70013	17-102mm Fast., fl 8, 6X	1,090 00
Q16-160MSI	70016	16-160mm Fast., fl 8, 10X	1,950 00

3/8-INCH FORMAT

Q12-75MSI	70010	12.5-75mm Fast., fl 8, 6X	800 00
Q11-90MSI	70011	11.5-90mm Fast., fl 8, 8X	1,150 00
Q10-100MSI	70017	10-100mm Fast., fl 8, 10X	1,350 00
Q17-102MSI	70013	17-102mm Fast., fl 8, 6X	1,090 00
Q16-160MSI	70016	16-160mm Fast., fl 8, 10X	1,950 00

VIDEO SIGNAL EQUIPMENT

QDA	50000	DISTRIBUTION AMPLIFIER - One in, four out with input loop-through capability. Provides cable equalization for long runs.	205 00
QVMD	50300	VIDEO MOTION DETECTOR	440 00
QDTG	50211	DATE/TIME DISPLAY GENERATOR - Month/Day/Year/Hour/Minute/Second are displayed on the video monitor.	450 00

MISCELLANEOUS

RELAY BOXES FOR LONG DISTANCE CONTROL

QRB-1	46750	RELAY BOX for remote control of QLS-24 and QPT15-24	240 00
QRB-2	46760	RELAY BOX for remote control of QESM-24, QESH-24, QPT30-24, QPT30AS-24, QPT90-24, QPT90AS-24	330 00
QRB-3	46770	RELAY BOX for remote control of QPTDC-24	365 00

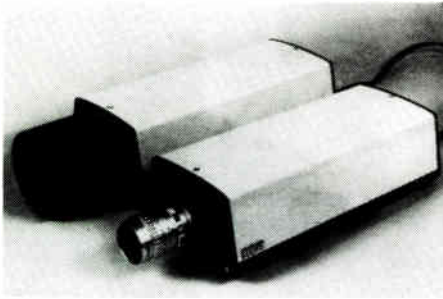
Prices and Specifications Subject to Change Without Notice.

VC-239

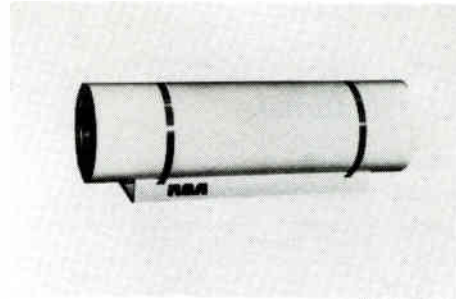
RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

New Holland Avenue
Lancaster, PA 17604-3140
(717) 397-7661

CLOSED CIRCUIT VIDEO EQUIPMENT



TC1005



TC1006

1" CAMERAS FOR HIGH PERFORMANCE

TC1005 CAMERA FAMILY

Standard Vidicon Cameras 600,000:1 Light Range (Supplied less lens).

Model	Optional User Price \$	Dealer Cost \$			Description
		1 - 4	5 - 24	25 -	
TC1005/01 ²	995	670	650	625	High performance camera, 800 lines resolution, 1" separate mesh, magnetic focus vidicon, internal, RS-170 sync. Accepts external M&V drive, sync or composite video for Genlock.
TC1005/01F ²	995	670	650	625	24 V, 60 Hz version of TC1005/01

LOW LIGHT CAMERAS

1" Ultricon II¹ — 3.67 x 10⁷ :1 Light Range with f/1.4 to f/1200 Lens.

Less Lens or With Fixed Lens ²					Description
Model	Optional User Price \$	1 - 4	5 - 24	25 -	
TC1005/U01 ²	1725	1155	1110	1065	1" Ultricon II (Silicon Target) version of TC1005/01 less lens.
TC1005/U9	2030	1360	1315	1270	With 9.0 mm f/1.4 auto iris lens
TC1005/U12	1945	1310	1265	1220	With 12.5 mm f/1.4 auto iris lens
TC1005/U24	1930	1292	1247	1202	With 25 mm f/1.4 auto iris lens
TC1005/U49	1935	1297	1252	1207	With 50 mm f/1.8 auto iris lens
TC1005/U74	1990	1333	1288	1243	With 75 mm f/1.8 auto iris lens
With Zoom Lens and Auto-Iris Controller, Factory Installed and Adjusted					
TC1005/U06	3250	2175	2130	2085	TC1005/U01 Ultricon II (Silicon Target) camera with 17.5-105 mm (6x) f/1.8 zoom lens with spot filter and separate TC1430 Controller
TC1005/UR6	3250	2175	2130	2085	Same as TC1005/U06 but with TC1430R Control Unit mounted on camera
TC1005/U10 ³	3800	2545	2495	2450	Same as TC1005/U06 but with 16-160 mm (10x) f/1.8 lens Includes TC1430 Controller
TC1005/UR0 ³	3800	2545	2495	2450	Same as TC1005/U10 but with TC1430R Control Unit
TC1005/URE	6400	4270	4115	3960	Same as TC1005/U06 but with 15-150 mm (10x) f/1.8 lens, integral remotely controlled extender (23.5-235 mm f/2.9) and TC1430R Control Unit on camera
The TC1430 Controller is for desk top or rack mount. Use in hard wired systems of up to 1000 ft. with one controller per camera. The TC1430R Control Unit is mounted on the camera. Use in long hard-wired systems or with twisted-pair control systems. A separate controller such as V100C is required (V108C for URE cameras) or use twisted-pair control system.					
With Auto-Iris Zoom Lens, Factory Installed & Adjusted (No remote iris control) ⁴					
TC1005/UT6	2795	1875	1830	1785	TC1005/U01 Ultricon II (Silicon Target) camera with 17.5-105 mm (6x) f/1.8 Auto-Iris Zoom lens
TC1005/UT0 ³	3350	2245	2195	2150	Same as TC1005/UT6 but with 16-160 mm (10x) f/1.8 lens
TC1005/UT2 ³	3725	2495	2445	2400	Same as TC1005/UT6 but with 15-180 mm (12x) f/1.9 lens

NOTES:

Cameras are 120V, 60Hz. For 24V, 60Hz version add suffix "F" to model number (same price).

- For Newvicon cameras tube type 4906 (S4076), change "U" to "N" in model number and add \$10.00 to cost.
- Crystal control available on Special Order for basic cameras without lens (shown in bold type). Add suffix "C" to model number and add \$10.00 to cost. Crystal control models do not have Line Lock feature. Contact RCA for minimum quantity requirements for factory installed lenses on crystal controlled models.
- Pre-position addition (VPPL) available on models indicated. Add suffix "P" to model number and add \$240.00 to cost. Other types may be available with pre-position. Contact RCA for requirements.
- "UT-" cameras require a separate controller such as the V1002F. If length of run exceeds 1000 ft. use a relay box or a suitable control system.

1" CAMERA FAMILY

TC1006 CAMERA FAMILY — LOW LIGHT LEVEL SYSTEMS

- Prepackaged in Integral Environmental Housing
- Designed Tested to Military and Space Environmental Standards
- Round-the-Clock Service
- Three Camera Tube Options
- Factory Assembled, Adjusted and Pressurized

Signal-to-Noise FET low noise amplifier. Better than 43dB.

Automatic Beam Control (ABC) Eliminates need for periodic readjustment of beam throughout life of camera tube.

Gamma Correction Internally adjustable from 1.0 to 0.7 for enhanced grey-scale rendition.

Video Output 1.1 V p-p composite. Internally adjustable. Fixed lens models have two isolated outputs at 75 ohms. Zoom lens models have one output at 75 ohms.

Auto Black plus Keyed Clamp maintains constant pedestal setup over entire operating range.

Sync EIA RS-170 in 60Hz models or CCIR in 50Hz models. Phase-locked loop synchronizes camera to power line zero-crossing. Crystal control option available.

Genlock Accepts negative 4 V p-p composite sync (1 to 6 V p-p) and negative 4 V p-p H & V drives (3 to 6 V p-p). Will also lock onto composite video. Internal sync in/out and HiZ/75 ohm termination selection.

WITH FIXED LENS

Ultricon II Camera Tube (Newvicon — see note below)

Model	Optional User Price \$	Dealer Cost \$			Description
		1 - 4	5 - 24	25 -	
TC1006/U12	2490	1670	1620	1570	TC1005/U01 camera with 12.5 mm auto iris lens with filter
TC1006/U24	2460	1650	1600	1550	Same as TC1006/U12 but with 25 mm lens
TC1006/U49	2460	1650	1600	1550	Same as TC1006/U12 but with 50 mm lens
TC1006/U74	2515	1685	1635	1585	Same as TC1006/U12 but with 75 mm lens

WITH ZOOM LENS

Model	Optional User Price \$	1 - 4	5 - 24	25 -	Description
TC1006/UZ6	3515	2345	2270	2195	TC1005/U01 camera with 17.5-105 mm (6x) f/1.8 zoom lens with spot filter
TC1006/UZ0 ³	4395	2930	2870	2800	Same as TC1006/UZ6 but with 16-160 mm (10x) f/1.8 lens
TC1006/UZ2 ³	4070	2715	2645	2570	Same as TC1006/UZ6 but with 15-180 (12x) f/1.9 lens

NOTES:

- For Newvicon camera tube, type 4906 (S4076), change "U" to "N" in model number and add \$10.00 to cost.
- "UZ-" cameras require a separate controller such as the V1002F. If length of run exceeds 1000 ft. use of a relay box or a suitable control system is recommended.
- Pre-position addition (VPPL) available on lens types indicated. Add suffix "P" to model number and add \$250.00 to cost. Other types may be available with pre-position. Contact RCA for requirements.
 - Sunshield, TC1366 available, \$75.00 User Price.
 - For crystal control add suffix "C" to model number and add \$10.00 to cost.
 - For High Impedance Sync input add "M" to model number and \$10.00 to cost.

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

New Holland Avenue
Lancaster, PA 17604-3140
(717) 397-7661

CLOSED CIRCUIT VIDEO EQUIPMENT



TC1030/H

TC1030/H SIT CAMERAS FOR VERY LOW LIGHT LEVEL

Silicon Intensified Target (SIT) Cameras
for Very Low Light Level Applications.

Using RCA 16mm low bloom silicon intensified target tubes. Supplied with factory installed/adjusted zoom or fixed focal length auto iris lenses with spot filters.

TC1030 SERIES — HIGH PERFORMANCE SIT CAMERAS

Cameras include a remote lens control where applicable.

Type	Price \$	Description
TC1030/H06	7160	With 18-108 mm (6X) f/1.8 zoom lens. Includes separate TC1430 remote lens controller.
TC1030/H08	7650	Same as above with 18-144 mm (8X) f/2.0 zoom lens.
TC1030/H10	8625	Same as above with 16-160 mm (10X) f/1.8 zoom lens.
TC1030/HR6	7160	With 18-108 mm (6X) f/1.8 zoom lens. Includes camera mounted TC1430R remote control unit.
TC1030/HR8	7650	Same as above with 18-144 mm (8X) f/2.0 zoom lens.
TC1030/HR0	8625	Same as above with 16-160 mm (10X) f/1.8 zoom lens.
TC1030/HRE	10000	Includes 15-150 mm (10X) f/1.8 lens with integral remotely controlled extender (23.5-235 mm f/2.9) and camera mounted TC1430R remote control unit. Use V108C controller.
TC1030/H12	6900	With 12.5 mm f1.4 fixed focal length lens.
TC1030/H24	6825	Same as above with 25 mm f1.4 fixed lens.
TC1030/H49	6825	Same as above with 50 mm f/1.8 fixed lens.
TC1030/H74	6900	Same as above with 75 mm f/1.8 fixed lens.
TC1030/H	6650	Less lens. Available on special order for use in constant low light level applications.

TC1036 SERIES — ENVIRONMENTALIZED HIGH PERFORMANCE SIT CAMERAS

Auto Iris function controlled by lens/camera electronics. Cameras do not include a remote lens control.*

TC1036/HZ6	7720	With 18-108 mm (6X) f1.8 zoom lens.
TC1036/HZ8	8170	Same as above with 18-144 mm (8X) f2.0 zoom lens.
TC1036/HZ0	9180	Same as above with 16-160 mm (10X) f1.8 zoom lens.
TC1036/HZ2	9480	Same as above with 15-180 mm (12X) f1.9 zoom lens.
TC1036/H12	7500	With 12.5 mm f1.4 fixed focal length lens.
TC1036/H24	7415	Same as above with 25 mm f1.4 fixed lens.
TC1036/H49	7415	Same as above with 50 mm f/1.8 fixed lens.
TC1036/H74	7500	Same as above with 75 mm f1.8 fixed lens.

TC1034 SERIES — LOW COST SIT CAMERAS

Auto Iris function controlled by lens/camera electronics. Cameras do not include a remote lens control.*

TC1034/HZ6	6015	With 18-108 mm (6X) f1.8 zoom lens.
TC1034/HZ8	6425	Same as above with 18-144 mm (8X) f2.0 zoom lens.
TC1034/HZ0	7250	Same as above with 16-160 mm (10X) f1.8 zoom lens.
TC1034/HZ2	7550	Same as above with 15-180 mm (12X) f1.9 zoom lens.
TC1034/H12	5200	With 12.5 mm f1.4 fixed focal length lens.
TC1034/H24	5200	Same as above with 25 mm f1.4 fixed lens.
TC1034/H49	5200	Same as above with 50 mm f/1.8 fixed lens.
TC1034/H74	5200	Same as above with 75 mm f1.8 fixed lens.

NOTE:
*For zoom focus where applicable, use V100ZF controller or twisted pair remote control systems such as RCA TC1600 or TC1700 Series.

TC1040/H ISIT CAMERAS FOR ULTRA LOW LIGHT LEVEL

Intensified Silicon Intensifier Target (ISIT) Cameras
for Ultra Low Light Level Applications

Using RCA 16mm low bloom silicon intensified target camera tubes with additional intensifier section. Supplied with factory installed/adjusted zoom or fixed focal length auto iris lenses with spot filters.

TC1040 SERIES — HIGH PERFORMANCE ISIT CAMERAS

Cameras include a remote lens control where applicable.

Type	Price \$	Description
TC1040/H06	9270	With 18-108 mm (6X) f/1.8 zoom lens. Includes separate TC1430 remote lens controller.
TC1040/H08	9800	Same as above with 18-144 mm (8X) f/2.0 zoom lens.
TC1040/H10	10750	Same as above with 16-160 mm (10X) f/1.8 zoom lens.
TC1040/HR6	9270	With 18-108 mm (6X) f/1.8 zoom lens. Includes camera mounted TC1430R remote control unit.
TC1040/HR8	9800	Same as above with 18-144 mm (8X) f/2.0 zoom lens.
TC1040/HR0	10750	Same as above with 16-160 mm (10X) f/1.8 zoom lens.
TC1040/HRE	12200	Includes 15-150 mm (10X) f/1.8 lens with integral remotely controlled extender (23.5-235 mm f/2.9) and camera mounted TC1430R remote control unit. Use V108C controller.
TC1040/H12	9050	With 12.5 mm f/1.4 fixed focal length lens.
TC1040/H24	8975	Same as above with 25 mm f/1.4 fixed lens.
TC1040/H49	8975	Same as above with 50 mm f/1.8 fixed lens.
TC1040/H74	9050	Same as above with 75 mm f/1.8 fixed lens.
TC1040/H	8800	Less lens. Available on special order for use in constant low light level applications.

Supply Voltage Options

24V, 60Hz
24V, 50Hz
220V, 50Hz
12VDC, 60 fps (RS-170)
12VDC, 50 fps (CCIR)

Type Designation Suffix

Add Suffix F
Add Suffix FX
Add Suffix X
(TC1034 Series only) Add Suffix DC
("C" indicates crystal control)
(TC1034 Series only) Add Suffix DCX
("C" indicates crystal control)

Remote Control Description — For Zoom/Auto-Iris Lenses

TC1430 Rack or Desk Top Controller

Can be used with up to 1000 feet of AWG-18 4-wire cable between controller and camera.

TC1430R Camera Mounted Control Unit

- Permits long cable runs of up to approximately one mile when used with 4-wire controller such as RCA or Vicon V100C.
- Accepts output from 6-wire Modupulse or 4-wire bipolar receivers used with twisted-pair control systems.
- Can also be used with any external switch closures or relays when such a control system is used, i.e. TC1600 and TC1700 micro-processor controls.

DUMMY CAMERAS

TC1501/D	60	Dummy TC1501 with pilot light, no lens, 120 VAC, 60 Hz.
TC1502/D	60	Dummy TC1502 with pilot light, no lens, 24 VAC, 60 Hz.
TC2011/D	75	Dummy TC2011. Integral power supply format (120 V) and pilot light. (Also use as TC2511 Dummies.) No lens.
TC2012/D	75	Dummy TC2012. Integral power supply format (24V) and pilot light. (Also use as TC2512 Dummies.) No lens.
TC2055/D	70	Also use as TC2021, TC2022, TC2521, and TC2522 Dummies.

NOTE: Order lens separately.

SURVEILLANCE KITS

Everything required for a CCTV Surveillance setup in one, low cost, convenient package. Includes a 2/3" Vidicon Camera, a 16mm Lens, a 9" RCA Monitor, a Camera Wall Mount, 100 feet of connecting cable and necessary connectors.

Model	Price \$	Description
KIT1551	455	120 V TC1501/16 camera and 9" monitor. Use where 120 VAC power is available at both the camera and monitor locations.
KIT1552	465	24 V TC1502/16 camera, 24 V transformer and 9" monitor. Use where 120 VAC power is available only at the monitor.

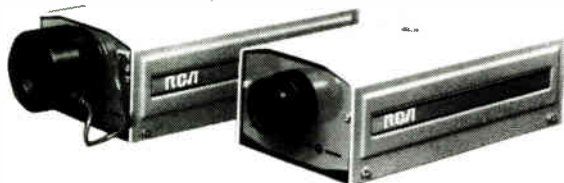
Prices and Specifications Subject to Change Without Notice.

VC-241

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

New Holland Avenue
Lancaster, PA 17604-3140
(717) 397-7661

CLOSED CIRCUIT VIDEO EQUIPMENT



TC1500



TC1465

TC1500 LOW-COST 2/3" CAMERA FAMILY

STANDARD VIDICON CAMERAS

- 500 Line Resolution
- 200,000:1 Light Range
- RS-170 Sync, 2:1 Interlace
- Separate Mesh Vidicon

Model	Price \$	Description
TC1501	198	120 V, 60 Hz.
TC1501/8	258	With 8 mm f/1.6 lens (no iris)
TC1501/16	216	With 16 mm f/1.6 lens (no iris)
TC1502	198	24 V, 60 Hz version of TC1501.
TC1502/8	258	With 8 mm f/1.6 lens (no iris)
TC1502/16	216	With 16 mm f/1.6 lens (no iris)

ULTRICON III LOW LIGHT CAMERAS

660,000:1 Light Range with f/1.4 to f/360 Auto Iris Lens

Model	Price \$	Description
TC1501/U	670	Ultricon III version of TC1501, Type 4875U, 120 V, 60 Hz.
TC1501/U8	895	With 8.0 mm f/1.4 auto iris lens
TC1501/U16	860	With 16 mm f/1.4 auto iris lens
TC1502/U	670	24 V, 60 Hz version of TC1501/U.
TC1502/U8	895	With 8.0 mm f/1.4 auto iris lens
TC1502/U16	860	With 16 mm f/1.4 auto iris lens

FIXED LENSES FOR TC1500 LOW LIGHT CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications with connectors installed for ease of installation. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

Model	Price \$	Description
TC1805/M	305	2/3" format EX 5.7 mm f/1.4
TC1810/M	230	" " EX 8.0 mm f/1.4
TC1816/M	195	" " EX 16 mm f/1.4
TC1809/M	310	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras).
TC1812/M	235	" " EX 12.5 mm f/1.4
TC1824/M	210	" " ES 25 mm f/1.4 " "
TC1849/M	215	" " ES 50 mm f/1.8 " "
TC1874/M	270	" " ES 75 mm f/1.8 " "

NOTES:

TC1500 Series cameras and monitors may be combined to obtain best quantity price. Zoom lenses not recommended for use on TC1500 Series Cameras.

FIXED LENS FOR 2/3" VIDICON CAMERAS

Model	Optional User Price \$	Description
TC1886	18	2/3" format 16 mm f/1.6 standard (no iris)
TC1888	60	2/3" format 8 mm f/1.6 wide angle (no iris)

DIGITAL MOTION DETECTOR MODULAR, ONE TO SIXTEEN CHANNELS

Model	Price \$	Description
TC1465	2500	Modular. Accepts 1 to 16 channel modules (TC1465CM). 896 detection points programmable in up to 7 separate zones in each channel. On-screen alarm signal, sequence, alarm follower and status monitor outputs.
TC1465CM	975	Single camera channel module. Up to 16 per TC1465.
TC1465KB	1635	Keyboard Control Unit for TC1465.

TC1450 VIDSCAN TELEPHONE LINE TRANSMISSION SYSTEM FOR CCTV APPLICATIONS

Model	Price \$	Description
TC1451	3900	Phone Line Transmission (PLT) Transceiver.

TC4600 FIBER OPTIC LINK FIBER OPTIC TRANSMISSION SYSTEM.

Best Cable Transmission System for:

- Long Distance
- Eliminates Lightning Damage
- Eliminates Ground Loops
- Color Compatibility

Model	Price \$	Description
TC4611	375	Transmitter.
TC4612	375	Receiver.
TC4601PS	23	Power Supply, 120 V, 50/60 Hz.

FIXED AND ZOOM LENSES FOR LOW LIGHT CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

Model	Price \$	Description
TC1805	305	2/3" format EX 5.7 mm f/1.4
TC1810	230	" " EX 8.0 mm f/1.4
TC1816	195	" " EX 16 mm f/1.4
TC1809	310	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras)
TC1812	235	" " EX 12.5 mm f/1.4
TC1824	210	" " ES 25 mm f/1.4 " "
TC1849	215	" " ES 50 mm f/1.8 " "
TC1874	270	" " ES 75 mm f/1.8 " "

ZOOM¹

Model	Price \$	Description
TC1841A	690	2/3" format 12.5-75 mm (6x) f/1.8
TC1846	1095	" " 11-110 mm (10x) f/1.6
TC1843	1700	1" format 15-180 mm (12x) f/1.9 (also usable on 2/3" cameras).

NOTES:

Prices are for lenses purchased separately, less connector.

1. For zoom lenses use V100ZF controller or a suitable control system.
2. Zoom lenses not recommended for use on TC1500 Series cameras.

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

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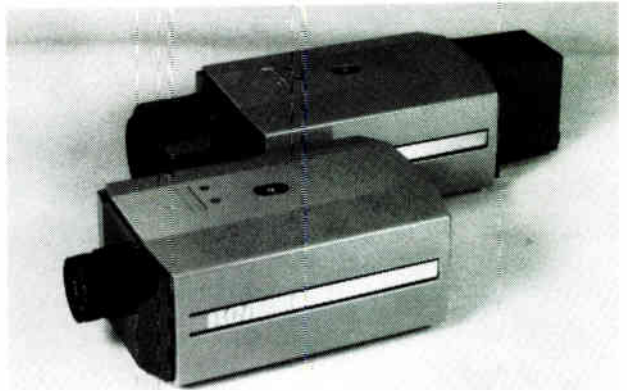
CLOSED CIRCUIT VIDEO EQUIPMENT

TC2000 STANDARD 2/3" CAMERA FAMILY

- 2/3" Magnetic Focus and Deflection Vidicon
- RS-170 Sync
- Gamma Correction-Internally Selectable
- Composite Video Output Level Control
- Automatic Beam Control (ABC)
- 2:1 Interlace, Precision Line Locked at Zero Crossover
- Accepts External Drive
- Automatic Light Control Adjustable for Peak/Average Response
- Genlock with Automatic Internal/External Switching
- Auto Track Electronic Focus
- Auto Black Plus Keyed Clamp
- 10:1 Automatic Gain Control (AGC)

STANDARD VIDICON CAMERAS

Type 8844 Separate Mesh Vidicon 400,000:1 Light Range (including 10:1 AGC).



TC2000

FIXED AND ZOOM LENSES FOR TC2000 LOW LIGHT CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications with connectors installed for ease of installation. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

Model	Price \$	Description
TC2011	290	Integral power supply, 120 V, 60 Hz, no lens. ²
TC2011/8	350	With wide angle 8 mm f/1.6 lens (no iris)
TC2011/16	308	With standard 16 mm f/1.6 lens (no iris)
TC2012	290	Integral power supply, 24 V, 60 Hz, no lens. ²
TC2012/8	350	With wide angle 8 mm f/1.6 lens (no iris)
TC2012/16	308	With standard 16 mm f/1.6 lens (no iris)
TC2021	290	Separate power supply, 120 V, 60 Hz, no lens. ²
TC2022	290	Separate power supply, 24 V, 60 Hz, no lens. ²
TC2055/C	290	12 VDC camera (10.5 - 16 VDC) crystal control, no lens.

LOW LIGHT LEVEL CAMERAS

Ultron III Camera Tube — Type 4833U (Newvicon Camera Tube ¹)
2.6 x 10⁶ Light Range with f/1.4 to f/360 Auto Iris Lens, including 10:1 AGC.

TC2011/U	790	Integral power supply, 120 V, 60 Hz. ²
TC2011/U8	1015	With 8.0 mm f/1.4 auto iris lens
TC2011/U16	980	With 16 mm f/1.4 auto iris lens
TC2012/U	790	Integral power supply, 24 V, 60 Hz. ²
TC2012/U8	1015	With 8.0 mm f/1.4 auto iris lens
TC2012/U16	980	With 16 mm f/1.4 auto iris lens

LOW LIGHT LEVEL CAMERAS

Ultron III Camera Tube — Type 4833U (Newvicon Camera Tube ¹).

TC2021/U	790	Separate power supply, 120 V, 60 Hz. ²
TC2021/U8	1015	With 8.0 mm f/1.4 auto iris lens
TC2021/U16	980	With 16 mm f/1.4 auto iris lens
TC2022/U	790	Separate power supply, 24 V, 60 Hz. ²
TC2022/U8	1015	With 8.0 mm f/1.4 auto iris lens
TC2022/U16	980	With 16 mm f/1.4 auto iris lens
12 Volt DC Models - Crystal Control Only		
TC2055/UC	790	12 VDC camera (10.5 - 16 VDC) crystal control.
TC2055/U8C	1015	With 8.0 mm f/1.4 auto iris lens
TC2055/U16C	980	With 16 mm f/1.4 auto iris lens

POWER SUPPLIES FOR CAMERAS

Model	Optional User Price \$	Description
TC2011PS	33	For TC2011 Camera. Integral format. 120 V, 60 Hz.
TC2012PS	33	For TC2012 Camera. Integral format. 24 V, 60 Hz.
TC2021PS	33	For TC2021 and TC2521 Cameras. Separate unit. 120 V, 60 Hz.
TC2022PS	33	For TC2022 and TC2522 Cameras. Separate unit. 24 V, 60 Hz.
TC2511PS	33	For TC2511 Camera. Integral format. 120 V, 60 Hz.
TC2512PS	33	For TC2512 Camera. Integral format. 24 V, 60 Hz.

Model	Price \$	Description
TC1805/D2	305	2/3" format EX 5.7 mm f/1.4.
TC1810/D2	230	" " EX 8.0 mm f/1.4.
TC1816/D2	195	" " EX 16 mm f/1.4.
TC1809/D2	310	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras)
TC1812/D2	235	" " EX 12.5 mm f/1.4
TC1824/D2	210	" " ES 25 mm f/1.4
TC1849/D2	215	" " ES 50 mm f/1.8
TC1874/D2	270	" " ES 75 mm f/1.8

ZOOM ³

TC1841A/D2	690	2/3" format 12.5-75 mm (6x) f/1.8.
TC1846/D2	1095	" " 11-110 mm (10x) f/1.6.
TC1843/D2	1700	1" format 15-180 mm (12x) f/1.9 (also usable on 2/3" cameras).

NOTES:

1. For Newvicon camera tube type 4905 (S4075) change "U" to "N" in model number and add \$10.00 to cost. Allow for extended lead time when ordering.
2. Crystal control available on Special Order. Allow for extended lead time when ordering. Add suffix "C" to model number and add \$10.00 to cost (TC2055 is crystal control only). Crystal control models do not have Line Lock feature.
3. For zoom lens use V100ZF controller or a suitable control system.

OPTIONS FOR TC2000 SERIES

Camera Identifier — TC2300 Series

Use TC2000 series model number except change second numeral to "3", i.e., TC2312/U16. Add \$60.00 Optional User Price.

CAMERA TUBES

4532/U	425	1" Ultron II (Silicon Target) for TC1005/U01 Series.
4833/U	350	2/3" Ultron III for TC2000/U and TC2500/U Series.
4848	57	2/3" standard vidicon for TC1500 Series
4875/U	375	2/3" Ultron III for TC1500/U and former TC1000/U Series.
4904	390	2/3" Newvicon for TC1500/N Series
4905	365	2/3" Newvicon for TC2000/N and TC2500/N Series.
4906	440	1" Newvicon for TC1005/N01 Series.
8541	75	1" standard vidicon for TC1005/01
8844	50	2/3" standard vidicon for TC2000 and TC2500 Series

NOTES:

1. Adjustment Code M5.

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

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(717) 397-7661

CLOSED CIRCUIT VIDEO EQUIPMENT



TC2500

TC2500 PREMIUM 2/3" CAMERA FAMILY ALL THE OUTSTANDING FEATURES AND CAPABILITY OF THE TC2000 SERIES PLUS:

- Resolution Capability to 700 Lines
- 25% Higher Sensitivity
- Better Signal-to-Noise Ratio
- AGC On/Off Switch — External
- Phase Adjustable Line Lock — External
- New Attractive Finish

STANDARD VIDICON CAMERAS

Type 8844 Separate Mesh Vidicon Light Range 500,000:1 (including 12:1 AGC).

Model	Price \$	Description
TC2511	337	Integral power supply, 120 V, 60 Hz, no lens. ²
TC2511/8	397	With wide angle 8 mm f/1.6 lens (no iris)
TC2511/16	355	With standard 16 mm f/1.6 lens (no iris)
TC2512	337	Integral power supply, 24 V, 60 Hz, no lens. ²
TC2512/8	397	With wide angle 8 mm f/1.6 lens (no iris)
TC2512/16	355	With standard 16 mm f/1.6 lens (no iris)
TC2521	337	Separate power supply, 120 V, 60 Hz, no lens. ²
TC2521/8	397	With wide angle 8 mm f/1.6 lens (no iris)
TC2521/16	355	With standard 16 mm f/1.6 lens (no iris)
TC2522	337	Separate power supply, 24 V, 60 Hz, no lens. ²
TC2522/8	397	With wide angle 8 mm f/1.6 lens (no iris)
TC2522/16	355	With standard 16 mm f/1.6 lens (no iris)

LOW LIGHT LEVEL CAMERAS

Ultricon III Camera Tube — Type 4833U (Newvicon Camera Tube ¹) 3.1 x 10⁶ :1 Light Range with f/1.4 to f/360 Auto Iris Lens.

TC2511/U	855	Integral power supply, 120 V, 60 Hz. ²
TC2511/U8	1080	With 8.0 mm f/1.4 auto iris lens
TC2511/U16	1045	With 16 mm f/1.4 auto iris lens
TC2512/U	855	Integral power supply, 24 V, 60 Hz. ²
TC2512/U8	1080	With 8.0 mm f/1.4 auto iris lens
TC2512/U16	1045	With 16 mm f/1.4 auto iris lens

LOW LIGHT LEVEL CAMERAS

Ultricon III Camera Tube — Type 4833U (Newvicon Camera Tube ¹)

TC2521/U	855	Separate power supply, 120 V, 60 Hz. ²
TC2521/U8	1080	With 8.0 mm f/1.4 auto iris lens
TC2521/U16	1045	With 16 mm f/1.4 auto iris lens
TC2522/U	855	Separate power supply, 24 V, 60 Hz. ²
TC2522/U8	1080	With 8.0 mm f/1.4 auto iris lens
TC2522/U16	1045	With 16 mm f/1.4 auto iris lens

FIXED AND ZOOM LENSES FOR TC2500 LOW LIGHT CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications with connections installed for ease of installation. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

Model	Price \$	Description
TC1805/D2	305	2/3" format EX 5.7 mm f/1.4
TC1810/D2	230	" " EX 8.0 mm f/1.4.
TC1816/D2	195	" " EX 16 mm f/1.4.
TC1809/D2	310	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras)
TC1812/D2	235	" " EX 12.5 mm f/1.4
TC1824/D2	210	" " ES 25 mm f/1.4 " "
TC1849/D2	215	" " ES 50 mm f/1.8 " "
TC1874/D2	270	" " ES 75 mm f/1.8 " "

ZOOM ³

TC1841A/D2	690	2/3" format 12.5-75 mm (6x) f/1.8
TC1846/D2	1095	" " 11-110 mm (10x) f/1.6
TC1843/D2	1700	1" format 15-180 mm (12x) f/1.9 (also usable on 2/3" cameras).

NOTES:

- TC2500 Series and Monitors may be combined to obtain the best quantity price.
1. For Newvicon camera tube type 4905 (S4075) change "U" to "N" in model number and add \$10.00 to cost.
 2. Crystal control available on Special Order. Add suffix "C" to model number and add \$10.00 to cost. Crystal control models do not have Line Lock feature.
 3. For zoom lens use V100ZF controller or a suitable control system.

OPTIONS FOR TC2500 SERIES

Camera Identifier — TC2600 Series

Use TC2500 series model number except change second numeral to "6", i.e., TC2612/U16. Add \$60.00 Optional User Price.

TC900 MINISYSTEMS

AN ECONOMICAL AND ATTRACTIVE ENTRY TO CCTV SURVEILLANCE

Available as a single package including one Video Monitor/Sequential Switcher capable of handling up to three cameras and one Mini CCTV 2/3" Vidicon Camera with a 16mm, f/1.6 lens (no iris) and a universal camera mounting bracket. Easy to install and operate. A single, user supplied, coaxial cable between the camera and monitor supplies power from the monitor to the camera and video from the camera to the monitor. Expandable.

Model	Price \$	Description
TC951	740	Basic MiniSystem. Includes Monitor/Switcher and one TC901 Camera with lens and mounting bracket. (Can handle 3 cameras.)
TC901	260	2/3" Vidicon Camera with 16 mm, f/1.6 lens (no iris) and universal camera mounting bracket. (TC1888 8 mm, f/1.6 wide angle lens (no iris) available.)
TC901N	645	2/3" Newvicon Camera with universal camera mounting bracket. Auto Iris lens required. Order separately. (8.5-16-25-50 mm lenses recommended)
TC931	285	Expansion Unit. Extends capabilities of Monitor/Switcher to handle a total of six cameras.
TC901PS	118	Power Supply, 120 V, 50/60 Hz.
TC901PSDC	118	Power Supply, 12 VDC.

TC800 VIDEO PRINTER

Instant printed copies of video pictures on your monitor or from your Video Recorder. This compact thermal printer produces positive or negative prints. It has adjustable video level and contrast and gives approximately the same resolution as a TV receiver.

TC800	595	Video Printer.
TC801	27	Paper for video printer. (Pack of 4 rolls)

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

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(717) 397-7661

CLOSED CIRCUIT VIDEO EQUIPMENT



10x Zoom Lens

TC2800



TC1400

TC2800 CCD CAMERA FAMILY

- 206, 366 Picture Elements (403 H x 512 V) for Sharp, High Resolution CCD Pictures
- High Sensitivity for Nighttime Surveillance. Usable Pictures at 0.060fc
- No Geometric Distortion for Precise Measurements and Positioning
- No Lag or Image Retention for Sharp Pictures of Moving Objects
- Reduced Blooming

Model	Price \$	Description
TC2811	1775	Integral power supply, 120 V, 60 Hz. ¹
TC2811/8	2005	With 8.0 mm f/1.4 auto iris lens
TC2811/16	1970	With 16 mm f/1.4 auto iris lens
TC2812	1775	Integral power supply, 24 V, 60 Hz. ¹
TC2812/8	2005	With 8.0 mm f/1.4 auto iris lens
TC2812/16	1970	With 16 mm f/1.4 auto iris lens
TC2821	1775	Separate power supply, 120 V, 60 Hz. ¹
TC2821/8	2005	With 8.0 mm f/1.4 auto iris lens
TC2821/16	1970	With 16 mm f/1.4 auto iris lens
TC2822	1775	Separate power supply, 24 V, 60 Hz. ¹
TC2822/8	2005	With 8.0 mm f/1.4 auto iris lens
TC2822/16	1970	With 16 mm f/1.4 auto iris lens
TC2855C	1775	12 VDC camera (10.5-16 VDC) crystal control, no lens.
TC2855/8C	2005	With 8.0 mm f/1.4 auto iris lens
TC2855/16C	1970	With 16 mm f/1.4 auto iris lens

NOTES:

1. Crystal control available on Special Order for basic cameras without lens (shown in bold type). Allow for extended lead time when ordering. Add suffix "C" to model number and add \$10.00 to cost (TC2855 is crystal control only). Crystal control models do not have Line Lock feature.

FIXED AND ZOOM LENSES FOR TC2800 CCD CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications with connectors installed for ease of installation. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

TC1805/D2	305	2/3" format EX 5.7 mm f/1.4.
TC1810/D2	230	" " EX 8.0 mm f/1.4.
TC1816/D2	195	" " EX 16 mm f/1.4.
TC1809/D2	310	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras)
TC1812/D2	235	" " EX 12.5 mm f/1.4
TC1824/D2	210	" " ES 25 mm f/1.4 " "
TC1849/D2	215	" " ES 50 mm f/1.8 " "
TC1874/D2	270	" " ES 75 mm f/1.8 " "

ZOOM³

TC1841A/D2	690	2/3" format 12.5-75 mm (6x) f/1.8
TC1846/D2	1095	" " 11-110 mm (10x) f/1.6
TC1843/D2	1700	1" format 15-180 mm (12x) f/1.9 (also usable on 2/3" cameras).

NOTE:

For zoom lens use V100ZF controller or a suitable control system.

SWITCHERS, DATE TIME GENERATOR, MOTION DETECTORS, SPLITTER/INSERTER, TRANSFORMERS

Model	Price \$	Description
TC1400	650	6 position Sequential Switcher, individually adjustable dwell time, 2 outputs. Interface for TC1460A/2 Motion Detectors.
TC1404	210	"Alarm" auto homing sequential switcher. 4 position. One output. Interface for TC1460A/2 Motion Detectors.
TC1408	620	"Alarm" auto homing sequential switcher. 8 position. One output. Cascadable to 32 positions. Interface for TC1460A/2 Motion Detector
TC1418	650	8 position, Alarm Auto homing switcher. Two bridging video outputs. Interface with TC1460A/2 Motion Detector. On screen camera identification (formerly model TC1408B).
TC1420	165	Black out unit. Blacks out peak white portions of the video signal. Recommended for use only with Ultricon. Requires customized field hook-up.
TC1440B	405	Date and Time Generator. Year, month, day, hour, minute, and second. Black outline numerals. Position, brightness and size controls front panel accessible. Crystal control and DC options available.
TC1460A/2	740	2 channel VidAlert Motion Detector for 1 or 2 cameras. Interface with TC1400 Series sequential switchers for automatic camera call up. Controls on front panel.
TC1461	315	VidAlert motion detector for one camera. Alarm beeper and LED. Switcher and alarm interfaces.
TC1461/01	425	12 VDC Single Channel VidAlert Motion Detector. Beeper and LED Alarm Indicators. Switcher and Alarm interfaces.
TC1470A	330	Splitter/Inserter. Permits simultaneous display of two cameras on one monitor and/or tape recorder.
TC1313	11	DC power cord with connectors for TC1910 monitors.
TC1320	50	20' extension cable for TC5002 Color Camera to power supply
TC1324	11	24 V, 60 Hz transformer. Provides low voltage power for one TC1500 family 24 VAC camera. Plugs into standard wall receptacle
TC1334	13	Same purpose as TC1324 except will operate one TC2000 family, one TC1005 family or two TC1500 family 24 VAC cameras.

19" RACK MOUNT HARDWARE FOR TC14XX SERIES EQUIPMENT

TC1404, TC1461 AND TC1470 ARE QUARTER-RACK SIZE (All Others Are Half-Rack Size)

TC2117/01	65	For one half-rack equipment with one half blank.
TC2117/02	65	For two half-rack equipments.
TC2117/03	65	For one quarter-rack equipment with three quarters blank.
TC2117/04	65	For one half-rack and one quarter-rack equipment with one quarter blank.
TC2117/05	65	For two quarter-rack equipments with one half blank
TC2117/06	65	For three quarter-rack equipments with one quarter blank
TC2117/07	65	For four quarter-rack equipments.
TC2117/08	65	For one half-rack and two one quarter-rack equipments

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

New Holland Avenue
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(717) 397-7661

CLOSED-CIRCUIT VIDEO EQUIPMENT



TC2912

TC2900 CCD CAMERA FAMILY - 1/2" FORMAT

FEATURES

- 206,366 picture elements (403H x 512V) for sharp, high resolution CCD pictures
- High sensitivity for nighttime surveillance. Usable picture at 0.024 fc.
- No geometric distortion for precise measurements and positioning
- No lag or image retention for sharp pictures of moving objects
- Reduced blooming

Model	Optional User Price \$	Dealer Cost \$			Description
		1-4	5-24	25+	
TC2911	3720	2495	2395	2295	Integral power supply, 120 V, 60 Hz. 1
TC2911/8	3950	2645	2545	2445	With 8.0 mm f/1.4 auto iris lens
TC2911/16	3915	2622	2522	2422	With 16 mm f/1.4 auto iris lens
TC2912	3720	2495	2395	2295	Integral power supply, 24 V, 60 Hz. 1
TC2912/8	3950	2645	2545	2445	With 8.0 mm f/1.4 auto iris lens
TC2912/16	3915	2622	2522	2422	With 16 mm f/1.4 auto iris lens
TC2921	3720	2495	2395	2295	Separate power supply, 120 V, 60 Hz. 1
TC2921/8	3950	2645	2545	2445	With 8.0 mm f/1.4 auto iris lens
TC2921/16	3915	2622	2522	2422	With 16 mm f/1.4 auto iris lens
TC2922	3720	2495	2395	2295	Separate power supply, 24 V, 60 Hz. 1
TC2922/8	3950	2645	2545	2445	With 8.0 mm f/1.4 auto iris lens
TC2922/16	3915	2622	2522	2422	With 16 mm f/1.4 auto iris lens
TC2955C	3720	2495	2395	2295	12 VDC camera (10.5-18 VDC); crystal control, no lens.
TC2955/8C	3950	2645	2545	2445	With 8.0 mm f/1.4 auto iris lens
TC2955/16C	3915	2622	2522	2422	With 16 mm f/1.4 auto iris lens

Notes: 1. Crystal control available on Special Order for basic cameras without lens (shown in bold type). Add suffix "C" to model number and add \$10 to cost (TC2955 is crystal control only). Crystal control models do not have Line Lock feature.

FIXED AND ZOOM LENSES FOR TC2900 CCD CAMERAS

Auto-iris lenses providing performance and economy for a wide range of CCTV applications with connectors installed for ease of installation. Includes built-in spot filter that extends upper range to a minimum of f/360.

FIXED

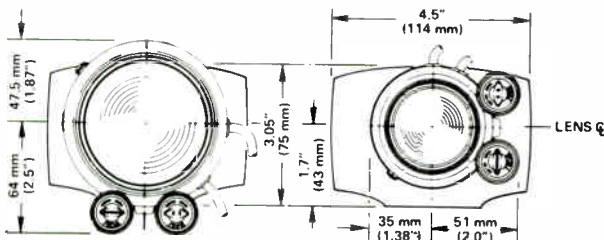
Model	305	200	200	200	Description
TC1805/D2	305	200	200	200	2/3" format EX 5.7 mm f/1.4
TC1810/D2	230	150	150	150	EX 8.0 mm f/1.4
TC1816/D2	195	127	127	127	EX 16 mm f/1.4
TC1809/D2	310	205	205	205	1" format EX 9.0 mm f/1.4 (also usable on 2/3" cameras)
TC1812/D2	235	155	155	155	EX 12.5 mm f/1.4
TC1824/D2	210	137	137	137	ES 25 mm f/1.4
TC1849/D2	215	142	142	142	ES 50 mm f/1.8
TC1874/D2	270	178	178	178	ES 75 mm f/1.8

ZOOM

Model	690	490	480	480	Description
TC1841A/D2	690	490	480	480	2/3" format 12.5-75 mm (6x) f/1.8
TC1846/D2	1095	765	765	765	11-110 mm (10x) f/1.8
TC1843/D2	1700	1190	1190	1190	1" format 15-180 mm (12x) f/1.9 (also usable on 2/3" cameras)

Notes: For zoom lens use V100ZF controller or a suitable control system.

10X AND 6X ZOOM LENS/CAMERA CROSS SECTIONS



10x

6x

Lenses may be oriented in any position with respect to camera.

SPECIFICATIONS

Imager: 1/2" CCD
Sensitivity(2856 K):

Scene Illumination*	fc	Usable Picture	Full Video
Scene Brightness*	lx	0.024	0.097
	fL	0.261	1.044
	nt	0.018	0.071
Faceplate Illum.	fc	0.060	0.242
	lx	0.0018	0.0071
		0.0190	0.0759

*f/1.2 lens, 75% highlight reflectance.
1.0 lux (lx) = 0.0929 footcandle (fc).
1.0 nit (nt) = 0.2919 foot Lambert (fL).

Resolution:

Horizontal — 403 elements (50% amplitude response at 200 TV lines/picture height). Vertical — 512 elements (Standard EIA Resolution).

Geometric Linearity: No camera distortion. Picture linearity limited by lens and monitor.

Light Range: 3.5 x 10⁶:1 with f/1.2 to T/360 auto iris lens. Includes selectable 10:1 AGC, internally adjustable for peak/average response weighting.

Automatic Lens Override (ALO): Provides camera-controlled auto-lens response independent of auto-lens setup. Eliminates AGC/Auto-Lens interaction and gives smooth, step-free response throughout light range. Compatible with all ES and EX Series Auto Iris lenses.

Signal to Noise: Better than 65dB.

Bandwidth: 3.7MHz.

Gray Scale: At least 10 steps.

Gamma Correction: Factory set for preferred response. Internally changeable from 0.5 through 1.0.

Composite Video Output: 1.0 to 1.4Vp-p. Adjustable attenuator-type control on back panel. 75 ohm.

White Clipper: Automatic. Keeps highlights within preset level to avoid monitor or VCR overdrive.

Auto Black: plus keyed clamp maintains constant pedestal setup throughout entire light range.

Sync: EIA RS-170. Phase-Locked-Loop synchronizes camera to power line zero crossing. Crystal control option available (DC and 220VAC models - Crystal Control only).

Genlock: Accepts composite sync or H&V drives at negative 4Vp-p (3 to 6Vp-p, RS-170).

External Controls: Composite Video Level, Imager Position and Lock.

Supply Voltage/Power: 12VDC models 10.5 to 16VDC. 7.2 watts nom. at 12V. 24VAC models 20 to 28V or 26 to 34V, 60 Hz. (Range Switch). 15 watts nominal at 20 or 30 volts.

120VAC models 100 to 140V, 60 Hz. 15 watts nominal at 120V.

220VAC models 198 to 264V, 50 Hz. 15 watts nominal at 220V.

Camera/Power Supply Separation: (Remote Power Supply Models) up to 100 ft. using AWG-18, Type SV, 3-conductor cable (12 ft. cable supplied).

Lens Mount: Standard "C".

Camera Mounts: Two 1/4" - 20 tapped holes in base. One 1/4" - 20 tapped hole in top.

Connectors: Genlock/Auto-Iris — 8-pin DIN.

Video — BNC.

Printed Circuit Board: Fiberglass epoxy with double-sided ground plane structure. Plated through holes.

Finish: Light beige Lexan case.

Weight: Camera (12V and Remote PS models) — 2.0 lbs. (0.9kg).

Camera/Integral Power Supply — 3.3 lbs. (1.5kg).

Remote Power Supply only 1.3 lbs. (0.6kg).

Size: Camera (12V and Remote PS models) — 3.05"H x 4.50"W x 7.10"L (75 x 114 x 180mm).

Camera/Integral Power Supply — 3.05"H x 4.50"W x 9.23"L (75 x 114 x 235mm).

Remote 24V Power Supply — 3.36"H x 2.61"W x 2.65"L (85 x 66 x 68mm).

Remote 120 or 220V Power Supply — 3.10"H x 2.53"W x 2.65"L (79 x 65 x 68mm).

12x Zoom Lens, Sup't Rail & Camera (w/o Power Supply) — 6.35"H x 5.70"W x 19.7"L (162 x 145 x 500mm).

12x Zoom Lens, Sup't Rail & Camera/Integral Power Supply — 6.35"H x 5.70"W x 21.85"L (162 x 145 x 555mm).

Environment: Temperature — 0 to 122°F (-18 to 50°C).

Humidity — 0 to 95% relative.

Vibration — 3g swept sine wave, 15 to 2000 Hz.

Shock — 50g.

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

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CLOSED CIRCUIT VIDEO EQUIPMENT

TRANSCOAX CONTROL SYSTEM TC4500 SERIES

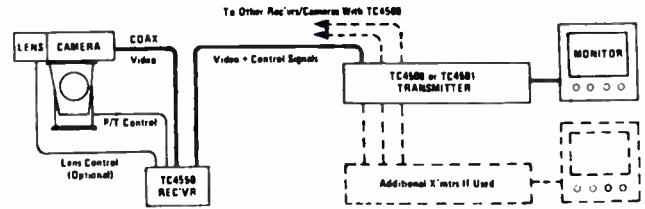
The TC4500 Series, TransCoax, Control System provides control of camera functions at distant sites via the coaxial video cable. It thus eliminates the necessity and expense of separate control wiring to camera sites. The system consists of control Transmitters at one or more locations and Receivers at the site of each camera to be controlled. The control transmitters insert encoded control signals on the video cable during the retrace time and send these signals to the on-site receiver where they are decoded and used to implement the various control functions. The eight-camera transmitter, TC4508, with a built-in vertical interval switcher, can be used to control up to eight cameras. A one-camera transmitter, TC4501, is available for controlling a single camera or it can be used in conjunction with V1400S Series manual switchers to control multiple cameras. The transmitters may be used in series to control cameras from multiple locations. A lock-out switch with a "busy" light eliminates conflicting control signals in such multi-control systems.

Complete Site Control

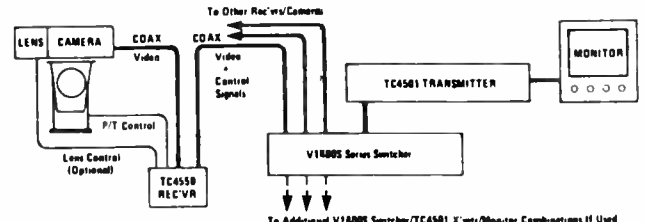
- Pan, tilt, and auto-pan for 24 VAC, 115 VAC and 115 VDC pan/tilts.
- Zoom, focus, and iris control with variable speed.
- Two momentary switches for control of intermittent auxiliaries.
- Two On/Off switches for control of latching auxiliaries. (One required for auto-pan implementation)

Easy to Use

- Just connect to existing or new video cabling and to a power source
- 2:1 or random interlace operation, monochrome or color.
- Vertical interval switcher in 8-camera transmitter for roll-free pictures and clean VCR recordings.
- "Back-porch" video clamping for hum and noise rejection.
- Weatherproof NEMA on-site receiver enclosure.
- Sealed "MS" style receiver connectors.



WITH TC4508 FOR 2 TO 8 CAMERAS - OR TC4501 FOR 1 CAMERA



WITH TC4501 and V1400S SERIES SWITCHER FOR MULTIPLE CAMERAS

Specifications

TC4508, TC4508X Eight-Camera Control Transmitters

Use to control one to eight cameras

Switching Vertical interval

Controls:

- Camera Selection - 8 "illuminated on" pushbuttons.
- Pan/Tilt - Joystick.
- Zoom In/Out - two position lever switch.
- Focus Near/Far - two position lever switch.
- Iris Open/Close - two position lever switch.
- Lens Control Speed - Slow to Fast rotary knob.
- Latching Auxiliary #1 On/Off - two position lever switch.
- Latching Auxiliary #2 On/Off - two position lever switch.
- Momentary Auxiliaries #3 & #4 - two position lever switch (Aux #3 - Up, Aux #4 - Down).
- On/Off - rocker switch. LED "On" indicator.
- Channel Lock/Unlock - rocker switch. LED "Busy" indicator.
- *Selectable at each receiver to control Auto-Pan.

Latching Auxiliary "On" Indicator - LED (selectable at each receiver for status of either Aux #1 or Aux #2).

Video Input (Hi Z, loop-through):

- 115 V Models - 525 line, 30 field, NTSC.
- 230 V Models - 625 line, 25 field, CCIR.

Video Output 1.0 V p-p composite video.

Operating Distance:

- With low loss RG-59/U type cable (Belden #9259 or equiv.) - 2000 ft. (600 m).
- With low loss RG-11/U type cable (Belden #9292 or equiv.) - 4000 ft. (1200 m).

Connectors:

- Video Input - 16 BNC (2 per camera for loop-through).
- Video Output - 1 BNC.
- Power - 3-wire cord supplied.

Supply Voltage:

- 115 V Models - 115 V, 60 Hz. (100 to 130 V).
- 230 V Models - 230 V, 50 Hz. (200 to 260 V).

Power 4 watts approx.

Size:

- Table Top 1.81" H x 17" W x 9.5" D (46 x 432 x 241 mm).
- Racked* 1.75" H x 19" W x 9.5" D (44 x 483 x 241 mm).

*Order Rack Kit TC4501MK

Weight 9 lbs. (4 kg) approx

Ambient Operating Temperature -20 to +120° F (-29 to +49°C).

TC4501, TC4501X

Single Camera Control Transmitters

Use to control one camera - or, with a V1400S Series Manual Switcher, to control multiple cameras.

Same as TC4508 Eight-Camera Control Transmitters except do not include the vertical interval switcher or the camera selection pushbuttons and have only two BNC video-in connectors for loop-through of a single input.

TC4550, TC4550X Receivers

One required at each camera site to be controlled.

Controls "On/Off" toggle switch.

Signal Input 1.0 V p-p composite video, Hi Z loop-through (100 K ohm approx.)

Pan/Tilt Output:

- Internal Selections - 24 VAC, 115 VAC, 115 VDC.
- Max. Current - 2 amps continuous, 4 amps intermittent.
- Auto Pan - Internally selectable constant pan voltage.

Lens Outputs:

- Zoom, Focus, Iris - 7 VDC (adjustable with "speed" control) (1 V p-p, composite video & 12 VDC available for auto-iris).

Connectors:

- Video - 2 UHF for loop-through.
- Pan/Tilt - one 7-pin sealed "MS" style. Mating connector supplied.
- Lens - one 6-pin sealed "MS" style. Mating connector supplied.
- Auxiliaries - Internal barrier strips. (Customer to supply and install connectors).

Relay Contact Rating:

- Auxiliaries #1 & #2 (Latching) - 5.0 amps at 115 V.
- Auxiliaries #3 & #4 (Momentary) - 0.5 amps at 115 V.

Supply Voltage:

- TC4550 - 115 V, 60 Hz. (100 to 130 V).
- TC4550X - 230 V, 50 Hz. (200 to 260 V).

Power 8 watts approx. - plus pan/tilt power.

Construction Weatherproof NEMA enclosure.

Size 10" H x 8" W x 3.3" D (254 x 203 x 84 mm).

Weight 10 lbs. (4.5 kg) approx.

Ambient Operating Temperature -20 to +120° F (-29 to +49°C)

Practical

"Up-the-Video-Cable" Control for CCTV Surveillance Systems

Eliminates Costly Control Wiring

Single or Multiple Control Stations

TC4501 Single Channel TransCoax Transmitter	\$595.00
TC4501MK Transmitter Rack Kit	75.00
TC4508 Eight Channel TransCoax Transmitter	765.00
TC4550 TransCoax Receiver (One required per camera)	630.00

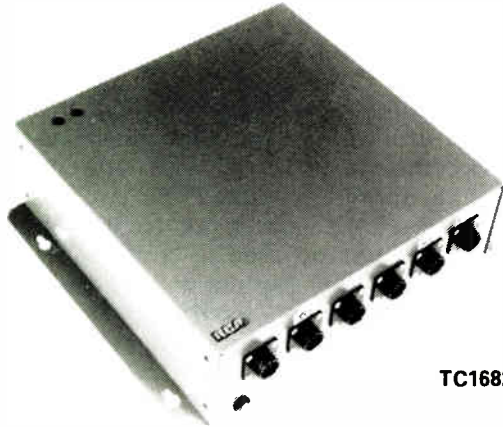
Prices and Specifications Subject to Change Without Notice.

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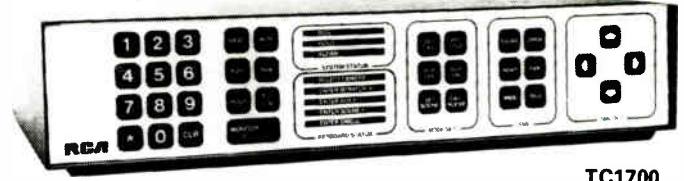
RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

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CLOSED CIRCUIT VIDEO EQUIPMENT



TC1682



TC1700

TC1700 SWITCHER/CONTROLLER — MICROPROCESSOR BASED TWISTED PAIR WIRING — LOW COST SYSTEM

- Up to 32 Cameras — 4 Monitors
- Complete Control of Pan/Tilt, Zoom Lens and Auxiliary Function in Multiple Camera Systems
- Automatic Sequential or Manual Switching
- Date/Time, Camera Ident and Title On-Screen
- Alarm Interface and Audio Follower Options

Model	Price \$	Description
TC1701/162	2765	CPU/Switcher/Controller in one unit. Integral keyboard. Up to 16 cameras x 2 monitors. Desk top.* Can be used with separate keyboards listed under associated equipment.
TC1701/164	3370	Same as TC1601/162 except up to 16 cameras x 4 monitors.
TC1701/322	3370	Same as TC1601/162 except up to 32 cameras x 2 monitors.
TC1701/324	3875	Same as TC1601/162 except up to 32 cameras x 4 monitors.
TC1701/MM	605	Module for expansion from 2 to 4 monitors.
TC1701/CM	525	Module for expansion from 16 to 32 cameras.

TC1600 SERIES — CCTV CONTROL SYSTEM MICROPROCESSOR BASED — TWISTED PAIR WIRING

- Excellent for Control of Multi-Camera Systems
- Basic System — Up to 64 Cameras — 8 Monitor Stations
- Automatic Sequential or Manual Switching
- Small Keyboard Controllers, Desktop or Rack Mount
- Date and Time, Camera Number and Title "On-Screen"
- Complete Control of Pan/Tilt, Zoom Lens and Auxiliary Functions
- Alarm Interface and Audio Follower Options

NOTE:
Control systems for larger installations are available (up to 256 cameras, 32 monitors). Consult CCVE Marketing.

ASSOCIATED EQUIPMENT FOR TC1700 SWITCHER/CONTROLLER SYSTEMS

TC1631	650	Switcher Follower - 32 Relay Closures. Useable in a 1x32 or a 2x16 configuration. Units cascaded for additional closures.
TC1635	2375	Master Clock - Synchronizes Date/Time Displays in Expanded TC1600 Systems.
TC1671	465	Keyboard - Desktop - Single Monitor Control.
TC1671/8	635	Keyboard - Desktop with switch for 8 Monitor Control.
TC1672	515	Keyboard - Desktop with switch for 2 Monitor Control.
TC1678B	1950	Keyboard - Desktop* for TC1600, TC1700 and TC1990 Systems for multi Camera/Monitor Control - LED Readout.
TC1678BE	1950	Keyboard - Desktop Executive - No Pan/Tilt or Lens Control.
TC1680	1225	Receiver/Driver - Outdoor. 120 V Pan/Tilt. Optional heater - \$40 Dealer Cost (Add suffix "H" to Model No.). Up to 3 momentary or latching auxiliaries - \$40 each Dealer Cost (Add suffix "M" or "L" and 1, 2, or 3). Also specify auxiliary output as 24 V, 120 V, or contact closure, i.e., TC1680HM1L2 (M is CC, L's are 24 & 120 V).
TC1680N	1135	Same as TC1680, mounted on metal plate with no housing.
TC1681	985	Same as TC1680 but for 24 V Pan/Tilt.
TC1681N	875	Same as TC1681, mounted on metal plate with no housing.
TC1682	925	Receiver/Driver. Indoor. 24 V Pan/Tilt. Up to 3 momentary or latching auxiliaries, 24 VAC only. - \$40 each Dealer Cost (Add suffix "M" or "L" and 1, 2, or 3), i.e., TC1682M2L1.
TC1685P	440	Preposition Card for TC1680, TC1681 and TC1682 Receivers.
TC1689/8	3615	Multi Receiver/Driver for up to 8 cameras. Indoor 24 V Pan/Tilt. No auxiliaries. Surface mount.**
TC1689/6	3615	Receiver/Driver for up to 6 cameras. Indoor 24 V Pan/Tilt. Eight auxiliaries with 24 V output. Surface mount.**
TC1689/4	3615	Multi Receiver/Driver for up to 4 cameras. Indoor 24 V Pan/Tilt. Sixteen auxiliaries with 24 VAC output. Surface mount.**
TC1689/0	3615	Multi Receiver - 32 auxiliaries only. 24 VAC output. Surface mount.**
TC1689P	645	Preposition Card for TC1689 Receiver/Driver (10 positions).
TC1691	415	Distribution Unit. Required where control cable exceeds 5000 ft. or 3 Receiver/Drivers in "Star or Daisy Chain" for TC1600 systems or 8 for TC1990 systems. Surface mount.
TC1695	675	Alarm Interface Unit for TC1600 and TC1700 Systems. 64 switch closure inputs (for switch "open" inputs add suffix "C" to model number).
TC1696	675	Same as TC1695 but for use with TC1990 series systems.

*For Rack Mount add \$50.00 Dealer Cost.

**For Rack Mounting add suffix "R" to Model No. — same price.

SPECIAL CORNER MOUNT HOUSING AND LENS FOR RESTRICTED SPACE SUCH AS ELEVATORS

TC2070HL	575	Corner Mount Housing for TC2021, TC2022, TC2521 or TC2522 Camera. Includes 4.8 mm wide angle lens. Purchase camera separately.
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Model	Price \$	Description
SYSTEM CENTRAL PROCESSING UNIT (CPU)		
TC1601/3*	2380	Central Processing Unit (CPU) complete with Power Supply Module and Processing Module. Tabletop. For use with TC1671 and/or TC1672 keyboards. (Up to eight monitor stations)
TC1601/7*	2380	Same as TC1601/3 except for use with up to 4 TC1678 keyboards. (Also permits use of up to 4 additional TC1671/TC1672 keyboards.)
SYSTEM COMPONENTS		
TC1602*	680	System Expansion Unit (SEU) with Interconnect Cable. Tabletop.
TC1603	675	Spare Power Supply Module (PSM) for CPU
TC1604/3	1335	Spare Processing Module (CPM) for CPU TC1601/3
TC1604/7	1335	Spare Processing Module (CPM) for CPU TC1601/7
TC1611	455	Video Input Module (8 Inputs) (VIM)
TC1621	515	Video Output Module - Single Monitor (VOM-1)
TC1622	915	Video Output Module - Dual Monitor (VOM-2)
TC1631	650	Switcher Follower Unit (SFU). Up to 32 inputs and one output, or 16 inputs and two outputs. Surface mount
TC1671	480	Keyboard Control Unit - Desktop. Single monitor station control (KCU-1).
TC1672	520	Keyboard Control Unit - Desktop. Two monitor station control (KCU-2).
TC1678*	2000	Keyboard Control Unit - Desktop. Up to 256 camera/32 monitor control with pre-position and alarm interface (KCU-8)
TC1678/1	2180	RS232 Transmitting Keyboard.
TC1678/2	2180	RS232 Receiving Keyboard
TC1679	2040	RS232 Receiver only
TC1680	1200	On-Site Receiver/Driver (SRO-1) Outdoor for 120 V Pan/Tilt. Optional heater (add \$40 Dealer Cost). Up to 3 momentary or latching auxiliary functions (add \$40 each Dealer Cost).
TC1680P	1665	Same as TC1680 but includes pre-position option. Use with pre-position lens and pan/tilt
TC1680NH	1105	Same as TC1680, mounted on steel plate with no housing.
TC1680PC	785	Replacement PC board only for TC1680
TC1681	995	Same as TC1680 but for 24 V Pan/Tilt (SRO-2) Auxiliaries \$15 each.
TC1681NH	905	Same as TC1681, mounted on steel plate with no housing.
TC1681PC	785	Replacement PC board only for TC1681
TC1682	960	On-Site Receiver/Driver (SRI) Indoor for 24 V Pan/Tilt. Up to 3 momentary or latching auxiliaries (add \$15 each Dealer Cost)
TC1682P	1410	Same as TC1682 but includes pre-position option. Use with pre-position lens and pan/tilt
TC1682PC	755	Replacement PC board only for TC1682
TC1685PC	455	Replacement PC board for pre-position option in Receiver/Drivers
TC1688	770	Modular Receiver/Driver for up to 8 cameras, hard wired. Requires TC1688CM modules. Indoor 24 V Pan/Tilt
TC1688CM	530	Output module for TC1688. One per camera site. Wired into TC1688
TC1691	415	Signal Distribution Unit (SDU) Required where signal control cable exceeds 5000 ft. or 3 Receiver/Drivers in "Star or Daisy Chain" configuration. Surface mount
TC1691PC	335	Replacement PC board only for TC1691
TC1695	750	Alarm Interface Unit (AIU) Up to 64 closure inputs. Surface mount

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CLOSED CIRCUIT VIDEO EQUIPMENT



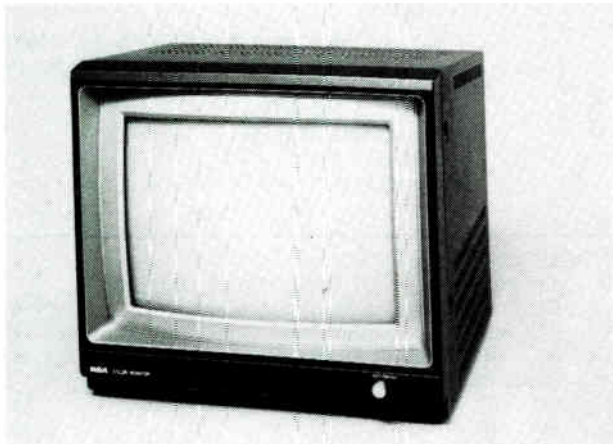
TC5002

CAMERAS FOR SPECIAL APPLICATIONS COLOR CCTV FOR SURVEILLANCE APPLICATIONS

Color Camera, Single Newvicon Tube, RS-170 Sync, 2:1 Interlace, High Sensitivity

Model	Price \$	Description
TC5002	1020	120 V, 60 Hz separate power supply included.
TC5002/8	1250	With 8.0 mm f/1.4 auto-iris lens
TC5002/12	1255	With 12.5 mm f/1.4 auto-iris lens
TC5002/16	1215	With 16 mm f/1.4 auto-iris lens
TC5002/24	1230	With 25 mm f/1.4 auto-iris lens
TC5002/49	1240	With 50 mm f/1.8 auto-iris lens
TC5002/74	1290	With 75 mm f/1.8 auto-iris lens
TC5002/Z6	1730	With 12.5-75 mm (6x) f/1.8 auto-iris zoom lens
TC5002/Z0	2135	With 11-110 mm (10x) f/1.6 auto-iris zoom lens

NOTE:
20 ft. Camera to Power Supply Extension Cable. TC1320, available.



TC5510AU

MONITOR — COLOR

TC5510AU	315	10 inch. Front operating controls. Built-in audio.
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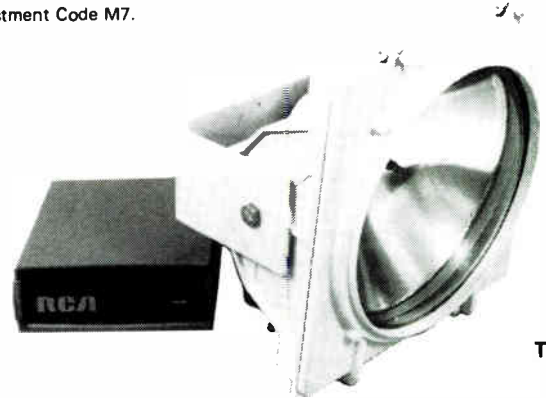
TC3800

TIME LAPSE VIDEO RECORDERS — 1/2" CASSETTE TYPE

Use 1/2" VHS Video Cassettes, Built-in Date/Time Generator
Microprocessor Based Touchbutton Operation, Automatic High Speed
Alarm Recording, Single-Field Playback.

Model	Price \$	Description
TC3800M ¹	3595	Deluxe 10 speed - two user programmable speeds to 999 hours. Real time to over 40 days 7-day, multiple on/off program timer.
TC3800C ¹	3595	NTSC color version of TC3800M.
TC3801RC	65	Remote control for TC3800's.
TC3700 ¹	2395	Standard 10 speed. Real time to 480 hours. All basic time lapse features.
TC3701RC	65	Remote control for TC3700's.
TC1350	185	VHS Video Cassette (VK250) for above VCR's.

NOTE:
1. Adjustment Code M7.



TC4200

TC4200 VIDCOLINK III MICROWAVE TRANSMISSION SYSTEM

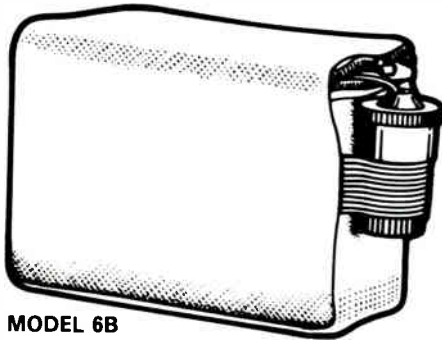
Simultaneous, single-path communications of video plus audio or camera control signals over short or medium distances.

TC4211H	5950	Simplex Video, frequency 23.525.
TC4211L	5950	Simplex Video, frequency 22.325.
TC4211S	5950	Simplex Video, special frequency to be supplied by customer.
TC4212H	8450	Simplex Video with wideband reverse audio subcarrier, frequency 23.525, for use with TC1600, TC1700 and TC1990 series systems.
TC4212L	8450	Simplex Video with wideband reverse audio subcarrier, frequency 22.325, for use with TC1600, TC1700 and TC1990 series systems.
TC4212S	8450	Simplex Video with wideband reverse audio subcarrier, special frequency to be supplied by customer for use with TC1600, TC1700 and TC1990 series systems.
TC4213H	8950	Simplex Video with duplex audio subcarriers, frequency 23.525.
TC4213L	8950	Simplex Video with duplex audio subcarriers, frequency 22.325.
TC4213S	8950	Simplex Video with duplex audio subcarriers, special frequency to be supplied by customer.

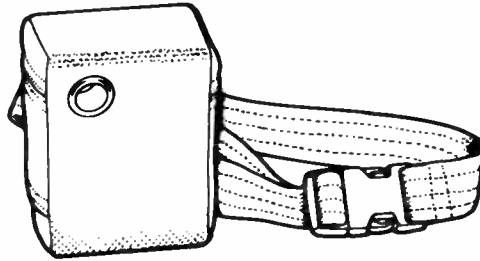
RED LINE™

Research Laboratories, Inc.
 4055 Guasti Rd. Suite 110
 Ontario, CA 91761
 (714) 986-7600 (800) 447-7225 "HIP-PACK"

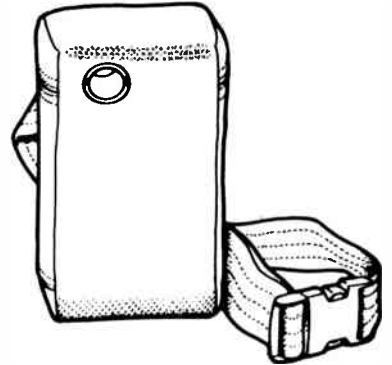
BATTERY PACKS



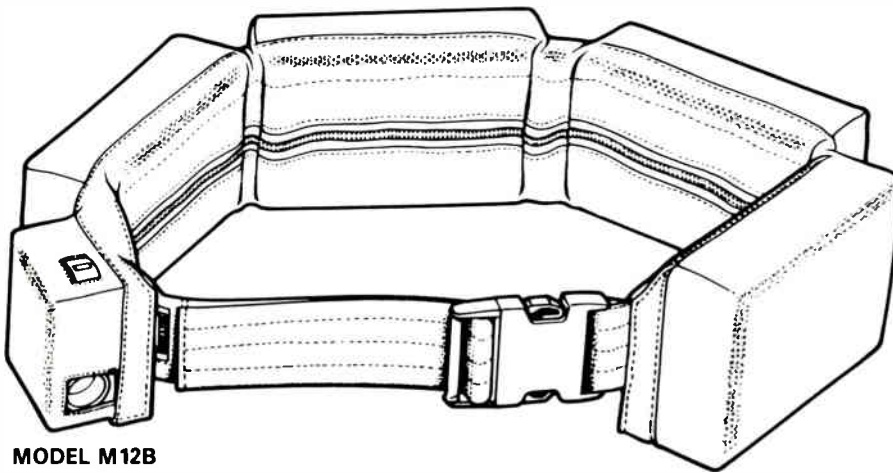
MODEL 6B
 12 Volt, 6 Amp Hour Battery
 Record up to 5 Hours
 Short Circuit Protection
 Universal Power Receptacle
 6.5 Watt Charger
 Comfortable Hip Pack Design



MODEL NC48
 12 Volt, 4.8 Amp Hour Nickel Cadmium Battery
 4-8 Hour Operation, up to 1500 Recharges
 Exclusive Power-Lock™ Receptacle
 Short Circuit Protection
 Belt and Shoulder Strap
 Deluxe NiCad Charger
 Quick Release Buckle
 Padded Cordura Nylon Case

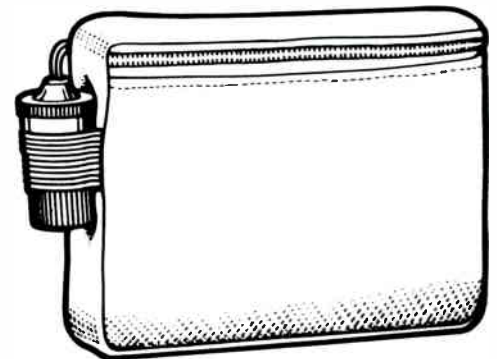


MODEL 6E
 12 Volt, 6 Amp Hour Battery
 Record up to 5 Hours
 Exclusive Power-Lock™ Receptacle
 Short Circuit Protection
 Belt and Shoulder Strap
 6.5 Watt Charger
 Quick Release Buckle
 Padded Cordura Nylon Case



MODEL M12B
 12 Volt, 12 Amp Hour Battery Pack
 Built-in Meter Short Circuit Protection
 Dual Harness Construction
 Quick Release Buckle
 Padded Cordura Nylon Case

* M12B Operating Times: 100 Watt Light, 50 min. Continuous. VCR & Camera (Panasonic 6600), 10 hrs. Continuous. Times may vary with equipment used. May be more with intermittent use or less with extensive use.



MODEL 48B
 12 Volt, 4.8 Amp Hour Nickel Cadmium Battery
 4-8 Hour Operation with up to 1500 Recharges
 Deluxe NiCad Charger
 Short Circuit Protection
 Universal Power Receptacle
 Thin Profile Case
 Comfortable Hip Pack Design

SEALED LEAD ACID BATTERIES

6B	12V, 6AH Hip Pack	\$ 59.95
6E	12V, 6AH Hip or Shoulder Pack	79.95
M12B	12V, 12AH Metered Belt Pack	199.95
M17B	12V, 17AH Metered Belt Pack	249.95

NICKEL CADMIUM BATTERIES

48B	12V, 4AH Hip Pack	\$139.95
NC48	12V, 4AH Hip or Shoulder Pack	159.95
714B	12V, 7AH Hip Pack	199.95

BATTERY ACCESSORY PRODUCTS

WB48	48 Inch Belt	\$ 4.95
WB60	60 Inch Belt	4.95
CH6	Charger for 6B and 6E	12.95
CH12	Charger for M12B and M17B	19.95
CH48	Charger for 48B and NC48	16.95
CH714	Charger for 714B	17.95
CH220	European Charger	29.95
DD15-S	Voltage Level Indicator	29.95

PORTABLE VCR POWER CABLES

RL1	Panasonic 5500-6600, Canon, Nikon, Olympus, GE, Philco, Sylvania, Magnavox, Quasar 5420	\$14.95
RL2	RCA 900, Hitachi VT7P	14.95
RL3	RCA 170, Hitachi 6500, 6800 Minolta	14.95
RL4	Panasonic 8410, 3000, 4000, Quasar 5410, GE, Magnavox 8377, Sylvania VC4515, Philco V1715	14.95
RL5	JVC HR2200U	14.95
RL6	JVC HR2650U	14.95
RL8	Canon 30A, GE5022, 5024, 5026, 5028, J.C. Penney 5110, 5115, Magnavox 8474, 8475, Olympus 105, 106, Panasonic 5800, 8100, 8484, 8485, 8500, 9600, Philco 1728, Quasar 5440, 5442, 5740, 5747, Sylvania 4525, 4540	\$24.95
RL10	Y-Connector	14.95

VIDEO CHECKER PRODUCTS

CBC	Color Bar and Grey Scale Chart	\$12.00
RSL	Resolution and Linearity Chart	12.00
SLT	Production Organizer	12.00
TTL	Title and Graphic Kit	12.00

SACHTLER CORP. OF AMERICA

400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0033 Telex 140107

CAMERA SUPPORT EQUIPMENT

VIDEO 14 SYSTEM

Video 14 Fluid Head

With 3 step dial-in drag adjustment, plus free-wheeling for pan and tilt, sliding quick-release wedge plate (1/4" + 3/8" screws) for center-of-gravity compensation, built-in counter balance spring, tilt ± 60°, two adjustable pan arms, tripod interface: flat base for Video 14 pedestal/75mm bowl tripod.

Video 14 Pedestal

Tripod with pneumatically supported center column, range 15.75" (400mm).

Video 14 Tripod

75mm bowl levelling, black anodized aluminum.

Video 14 Rolling Triangle

For pedestal and 75mm bowl tripod.

Video 14 Triangle

For 75mm bowl tripod.

SPECIFICATIONS

Video 14 Fluid Head

Capacity 17.6 lbs.
Counterbalancing see diagram
Pan 360°
Tilt + 60°-60°
Drag 3 steps pan + tilt, free wheeling
Pan arms 0.7", 18" long, adjustable
Temperature range - 40°F to + 140°F
Camera interface touch & go wedge-plate with
Center of Gravity compensation
Tripod interface flat base 3/8"/3" ø bowl levelling
Weight 4.8 lbs. with two pan arms

Pedestal

Pneumatic Center Column
Range 15.7"
Maximum load 22 lbs.
Air pressure adjustable up to 5 bars

Video 14 Fluid Head with Pedestal

Operational range:
on rolling triangle height: min. 42"-max. 84.5"
Overall dimensions when
folded for transport length 35.8", ø 7.5"
Weight of Pedestal 11 lbs.

Rolling Triangle

Dimensions when folded
for transport 27.5 x 7 x 6.3"
Wheels ø 3.15"
Weight 9.7 lbs.

Lightweight Tripod

Bowl levelling ø 2.952"
Height min. 29.5"-max. 61.2"
Weight 4.4 lbs.

	Code #	Price
Video 14 Fluid Head	0525	\$ 920.00
Video 14 Pedestal	4190	1025.00
Video 14 Tripod (Long)	4182	265.00
Video 14 Tripod (Medium)	4151	244.00
Video 14 Rolling Triangle	7053	225.00
Video 14 Triangle	7001	95.00



VIDEO 14
FLUID HEAD



VIDEO 14
PEDESTAL



VIDEO 14
ROLLING TRIANGLE



VIDEO 14
TRIANGLE



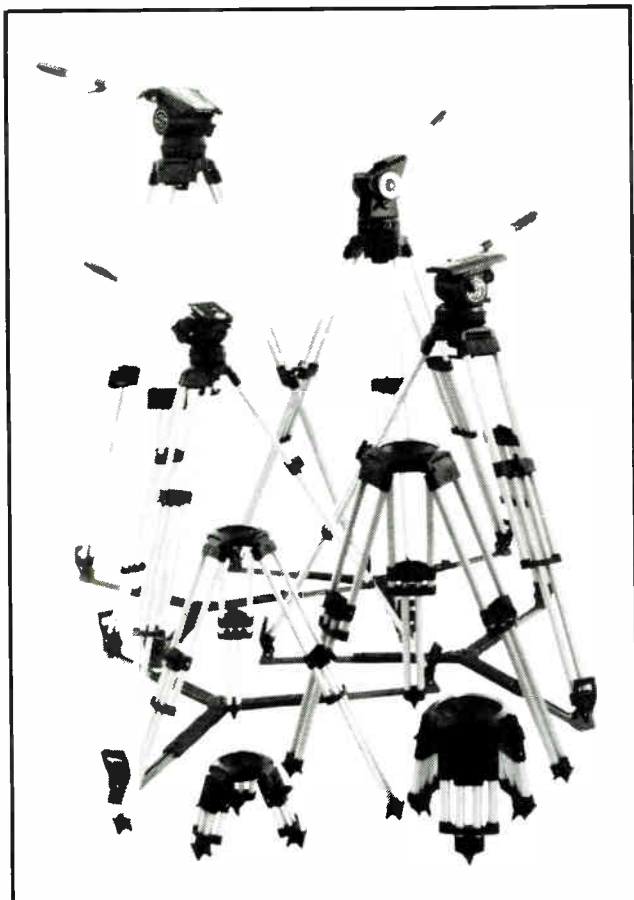
VIDEO 14
TRIPOD

Not Shown:	Code	Price
Transport Cover		
For Video 14 fluid head and pedestal	9204	\$180.00
For Video 14 fluid head, tripod and triangle	9200	160.00
Carrying Bag		
For Video 14 fluid head, tripod 75mm bowl, triangle	9101	85.00
Components		
Included in unit prices above		
When ordered separately or in addition:		
Air Pump	4190-26	8.50
Touch and go sliding wedge plate	0156	42.50
Pan Arm	1075	90.00

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Hauppauge, NY 11788
(516) 231-0033 Telex 140107

TRIPODS AND ACCESSORIES



TRIPODS

Sachtler Triangle

A triangle for slippery or delicate floors. Made of various rubber and polyamid parts, it is light, robust and unbreakable. Rubber pull loops attach it to the tripod. For transport the triangle is folded inwards and is stored together with the tripod in the container.

Sachtler Triangle From \$250.00

Sachtler Semi-Dolly

A lightweight, rolling triangle with independent brakes for the rolling and spinning action of the wheels; for clean straight and defined circular drives.

The wheels have cable guards which are adjustable in height. The Semi-Dolly folds to a minimum in volume and has a handy grip to ease transport.

Sachtler Semi-Dolly \$795.00

Sachtler Tripods

Sachtler tripods are extremely lightweight, robust and twistfree with 100mm resp. 150mm bowl leveling.

Height clamping of legs requires little effort with the fast and secure ball-ring clamp. The pre-set end pressure point of this clamp prevents damage by over-tightening. Double claws are provided for using the tripod with the triangle or rolling triangle.

Stainless steel spikes provide rigid standing on soft ground. For the weight minded traveling cameraman the 100mm bowl tripod is available with carbon-fibre legs, saving 2.8 kgs in weight, when using it with the lightweight triangle the saving is 4.2 kgs.

	SPECIFICATIONS 100mm Bowl For Panorama and Video 20	SPECIFICATIONS 150mm Bowl For Video 25-30
Tripod long		
Height at 50cm spread	26.8" - 54" (68 - 137cm)	32.7" - 60.6" (83 - 154cm)
Length collapsed	32.5" (82.5cm)	36.2" (92cm)
Weight Duraluminium	6.2 lbs (2800 g)	10.8 lbs (4900 g)
Duraluminium h.d.	9.1 lbs (4150 g)	
Inox	10.5 lbs (4750 g)	
Carbon-fibre	5.1 lbs (2300 g)	
Tripod medium long		
Height at 50cm spread	26.8" - 54" (68 - 137cm)	
Length collapsed	32.5" (82.5cm)	
Weight Duraluminium	10.0 lbs (4550 g)	
Tripod medium		
Height at 50cm spread	15.7" - 29.5" (40 - 75cm)	20.5" - 33.5" (52 - 85cm)
Length collapsed	19.9" (50.5cm)	22.4" (57cm)
Weight Duraluminium	4.7 lbs (2150 g)	8.3 lbs (3750 g)
Inox	5.8 lbs (2650 g)	
Tripod short		
Height at 15cm spread	7.3" (18.5cm)	11.8" (30cm)
Length collapsed	8.5" (21.5cm)	12.6" (32cm)
Weight Duraluminium	3.3 lbs (1500 g)	6.6 lbs (3000 g)

Sachtler Containers

For Panorama, Video 20 and Video 25 the container offers effective protection for the complete unit — head, tripod, triangle — during transport and storage. For Video 30 a separate case for the head and a container for the tripod with triangle are available

Sachtler Containers **POR**

Sachtler Shoulder Brace

The shoulder brace is easily adjustable for body shape and type of camera. The touch & go quick-release-system permits speedy change of camera between tripod and shoulder brace. For transport it is collapsible, its weight is 1.1 kg.

Sachtler Shoulder Brace **\$712.00**

THE ACTION TRIPOD FOR NEWS CREWS ON THE GO!

The Hot Pod

- Locked when folded, handy grip
- Central lock for easy set-up
- Self-locking lever for camera leveling
- Self-locking center column for increased rise and height



For ENG-Cameras

The Sachtler Hot Pod with the Sachtler Panorama head. Minimal height (up to wedge plate) — 940mm; Legs fully extended — 1432mm; Max. height — 1892mm.

For Recording-Cameras

The Sachtler Hot Pod with the Sachtler Video 20. Minimal height (up to wedge plate) — 957mm; Legs fully extended — 1449mm; Max height — 1909mm.

Volume, for Transport and Storage

Hot Pod with Panorama: Full length — 1003mm, ø 195mm; Hot Pod with Video 20: Full length — 1020mm, ø 240mm

The Hot Pod **POR**

SACHTLER CORP. OF AMERICA

400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0033 Telex 140107

HEADS



VIDEO 30

EFP

The utmost in comfort for EFP:

Sachtler Video 30

For studio and field production using the new generation of easy-to-carry cameras.

Sliding camera platform to compensate for center of gravity displacements.

Dynamic Counterbalancing System (pat. pend.)

Balancing momentum adjustable in 7 steps by means of 3 toggle levers for camera weight and center of gravity height and to easily re-balance the camera when changing lenses and/or viewfinder-monitors.

Tilt range +/-60°.

Drag individually adjustable in 7 steps for pan and tilt. As an option, a lens-support fitting the sliding camera platform can be made available. The supporting device is adjustable to meet different camera/lens combinations. Support is effected by a spring loaded bracket, compensating for the extra load of narrow-angle zoom lenses, not affecting lens-prism-tube alignment.

Camera Interface

Heavy-duty touch & go system or Debrie wedge plate

Tripod Interface

150 mm bowl, Mitchell intermediate

Specifications

- Capacity: 40 kgs • Counterbalancing momentum • Pan: 360°
- Tilt: +/-60° • Damping: 7 steps for pan and tilt each • Pan arm O: 18 mm, extension 22 mm • Temperature range: -40° to +60° C
- Camera interface: heavy duty touch and go or Debrie wedge-plate
- Tripod interface: 150 mm bowl • Sliding platform: +/-50 mm
- Weight: 9 kgs • Finish: black enamel

Video 30HP

Same as Video 30S but with Vinten interface

\$5650.00

Video 30S

Same as Video 30, but with heavy-duty, 7 position dynamic counterbalancing system, tilt range ± 60°

\$5376.00



VIDEO 25

ENG/EFP

The doing everything:

Sachtler Video 25

A medium sized ENG/EFP fluid head optimized for on location shooting combining the stability and pan and tilt comfort previously offered only by significantly larger and heavier camera supporting systems.

Sliding camera platform to compensate for center of gravity displacements.

Dynamic Counterbalancing System (pat. pend.)

Balancing momentum adjustable in 4 steps by means of 2 toggle levers for camera weight and center of gravity height and to easily re-balance the camera when changing lenses and/or viewfinder monitors.

Tilt range +/-60°.

Drag individually adjustable in 7 steps for pan and tilt. Positive operational pan and tilt lock plus safety lock for keeping the camera in horizontal position.

As an option, a lens-support fitting the sliding camera platform can be made available. The supporting device is adjustable to meet different camera/lens combinations. Support is effected by a spring loaded bracket, compensating for the extra load of narrow-angle zoom lenses, not affecting lens-prism-tube alignment.

Camera Interface

Touch & go system to ease alternative use of camera on tripod or shoulder brace.

Tripod Interface

150 mm bowl, Mitchell intermediate

Specifications

- Capacity: 25 kgs • Counterbalancing momentum • Pan: 360°
- Tilt: +/-60° • Damping: 7 steps for pan and tilt each • Pan arm O: 18 mm, extension 22 mm • Temperature range: -40° to +60° C
- Camera interface: small touch and go wedge-plate • Tripod interface: 150 mm bowl • Sliding platform: +/-50 mm • Weight: 6.5 kgs • Finish: black enamel

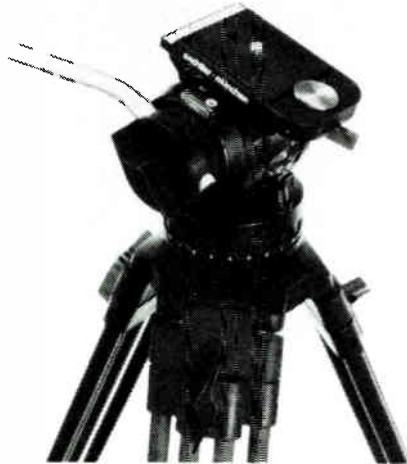
Video 25

\$4279.00

SACHTLER CORP. OF AMERICA

400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0033 Telex 140107

HEADS



7 + 7

ENG

For the travelling news gatherer:

Sachtler Panorama 7 + 7

A small, lightweight fluid head for real news gathering, with an integrated counterbalance spring adequate for today's ENG cameras. To compensate for the center of gravity being displaced, this spring can be locked in 7 different positions.

Tilt range +/-90°.

Drag individually adjustable in 7 steps for pan and tilt. Together with the Sachtler Carbonfiber tripod and the lightweight triangle the weight of the complete system, including its carrying case, is 8.2 kgs.

Camera Interface

Touch & go system to ease alternative use of camera on tripod or shoulder brace.

Tripod Interface

100 mm bowl, Pro-Junior intermediate

Specifications

- Capacity: 10 kgs • Counterbalancing momentum • Pan: 360°
- Tilt: +/-90° • Damping: 7 steps for pan and tilt each • Pan arm O: 14mm • Temperature range: -40° to +60° C • Camera interface: small touch and go wedge-plate • Tripod interface: 100 mm bowl
- Sliding platform: no • Weight: 2.8 kgs • Finish: black enamel

\$2445.00

Panorama 3 + 3

3 step on-off drag control for pan + tilt **1965.00**

Panorama 1 + 1

1 step on-off drag control for pan + tilt **1410.00**

Panorama 7 + 7

7 step on-off drag control for pan + tilt **2445.00**

Panorama to come with flat base in exchange for 100mm ball
add **100.00**



VIDEO 20

ENG/EFP

For the mobile unit:

Sachtler Video 20

A medium sized ENG/EFP fluid head for the ultimate in mobility. Lightweight but stable enough to accept ENG cameras with FP accessories.

Sliding camera platform to compensate for center of gravity displacements, more powerful counterbalancing spring for cameras with integrated shoulder brace or for cameras in EFP configuration.

Tilt range +/-60°.

Drag individually adjustable in 7 steps for pan and tilt. Positive operational pan and tilt lock plus safety lock for keeping the camera in horizontal position.

Camera interface

Touch & go system to ease alternative use of camera on tripod or shoulder brace.

Tripod Interface

100 mm bowl, Pro-Junior intermediate

Specifications:

- Capacity: 15 kgs • Counterbalancing momentum • Pan: 360°
- Tilt +/-60° • Damping: 7 steps for pan and tilt each • Pan arm O: 18mm, extension 22 mm • Temperature range: -40° to +60° C
- Camera interface: small touch and go wedge-plate • Tripod interface: 100 mm bowl • Sliding platform: +/-50mm • Weight: 5.5 kgs
- Finish: black enamel **\$3595.00**

Video 18

7 step on-off drag control for pan + tilt **2515.00**

Video 17

3 step on-off drag control for pan + tilt **2035.00**

Video 16

1 step on-off drag control for pan + tilt **1480.00**






Heavy-duty balance spring type C to compensate for camera-weight,
tilt range +/-45° add **15.00**







SCHNEIDER CORP. OF AMERICA

400 Crossways Park Dr.
Woodbury, NY 11797
(516) 496-8500 Telex 960102

BROADCAST ENG/EFP TV LENSES

2/3" ENG/EFP TV LENSES

Lens	Focal Length	Type
 14X Wide Angle	1.7/9—126 With asph. att. 1.7/6.3mm—9mm With iris servo, zoom servo with rocker switch, lens hood and packing for shipment.	TV 44.5 \$4250
 14X Wide Angle	1.7/9—126 With asph. att. 1.7/6.3—9 With X2 flip-in RE with iris servo, zoom servo with rocker switch, lens hood and packing for shipment.	TV 44.0 \$4990
 14X Wide Angle	1.7/9—126 With X2 flip-in RE with iris servo, zoom servo with pistol grip and man. or servo focus and packing for shipment.	TV 44.0 \$5490 w/housing
 14.5X Wide Angle	1.4/8.8—130 With X2 flip-in RE and Diascope With iris servo, housing, camera mounting plate and aluminum transport case.	TV 66 \$24,000
 17X Wide Angle	1.4/8.5—150 With X2 flip-in RE and Diascope With iris servo, housing, camera mounting plate and aluminum transport case.	TV 80 POR

Lens	Focal Length	Type
 30X Wide Angle	1.4/8.7—260	TV 46* \$22,200 †
 30X Standard	1.4/11—330	TV 45* \$21,800 †
 30X Tele	1.4/18.5—550	TV 47* \$25,700 †
 30X Wide Angle	1.7/12.5—375	TV 35* \$22,200 †
 30X Standard	1.7/16—480	TV 26* \$21,800 †
 30X Tele	1.7/26—800	TV 39* \$25,700 †

*Price includes manual zoom and focus controls
†Adaptor for Mounting of Schneider TV Lenses 30X on 2/3" ENG/EFP Cameras

Aspheric Accessory Lens for ENG 14X Lens



Lens Type	Type No.	Code Ref.
Super Wide Lens for TV 44/45 52°—70° horizontal angle of view	CVA 665—0001	137 139 \$495

Studio Conversion Kit for 44 Series (44 & 44.5) **\$1500**



Universal Adaptor

Universal adaptor with accessories necessary for mounting 30X TV Lenses on ENG/EFP cameras, together with tripod pedestal. Different versions are available; specify camera type and manufacturer.

(complete) \$2950.00

Schneider TV Lenses available for all cameras. Please specify camera manufacturer and type in all orders and inquiries. All lenses with iris servo, housing, camera mounting plate, lens hood and aluminum transport case unless otherwise stated.

Prices and Specifications Subject to Change Without Notice.

VC-255

400 Crossways Park Dr.
Woodbury, NY 11797
(516) 496-8500 Telex 960102

TV Lenses

1 1/4" 1"

	Lens	Focal Length	Type	
NEW 	14.5 × Wide Angle with × 2 flip-in RE and Diascope	2.2/16.5–240	TV 65	\$24,000.00
		1.7/13–190	TV 64	
NEW 	14.5 × Wide Angle with × 2 flip-in RE	2.2/16.5–240	TV 65	\$22,400.00
		1.7/13–190	TV 64	
	15 × Wide Angle	2.1/16–240	TV 33	\$21,100.00
		1.7/12.5–190	TV 36	
	30 × Wide Angle	2.1/16–480	TV 31	\$22,200.00
		1.7/12.5–375	TV 35	
	30 × Standard	2.1/20–600	TV 25	\$21,800.00
		1.7/16–480	TV 26	
	30 × Tele/OB	2.1/33–1000	TV 37	\$25,700.00
		1.7/26–800	TV 39	

Schneider TV Lenses available for all cameras. Please specify camera manufacturer and type in all orders and inquiries. All lenses with iris servo, housing, camera mounting plate, lens hood and aluminum transport case unless otherwise stated.



10 Sharp Plaza
P.O. Box 588
Paramus, NJ 07652
(201) 265-5548

FROM SHARP MINDS
COME SHARP PRODUCTS



XC-A1 ENG/EFP COLOR VIDEO CAMERA

New Field-Proven 2/3" Diode Gun Saticon* Tubes with Prism Optics
Broadcast-caliber picture quality starts with the three 2/3" Diode Gun LOC/MS Saticon* tubes coupled with a high-transparency glass f/1.4 prism beam splitter. The result is high sensitivity, enhanced resolution (750 lines), excellent S/N ratio (57 dB), truer colorimetry, plus reduced image retention and comet tailing. Bias lighting further reduces lag, especially for those critical low-light scenes.

Automatic Functions Offer Increased Ease-of-Use

- **Auto-White** — The high performance Auto-White circuit is supplemented by a preset 3200°K setting. This allows shooting to begin immediately if the action requires a quick change of scene
- **Auto-Black** — Black balance is continuously maintained by high-gain DC clamp circuitry and precisely calibrated by the micro-computer Digital Auto-Black Balance. This combination totally eliminates black balance adjustment when switching from 0 to 18 dB gain, and reduces routine maintenance requirements.

SPECIFICATIONS

Optical System: Prism beam splitter (f/1.4) with bias light injection
Lens Mount: Bayonet
Pick-Up Tubes: Three 2/3" Diode Gun LOC MS Saticons*
Scanning System: 525 lines; 2:1 interlace 30 frames/second
Synchronization:
 a. Internal Synchronization: Built-in sync generator (meets SC-H Phase requirements of RS-170A)
 b. External Synchronization: Locks to composite video or black burst
 Timing for External Synchronization: H-sync adjustable from 2 μ sec. delay to 4 μ sec. advance with respect to gen-lock input signal. Subcarrier phase adjustable 360° with respect to gen-lock input signal
 c. Blanking Width: H-Blanking adjustable from 10.0 μ sec. V-Blanking selectable — 18, 19 or 20 lines NTSC (I, Q System)
Color Encoder System:
Sensitivity: 2000 lux 89.9% Refl. 3200°K f4
Standard Illumination: Horizontal — 750 lines — center G-ch. (typ.)
Resolution: 600 lines encoded (typ.)
S/N Ratio: 57 dB measured without Gamma and without image enhancement
Registration Error:
 a. Zone 1 (within a circle of diameter equal to 80% of picture height): Less than 0.1% of picture height
 b. Zone 2 (within a circle of diameter equal to picture width): Less than 0.2% of picture height
 c. Zone 3 (outside of Zone 2): Less than 0.5% of picture height
Geometric Distortion: Less than 1.5% of picture height
Color Temperature Compensation: Built-in optical filter turret, 3200°K, 5600°K, 5800°K, + 12% ND, cap and built-in auto-white balance circuit with memory produce total range from 2000°K to 10,000°K + 9 dB (+ 6 dB) or + 18 dB (+ 12 dB)
Gain Boost: + 9 dB (+ 6 dB) or + 18 dB (+ 12 dB)
Detail Correction: 2 line type including level dependence, noise coring and comb filtering
Automatics: Auto-White, Auto-Black, Auto-Centering with memory and presets
Character Display: VF character display of camera status. Optional status display on main video

COLOR VIDEO CAMERA

- **Auto-Centering** — The Automatic Centering circuit allows centering to be automatically adjusted using computer control. A preset switch position is also available

+ 9/+ 18 dB High Gain Switch

Sensitivity can be increased 3X or 8X for low light-level scenes using the + 9 dB and + 18 dB settings. Minimum required illumination is an amazingly low 30 lux (2.8fc) at f/1.4, making the XC-A1 the ideal choice for difficult ENG work.

Compact, Lightweight, Solidly-Built Die-Cast Body Provides Balanced Weight and EMI Shielding

Sharp has precision-machined the die-cast camera body to create a durable, solid unit that assures optical alignment under the roughest ENG applications.

Automatic Beam Optimization Adjustment (A.B.O.)

Built-in automatic beam optimization circuitry can handle incident light intensity up to 8 times higher than normal. This feature eliminates "comet tailing" and "blooming" phenomena caused by bright pin-point light sources.

Color Temperature Filter System

A 4-position rotating filter system allows selecting the optimum color temperature filter for indoors, normal outdoor light, bright sunlit outdoors, and cloudy/dim outdoor light levels. This equipment insures the best possible picture image under every lighting condition.

Power Conserving Standby Switch

Switching to standby mode further extends running time with battery operation by reducing power consumption to a minimum while the operator is waiting for the action to begin.

Information-Packed 1.5" Viewfinder

The 1.5" underscanned electronic viewfinder can swivel a complete 180° and can slide right and left. Additional features include a built-in peaking circuit and a zebra pattern video level indicator with adjustable threshold.

Multi-Standard Intercom System

The intercom provides communication with virtually all major 2-wire intercoms presently in use.

XC-A1 (ENG configuration, less lens) **\$6500.00**

ABO: Automatic Beam Optimization stabilizes highlights up to 8 times normal
Auto Iris: Uses NAM (non-additive mix) of RGB plus center screen weighting
Zebra Indication: Adjustable zebra with On/Off switch
Color Bar: Split field 100% saturated, 75% amplitude in accordance with EIA RS-189A (with camera identification)
 Compensated for individual channels
Flare Compensation:
Input Signals:
 a. Gen-Lock Signal: 1V, composite video or 0.43V, black burst (75 ohm) 2 inputs — BNC connector, Remote/VTR connector
 b. Return Video: 1V (75 ohm) composite video synchronous or non-synchronous. 1 input — Remote/VTR connector
 c. Mic: 0 dB or + 50 dB Gain (internally selectable) 1 input — XLR connector
 1 input — Remote/VTR connector
 d. Tally:
Output Signals:
 a. Encoded Video: 1V (75 ohm) composite video
 2 outputs — Remote/VTR connector, BNC connector
 b. RGB Video: 0.714V (75 ohm) non-composite
 1 output for each signal at Remote/VTR connector (GRN with sync available)
 1V (75 ohm). RGB individual video, encoded video,
 c. Monitor Video: R-G, B-G. Registration video
 (on encoded output) -20 dBm or -70 dBm 600 ohm unbalanced 1
 d. Mic Audio: output — Remote/VTR connector
Power Requirements: + 10V to + 17.4V DC, approx. 22W regardless of input voltage
Ambient Operating Conditions: -10°C to + 40°C (14°F to 104°F) less than 90% humidity
Weight: Camera head approx. 8.58 lbs. (3.9kg)
 Viewfinder approx. 1.32 lbs. (0.6kg)
Dimensions: Height: Approx. 10-15/16" including legs
 Width: Approx. 15-7/8" including 1.5" viewfinder
 Depth: Approx. 7-13/16" including 1.5" viewfinder (without mic. holder)

Design and specifications subject to change without notice.
 *Note: LOC (Low Capacitance) MS (Magnetic focus-Static deflection) Saticon is a registered trademark of NHK.

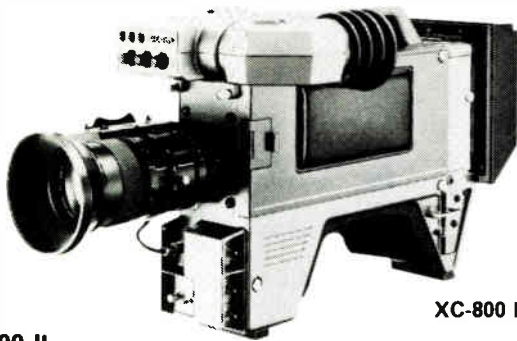
Prices and Specifications Subject to Change Without Notice.

VC-257



10 Sharp Plaza
P.O. Box 588
Paramus, NJ 07652
(201) 265-5548

FROM SHARP MINDS
COME SHARP PRODUCTS



XC-800 II

**XC-800 II
PROFESSIONAL ENG/EFP COLOR CAMERA**

- Saticon II® Tubes for reduced high light sticking
- 750 lines resolution
- 57dB SN
- Rugged die-cast chassis and RFI protected side covers with weatherproofing
- On-board microcomputer
- Flare compensation
- Dynamic beam optimization
- Geometry correction
- Test calibration signal with dual ramp for gamma correction
- 2 line image enhancement with comb filtering, noise coring and level dependence
- +9dB, +18dB gain switch
- Continuous gamma correction
- Digital auto white and auto black balance maintains balance when changing gain
- Split-field color bars (EIA RS-189A)
- Built-in Gen-Lock with H and SC phase shifters
- Broadcast I & Q encoder
- Phantom power for condenser microphones
- Video and audio monitoring for recording and playback
- Extremely accurate shading compensation
- Serial data transmission to reduce size, weight and cost of camera cable
- Glass f/1.4 prism beam splitter

XC-800PP ENG-PORTABLE PACKAGE

Includes:

- XC-800H** Camera head with quick disconnect tripod mount, battery bracket, service manual, extender board, spare fuses, registration chart.
- XC-815VF** 1.5" high resolution viewfinder with Zebra pattern, adjustable peaking, underscan and high gain indicator.
- XC-812AA** AC power adaptor.
- XC-80CC** Heavy duty carrying case.
- XC-800PP** ENG-Portable Package **\$7500.00**
(Less Lens/Less VTR Cable)

CAMERA HEAD AND COMPONENTS

- XC-800H** Camera head with quick disconnect tripod mount, battery bracket, service manual, extender board, spare fuses, registration chart ... **\$6240.00**
- XC-815VF** 1.5" High resolution viewfinder with Zebra pattern, adjustable peaking, underscan and high gain indicator **\$695.00**
- XC-803TX** Triax System. Includes base station and camera head **\$9995.00**
- XC-870VF** 7" High resolution underscanned studio viewfinder with Zebra pattern and adjustable peaking **\$770.00**
- XC-80RPA** Remote operation panel (includes R.O.P. adaptor) digital microprocessor controlled with serial data transmission and black stretch **2200.00**
- XC-802RA** R.O.P. adaptor (included with XC-80RPA) **455.00**

AC ADAPTOR, BATTERY AND CHARGERS (XC-800II/XC-900D)

- XC-812AA** AC power adaptor, mounts directly to camera head or can be used remotely **\$225.00**

VC-258

ENG/EFP COLOR CAMERAS

- XC-80BAT** Anton/Bauer 14.4V 4AH heavy duty NiCad rechargeable battery **495.00**
- XC-70SC** Anton/Bauer slow battery charger **64.00**
- XC-80FC** Anton/Bauer fast battery charger **495.00**
- XC-80Q4** Anton/Bauer 8-hour quad battery charger **895.00**
- XC-99BT** Frezzolini 14.4V 4AH heavy duty NiCad rechargeable battery **495.00**
- XC-99SC** Frezzolini slow battery charger **63.00**
- XC-99FC** Frezzolini fast battery charger **395.00**
- XC-99S8** Frezzolini slow charger for 8 batteries **495.00**

VTR CABLES (XC-800II/XC-900D)

- XC-8B3VT** VTR cable with 14-pin connector **\$195.00**
- XC-8B3VC** VTR cable with 10-pin connector **145.00**

OTHER ACCESSORIES (XC-800II/XC-900D)

- XC-80CC** Heavy duty carrying case **\$340.00**
- XC-80QRR** Tripod quick release plate — heavy duty .. **123.00**
- XC-80LB** Light bracket with universal stud **45.00**
- XC-800KIT-0001** Spare parts kit for XC-800 **2995.00**
- XC-800SM** Spare service manual for XC-800, XC-815VF, XC-870VF and XC-80RPA **75.00**
- XC-900KIT-0001** Spare parts kit for XC-900D **2995.00**
- XC-900SM** Spare service manual for XC-900D, XC-815VF, XC-870VF and XC-80RPA **75.00**

CAMERA CABLES (XC-800 II/XC-900D)

Standard Cables for connecting between camera head and R.O.P.

Stock Lengths

- XC-8B70** Camera cable — 70 feet **\$ 560.00**
- XC-8B150** Camera cable — 150 feet **800.00**
- XC-8B300** Camera cable — 300 feet **1250.00**

XC-900D

DIODE GUN PLUMBICON* ENG/EFP COLOR CAMERA

- Three bias-lighted diode gun Plumbicon* tubes with prism and linear matrix masking
- Compact, light and sturdy die-cast body—maintains weight balance
- Dynamic beam optimization and two-line image enhancement
- Low power consumption
- On-board micro-computer for unparalleled functions and accuracy
- +9 dB/ +18 dB high gain switch
- Built-in genlock circuit
- Adjustable blanking width
- Optical shock mount system
- Triax ready

XC-900PP ENG-PORTABLE PACKAGE

- XC-900D** Camera head with quick disconnect tripod mount, battery bracket, service manual, extender board, spare fuses, registration chart.
- XC-815VF** 1.5" high resolution viewfinder with Zebra pattern, adjustable peaking, underscan and high gain indicator.
- XC-812AA** AC power adaptor.
- XC-80CC** Heavy duty carrying case.
- XC-900PP** ENG-Portable Package **\$19,995.00**
(Less Lens/Less VTR Cable)

CAMERA HEAD AND COMPONENTS

- XC-900D** Camera head with quick disconnect tripod mount, battery bracket, service manual, extender board, spare fuses, registration chart .. **\$18,735.00**
- XC-815VF** 1.5" high resolution viewfinder with Zebra pattern, adjustable peaking underscan and high gain indicator **695.00**
- XC-870VF** 7" high resolution underscanned studio viewfinder with Zebra pattern and adjustable peaking **770.00**
- XC-80RPA** Remote operation panel (includes R.O.P. adaptor), digital microprocessor controlled with serial data transmission and black stretch **2200.00**
- XC-802RA** R.O.P. adaptor (included with XC-80RPA) ... **455.00**
- XC-803TX** Triax system, includes base station and camera head **9995.00**

*Plumbicon is a trademark

Prices and Specifications Subject to Change Without Notice.

3000AF 660506

A working range from 63" to practically ground level makes this the ideal choice for special applications.

Construction: 3-section anodized aluminum channel

Channel Size: 28 x 21mm

Height: 63", Weight: 6 lbs.

Folded Length: 23¾"

Center Column: 2-piece reversible manual lift

Other: Indexed, locking telescopic braces

\$89.95

2000AF 660501

Smaller, lighter weight version of the 3000AF, the 2000AF offers the same capabilities in a smaller package.

Construction: 3-section anodized aluminum channel

Channel Size: 24 x 18mm

Height: 57", Weight: 5½ lbs.

Folded Length: 22½"

Center Column: 2-piece reversible manual lift

Other: Indexed, locking telescopic braces

\$84.95

3000GLB 660507

Our best conventional tripod, the 3000GLB has all the sought-after features.

Construction: 3-section anodized aluminum channel

Channel Size: 28 x 21mm

Height: 63", Weight: 6½ lbs.

Folded Length: 23¾"

Center Column: Gear operated

Other: Reversible pan-head, Center braced legs

\$79.95

2000GLB 660502

A smaller, lighter weight version of the 3000GLB.

Construction: 3-section anodized aluminum channel

Channel Size: 24 x 18mm

Height: 57", Weight: 5 lbs.

Folded Length: 22½"

Center Column: Gear operated

Other: Reversible pan-head, Center braced legs

\$69.95

2000SQ 660503

The 2000SQ is a basic no-nonsense tripod with a price to match.

Construction: 3-section anodized aluminum channel

Channel Size: 24 x 18mm

Height: 57", Weight: 4½ lbs.

Folded Length: 22½"

Center Column: manual lift

\$59.95

2000SQ Mini 660513

A heavy-duty, full-featured table top tripod designed for the serious enthusiast.

Construction: 3-section anodized aluminum channel

Channel Size: 24 x 18mm

Height: 20¾", Weight: 3¾ lbs.

Folded Length: 11½"

Center Column: manual lift

\$49.95

KC5000 660510

An ultra-compact tubular leg tripod complete with vinyl carrying case.

Construction: 3-section tubular aluminum

Height: 43", Weight: 1½ lbs.

Folded Length: 16"

Center Column: manual lift

\$37.95

255 Monopod 660512

Deluxe compact monopod.

Construction: 5-section tubular aluminum

Height: 61", Weight: 12 oz.

Folded Length: 15½"

Head: Locking ball and socket

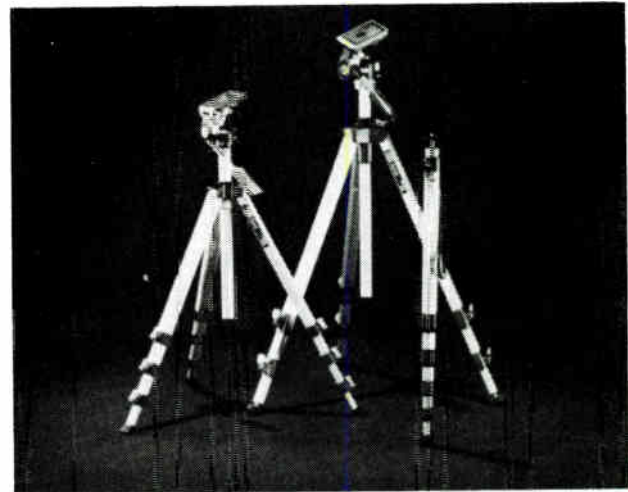
Other: Knurled cam-type leg locks, wrist strap included

\$27.95

Cable Release 660601

All metal 24" cable release with shutter release lock.

\$4.95



Model 601 660542

Construction: 2-section anodized and lacquered aluminum channel

Channel Size: 1.1" x .81"

Height: 60" with column fully extended, Weight: 6 lbs.

Folded Length: 32"

Center Column: Geared, with locking screw, 12¾" rise

Panhead: Model AA 2-way, indexed head with locking controls. Oversize panhandle. Geared camera mounting screw for easy camera mounting and removal

Other: Center braces, rubber-tipped feet with metal spikes for outdoor applications

\$94.95

Model 65 660520

Construction: 2-section contoured anodized & lacquered aluminum tubing.

Channel Size: 1.1" x .81"

Height: 62", Weight: 8.5 lbs.

Folded Length: 33"

Center Column: Safety double-geared with 11¾" rise

Panhead: Model AA 2-way, indexed head with locking controls. Oversize panhandle. Geared camera mounting screw for easy camera mounting and removal

Other: 2" locking casters, locking center braces

\$169.95

Model 501 660541

Construction: 2-section anodized and lacquered aluminum channel

Channel Size: .95" x .71"

Height: 59", Weight: 5 lbs., 2 ozs.

Folded Length: 32"

Center Column: Geared, with locking screw

Panhead: Model CC 2-way, indexed head with locking controls. Oversize panhandle. Geared camera mounting screw.

Other: Center braces, rubber-tipped feet with steel ground spikes

\$84.95

Model 641 660544

Construction: 2-section contoured anodized & lacquered aluminum tubing.

Channel Size: 1.1" x .81"

Height: 60", Weight: 6 lbs., 8 ozs.

Folded Length: 32"

Center Column: Geared

Panhead: Model AA 2-way, indexed head with locking controls. Oversize panhandle. Geared camera mounting screw for easy camera mounting and removal.

Other: Locking center braces, rubber-tipped feet with steel ground spikes

\$139.95



Don't be locked into the OEM lens supplied with the C-mount video cameras on the market. Smith-Victor C-mount adaptors allow maximum versatility and flexibility by enabling all popular 35mm photographic lenses to be mounted on all video cameras with a removable C-mount lens.

Now, any photographer can make use of their existing 35mm lenses to realize the true potential of their video cameras. Fisheyes, wide-angles, macros, telephotos, and zooms can all be adapted with one simple converter, and at a fraction of the cost of high-

priced, hard-to-get video lenses. The creative possibilities are almost endless.

Smith-Victor Kenlock C-mount adaptors are of a precision-machined alloy featuring plated mounting flanges which conform to each lens manufacturer's specifications. To use, simply unscrew the existing C-mount video lens, affix the appropriate converter in its place, and attach the desired lens following the standard procedure common to that lens mount.

Adaptors are available to fit the following 35mm lens mounts:

Canon mount	640300
Nikon mount	640301
Pentax K mount	640302
Pentax S mount	640303
Minolta mount	640304
Contax/Yashica mount	640305
Olympus mount	640306

\$29.95 each

Note: C-mount adaptors are not meter-coupled. Lens apertures must be set manually.



DXC-1850 HBST Color Video Camera

The DXC-1850 with Sony's HBST, High Band Saticon™ Tricon, pickup tube delivers the best possible picture in a single-tube camera. The camera head, by virtue of its compact design and extremely light weight, is ideally suited for use with specialized fiber optics and a wide range of other optical instruments in fields ranging from medicine to metallurgy.

Features

- $\frac{2}{3}$ " HBST (High Band Saticon™ Tricon) pickup tube for the best possible picture from a single-tube color video camera
- HBST pickup tube assures high resolution, good color fidelity and uniformity, low image lag and retention
- Lightweight camera head (less than 1 lb. 9 oz.) for precision interface with optical equipment: microscopes used in medicine, biology, metallurgy
- Full range of automatic controls for very simple, very safe operation
- Ideal for surveillance and teleconferencing, especially when lighting and installation-space are limited
- 3-mode white balance: automatic, manual and halogen-lamp
- Red Hue Expander, Red Detail Control for enhancing and delineating red color nuances
- Provision for handle on control unit, which is 19" EIA Standard for rack mounting
- Safety conscious features include an exterior finish highly resistant to alcohol and disinfectants, electrical leakage of less than 10 micro Amps and solid housings not prone to damage from accidental spills
- On-screen illumination indicating lines simplify illumination adjustments
- Uniformity control ensures optimum color quality with wide variety of optical instruments by compensating for color hue distortions
- Built-in two line type Vertical Image Enhancer
- Automatic Beam Optimizer — ABO
- VBS GenLock capability
- Automatic and manual gain/iris control
- Chroma level control

Specifications

- Pickup tube: $\frac{2}{3}$ " HBST tube
- Scanning system: 525 lines 30 frames NTSC 2:1 interlace
- Sync system: Internal or external
- Horizontal resolution: 400 lines
- Sensitivity: 2000 lux f.4
- Automatic gain control range: 120-2000 lux (with f/2.5 lens)
- Output: 1.0 Vp-p, sync negative 75 Ohms unbalanced x 3
- Video signal-to-noise ratio: 53 dB
- Lens mount: C-mount
- Power requirement: AC 120V, 60 Hz + 11 to +16 V DC
- Power consumption: AC 26W DC 18W
- Operating temperatures: 0°C to +40°C
- Weight: CHU: 1 lb 9 oz (0.71 kg) CCU: 17 lb 10 oz (8.2 kg)
- Dimensions: CHU: 2-3/8" x 2-1/4" x 7-3/4" HWD 55mm x 59mm x 196mm HWD; CCU: 3-1/2" x 16-3/4" x 13-3/8" HWD 88mm x 424mm x 340mm HWD

Supplied Accessories

- Camera cable (10m)
- 75 Ohm coaxial cable with BNC connector (10m)
- AC power cord
- Camera head bracket
- Bracket set for 19" rack mounting
- Filter set (ND4, W14 and replacement tool)
- Battery (Eveready M 542)

Optional Accessories

- VCL-1106YB 6.1 auto iris power zoom lens
- VCL-08S Wide angle lens
- CCJ-10 10m camera cable
- CCJ-25 25m camera cable
- CCJ-50 50m camera cable
- MVA-11 Microscope adaptor
- MVA-102 Endoscope adaptor for Olympus
- MVA-102R Endoscope adaptor for C. Storz.

DXC-1850 Color Video Camera

\$8500.00

REPLACES
DXC-6000

DXC-M3

A 3-Tube MF Saticon™ Color Video Camera

- **MF Saticon™ Pickup Tube:** Sony developed the 3/8" MF Saticon tube to achieve both a significant improvement in resolution and a reduction in geometric distortion. The 3 tube system in the DXC-M3, using the new technology, offers superior picture quality with a high level of operational simplicity.

- **Superior Resolution:** The MF Saticon tube with its reduced beam spot achieves 650 lines of resolution at the center. Corner resolution was also improved due to the flat focus effect realized in the new tube design.

- **Outstanding Picture Quality:** Measurable improvements in picture quality attained with Sony's new MF Saticon tube technology include less geometric distortion, less registration error, anti-high-light sticking, a S/N of 57 dB thanks to a low output capacitance type target electrode, exclusive Sony FET and a sensitivity of 2000 lux at F4. A standard 2H vertical image enhancer also helps to create a sharper and crisper picture.

- **Improved Operating Convenience:** New sophistications in chip design enabled Sony to enhance the operation of the DXC-M3 with computer-assisted automatic centering without any special chart consultation, automatic black setting/automatic black balance and automatic white balance. A visual warning system has also been integrated into the viewfinder display so that the cameraman is alerted in the case of low light, incorrect balance or centering and when battery power is too low.

- **Character Generator and Display:** Highly advanced microcomputer type circuitry allows Sony to provide the added convenience of a built-in character generator that will hold 60 characters. Either letters or numbers can be stored, displayed in the viewfinder and recorded as titles, dating or identification coding.

- **Portability Plus:** Compact tube design and highly condensed circuitry result in improved portability. Streamlined design makes the camera easier to handle and lighter in weight with both camera and viewfinder totalling just over nine pounds.

- **A Highly Versatile System:** Designed for optimum flexibility and versatility, the DXC-M3 also has a serial data command system that allows full remote control via new, lightweight, low cost 14 pin connecting cables. There's also direct interface with most consumer VTRs with no additional adaptors, lens interchangeability with other Sony 3 tube cameras and the ability to use a variety of different viewfinders.



DXC-M3 Camera System	DXC-M3 Camera Head	\$ 6990.00
	DC-7 Battery adaptor	
	LC-M3 Carrying case	
	VCT-M3 Tripod adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	DXF-M3 1.5" Electronic viewfinder	
	Microphone holder	

DXC-M3H Camera System	DXC-M3 Camera Head	\$ 6600.00
	VCT-M3 Tripod Adaptor	
	CCQ-2AR Camera cable for portable VTR interface	

DXC-M3K Camera System	DXC-M3 Camera Head	\$ 8600.00
	DC-7 Battery adaptor	\$ 9640.
	LC-M3 Carrying case	6/86
	VCT-M3 Tripod adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	VCL-914BY 14x zoom lens, f1.6, 9-126mm	
	DXF-M3 1.5" electronic viewfinder	
	Microphone holder	

PAC M3/15 Camera System	DXC-M3 Camera Head	\$ 8300.00
	DC-7 Battery adaptor	
	LC-M3 Carrying case	
	VCT-M3 Tripod adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	DXF-M3 1.5" Electronic viewfinder	
	J15X9.5B 15x zoom lens, f1.8, 9.5-143mm	
	Microphone holder	

PAC M3/12E Camera System	DXC-M3 Camera Head	\$ 9150.00
	DC-7 Battery adaptor	
	LC-M3 Carrying case	
	VCT-M3 Tripod adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	DXF-M3 1.5" Electronic viewfinder	
	A12X9 BERM-88 12x zoom lens with 2x extender, f1.7, 9-108mm	
	Microphone holder	

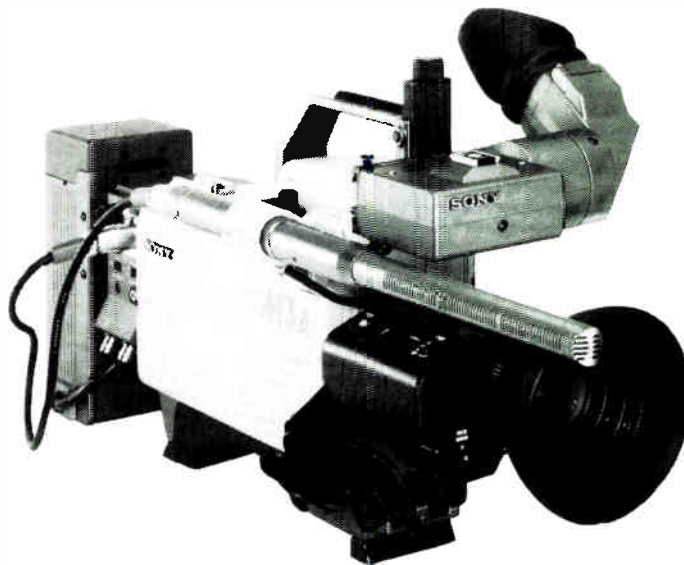
Studio-M3 Camera System	DXC-M3 Camera Head	\$ 8860.00
	VCT-M3 Tripod Adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	CCU-M3 Camera control unit	
	CMA-7 AC adaptor	
	RMM-1800 19" rack mount	
	DXF-50 Detachable 5" high resolution electronic viewfinder	

ENG/Studio-M3 Camera System	DXC-M3 Camera Head	\$ 9300.00
	DC-7 Battery adaptor	
	LC-M3 Carrying case	
	VCT-M3 Tripod adaptor	
	CCQ-2AR Camera cable for portable VTR interface	
	DXF-M3 1.5" Electronic viewfinder	
	CCU-M3 Camera control unit	
	CMA-7 AC adaptor	
	RMM-1800 19" rack mount	
	DXF-50 Detachable 5" high resolution electronic viewfinder	
	Microphone holder	

DXC-M3A

3-Tube MF Saticon Color Video Camera

- **MF Saticon™ Pickup Tube:** Sony developed the 2/3" MF Saticon tube to achieve both a significant improvement in resolution and a reduction in geometric distortion. The 3 tube system in the DXC-M3A, using the new technology, offers superior picture quality with a high level of operational simplicity.
- **Superior Resolution:** The MF Saticon tube with its reduced beam spot achieves 750 lines of resolution at the center. Corner resolution was also improved due to the flat focus effect realized in the new tube design.
- **Outstanding Picture Quality:** Measurable improvements in picture quality attained with Sony's new MF Saticon tube technology include less geometric distortion, less registration error, anti-high-light sticking, an S/N of 57 dB thanks to a low output capacitance type target electrode, exclusive Sony FET and a sensitivity of 2000 lux at F4. A standard 2H vertical image enhancer also helps to create a sharper and crisper picture.
- **Improved Operating Convenience:** New sophistications in chip design enabled Sony to enhance the operation of the DXC-M3A with computer-assisted automatic centering without any special chart consultation, automatic black setting/automatic black balance and automatic white balance. A visual warning system has also been integrated into the viewfinder display so that the cameraman is alerted in the case of low light, incorrect balance or centering and when battery power is too low.
- **Color Character Generator and Display:** Highly advanced micro-computer type circuitry allows Sony to provide the added convenience of a built-in character generator that will hold 48 characters. Either letters or numbers can be stored, displayed in the viewfinder and recorded as titles, dating or identification coding. Memory-stores character message.
- **Portability Plus:** Compact tube design and highly condensed circuitry result in improved portability. Streamlined design makes the camera easier to handle and lighter in weight with both camera and viewfinder totalling just over nine pounds.
- **A Highly Versatile System:** Designed for optimum flexibility and versatility, the DXC-M3A also has a serial data command system that allows full remote control via new, lightweight, low cost 14 pin connecting cables. There's also direct interface with most consumer VTRs with no additional adaptors, lens interchangeability with other Sony 3 tube cameras and the ability to use a variety of different viewfinders. NP-1 NiCad adaptor.



DXC-M3A PORTABLE CONFIGURATION

DXC-M3AK Camera System

DXC-M3A	Camera Head	
DC-8	Battery Adaptor	
LC-M3	Carrying Case	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	
DXF-M3A	1.5" Electronic viewfinder — detachable.	
J15X9.5B	15X Zoom lens f1.8, 9.5-143mm	\$8400.00

PAC M3A/12E Camera System

DXC-M3A	Camera Head	
DC-8	Battery Adaptor	
LC-M3	Carrying Case	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	
DXF-M3A	1.5" Electronic viewfinder — detachable.	
A12X9BERM-88	12X Zoom lens with 2X extender, f1.7, 9-108mm	\$9550.00

Studio-M3A Camera System

DXC-M3A	Camera Head	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	
CMA-8	AC adaptor/camera.	
RMM-1800	19" Rack mount.	
DXF-50	Detachable 5" high resolution electronic viewfinder.	\$9200.00

ENG/Studio-M3A Camera System

DXC-M3A	Camera Head	
DC-8	Battery Adaptor	
LC-M3	Carrying Case	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	
DXF-M3A	1.5" Electronic viewfinder — detachable.	
CCU-M3	Camera control unit.	
CMA-8	AC adaptor/camera.	
RMM-1800	19" Rack mount.	
DXF-50	Detachable 5" high resolution electronic viewfinder.	\$9650.00

DXC-M3A Camera System

DXC-M3A	Camera Head	
DC-8	Battery Adaptor	
LC-M3	Carrying Case	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	
DXF-M3A	1.5" Electronic viewfinder — detachable.	\$7400.00

DXC-M3AH Camera System

DXC-M3A	Camera Head	
VCT-M3	Tripod Adaptor	
CCQ-2AR	Camera cable for portable VTR interface.	\$6950.00

DXC-1820KA SMF TRINICON® COLOR VIDEO CAMERA

FEATURES

- Lightweight, Rugged Aluminum Diecast Camera Body
- Optical Filter for Shooting in Fluorescent Light
- Vertical Image Enhancer Standard
- Built-In Electret Condenser Microphone
- Built-In Color Bar Generator
- Adjustable Horizontal and Vertical Blanking Width
- Intercommunication Headset Jack On Camera Head
- Built-In Bias Light
- Optical Black System
- Diode Gun
- Saticon™ Layer
- MF System
- Trinicon System

12:1 Servo Zoom Lens Standard (DXC-1820KA)

The 12:1 f/1.6 servo zoom lens provides zoom with variable speed, wide range macro and auto iris and there is a 14:1 f/1.6 servo zoom lens also available as an optional accessory. The lenses automatically close to protect the pickup tube when the power to the camera is turned off.

Full System Capability

The camera can be used as a studio camera when connected to a CCU-1800 camera control unit. The CCU can remotely control most of the functions of the camera. The CCU, a 4" viewfinder/monitor and AC adaptor can all be mounted in a single standard 19" rack and the system can be easily configured for either EFP or studio use.

Information Pack 1.5" High Resolution Viewfinder

A 1.5" high resolution (400 lines) viewfinder monitors the recording picture. Warning indicators in the viewfinder illuminate if (1) there is a problem with the VTR or the tape, (2) the battery is weak, (3) the lighting is insufficient, or (4) the video output level is too low. The playback picture and the return video picture can be viewed when the camera and a VTR are connected with a CCQ camera cable.

Automatic White Balance Adjustment w/Preset Position

The white balance is automatically adjusted by a microcomputer and the adjusted value is stored in the digital memory even when the power is off. When the WHITE BAL switch is set to PRESET, a white balance of 3200°K is obtained. This allows you to start recording without the need to adjust the white balance.

Sensitivity

The gain up function makes low light shooting possible down to 4 fc (40 lux) and automatic, 0, +6, +12 and +18dB positions are also provided.

Automatic Beam Optimizer (ABO)

An automatic beam optimizer allows the camera to accept a light input that exceeds normal levels without causing comet tails or blooming and makes highlight handling very easy.

Versatile Interfacing Capability

A four position VTR selection switch is provided to make interfacing with various types of portable VTRs possible without any additional adaptors.

Fader

The fader makes it possible to record with fade-in and fade-out for more professional results. The fade time can be adjusted from 0 seconds to about 5 seconds.

Negative-Positive Picture Converter

The camera picture can be reversed to provide a negative picture for special effect.



DXC-1820KA

SPECIFICATIONS

Pickup Tube: 2/3" diode gun SMF Trinicon with built-in bias light, CT-2232

Lens Mount: DXC-1820: S mount, DXC-1821: C mount

Optical Filter: 3200°K, 4800°K, 5800°K, white fluorescent lamp

Signal System: EIA standard, NTSC color

Sync System: Internal sync or Genlock

Horizontal Resolution: 300 lines

Sensitivity: 200 fc (2000 lux) F4 at 3200°K, 89.9% reflectance

Minimum Illumination: 4.0 fc (40 lux) at f/1.6, +18dB gain up

Signal-to-Noise Ratio: 53dB in luminance channel

Video Output: BNC (1.0V p-p, 75 ohms)

VTR/CCU: Sony Q type 14P (automatic detection)

Mic Input: Mini (-60dB, 600 ohms)

Genlock: BNC (composite or black burst, 75 ohms)

Gain Switch: Auto (0 to +12dB) 0/6/12/18dB

Vertical Enhancer: 1H

Power Consumption: 12W (camera head only), 14.1W (w/1.5" VF)

Operating Temperature: 32°F to 104°F (0°C to 40°C)

Weight: Camera: 6 lbs. 6 oz. (2.9kg) Camera + 12X zoom lens + viewfinder + shoulder pad: 11 lbs. 11 oz. (5.3kg)

Dimensions: 3-5/8"H x 7-1/8"W x 12-7/8"D (90 x 180 x 325mm)

DXC-1820KA	DXC 1820 Camera head, DXF 1820 1.5" viewfinder, VIC 1020SY 12x zoom, DC-6 Battery Adaptor, LC1820 carrying case, CCQ 2AR cable	\$3,345.00
DXC-1821H	Camera Head (C lens mount) CCQ-2AR	2,600.00
Studio-1820A*	DXC 1820KA, CCU 1820, DXF-40, CMA8, RMM1800, LO 25, VCT-12	5,980.00

(Complete Studio Package)		
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VCL-91454	14:1 zoom lens 9-126m f/1.6 S lens mount	1,100.00
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VCT-12	Tripod adaptor for DXC 1820 only	85.00
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CCQK-2	DXC 1820/DXC 1821 H to SL2000 Camera Cable	65.00
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DXF-1820	1.5" Viewfinder for DXC 1820-DXC 1821H	500.00
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LO-24ZS	Lens conversion kit (for zoom) for VCL1010SY or VCL914SY	560.00
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LO-24F	Lens conversion kit (for focus) for VCL1010SY or VCL914SY	390.00
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LO-25	Studio Lens conversion kit for DXC-1820KA	920.00
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Studio-1820A*	Consists Of: DXC 1820KA, CCU 1820, DXF 40, CMA 8, RMM 1800, LO 25, VCT 12	
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AVC-D1

Miniature CCD Video Camera

Compact enough to fit in the palm of your hand, the AVC-D1 delivers versatile performance with no sacrifice in video quality. Lightweight and easy to handle, it can be quickly attached to either a wall mount or tripod for use in a multitude of applications.

FEATURES

CCD Image Sensor

CCD (Charge Coupled Device) solid-state image sensor for extended life and improved stability.

CCD Image Sensor Provides:

- High resistance to image burning
- Low lag
- Excellent geometric accuracy
- No magnetic interference

Lightweight and Compact

Revolutionary size, 1.14"H x 1.73"W x 4.72"D, and ultralight weight, 7.7 oz., for incredible versatility.

High Sensitivity

High sensitivity makes low light shooting possible with minimum illumination of 0.3fc (3 lux).

Lens Interchangeability

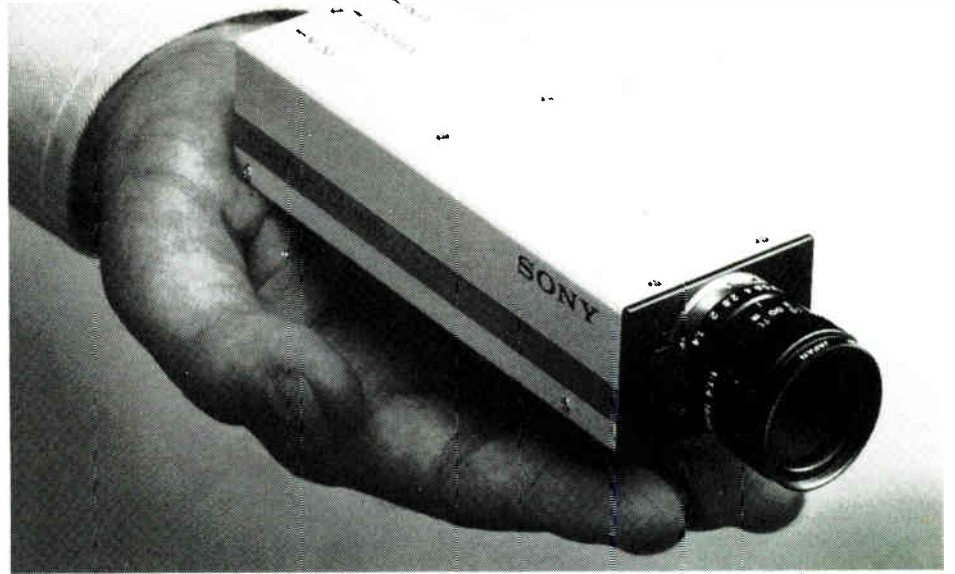
Special mini bayonet mount for ultra compactness. Supplied C mount adaptor allows use of C mount lenses.

Full Solid-State Design

All electronic components are solid-state for video performance unaffected by shock and vibration.

Quick Start-Up

Shooting start-up requires 0.5 seconds and no preheating is necessary.



AVC-D1

Tripod Mountable

Tripod attachment screw holes of 1/4" and 3/8" make mounting possible on both tripods and pan/tilt units. The attachment is removable from the bottom of the unit and mountable on the top cover.

Supplied Accessories

Standard Lens with IR Filter: f/1.4, 16mm, manual iris, manual focus lens with detachable IR cut filter.

C Mount Adaptor: Any C mount lens can be attached by using this C mount adaptor.

ND Filter: The 1/64 ND filter attaches to the standard lens.

CCDC-10: 33' connecting cable (for use with CMA-D1).

AVC-D1 CCD Video Camera \$1350.00

Optional Accessories

CMA-D1 AC Adaptor: The CMA-D1 supplies power to two AVC-D1s simultaneously. Power Requirements: 120V AC, 50/60Hz, DC Out: 12V, 1A, 2 outputs, Weight: 3 lbs., 15 ozs. (1.8kg), Dimensions: 2.75"H x 6.50"W x 5.25"D \$220.00

VCL-08D1 Auto Iris Lens

CCDC-25 82' DC Power Cable: (For Use with CMA-D1) POR

CCDC-50 165' DC Power Cable: (For Use with CMA-D1) POR

CCD-G5

Color Video Camera

- Ultra-compact portable color video camera using solid-state CCD (Charge-Coupled Device) imaging sensor
- Lightweight: 2 lbs., 7 oz.
- Exceptional color fidelity and uniformity
- High sensitivity (down to 30 lux)
- No image lag and burn
- Low power consumption with no warm-up time necessary
- High quality 6:1 power zoom lens with macro position
- Built-in electronic viewfinder with 1-1/2" B/W CRT
- Auto white balance
- Record/review (with SL-2000/SL-2500/SL-2700)
- Electronic fader
- 2-channel audio recording capability
- Weight: 2 lbs., 5 oz.
- Dimensions: 4"W x 3-7/8"H x 7"D

Supplied Accessories

Shoulder strap, ME-20H earphone, lens cap. \$1300.00

Optional Accessories

Camera Extension Cable: CCK-5 . . . \$ 48.00

Camera Extension Cable: CCK-10 . . . 63.00

Camera Plug Adaptor: CMA-1010A . . . 55.00

Camera Adaptor Cord: CMA-1030 . . . 55.00

Unidirectional External Microphone: ECM-K100B 60.00

External Zoom Microphone: ECM-Z300C 150.00

Hand Grip: GP-10 30.00

Camera AC Power Adaptor: HVA-200 55.00

Camera AC Power Adaptor: HVA-220 65.00

Special Effects Generator: HVS-120K 550.00

External Microphone Shoe: SAD-100 25.00

Tripod Dolly: TPD-8 85.00

Wide Attachment Lens: VCL-0758WA 55.00

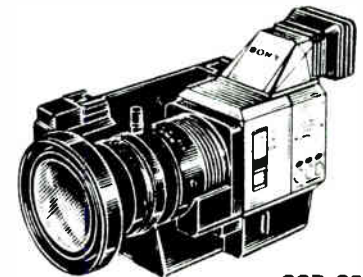
Wide Conversion Lens: VCL-0758A . . . 135.00

Teleconversion Lens: VCL-1558A . . . 130.00

Lightweight Tripod: VCT-40 110.00

Heavy Duty Tripod: VCT-150K 199.95

Filter Kit: VF-105A 65.00



CCD-G5

**AVC-1400
COMPACT MONOCHROME VIDEO CAMERA**

Consists of a camera head and a separate power unit to make the camera head truly compact and lightweight. Ideal for surveillance or observation system. Power supply and video signal transmission with a single coaxial cable. Easy handling and adjustment: only focus adjustment. Automatic Sensitivity control for the most suitable lighting condition adjustment. Light Emitting Diodes for pilot lamp. Camera Weight: 2 lbs., 2 ozs. Dimensions: 8" x 4" x 2½". Power Unit Weight: 2 lbs., 13 ozs. Dimensions: 6½" x 2¾" x 4¾"

AVC-1400. Black and White Surveillance Camera with 16mm f/1.7 lens **\$495.00**



AVC-1400

**AVC-3260DX
VERSATILE MONOCHROME VIDEO CAMERA**

Easy-to-operate video camera for versatile applications such as program production at small-size video studio, surveillance system, etc. Sharp and crisp picture due to minimal interference and excellent resolution. Stable quality performance assured by precise engineering and reliable solid-state circuitry. Reinforced mechanical construction assures lasting stable performance and stability against temperature change, vibration, impact, etc. Automatic sensitivity control for regulating camera sensitivity to suit a wide range of lighting conditions. Light Level Switch provides clear pictures under lighting intensity of as low as 15 lux. There are two types of camera output. VIDEO OUT: connects to a video tape recorder or monitor for direct picture display, and VIDEO/SYNC: connects to a video tape recorder, or to other components such as special effects generator, wiper and switcher. Selectable between internal and external sync system. Adjustable pedestal level for contrast matching between cameras with multiple camera connections. Sony Viewfinder AVF-3250 (supplied w/AVC-3250DX & AVC-3260DX) can be installed onto the camera for direct monitoring without any cable or additional hardware. Truly compact and lightweight.

AVC-3260DX. Black and White Studio Camera ensemble including AVC-3260 camera, zoom lens, viewfinder, tripods, microphone **\$1165.00**



AVC-3260DX

Camera Accessories

BC-20. Dual battery charger for BP-20/BP-20A/BP-60	170.00
BC-1000. Battery charger for six BP-20A & BP-60	495.00
BP-60. Battery for DXC-1610, SLO-340	68.00
CCF-5. 6-pin camera extension cable, 16'	23.50
CCF-10. 6-pin camera extension cable, 32'	32.50
CCJ-1. 10-pin video/audio extension cable, 5'	47.00
CCJ-5. 10-pin video/audio extension cable, 16'	65.00
CCJ-10. 10-pin video/audio extension cable, 32'	88.00
CG-101. Color sync generator	1100.00

CAMERA ACCESSORIES

CCU-1800	Camera control unit for DXC-1800	\$ 895.00
CCU-M3	Camera control unit for DXC-M3	1200.00
CMA-201A	Recording adaptor to use HVC-2400, HVC-2800, with SLO-340	100.00
CMA-204	Recording adaptor to use HVC-2400, HVC-2800, with VO-4800	130.00
CMA-205A	Recording adaptor to use DXC-1800 with SL-2000	120.00
CMA-206M	Recording adaptor. Connects Sony DXC camera w/Panasonic portable recorder	125.00
CMA-206V	Recording adaptor. Connects Sony DXC camera w/JVC portable recorder	125.00
DR-10A	Headset	66.00
DR-100	Lightweight headset for intercom communication	95.00
DXF-M3	Detachable 1.5" viewfinder for DXC-M3	645.00
DXF-M3A	Detachable 1.5" viewfinder for DXC-M3A	895.00
DXF-50	Detachable 5" electronic high resolution viewfinder for DXC-1800	830.00
LC2003	Carrying case for RMM-1800, CCU-1800, CMA-7, DXF-40	250.00
LC-2006	Carrying case for SEG-2000	300.00
LC-M3	Carrying case for DXC-M3	400.00
MVA-11	Microscope attachment for DXC-1800, DXC-1640, DXC-1850	535.00
MVA-102	Endoscope (Olympus) adaptor for 2/3" Tricon color cameras	2580.00
RMM-1800	19" rack mount for CCU-1800, CMA-7, DXF-40	120.00
VCR-16D	Telecine adaptor for DXC-1800, DXC-1640	577.00
VCT-20A	Tripod	100.00
VCT-M3	Tripod adaptor for DXC-M3	130.00
EC-0.5C2	Microphone cable	30.00
A12X9 BERM/88	12:1 9-108mm, f/1.7 power zoom. Auto iris w/2x extender	2250.00

CAMERA ACCESSORIES (CONT'D)

A12X9 BERM/88	12:1 9-108mm, f/1.7 power zoom	1220.00
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LENSES AND LENS ACCESSORIES

A10X11 BRM	10:1 10-100mm, f/1.6 power zoom. Auto iris. Bayonet mount	\$ 995.00
A14X9 BERM	14:1 9-126mm, f/1.7 power zoom w/2x extender	4890.00
A14X10 BERM	14:1 10-140mm, f/1.7 power zoom. Auto iris. Bayonet mount	1330.00
A17X9 BERM	17:1 9-153mm, f/1.7 power zoom. Auto iris. Bayonet mount w/2x extender	7800.00
J15X9.5B	15:1 9.5-143mm, f/1.8 power zoom. Auto iris. Bayonet mount	1470.00
J13X9 BIE-2	13:1 9-118mm, f/1.6 power zoom. Auto iris. Bayonet mount w/2x extender	4560.00
VCL-914BY	14:1 9-126mm, f/1.6 power zoom for DXC-M3	1170.00
VCL-1206	Zoom 12.5-75mm f/1.8, C mount	302.00
VCL-08S	Wide angle lens 8mm f/1.4, C mount for DXC-1800, DXC-1640, DXC-1850	280.00
VCL-1106YB	6:1 zoom 11-70mm f/1.4, 2 speed power zoom. Auto iris, macro-focus	529.00
VCL-1110Y	10:1 zoom, 11-110mm f/1.6, 2 speed power zoom. Auto iris, macrofocus	650.00
FMM-7	Focus manual module for Fujinon A14X9BERM lens and A17X9BERM to be used with RM-S5A	125.00
LO-10	2 speed power zoom adaptor for VCL-1106YA, VCL-1106YAF lenses	250.00
LO-21	Flexible cable drive for tripod control of zoom and focus of VCL-1110Y lens	495.00
LO-22	Flexible cable drive for tripod control of zoom and focus of VCL-1106YB	495.00

LENSES AND LENS ACCESSORIES (CONT'D)

LO-24F	Studio conversion kit for DXC-M3 using VCL-914BY lens	390.00
LO-24ZS	Studio conversion kit for DXC-M3 using VCL-914BY lens	560.00
LO-1309	Studio conversion kit for Canon J13X9 BIE-2 and J15X9.5 B	775.00
LO-1011	Studio conversion kit for Fujinon A10X11 BRM and A14X10 BRM	800.00
RM-S5A	Studio conversion kit for Fujinon lenses. A19x9 BERM and A17x9 BERM focus manual is excluded.	848.00

AC ADAPTORS/BATTERIES

AC-340B	AC adaptor for SLO-340,* VO-4800* charges BP-20A, BP-60	300.00
ACP-220	AC adaptor for SL-2000, fits in unit's battery compartment	109.00
BP-60	Battery for DXC-1640, DXC-1800, DXC-M3, DXC-6000, VO-4800 and SLO-340, SEG-2000 and PVM-4000	68.00
BP80/EP650	Rechargeable battery pack for PVM-8000	130.00
BC-20	Dual battery charger for BP-20, BP-20A and BP-60	170.00
BP-65AN	NiCad battery for DXC-6000	570.00
BC-65AN	Battery charger for BP-65AN	85.00
DC-65AN	Battery attachment for BP-65AN	172.00
AC-220	SL-2000 AC Adaptor	155.00
BC-1000	Battery charger for six BP-20A and BP-60	495.00
CMA-5	AC adaptor for DXC-1640	192.00
CMA-7	AC adaptor for DXC-1800, DXC-6000 and DXC-M3	360.00
DC-6	Battery adaptor case for DXC-1800, DXC-6000	68.00
DC-7	Battery adaptor case for DXC-M3	160.00
DCC-2400B	Car battery cord for SL-2000	35.00
DCC-3000	Car battery adaptor for VO-4800, DXC-1640, DXC-1800	357.00
HVA-200	AC adaptor for HVC-2200	52.00
NP-1	Rechargeable battery pack for SL-2000	60.00

CABLES

CAMERA		
CCDQ-06	14 pin to 4 pin cable, 2'. DC power cord for CCU-1800 from CMA-7	22.00
CCDD-2.5	Tallycable 2.5 meters, 4 pin	11.00
CCDY-2.5	18 pin CCY to 4 pin 2.5 meter tallycable for MD-1200 w/DXC-1800, DXC-1640	35.00

*AC Adaptor is supplied

CCF-5	6-pin camera extension cable 16'	21.50
CCF-10	6-pin camera extension cable 32'	32.50
CCJ-1	10-pin video/audio extension cable 5'	47.00
CCJ-5	10-pin video/audio extension cable 16'	65.00
CCJ-10	10-pin video/audio extension cable 32'	88.00
CCJ-25	10-pin video/audio extension cable 82'	148.00
CCJ-50	10-pin video/audio extension cable 165'	258.00
CCQ-10AM	14 pin extension cable for DXC-M3/CCU-M3 33'	150.00
CCQ-25AM	14 pin extension cable for DXC-M3/CCU-M3 82'	285.00
CCQ-50AM	14 pin extension cable for DXC-M3/CCU-M3 165'	530.00
CCQ-100AM	14 pin extension cable for DXC-M3/CCU-M3 333'	1030.00
CCQ-2AR	14 pin extension cable for VO-4800/DXC-1640/DXC-1800/DXC-6000/DXC-M3 6'	80.00
CCQ-5AR	14 pin extension cable for VO-4800/DXC-1640/DXC-1800/DXC-6000/DXC-M3 16'	100.00
CCQ-10AR	14 pin extension cable for VO-4800/DXC-1640/DXC-1800/DXC-6000/DXC-M3 33'	150.00
CCQ-25AR	14 pin extension cable for VO-4800/DXC-1640/DXC-1800/DXC-6000/DXC-M3 82'	275.00
CCQ-50AR	14 pin extension cable for VO-4800/DXC-1640/DXC-1800/DXC-6000/DXC-M3 165'	525.00
CCQJ-2	14 pin to 10 pin cable 6'	50.00
CCJQ-0.5	10 pin to 14 pin cable 1.6'	52.00
CCQQ-1	CCQ cable extension connector	40.00
CCXX-1	Bulk head type CCX cable extension connector	110.00
CCX-10A	26 pin extension for DXC/CCU-6000, 32'	400.00
CCX-25A	26 pin extension cable for DXC/CCU-6000, 82'	600.00
CCX-50A	26 pin extension cable for DXC/CCU-6000, 165'	900.00
CCX-100A	26 pin extension cable for DXC/CCU-6000, 330'	1500.00
CCY-25	Camera extension cable for DXC-1210 w/JB-6A, 82'	434.00

GCS-50



GCS-1

RM-E50

**PROFESSIONAL SUPERBETA™ SERIES:
GCS-50 BETAMAX® EDITOR/RECORDER
GCS-1 BETAMOVIE® CAMERA
RM-E50 EDITING CONSOLE**

SUPERBETA™ SYSTEM

The SuperBeta system is designed around a new recording technique that shifts the video carrier signal frequency higher by 800kHz, creating a wider luminance bandwidth. The resulting picture is sharper and has finer detail and texture than conventional Betamax® VCR. The new system with higher horizontal resolution and superior dubbing picture quality is ideal for program origination as well as multi-generation editing.

The Sony SuperBeta system includes the one-piece GCS-1 Betamovie® color camera/recorder unit, the GCS-50 Betamax editing videocassette recorder and the RM-E50 automatic editing control unit.

GCS-1 BETAMOVIE® ONE-PIECE CCD CAMERA

The GCS-1 is a well-balanced, extremely compact package, weighing just 5 lbs., 11 oz. It combines the high performance of a Charge Coupled Device (CCD) image sensor with 250,000 picture elements and the convenience of a built-in recorder. The one-piece, cord-free design allows for quick start recording with just a single button control in both camera and recording operations.

The replacement of the conventional pick-up tubes with the CCD sensor has resulted in much reduced size, weight and power requirement. The CCD sensor produces accurate pictures with low lag, high resistance to image burning and offers long life and high stability of performance. Adoption of the high band recording system and the high density CCD image sensor create a sharper and more detailed picture.

A digital LCD display on the GCS-1 incorporates a tape counter and battery indicator. Also displayed are date or time and camera/recorder operating status. The date/time information on the LCD window can also be recorded on videotape.

The GCS-1's auto index mark-in function allows the user to record an index signal on the tape during shooting.

The GCS-1 camera/recorder unit also incorporates a 6X power zoom lens with macro capability, one-inch black and white electronic viewfinder, built-in electric microphone and three-position (0dB, AGC, 12dB) light sensitivity switch.

GCS-50 BETAMAX® VCR RECORDER/EDITOR

A prominent feature of the GCS-50 Betamax VCR recorder/editor is greatly improved picture quality. It incorporates a newly developed D.A. Pro 4 head for a sharp and noise-free picture even in search mode. The GCS-50's high band recording system provides 270 TV lines of resolution (horizontal) in color. Along with this new recording system, the newly adopted dubbing mode produces superior quality dubbing — with fourth generation tapes produced on GCS-50

rivaling the picture quality of video tapes produced as second generation on conventional Betamax VCRs.

The GCS-50's framing servo and external sync systems allow precise editing. Its rotary erase heads produce clean cuts at edit points in either insert or assemble mode.

The editor has programmed assembly edit function, and capability for automatic insert editing of picture and sound from a camera or other sources (simultaneously or independently) for title and graphics insertion.

For quick edit point location, the jog/shuttle dial allows picture and sound search at X/5, 1X, 2X and Betascan® 9X speeds, in both forward and reverse direction. During recording or playback, the GCS-50 can record/erase an index signal that provides quick and easy program search and programmed repeat.

The outstanding picture quality of the GCS-50 is complemented by its superior two channel audio permitting stereo or dual language recording and by the optional Beta Hi-Fi sound. The unit is capable of recording in Beta II and playback in Beta I, II and III modes.

RM-E50 AUTOMATIC EDITING CONTROL UNIT

The fully automated editing control unit RM-E50 offers automatic programmed assembly of up to 64 events. The unit's timesaving preview function allows the user to rehearse an edit decision before it is actually executed.

In the auto edit mode, the RM-E50 memorizes all the edit in/out points on a particular cassette or series of cassettes — up to 64 segments. While executing the edit list for a master tape, all unnecessary scenes in the original footage are ignored. By feeding the appropriate cassettes indicated in the edit decision list, an entire program is assembled with great speed, ease and flexibility. Automatic editing also saves a generation, since multiple copies can be auto-assembled directly from the original tapes in second generation with minimum loss of picture quality.

The jog/shuttle dial on the RM-E50 provides fast and accurate picture/sound search. In shuttle mode the tape speed can be varied at X/5, 1X, 2X and Betascan 9X speeds, in forward and reverse. The jog dial permits frame-by-frame picture movement in both directions for quick and precise edit point location. During operation, possibility for editing errors is minimized by the alphanumeric information in the three LCD windows which display source and editing VTR status and editing commands. Among the other features of RM-E50 are (TTL level) CUE signal output, automatic tape protection system and capabilities for butt edit and go-to function.

Prices TBA

Prices and Specifications Subject to Change Without Notice.

VC-269

Professional Wireless Communication Systems

for: Broadcasters
Entertainers

Schools & Churches
Athletics

Industry
Race Car Crews

Police, Fire & Security
TV & Film Production

WIRELESS MICROPHONE SYSTEMS

- Systems for hand-held mics, lavalier mics, electric instruments and ENG/EFP/LPTV.
- A variety of hand-held mics and finishes.
- VHF/UHF high band operation.
- All metal construction assures durability and RF shielding.
- Reduced RF bandwidth for multi unit operation.
- Antenna switching diversity for glitch free reception.

Swintek systems are used whenever reliable, high quality sound transmission is required without the physical limitations and visual clutter of "hard-wired" microphones. All systems contain our patented dB-S® companders which permit wide dynamic range without unnatural compression.

Mark 1L & Mark 2L RF Switching Diversity for Sound Reinforcement

Top-of-the line receivers that can be powered by either 110 or 230 V AC power mains, optional built-in batteries, or an external source of 12 to 24 V DC.

Mark 3 Cinematographer Receiver

Top-of-the line compact, portable receiver that is powered from any external 10 to 16 V DC power source or internal battery cells.

Mark QAC Institutional Receiver

Compact, economical receiver for church, school, business and similar groups.

Mark QDC Video Production Receiver

DC powered, compact receiver designed to be integrated with any video or film camera. Interfaces to most microphones and wired intercoms.

Mark 50A/ENG & Mark 50A

Compact pocket transmitters that may be used with any dynamic, ribbon or electret condenser lavalier microphone.

Hand-held Microphones

Swintek offers a choice of mic capsules, finishes and antenna systems.

Mark 8, Mark 8C & Mark 9-2

Antenna combination diversity—the simplest, most effective multiple diversity antenna system for fade-free reception.



WIRELESS INTERCOM SYSTEMS

- Continuous hands-free communications.
- Full duplex operation (talk and listen simultaneously).
- Unlimited system configurations with easy operation.
- VHF/UHF high band operation for less interference and noise, more reliable operation.
- Interfaces to wired intercom system and TELCO lines.

ON GOVERNMENT
SCHEDULE

Swintek
TELECOMMUNICATIONS DIVISION

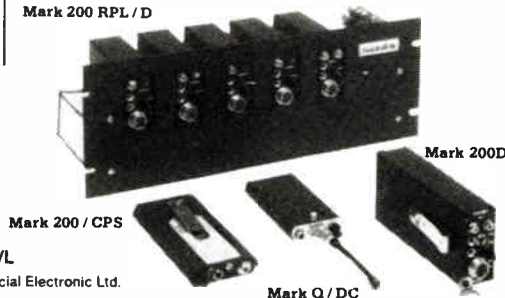
587 DIVISION ST. / CAMPBELL, CA 95008
(408) 378-8091 / TELEX 497-0334 SWINTEK SUVL
CANADA Toronto, Ontario Cinequip Vancouver, BC Commercial Electronic Ltd.

The Swintek Mark 200 is the world's finest and most reliable wireless intercom system. It's simple to operate and exceptionally dependable utilizing the same technology as our systems used on the Space Shuttle. Each system is designed to meet your specific requirements using standard, fully tested, precision Swintek electronic components that are protected by rugged, industrial grade, all metal cases.

Mark 200 RPL/D

Full duplex base station expander, mounts up to five Mark 200D/R remote receivers per rack.

Mark 200 RPL/D



HS200D/T or HS200D/B

Single-muff headset with noise canceling dynamic microphone and rubber duckie antenna. Dual-muff headsets also available or use your own headset. The Mark 200 system works with carbon or electret condenser mics.

Mark 200/D, 200/CPS

Remote intercom units powered by battery or external DC source.

Mark Q/DC

Remote intercom receiver powered by battery or external DC source.

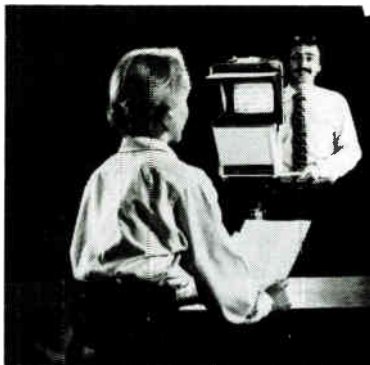
HS200D/B

HS 200D/T

TEKSKIL INDUSTRIES, INC.

310-218 Blue Mountain Street
Coquitlam, British Columbia,
Canada, V3K 4H2
(604) 931-3211
Telex 04-351186 WCST PSML

**909V CAMERA
VIEWING UNIT**



909 PROMPTER SYSTEM

The Tekskil 909 is the first prompter designed specifically to work with your portable video camera. Other prompting systems, designed for heavy studio cameras, have front-mounted imaging monitors that must be counterweighted. The result is a clumsy system that doesn't lend itself to smooth camera work and is time-consuming to set up. The 909 eliminates these problems with a totally different design.

The 909 also fills an important need for many teleproduction studios: The ability to use a variety of material for on-camera prompts. State-of-the-art controls, time-saving innovations, and a compact, rugged design make the 909 system an extremely useful permanent accessory for your portable video camera.

Full-function display control

The 909T provides for two NTSC inputs: One for the text camera and one for your portable camera, with instant switching between cameras. Script feed stops when the talent or operator switches to the auxiliary video feed. When the script is recalled, it continues where it left off, at the exact speed it was moving before the switch. The 909T also provides individually-buffered NTSC video outputs to drive monitors and other equipment.

You can switch between normal and reverse video text displays. An adjustable video enhancer brightens poor-contrast originals to give your talent the sharpest possible display to make reading easier.

Light, rugged, and easy-to-work-with

The mount is a single basic unit — a light, rugged, precision aluminum casting that is easy to transport (it also contains and protects the imaging monitor), and can be set up in the field in a few minutes without tools. It is the first prompter really suited to EFP and ENG.

Optional: A gen-lockable text camera

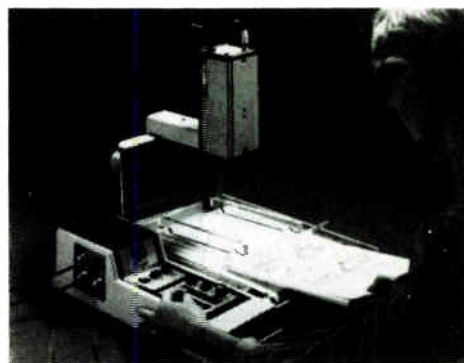
This option gives you the ability to use the 909T to create text or graphic overlays. Place the material under the camera; the 909T gives you a monochrome output to work with.

Now you can use script paper in any format

The 909T Script Transport lets you feed almost anything to the monitor. You can use paper up to ten inches wide, including continuous computer printouts, and even whole magazines — the document guide is self-adjusting. When you have to work from a variety of written, typed, or printed material, this feature will simplify your life.

PROMPTER SYSTEM

**909T SCRIPT
TRANSPORT**



State-of-the-art microcircuitry controls

The 909T uses a pulse frequency modulation circuit to give you precise one-touch control of script speed forward and backward. A bar-graph display indicates scroll-ready status, direction of movement, and speed. Once your script assistant has established the best speed for the talent, that precise speed can be used every time. Scrolling speed and video-input switching can also be controlled by means of a plug-in remote controller.

The 909 lets you pan and tilt your portable as smoothly as a studio camera

The 909V Camera Viewing Unit mounts on any standard-mount field or studio tripod and accepts any portable camera. It holds the prompting monitor below the camera, so that both are balanced over the tripod head. Tekskil uses folded optics — a surface-reflectance mirror and a 70/30 beamsplitter — to bring the prompts up in front of the lens. The result: Smooth, easy pans and tilts, free from the clumsiness associated with traditional front-heavy prompters.

Let your talent see what the camera sees

The 909 takes a video output from the camera and lets you switch it onto the prompting monitor. While looking straight at the camera, the talent can see what the camera sees — ideal for blocking scenes, pointing at weather maps, and generally reducing production time.

SPECIFICATIONS

Power: 120VAC, .2 amp, 60Hz; or (optional) 240VAC, .1 amp, 50Hz

Tekskil 909V Viewing Unit

Weight: (without monitor) 11.0 lbs. (5.0kg)

Imaging Monitor: 9" industrial monitor, Ikegami PM-910A or equivalent.

Dimensions: 18"H x 12-1/2"W x 19-7/8"D (45.8 x 31.7 x 50.5cm)

Tekskil 909T Script Transport

Weight: (without camera) 17.0 lbs. (7.7kg)

Inputs: Two, 1V p-p, negative sync video, BNC connector standard.

Outputs: Two individually buffered NTSC outputs.

Text Camera: Panasonic WV 1400 or equivalent.

Dimensions: 15-3/8"H x 17-1/8"W x 17-11/16"D (39.0 x 43.5 x 44.9cm)

909 Prompter System — Includes 909T, (script transport), 909V (9" monitor) and Vidicon Camera \$4250.00

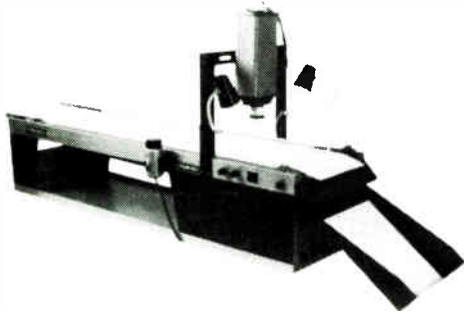
909V Camera viewing unit 9" monitor \$1525.00

909T Script transport includes Vidicon Camera and remote control \$2850.00

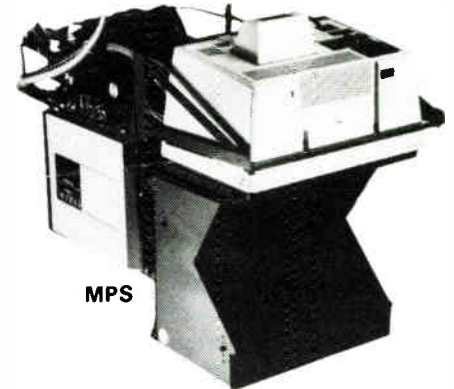
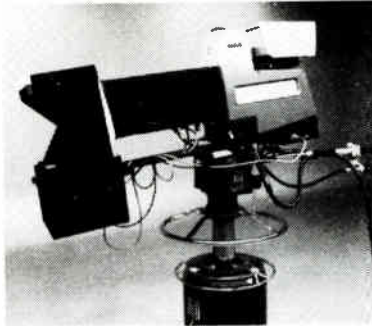
TELESCRIPT, INC.

445 Livingston St.
Norwood, NJ 07648
(201) 767-6733

MONITOR PROMPTING SYSTEMS



TELESCRIPTOR



MPS

Telescript's Monitor Prompting Systems consist of the "Monitor Prompter" (M/P) featuring the Lever Principle® and the Telecue® and Telescriptor® Transports.

The Telecue®

The compact, portable TELECUE transports Prompting scripts and graphics with equal facility. To facilitate script Prompting continuity and for remote location operation, 8 1/2 x 11 sheets of paper should be taped together.

The Telescriptor®

The TELESCRIPTOR transports Prompting scripts and graphics via a white Fiberglass Belt with equal facility. TELESCRIPTOR Prompting only requires that 8 1/2 x 11 sheets of paper be placed singly on the Transport's belt. Over and under lapping and immediate editing by exchanging sheets is the norm.

1 Monitor Prompting System (MPS)®

Telecue Transport or Telescriptor Transport incl. Table w/Casters; Vidicon Camera w/Mounting Plate. Int. 2-1, Sweep Sw, 12.5mm f/1.8, 1" Format Lens. Remote Hand Control and 25' cable. Includes:

- 1 Monitor/Prompter (15", 1000 Line)
- 1 Monitor Lensview Assembly
- 1 Monitor Mount Assembly
- Manuals

1 Monitor Prompting System w/Telecue	\$4430.00
1 Monitor Prompting System w/Telescriptor	4760.00
1 Monitor Prompting System w/C-64 Program	3060.00
Contrast Enhancer w/pkg	385.00

2 Monitor Prompting System (MPS)®

Telecue Transport or Telescriptor Transport incl. Table w/Casters, Vidicon Camera w/Mounting Plate. Int. 2-1. Sweep Sw, 12.5mm f/1.8, 1" Format Lens. Remote Hand Control and 25' Cable, includes:

- 2 Monitor/Prompter (15", 1000 Line)
- 2 Monitor Lensview Assembly
- 2 Monitor Mount Assembly
- 2 Compensating Weight Assembly

Telecue	\$5860.00
w/Telescriptor	6160.00
w/C-64 Program	4490.00

PRODUCT COSTS

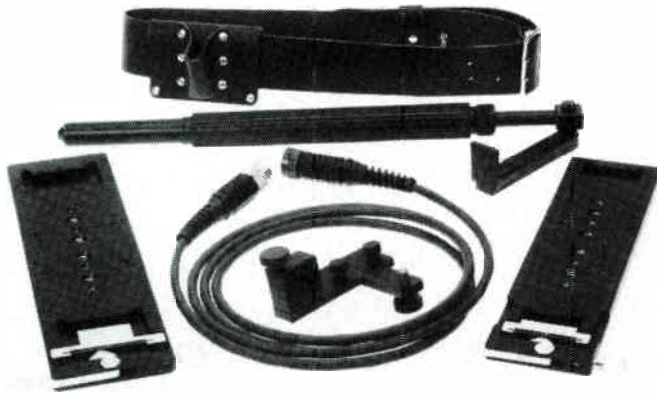
Telecue w/HC and 25' Cable	\$2390.00
Telescriptor w/HC and 25' Cable	2690.00
C-64 PROGRAM ROM Cartridge, Support Disk, Remote Controller w/10 Pushbuttons, Cables	1390.00
Table w/Casters (Telescriptor)	90.00
Dual Control w/HC features plus Ind. Foot Pedal (2) control, 25' ext. (2)	290.00
Vidicon Camera w/Mounting Plate, Int. 2-1, Sweep Sw, 12.5mm f 1.8, 1" Format Lens	560.00
Monitor Prompter (M/P) 15" 1000 L.	835.00
Monitor Prompter (M/P) 17" 1000 L.	865.00
(E'homes rehoused in alum/vinyl). Sweep Sw. Preview Monitor 9" 700 L.	175.00
Monitor Lensview (LV) Assembly w/Beam- splitter, Amb. Light Mask	\$290.00-360.00
Monitor Mount Assembly w/Counterbalancing Plate and Access.	\$375.00-475.00
Compensating Weight Assembly, CWT (Pb), Ext. Plate and Hardware	110.00
Beamsplitters 30/70 or 40/60 with 2nd surface low reflecting coating.	\$95.00-145.00
Wedge Adaptor and Wedge	\$50.00-70.00
Counterweight (Pb) and Hdwe.	\$20.00-30.00
Pedestal Weights Contrast Enhancer, 300% INCR. Video Rev. (A must for Out-of-Doors Prompting)	\$410.00
Telepod (off camera M/P support) Head, Adj. Pedestal, Base-Casters, LV or direct M/P viewing .....	.510.00
Mirror View for Public Speaking. Housing for M/P, Panels, Adj. Bstr. Holder and Bstr. ....	.520.00
Universal Fluid Heads. 12 models for Cameras weighing 12 to 50 lbs! 205BVH. Fluid Action 50 lb. video head, 2 PRO pan handles, PRO claw ball, tripod with 2" std. ball cup, spikes/rubber feet. Fluid head warranty: 2 years	\$1790.00
Video Blanking including Control & 2-50' ext. cables	135.00
Contrast Enhancer features Video Rev. (white on black or shades of gray). Necessary in well lighted or open areas	395.00
Lightweight Carrying Cases. Foam lined, handles, latches, straps "Space Age" Plastic	245.00
23" Monitors, 1000L* for placement in key areas for walk-about type speaking or group viewing	875.00

TOTAL SPECTRUM MFG., INC.

20 Virginia Avenue
West Nyack, NY 10994
(914) 358-8820

MOUNTS/ADAPTORS/CABLES

TSM-CMB

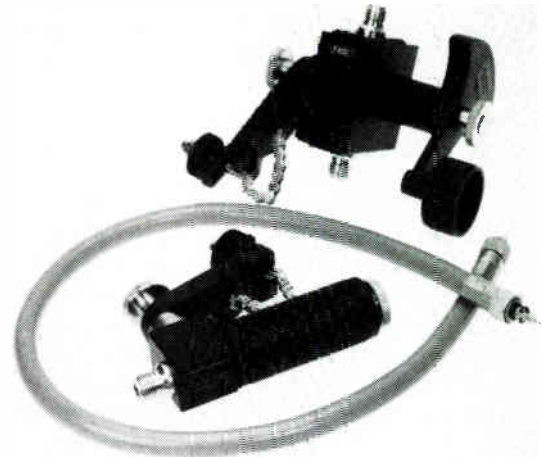


TSM-QRP 700/800

TSM-MLA

TSM-QRP 79/730

VTR CABLE



BCTV CAMERA ACCESSORIES

TSM-CMB-79 Camera Mono-Brace

For use with all HL-79 cameras. Unit comes with quick-release mount for front of camera, camera brace with twist-lock height adjustments, and waist belt with pocket for camera brace **\$633.00**

TSM-CMB-77 Same as above for HL-77 cameras **633.00**

TSM-CMB-SB Same as above for all Sony Broadcast cameras **633.00**

TSM-QRP 79/730 Quick-Release Tripod Mount

Quick-Release Plate with spring-loaded plunger lock. Plate is an extremely rugged design for direct replacement of Ikegami's HL-79/ITC-730 mount **\$146.00**

TSM-QRP 700/800 Quick-Release Tripod Mount

Direct replacement for Sharp's XC-700/800 camera mounts. Same as TSM-QRP 79/730 above. (Also fits XC-900) **\$146.00**

Camera Microphone and Light Adaptors

Allow mounting of Sennheiser shotgun or similar microphone and provides a 3/8" stud for mounting a light (mounting posts included for clamp type lights) **\$94.00**

- TSM-MLA-79D** For HL-79 cameras up to the D model **\$ 94.00**
- TSM-MLA-79E** For HL-79E cameras **126.00**
- TSM-MLA-95** For HL-95 cameras **175.00**
- TSM-MLA-83C** For HL-83 center handle cameras **175.00**
- TSM-MLA-730** For ITC-730 cameras **94.00**
- TSM-MLA-350** For ITC-350 cameras **94.00**
- TSM-MLA-77** For HL-77 cameras **94.00**
- TSM-MLA-MP** (Extra) Light Mounting Post **6.00**

VTR/CAMERA CABLES

Flexible 10' VTR cable assembly with extra heavy duty strain relief. Use Table to order correct TSM Model# for VTR/camera combination. Cables for other VTR/camera combinations are available by special order.

VTR Cable Model #	Camera Model #				VTR Model #			
	Ikegami	RCA	Sharp	Hitachi	Sony	JVC	Pana-sonic	
TSM-HL-79/BVU	HL-79				BVU 11C/50			\$333.00
TSM-HL-83/BVU	HL-83							
TSM-HL-95/BVU	HL-95							
TSM-ITC-730/BVU	ITC-730							
TSM-HL-79/4400	HL-79					4400	NU 9400	320.00
TSM-HL-83/4400	HL-83							
TSM-HL-95/4400	HL-95							
TSM-XC-700/BVU			XC-700		BVU 11B/50			333.00
TSM-XC-800/BVU			XC-800					
TSM-XC-700/4400			XC-700			4400	NU 9400	340.00
TSM-XC-800/4400			XC-800					
TSM-TK-76/BVU		TK-76			BVU 11D/50			333.00
TSM-TK-76/4400		TK-76				4400	NU 9400	
TSM-FP-21/BVU				FP-21	BVU 11D/50			340.00
TSM-FP-22/BVU				FP-22				
TSM-FP-21/4400				FP-21		4400	NU 9400	
TSM-FP-22/4400				FP-22				
TSM-FP-11/BVU				FP-11	BVU 11B/150			353.00

Pistol Grip Mounts

- TSM-PGM-79C** Pistol grip mount for mounting a Canon Canon Pistol grip to front of HL-79 camera **\$ 87.00**
- TSM-PGM-79F** Pistol grip mount for mounting Fujinon Fujinon Pistol grip to front of HL-79 camera **200.00**

TSM-BCTV-ZC 2 Speed BCTV Zoom Control

For standard broadcast lens drives. Normal speed is 1.5:1 and "Fast" speed is 0.75:1. Control has a clutch to prevent end stop damage and a drag adjustment to provide smooth action **\$820.00**

TSM-BCTV-FC BCTV Focus Control

For standard broadcast lens drives. Control has a drag adjustment to provide smooth action **\$400.00**

TSM-BCTV-DC BCTV Drive Cables 40" or 44"

Direct replacements for standard broadcast drive cables. These cables are extremely flexible to provide smooth, consistent operation. There is a dust seal on both ends to prevent contamination of lubricants **\$95.00**

ULTIMATE SUPPORT SYSTEMS, INC.

P.O. Box 470
Fort Collins, CO 80522-4700
(303) 493-4488 Telex 4991589 ULTIMATE SUPPT

TRIPODS

TS-30 TRIPOD STAND

Each Tripod combines deep etched and clear anodized aluminum tubing with black polycarbonate parts to create a look that complements any product it upholds. The stand's weight is 6 pounds (2.72 kg) and carries loads of up to 75 pounds (34 kg). Two sizes of Ultimate Support Systems Tripods are available. The TS-30 is 30% smaller than the TS-33, but is identical in design. Height is infinitely adjustable from 3'6" (1.07 m) to 6'7" (2 m) making it ideal for speakers, PA systems, signs, photo studio lights, etc. Large, easy-to-use handknobs make height and base spread adjustments simple and quick. For traveling and storage ease, the Tripod Stand breaks down to slip into a slender 42" (1.07 m) waterproof nylon tote bag which is included. A variety of mounting adaptors are available and are described on the accessory information page. Special interest is the TMB-400 Tripod Mounting Bracket; this innovative two piece mounting system solves the problems normally associated with mounting speakers on tripods. All USS lighting products can also be used with the TS-30. For uneven surfaces, USS has introduced the TAK-300 Tripod Articulation Kit which converts an existing TS-30 into an articulating leg tripod.

SPECIFICATIONS

- Height: 3'6" to 6'7" (1.07 to 2 m)
- Max Base Diameter: 47" (1.19 m)
- Load Capacity: 75 pounds (34 kg)
- Breakdown Dimensions: 41-1/4" x 6-1/2" dia. (1.05 x .165 m dia.)
- Weight: 6 pounds (2.72 kg)
- Set up time: 2 minutes

TS-30 \$100.00

TS-33 TRIPOD STAND

Each Tripod combines deep etched and clear anodized aluminum tubing with black polycarbonate parts to create a look that complements any product it upholds. The stand's weight is just 8 pounds (3.63 kg) yet it carries loads of up to 100 pounds (45.36 kg). The TS-33 is height adjustable from 5' (1.52 m) to 9'2" (2.79 m). With its wide base spread of 62" (1.57 m) it is well suited for larger, heavy speakers that need stability. The TS-33 serves as the base for all USS stage lighting products.

Applications include: projection stands for backlit screens, photography studio backdrops, studio lights, signs, etc. Large, easy-to-use handknobs make height and base spread adjustments simple and quick. For traveling and storage ease, the Tripod Stand breaks down to slip into a slender 58" (1.47 m) waterproof nylon tote bag which is included. A variety of mounting adaptors are available and are described in full on the accessory page. The TMB-400 Tripod Mounting Bracket; innovative two piece mounting bracket solves the problems normally associated with mounting speakers on tripods. For uneven surfaces, USS has introduced the TAK-330 Tripod Articulation Kit which converts an existing TS-33 into an articulating leg tripod.

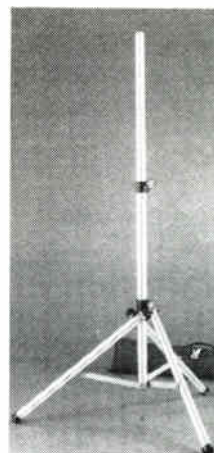
SPECIFICATIONS

- Height: 5'0" to 9'2" (1.52 to 2.79 m)
- Max. Base Diameter: 62" (1.57 m)
- Load Capacity: 100 pounds (45.36 kg)
- Breakdown Dimensions: 57-1/2" x 6-1/2" dia. (1.46 x 1.64 m dia.)
- Weight: 8 pounds (3.63 kg)
- Set up time: 2 minutes

TS-33 \$120.00

ARTICULATING LEG TRIPODS

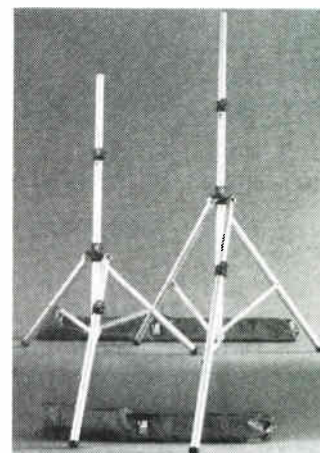
These new Ultimate Support Systems enable their users to direct the sound on almost any surface. By simply adjusting a handknob located conveniently at the top of the leg, the tripod can be infinitely adjusted to the exact contours of the ground surface. From outdoor concerts to stairs, this innovative stand will securely hold speakers, lights, etc., in the most precarious positions. The design also allows the tripod to be used normally on flat surfaces when the articulating leg is fully retracted. Tripods are constructed of lightweight aluminum alloy tubing and glass-reinforced polycarbonate parts to produce an end product that is not only extremely light but able to hold loads up to twelve times their own weight. Two sizes of Ultimate Support Systems Tripods are available. The TS-30A has a maximum height of 6'7" (2 m), and can hold up to 75 pounds (34 kg) of equipment. The TS-33A has a maximum height of 9'7" (2.79 m), and can hold up to 100 pounds (45.36 kg). For traveling and storage ease, the tripod stands breakdown to slip into a



TS-30



TS-33



TS-30A

TS-33A

waterproof nylon tote bag which is included. A variety of mounting adaptors are available and are described in detail on the accessory information page.

SPECIFICATIONS

TS-30A

- Height: 3'6" to 6'7" (1.07 to 2 m)
- Max. Leg Extension: 11" (.29 m)
- Load Capacity: 75 pounds (34 kg)
- Breakdown Dimensions: 41-1/4" x 6-1/2" dia. (1.05 x .164 m)
- Weight: 6-1/2 pounds (2.95 kg)
- Set up time: 2 minutes

TS-33A

- Height: 5' to 9'2" (1.52 to 2.79 m)
- Max. Leg Extension: 16" (.41 m)
- Load Capacity: 100 pounds (45.36 kg)
- Breakdown Dimensions: 57-1/2" x 6-1/2" dia. (1.46 x .164 m dia.)
- Weight: 8-1/2 pounds (3.86 kg)
- Set up time: 2 minutes

TS-30A \$115.00

TS-33A 135.00

ULTIMATE SUPPORT SYSTEMS, INC.

P.O. Box 470
Fort Collins, CO 80522-4700
(303) 493-4488 Telex 4991589 ULTIMATE SUPPT

ACCESSORIES



TAD-138



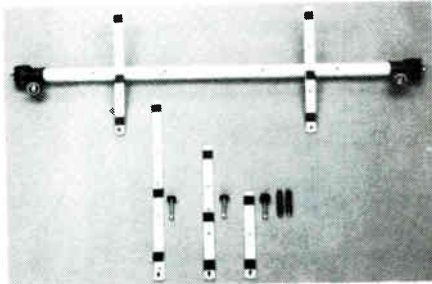
TAD-100



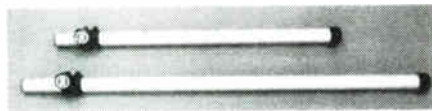
TMB-400



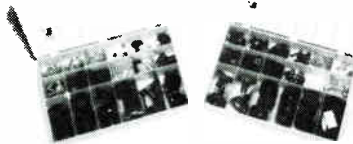
BMB-200



KT-TIERS KSB-222, KSB-220, KSB-160, EXT-220



TAK-300, TAK-330



PKT-100

PKT-200



ABG-100

EXP-800

TAD-138

1-3/8" dia. Tripod Adaptor for TS-30, TS-33. Allows Tripod to be used with any 1-3/8" (3.53 cm) inside diameter socket such as Peavey or EV-Tapco. Plastic construction.

TAD-100

1" dia. Tripod Adaptor for TS-30, TS-33. Allows Tripod to be used with any 1" (2.56 cm) inside diameter socket such as Atlas.

Can be used in conjunction with a microphone stand clamp for high miking applications. Plastic construction.

TMB-400

Tripod Mounting Bracket for TS-30, TS-33. USS's unique two part mounting system consisting of a thin plate, which is screwed to the bottom of the speaker, and a slide-in bracket which secures speaker to the Tripod. Constructed of glass-reinforced polycarbonate. Mounting screws included.

BMB-200

Mounting Bracket for TS-30, TS-33. Designed for attachment to speakers with built in threaded inserts spaced 4-3/8" to 6" (11.11 to 15.24 cm) apart. Constructed of glass reinforced polycarbonate. 1-1/2" (3.85 cm) inside diameter socket fits directly on USS Tripods. Mounting screws not included.

BMB-200K

Mounting Bracket (not shown). Identical to the BMB-200 except that it includes two 5/16-18 T-thumbscrews and two T-nuts. The bracket mounts directly to any speaker cabinet made of wood (or particle board) at least 5/8" thick.

KT-36, KT-42, KT-48, KT-54

Keyboard Tiers. Used with KS-12, KS-22 and KS-88. Comes in four widths: 36", 42", 48", 54" (.91, 1.07, 1.22, 1.37 m). Includes: Support Bars, Tee Fittings, and Rubber Pads.

KSB-222, KSB-220, KSB-160

Keyboard Support Bars. USS offers three various length support bars that will work on any size tier. The KSB-222 is 20" (.51 m) long enabling its user to mount extremely deep keyboards either directly to one tier or to reach from a front tier to a rear mounted tier. The KSB-220, 14-1/8" (.36 m) long, is the most popular support bar and comes standard with all USS tiers. Extra KSB-220s may be used when mounting two keyboards side by side, or to increase stability for heavier instruments. The KS-160, 8-3/4" (.22 m) long, is designed to hold small instruments on a keyboard tier. Its short length is perfect for drum machines, sequencers, etc.

ABG-100	Accessory Bag	\$25.00
BMB-200	Mounting Bracket	20.00
BMB-200K	Mounting Bracket Kit (includes mounting hardware)	24.00
EXP-550	Expander Bracket	18.00
EXT-220	Keyboard Tier Pin Extensions (pair)	2.50
KSB-222	Keyboard Support Bar (longer)	8.50
KSB-220	Keyboard Support Bar (standard)	7.00
KSB-160	Keyboard Support Bar (shorter)	6.50
PKT-200	Parts Kit	85.00
PKT-100	Parts Kit	85.00
TAD-138	1-3/8" Tripod Adaptor	9.00
TAD-100	1" Tripod Adaptor	9.00
TAK-330	Tripod Articulation Kit (for TS-33)	30.00
TAK-300	Tripod Articulation Kit (for TS-30)	26.00
TMB-400	Tripod Mounting Bracket	20.00
VCS-712	Velcro Cord Straps (pair)	2.00
KT-54	54" Keyboard Tier	47.00
KT-48	48" Keyboard Tier	45.00
KT-42	42" Keyboard Tier	44.00
KT-36	36" Keyboard Tier	43.00

EXT-220

Support Bar Pin Extensions (Pair). For Keyboard Tiers. Increases height of pins from 3/4" to 2-1/2" (1.91 to 6.35 cm). Used with slanted front instruments.

TAK-300, TAK-330

The Tripod Articulation Kits were designed specifically so that USS tripods might provide a stable support for mounting speakers, lights, etc., on uneven surfaces such as outdoors or on stairs. The TAK-300 provides a maximum single leg extension of 11" (.29 m) for the TS-30, while the TAK-330 provides a 16" (.41 m) single leg extension for the TS-33. Installation is quick and easy, as it uses existing parts from the tripod and common tools.

PKT-100

Parts Kit (MI). For KS-12, KS-22, KS-88, KT-36, KT-42, KT-48, KT-54, KS-11, SS-44, SS-40, TS-33, TS-30, VT-44, US-22, and US-44. A generous stock of parts for repairs and replacements. Part numbers and descriptions are inside the lid of the unbreakable plastic box.

PKT-200

Parts Kit (Lighting). For TS-30, TS-33, VE-24, CB-48, CB-24, HB-48, and HB-24. A generous stock of parts for repairs and replacements. Part numbers and descriptions are inside the lid of the unbreakable plastic box.

ABG-100

Accessory Bag. Holds all sections of a complete lighting tree (less Tripod). Also useful for microphone stands etc. Heavy waterproof nylon with full length zipper and carrying handle.

EXP-550

Expander Bracket. Provides a means of attaching power expanders, dimmer packs, etc., to the lighting tree. Bar has 1/4" (.64 cm) holes drilled 8" (20.32 cm) apart. Hardware included.

VCS-712

Velcro Cord Straps (pair) (not shown). Use to secure power and audio cords to any USS stand. 7" (17.78 cm) long.

Prices and Specifications Subject to Change Without Notice.

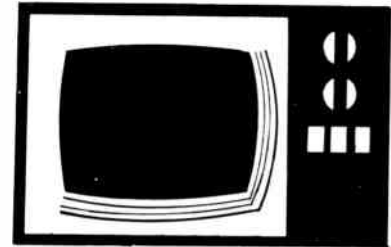
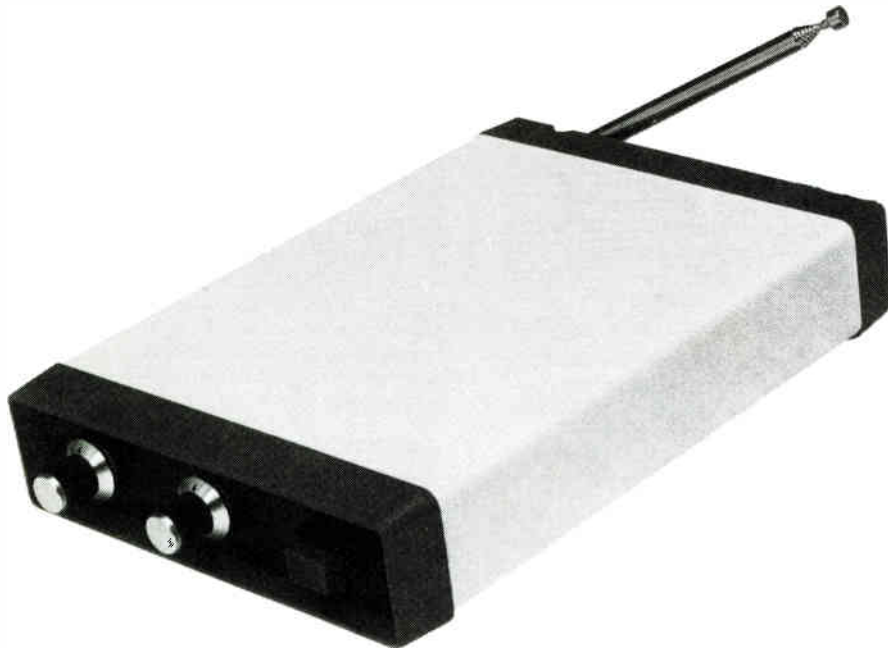
VC-275



VIDEO/AUDIO TRANSMITTER

164 Howes St.
P.O. Box 67, Dept. BD
Port Orange, FL 32029-0067
(800) 874-5906
Florida (800) 342-4900

HAWKEYE CORDLESS VIDEO/AUDIO TRANSMITTER



MODEL VTR-80 CORDLESS VIDEO/AUDIO TRANSMITTER

Features

- Transmits live video/audio from video camera to any TV set
- Transmits recorded video/audio from VCR to any TV set
- Range approx. 200 feet • sharp — clear picture
- No cable — portable • operates on 12 volts DC
- Color or B/W • light weight — miniaturized size
- Applications: — home entertainment — crime watch — baby minder — education — home security — and much more

The Video/Audio Transmitter, Hawkeye Model VTR-80 is a portable, real time, fast scan, high resolution, cordless Video/Audio transmission device, with an operational range of more than 200 feet.

To transmit Live Video pictures, you simply plug in any standard Video Camera to the Video/Audio input connections on the VTR-80 Video Transmitter.

Alternatively, you can transmit Recorded Video Tapes, directly from your VCR, by connecting the Video/Audio output connections on your VCR to the Video/Audio input connections on the VTR-80 Video Transmitter.

With the Hawkeye Video Transmitter, your pictures, live or recorded, can be viewed on any standard Television, just turn the dial to UHF Channel 14.

VTR-80 **\$399.95**

Specifications

- **Frequency Range:** X-tal controlled UHF Channel 14
- **Number of Channels:** Single Channel
- **RF Output:** Below 500 μ V/m at 30 meters
- **Antenna Impedance:** 50 Ohms
- **Power Input:** 12 Volts DC
- **Power Consumption:** Approx. 350 mA.
- **Type of Modulation:** Video — AM
Audio — FM
- **Video Input:** 1.0 Volt peak-to-peak/75 Ohms
- **Video Sync:** Negative Sync
- **Video Carrier Stab:** .002%
- **Audio Input:** 0.1 - 1.0 Volts RMS/600 Ohms
4.5 MHz Subcarrier
- **RF Bandwidth:** Max. 6 MHz
- **Deviation:** Max. 7 kHz
- **Resolution:** NTSC Standard
- **Spurious Output:** 50 dB down
- **Harmonics Output:** 50 dB down
- **Dimensions:** 5.75(W) x 1.50(H) x 8.50(D)
inches
- **Weight:** 1.8 lbs.



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POWER BELTS



Professional Power Belts
 Various Models: 7 to 20 AMP Hours

VDO-PAK offers the most complete range of battery power belts for the home videophile. All belts feature auto-reset circuit breaker for safety and ease of use. Group I belts utilize a modular design that allows user conversion of B600 or B800 to high-capacity B1000 model. Group II belts feature a quick conversion option that gives the user the choice of cutting weight and capacity by 50%, when lighter weight is important, and full power is not needed. All Group II belts are equipped with dual outlets, so that VCR and other equipment may be used simultaneously. Group I and Group II contain gell cell batteries.

VDO-PAK supplies all Power Belts with electronically regulated high-output float chargers. From full discharge, a VDO-PAK belt will regain full capacity within 14 hours. The regulated float charger ensures that the Power Belt will never overcharge, regardless of how long the charger is connected.

All Power Belts are completely adjustable for waist sizes 27-50", and provide comfortable, balanced 12 volt DC power for all applications. Belts are available in Black or Rust color heavy-duty Nylon, with quick-release buckle. VDO-PAK provides a limited 1-year warranty on all power belts.

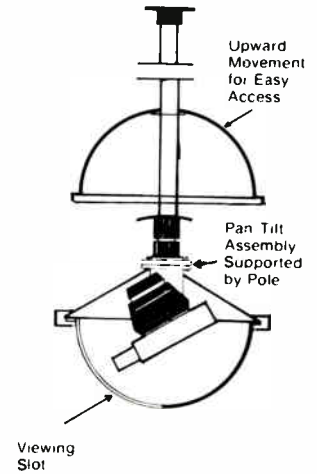
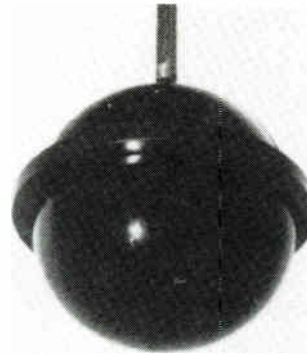
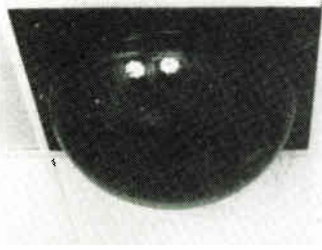
	Model	VCR & Camera	Operating Time 100W Quartz Light	Price
GROUP I				
B600	6 Amp Power Belt	3-4 Hours	20-25 Minutes	\$169.95
B850	8.5 Amp Power Belt	5-6 Hours	40-45 Minutes	199.95
B1000	10 Amp Power Belt	7-8 Hours	50-55 Minutes	224.95
GROUP II				
B1200	12 Amp Power Belt	8-9 Hours	55-60 Minutes	249.95
B1700	17 Amp Power Belt	11-12 Hours	100-110 Minutes	299.95
B2000	20 Amp Power Belt	14-16 Hours	120-130 Minutes	349.95

Listed capacities based on continuous recording without power zoom or auto focus options. Intermittent operation will increase rated capacity. VCR playback only operation will result in approximately double the listed operating time. Units weigh approximately 1 pound per Amp Hour.

VIDEOLARM, INC.

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 Lithonia, GA 30058
 (404) 482-1313 Telex 80-4569

CAMERA HOUSINGS



SECURITYSCAN I & II

- Flexibly designed for 2' x 2' drop ceilings, surface, pendant or wall mounting
- Accepts standard drive motors and zoom lens
- Upper trap door used for fine focusing camera
- Quick-release fasteners on mounting plate for ease of servicing
- Non-toxic, non-flammable metal upper support - Fire Marshall's choice
- Silent operation

Model I

Top: Top is fabricated from 18 gauge steel and measures 23" square. A swinging door appearing on bottom of unit is fastened to steel top on one side using two hinges. Swinging door measures 22-5/8" square and has a 20-3/4" diameter hole in its center. Four (4) butterfly fasteners are located around perimeter of 20-3/4" diameter hole and are used to secure capsule to top in absence of drive motor. Swinging door is secured in place using two butterfly fasteners located on opposite side of hinges. Smaller trap door, measuring 7-3/4" W x 13" L, is located on side of steel top and is fastened to top with a continuous hinge. Trap door is commonly used to secure swinging door and for fine focusing camera as it looks through outer capsule. Additionally, trap door has a keyed cam lock which is used to render entire unit tamper proof. Located within interior of top is a drive motor mounting plate measuring 7-3/4" square and containing four (4) quick release type fasteners. Height of mounting plate is adjustable to enable housing to be fitted with a variety of drive motors. Entire top is designed for a 2' x 2' ceiling grid, pendant, wall or hard surface mounting. Optional acrylic finishing plates can be fastened to all four (4) exterior flat sides of steel top. In addition, an optional trim frame is available for concealing rough cut which might exist when installing unit in a sheet rock ceiling.

Capsule: Capsule is formed from 1/8" bronze acrylic with a maximum of one "F" stop light transmission loss. Interior of capsule is painted flat black with exception of viewing slot. Diameter of capsule measures 20" and is attached to drive motor using two (2) plastic arms and four (4) quick release fasteners for ease in servicing. Installed capsule appears entirely black and will not disclose position of camera when bright background lighting is present.

In general the unit described above is designed to conceal a CCTV surveillance camera without the use of mirrors or other reflective image devices. In addition it is designed for standard off-the-shelf type drive motors which are standard to the CCTV industry.

Model I \$399.00

Model II (Simulated Unit)

A fabricated piece of 18 gauge steel measuring 23-6/8" square and containing a 20-3/4" diameter hole is used for the simulated model. Four (4) butterfly fasteners are located around the perimeter of the hole and are used to secure capsule to steel part. Interior of entire capsule is painted flat black since live camera will not be present. When placed into a 2' x 2' ceiling grid and viewed from the ground, simulated model appears identical to Securityscan I. There are no provisions for mounting camera.

Model II \$267.00

Max. Camera Length - 16"

Note: Length includes fully extended lens and rear cable connector(s). Optional VC-1, VC-2, or VC-3 coiled cable is recommended for this housing.

SECURITYSCAN III & IV

- Accepts standard drive motors and zoom lens
- Silent operation
- Easy to install and service
- Vertical movement in upper hemisphere for easy access

Model III

Top is formed from 1/8" thick, high-impact, black, hair-cell A.B.S. (acrylonitrile butadiene styrene) and measures 20" in diameter and has a 10" radius. The housing support bracket, threaded coupling, and pan/tilt mounting plate are located within interior of housing. Ceiling mounting plate is also included, but 1-3/4" tubing is not supplied. Once installed, the housing never has to be removed for maintenance. The upper hemisphere can be lifted upward to expose pan/tilt assembly for any maintenance because all equipment is supported from pole.

Capsule: Capsule is formed from 1/8" bronze acrylic with a maximum of one "F" stop light transmission loss. Interior of capsule is painted flat black with the exception of a viewing slot. Diameter of capsule measures 20" and is attached to drive motor using two (2) plastic arms. Installed capsule appears entirely black and will not reveal position of camera when bright background lighting is present.

In general the unit described above is designed to conceal a CCTV surveillance camera without the use of mirrors or other reflective image devices. In addition it is designed for standard off-the-shelf type drive motors which are found in the CCTV industry.

Model III \$434.00

Model IV (Simulated Unit)

Top is same make as above, with no provisions for mounting camera. Interior of entire capsule is painted flat black, since live camera will not be present. When viewed from the ground, simulated model appears identical to Securityscan III.

Model IV \$392.00

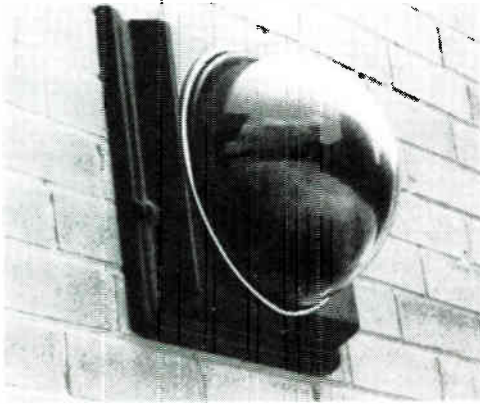
Max. Camera Length - 15"

Note: Length includes fully extended lens and rear cable connectors). Recommended Drive Motors: Vicon V3000, V3200; Pelco PT-270/280; Quickset QPT-15.

VIDEOLARM, INC.

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CAMERA HOUSINGS



MODEL: VLS-16

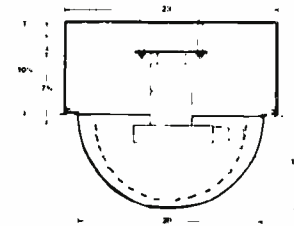
Fixed camera housing, wall or overhead application

- Aesthetically designed for indoor/outdoor covert applications
- Easy to install and service
- Comes complete with all necessary mounting hardware and security fasteners
- Low profile for wall or ceiling mounting
- Ideal for parking decks, train stations, interior halls or entrances, drive-through bank windows

Housing consists of base plate and upper cover which is formed from 1/8" thick, high-impact, black, hair-cell A.B.S. (acrylonitrile butadiene styrene) and measures 20-1/2" square. Upper and lower parts of housing are connected using one 18" stainless steel hinge. Upper cover has a 16" diameter hole in its center. Weatherproof gasketing is located around perimeter of 16" diameter hole and around perimeter of upper cover. Upper cover is secured to base plate using two (2) security fasteners. A fixed camera mounting plate that is fully adjustable to 360° is located within interior of housing. Unit is designed for both interior and exterior applications, but, since no heaters or blowers are available for this unit, it should not be installed in direct sunlight.

CAPSULE: capsule measures 16" in diameter and is formed from 3/16" thick, high-impact, cell-cast acrylic sheets with no visible light transmission loss on clear and a maximum of one "f" stop loss on tinted capsules. Unit contains an opaque inner liner in which a viewing slot can be cut to conceal direction of camera. If outer capsule is painted or scratched by vandals, open unit and twist outer and inner liner to clear location.

Model VLS-16\$343.00



Max. Camera Length — 12"

Note: Length includes camera, lens, and rear cable connectors.

MODEL: OBSERVADOME I & II

Fixed camera housing, indoor discreet, recessed ceiling applications.

- Flexibly designed for a 2' x 2' drop ceiling
- Easy to install
- Comes complete with all necessary mounting hardware

PRODUCT SPECIFICATION AND USER GUIDE

Model 0-1

Unit is formed from 24" x 24" high-impact, bronze acrylic sheets. Capsule measures 20" in diameter with a 10" radius. Interior of capsule is painted flat black with the exception of a viewing slot. Installed capsule appears entirely black and will not reveal position of camera when bright background lighting is present. Unit comes complete with camera mounting hardware that allows 0° to 90° viewing angle. Dome cover is available as an option and is formed from high-impact styrene.

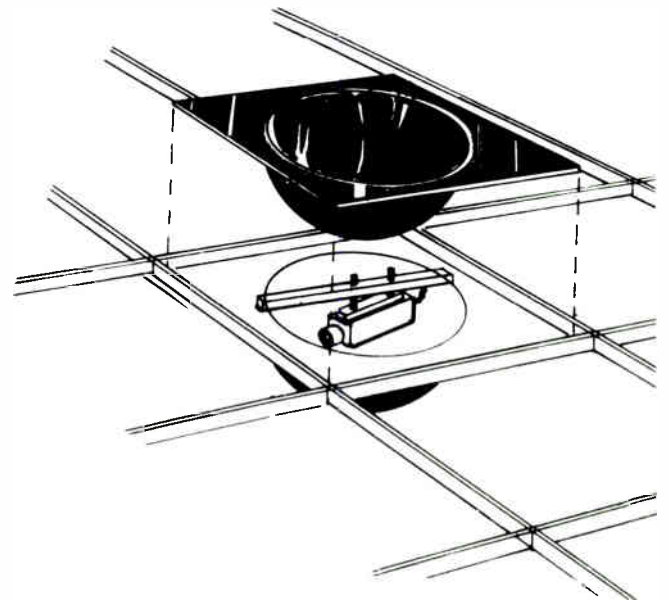
Model 0-1\$122.00

Model 0-2

Interior of capsule is painted entirely black, since no live camera will be present. No camera mounting hardware is included.

Model 0-2\$100.00

Max. Camera Length — 11"



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CAMERA HOUSINGS

MODEL VLW-22

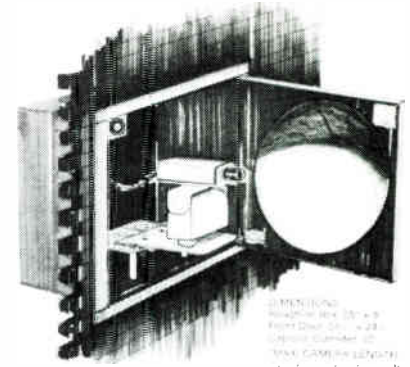
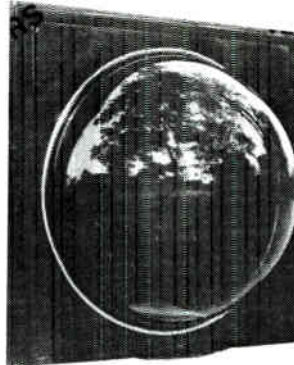
Recessed Housing For Outdoor Wall/Ceiling Applications

- Comes complete with mounts for drive motor & metal rough-in box
- Accepts standard pan/tilt motors
- Standard 22-inch diameter smoked acrylic capsule (1/4" thick)
- Optional fan and heater available
- Hinged front door with cam lock
- Smoked capsule only eliminates one f-stop of light

Model VLW-22 is designed for either a recessed wall or ceiling application. Metal rough-in box is painted black along with adjustable pan/tilt mount. Optional fan or heaters can be ordered in 240, 115 or 24 volts (AC). 22-inch diameter smoked acrylic capsule is standard with this housing. Vicon V3000PT or Pelco PT270 or 280 pan/tilt motor recommended.

Dimensions: Rough-in box 25" x 8", Front door 24 1/2" x 24 1/2", Capsule diameter 22"

Max. camera length 16"
(length includes fully extended lens & rear cable connectors)



MODEL VLP-20

Indoor/Outdoor CCTV Housing

- Aesthetically designed for indoor/outdoor use
- Allows use of pan/tilt & zoom lens
- Easy to install & service
- 1/4-inch smoked capsule with high optical quality (only one f-stop reduction of light transmission)

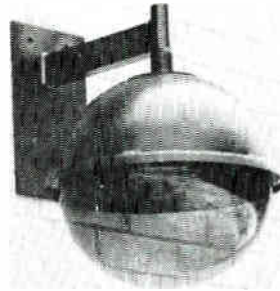
Model VLP-20 is attractively designed using black hair-cell textured plastic for the upper portion and our 1/4-inch smoked Plexiglas for the lower capsule (only one f-stop of light is lost). The cast aluminum globe holder and ceiling mounting plate are painted a coordinating black. Styled to complement your next interior or exterior application such as hotel lobbies, banks, department stores and casinos. Since no blowers or heaters are available at this time, it is not recommended that housing be installed in direct sunlight.

Max. camera length 15"
(length includes fully extended lens & rear cable connectors)

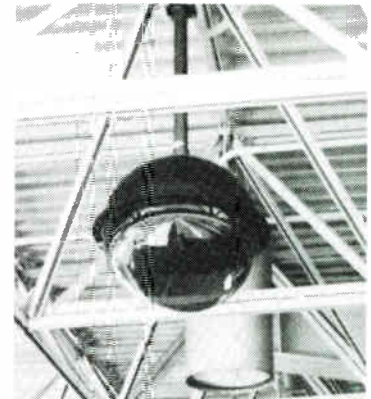
NOTE: Optional VC-1 or VC-2 coiled video cable is recommended for above housing. Heaters and blowers are not available at this time.

Drive Motor Recommended: Vicon PT3000, or Pelco PT270 PTA 15

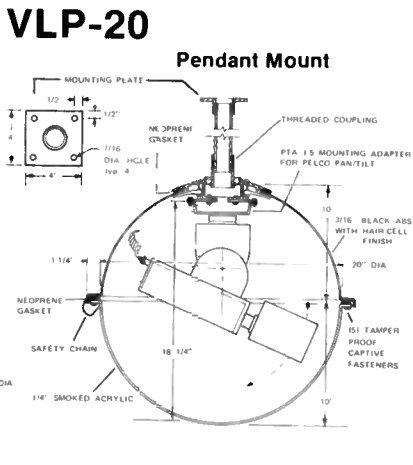
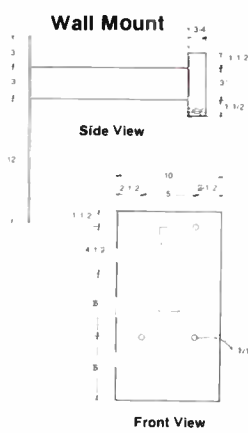
Housing supplied with threaded couplings but 1 3/4" diameter tubing not supplied by Videolarm.



VLP-20WM WALL MOUNT



PENDANT MOUNT



VLW-22	Recessed housing for outdoor wall or ceiling applications. Accepts standard pan/tilt or scanning motors. Complete with motor mount, rough-in box, 1/4" high impact tinted capsule (22" diameter), 16" maximum length for both camera and lens.	\$525.00
NOTE: OPTIONAL HEATERS AND BLOWERS AVAILABLE		
VLP-20	Pendant housing with sunshield, safety chain and tamper-proof fasteners. Complete with 1/4" high impact tinted capsule. (P-10410 toolhead driver to open/close unit not included). Unit designed for installations utilizing pan/tilt and zoom lenses. Shipped complete with threaded mounting plate for ceiling or optional designer wall mount. (See VLP-20WM in mounting accessories).	476.00

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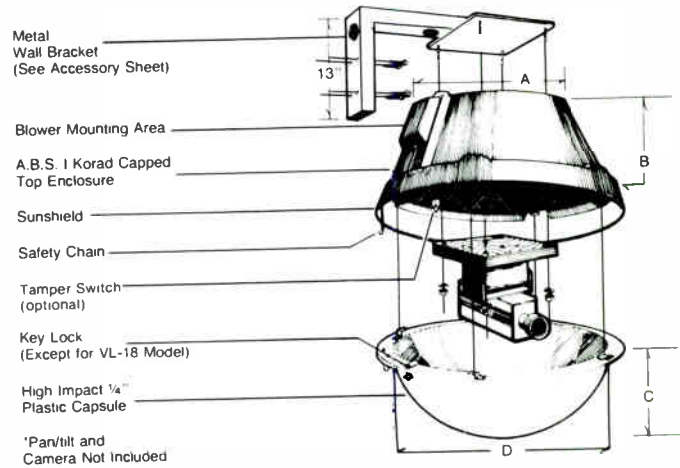
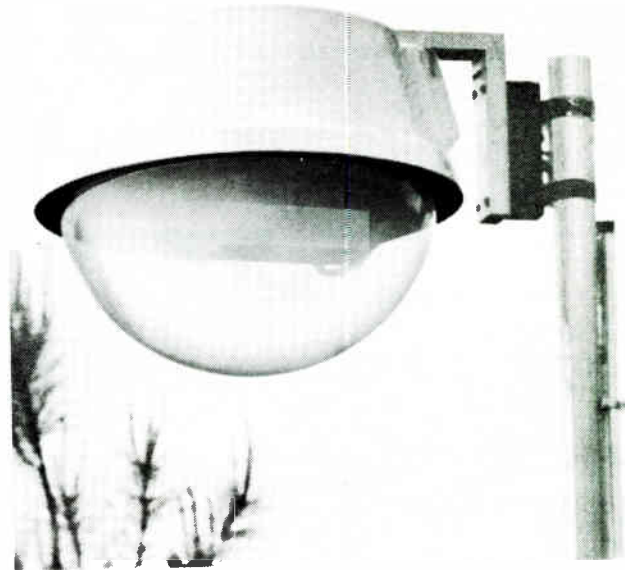
CAMERA HOUSINGS

OUTDOOR HOUSINGS MODELS VL-294/VL-29/VL-22/VL-18

Now there is no need to use the more costly weatherized Pan and Tilt or Scanner Motors for outdoor installations. Since everything is enclosed in VIDEOLARM and the weight of a heavy metal conventional housing is no longer a factor, light duty indoor drive motors can be used resulting in a lower installation cost. The real savings, however, is due to the lack of service calls your company will experience, because it is a recognized fact that the VIDEOLARM all-weather camera housing eliminates . . .

- Wind problems experienced with conventional equipment. Since everything is enclosed, the housing protects the gear mechanism of drive motors from harmful effects of high winds.
- Reduces weight load on drive motors. Pan/tilt or scanning motor must only contend with the weight of the camera and lens and not a heavy metal housing.
- Icing and salt air damage to drive motor.
- Fogging experienced with conventional outdoor surveillance housing.
- The threat of "wire pulling" vandals since everything is sealed within the housing and mounting bracket.
- "Sky Watching" on behalf of security personnel resulting in burnt or damaged vidicon tubes.

In short the "Better Alternative" has arrived for both indoor and outdoor use. Four different sizes are now available - for the very low light level cameras, motorized zoom lenses and large pan tilts, to fixed lens cameras with scanning motors. Heaters and blowers are also available in all voltages.



Dimensions

Model #	A (O.D.)	B (O.D.)	C (O.D.)	D (I.D.)	Shipping Weight	Drive Motor Recommended	Max. Camera Length see note 1
VL-294	19-1/2"	13-1/4"	13"	26"	34 lbs.	Vicon V330PT V360PT Pelco PT570	22"
VL-29	21-1/8"	9-1/4"	13"	26"	30.5 lbs.	Vicon V3000PT V360PT Pelco PT270/PM105 PT280/PM105	20"
VL-22	17"	8-1/2"	11"	22"	27 lbs.	Vicon V3000 Pelco PT270/PTA30 PT280/PTA30	16"
VL-18	14"	7"	8-7/8"	17-3/4"	25 lbs.	Vicon 3200 Pelco PS524 Quickset QPT 15	14"

Note 1. Length includes fully extended lens and rear cable connector(s).

Model #	Description	User Cost
VL-18	All-weather housing with sunshield, safety chain and locking mechanism. 1/4" high impact clear capsule. For fixed and scanning installations. 14" maximum length	\$329.00
VL-22	Same as VL-29 in design, including key lock. Designed for camera and motorized zoom lens, 16" maximum	385.00
VL-29	All-weather housing with sunshield, safety chain and key lock. 1/4" high impact clear capsule. Designed for camera and motorized zoom lens, 20" maximum	406.00
VL-294	Same as VL-29 with exception of 4" height extension on white upper part. For large pan/tilt motors. Designed for cameras and motorized lenses, 22" maximum	539.00

NOTE: Above units are available with tinted capsule. Add \$50.00 per unit and "T" to model number. Optional heaters and blowers available.

Prices and Specifications Subject to Change Without Notice.

VC-281

VIDEOLARM, INC.

P.O. Box 802
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(404) 482-1313 Telex 80-4569

FM VIDEO TRANSMISSION SYSTEM

FM modulator and demodulator system for long-line, interference-free video transmission. Long-line video transmission without signal loss.
RG-20u coax 10,000 feet
24 Ga wire 4,000 feet
Video transmission through any type wire
Interference-free video transmission
Complete ground loop isolation
Two-year warranty
For further information contact factory \$1120.00

MICROWAVE TRANSMISSION SYSTEM

Completely self contained 23GHz microwave transmitter and receiver offering video, and up to two audio subcarriers. Antennas can be interchanged, which allows longer distance transmission to take place. The system operates in the 21.8 to 22.0 GHz and 23.0 to 23.2 GHz bands. Transmitter designed to fit inside model VL-29 and VL-294 environmental housing. \$3360.00

INFRARED ILLUMINATORS

A new approach to nighttime surveillance is offered by low-light level illuminators placed alongside camera in model VL-29 and VL-294 environmental housing. Projects the greatest possible light energy over a maximum distance, both narrow-beam and wide-beam versions are available. In continuous operation, the surface of the illuminator housing only exceeds ambient temperatures by 3° fahrenheit. \$1120.00

VC-1/2/3

All coiled cables are 5' extended having braided copper video conductor and two (2) low-voltage power leads for camera. Each conductor is stranded copper. Both ends of cable are sealed with heat shrink tubing to eliminate breakage at connectors.

- VC-1 \$19.00
- VC-2 20.00
- VC-3 22.00

VC-4

5' coiled video cable (7' extended). Complete with BNC (M/F). Connectors on each end. 5 conductors for zoom lens and 2 conductors for powering low voltage camera. Each conductor supplied with quick disconnect ends. \$68.00

VLB-24v/115v/240v

VLB-24v
24 vac, 60Hz, 12 watt U.L. listed fan. Metal parts have been treated with corrosion inhibitors for outdoor use. 3125 RPM (min) free air 1.4A (max). Thermostat provided-closes at 95° f and opens at 80° f \$83.00

VLB-115v
115vac, 60Hz, .18 amps U.L. listed fan. Same description as above. Air delivery is 95 (cfm) \$83.00

VLB-240v
240 vac, 60Hz, .12 amps. U.L. listed fan. Same description as above. \$95.90

VLH-24v/115v/240v

VLH-24v
24vac, 176 ohms, 150 watts, 6.25 amps heating pads (set connected in series) constructed from 4 ply fiberglass supported silicone rubber. Each pad backed with .20 (mil) aluminum. Thermostat provided closes at 35° F and opens at 50° F \$66.00

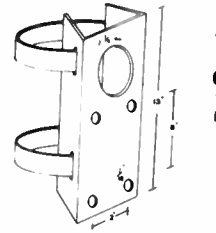
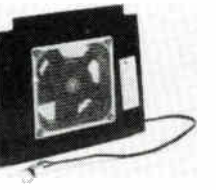
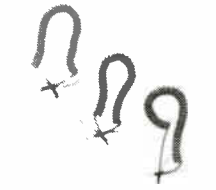
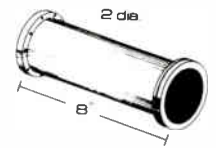
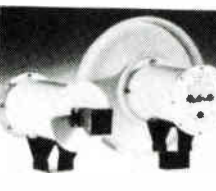
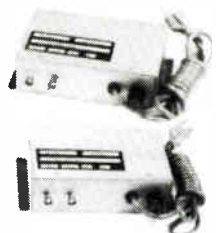
VLH-115v
115vac, 7.6 ohms, 575 watts, 5 amps, same description as above. \$66.00

VLH-240v
240vac, 384 ohms, 150 watts, 6.25 amps, same description as above. \$75.00

PM-3

Pole mount is used in conjunction with WM-18/22/29 brackets. Constructed of 7 gauge hot rolled steel which is electrically galvanized. Straps are stainless steel. \$70.00

VC-282



WM-18/22/29

7 gauge hot rolled channel iron 1 1/2 x 3 with 2 1/4" diameter holes for entering and exiting of cable. Steel is dipped in oil and electrically galvanized for rust prevention. WM-18/22 measures 13"H x 16 1/2"L square plate (10 gauge) measures 8 1/4 x 8 1/4, WM-29 measures 13"H x 18"L, square plate measures 11 1/4 x 11 1/4. Both plates have four spot welded 1/4" x 20" x 1 1/2" bolts.

- WM-18 & 22 \$76.00
- WM-29 83.00

CM-2/WA-2/CA-2

7 gauge hot rolled steel, dipped in oil and electrically galvanized for rust prevention. Each bracket has eight 7/16" mounting holes.

Note: all 3 brackets can be used with VL-18,22,29,294.

- CM-2 \$44.00
- WA-2 44.00
- CA-2 41.00

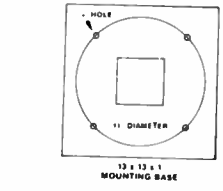
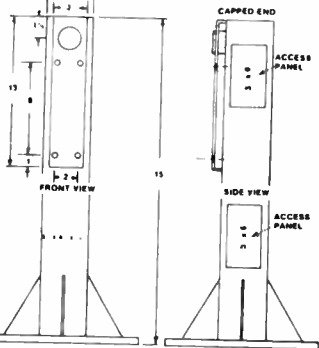
PTM-13

Quick release mounting plate for VL-18/22/29/294 housing. Adjustable in height and predrilled for an assortment of drive motors. Contains four quick release fasteners for removing drive motor and camera. Also accommodates strip heaters, VLH-24/115/240. \$34.00

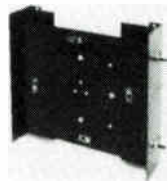
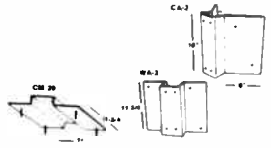
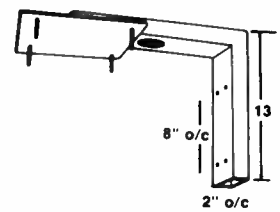
PI500

15" pole manufactured from 4"x4"x1/4" steel. Unit comes complete with two access panels and adapter plate for mounting WM-18/22/29 brackets. \$679.00

SECURITY POLE P1500



ACCESSORIES



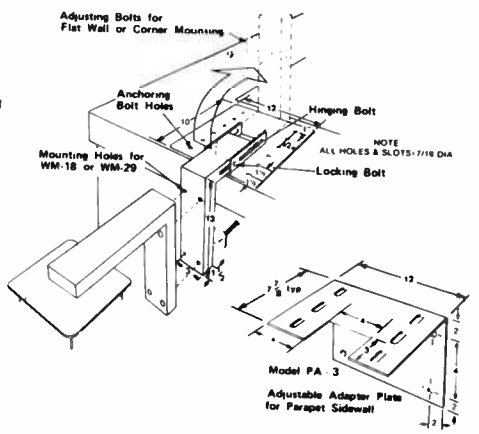
PA-2/3

Parapet mount adapter. Used in conjunction with WM-18/22/29 for flat wall or corner mounting. Hinged to allow rooftop servicing. PA-3: backup adapter plate for PA-2.

- PA-2 \$70.00
- PA-3 31.00

PARAPET MOUNT PA-2

Elbow swings backwards to allow rooftop servicing



FP-1

Tinted acrylic finishing plates designed for use with Securityscan I on surface mount applications. \$60.00

TR-1

Trim frame used for recessing Securityscan I or II into sheet rock ceiling. \$56.00

PK-2

Pendant kit for Securityscan I. Includes mounting board and two threaded couplings for 1 1/4" diameter tubing. Tubing not included. \$69.00

CL-800

16 fl. oz. silicone cleaner for capsules of all housings. \$6.65

WK-3

Wall mount kit for Securityscan. Includes mounting board and "L" shaped mounting arm. \$99.00

VLP-20WM

Wall mount bracket for VLP-20, black aluminum. \$65.00

P-10410

Toolhead driver for captive security fasteners on models VLP-20, VLW-22, and VLS-16. \$3.50

953

Right angle, BNC male to BNC female connector. \$5.60

954

Right angle, PL259 UHF at one end and female UHF at other. \$3.54

Prices and Specifications Subject to Change Without Notice.

VIDEOLARM, INC.

P.O. Box 802
2675-C Lithonia Ind. Blvd.
Lithonia, GA 30058
(404) 482-1313 Telex 80-4569

SECURITY SYSTEMS

WATCHMANN

An Environmental Simulated Security System That Provides Real Security.

MODEL W-1 — System comes complete with:

- Simulated camera with built-in motion detector, high frequency sonalert and red alarm light
- Adjustable camera mounting bracket
- Weather resistant upper housing
- Rock resistant globe
- L-shaped housing mounting bracket
- Pole mounting straps
- Strapping clamps (Requires standard screwdriver for securing)

Note: Can handle 800 watts

Model W-I\$685.00

MODEL W-II — Scanning unit includes:

- All equipment above
- Plus scanning motor

Model W-II\$875.00

Accessories:

- Flood light (mounted on top of L-shaped bracket)\$16.80
- Warning sign (with your company's name upon request)\$19.00

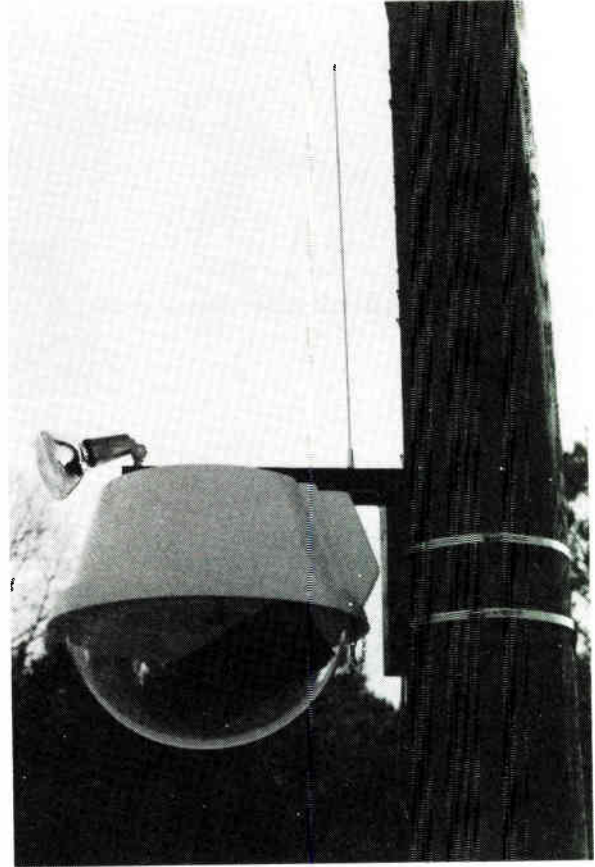
How System Works:

Once unit is installed, high frequency sonalert is activated and remains on until intruder crosses path of motion detector. Once motion detector senses movement, son-alert turns off and red alarm light turns on inside weatherproof housing. The optional flood light will turn on at the same time the red alarm light turns on and can be pointed in any direction.

Applications:

- Construction sites
- Lumber yards
- Automobile dealerships
- Truck dealers
- Parking lots

Patent pending

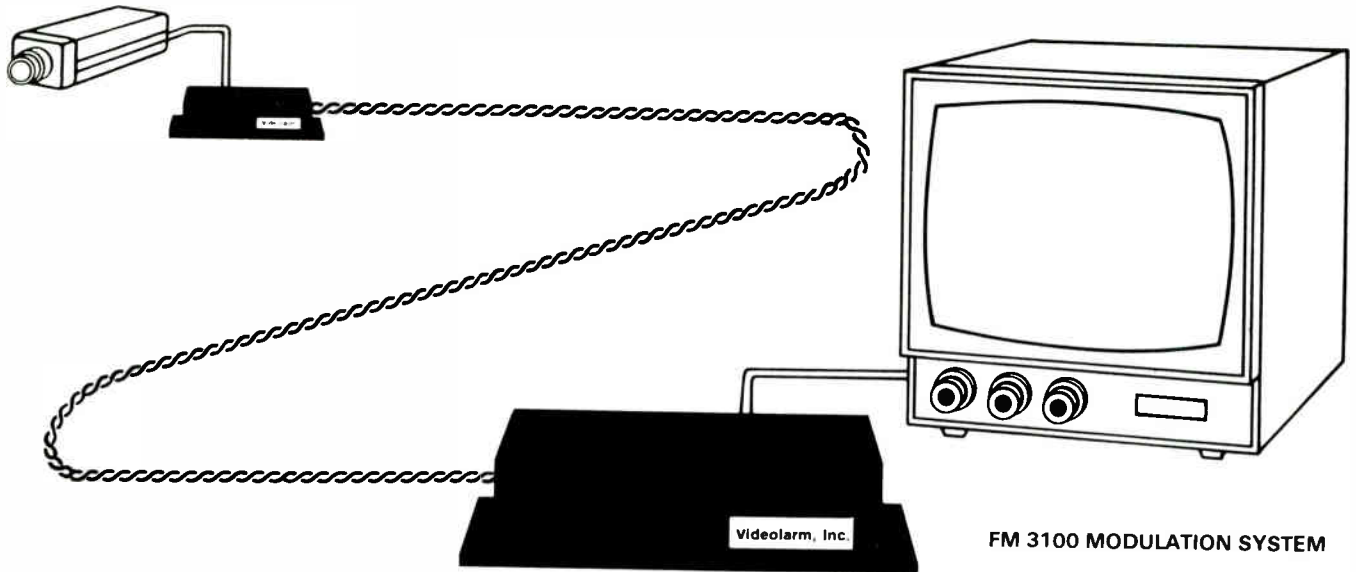


WARNING
Closed Circuit T.V.
Transmitting
System is used to
protect
this property.
Violators will be prosecuted.
The Management

VIDEOLARM, INC.

P.O. Box 802
 2675-C Lithonia Ind. Blvd.
 Lithonia, GA 30058
 (404) 482-1313 Telex 80-4569

VIDEO TRANSMISSION SYSTEM



MODELS FM 3100/FM 3200 FM VIDEO TRANSMISSION SYSTEM

- FM Modulator and Demodulator System for long line interference free video transmission.
- Long Line Video Transmission without signal loss:
 - RG-59u coax 10,000 feet
 - 24GA wire 4,000 feet
- Video Transmission through any type wire
- Interference Free video transmission
- Complete ground loop isolation
- Two year warranty

SPECIFICATIONS

FM 3100T Modulator

- Power Requirements 120 Volts 60Hz, 18 watts (Optional Power Sources Available - See Price Schedules)
- Operating Temperature -20° C to +70° C
- Input Impedance 75 ohms
- Output Impedance 75 ohms
- Input Level (Video) 1.4 volts pp max
- Output Level +66 dbmv (adjustable internally)
- Carrier Frequency 8 Mhz Normal
- Deviation ± 1 Mhz for 1.4 volts video

FM 3100R Demodulator

- Power Requirements 120 Volts 60 Hz, 18 watts
- Operating Temperature -20° C to +50° C
- Input Impedance 75 ohms, 5 MHz-13 Mhz
- Return loss at 75 ohms Less than 18 db, 5Mhz-13Mhz
- Video output Impedance 75 ohms
- Minimum signal for full limiting ... + 10 dbmv

FM 3100 System

- Video Response 60 Hz to 3.8 MHz (not for color)
- Tilt Less than 2%
- S/N Better than 40 db (+10 dbmv input to limiter at demodulator)
- Package size (both units) 7x4x2 inches
- Coaxial Connections Type BNC
- Primary fuse ¼ Amp
- External Adjustments None
- Transmission 10,000 Feet with RG 59
- Isolation Foam Co-Ax
 5000 Volt Isolation from ground loop.

FM VIDEO TRANSMISSION SYSTEM

FM 3100	Complete with FM 3100R (120 VAC) and FM 3100T (120 VAC).	\$1,120.00
FM 3100T	FM modulator only 115 VAC. Add 24 to model number when ordering 24 volt.	545.00
FM 3100R	FM demodulator only 115 VAC. Add 24 to model number when ordering 24 volt.	620.00
FM 3200	Complete with FM 3100R (120 VAC) and FM 3100T (24 VAC).	1,120.00
FM 3300	Complete with FM 3100R (240 VAC) and FM 3100T (240 VAC).	1,120.00

VIDEOTELECOM

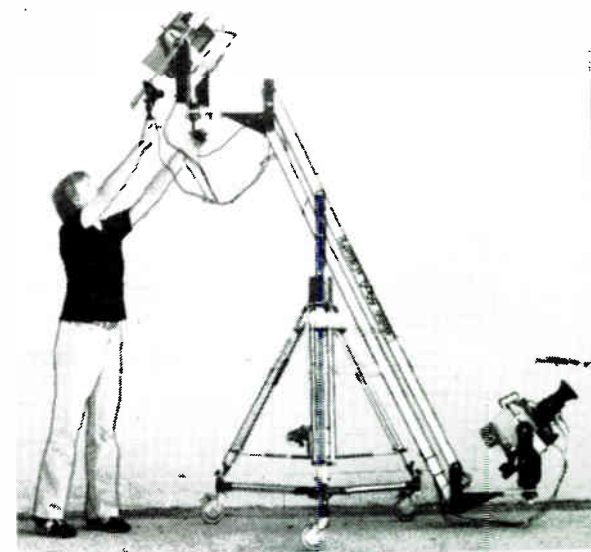
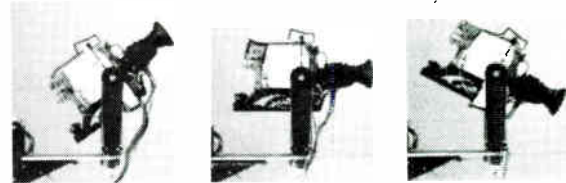
12229 Montague St.
Arleta, CA 91331
(818) 890-0947

CAMERA BOOM

THE BARBER "BABY" BOOM

Features

- Weight: 70 lbs.
- Vertical Boom: 6' to 11'
- Horizontal Swing: 14'
- Boom Radius: 360°
- Camera Tilt: 160°
- Camera Pan: 360°
- Crew Requirement: 1 camera operator
- Set Up: 5 to 10 minutes
- Maintenance: Minimal - No Motors or Pumps
- Space Requirements: 3 sq. feet on Standard Tripod - operates excellently in small tight spaces
- Mounting: Any standard camera mount from a High Hat to a Titan Crane
- Safety: Camera operator remains on the ground at all times
- Portable Case: 10'L x 10"H x 30"W



A boom. A breakthrough. A revolutionary camera positioning system. The Barber "Baby" Boom was designed and developed to create unique camera angles, fluid movement, versatile rapid positioning, and multi-dimensional combination moves that were never possible before.

You're familiar with traditional booms — where the camera and the operator ride up into the air on the end of the boom arm. But the camera operator has no immediate control over height, swing or speed of movement. He has to rely on 2 or 3 grips to interpret his shot and position him in the right place, at the right time, at the right speed. Inefficient, costly, and creatively limiting.

The Barber "Baby" Boom requires only you, the cameraman, to operate and control it. The camera is mounted on the end of the boom arm. You are at the other end with your hands on the two controls. You look into the video monitor and begin to track the action...fast, slow, whatever speed you need for the shot. With a feather light touch, you boom from 6" off the ground to 11 feet in the air. You swing the boom arm 14' horizontally (a dolly move without the dolly). You tilt the camera 160° up and down, pan it 360° and servo zoom and focus without ever taking your hands off the controls, your eyes off the action, or your feet off the ground. It's all made possible by the Barber "Baby" Boom's center of gravity gimble head and counter balance parallelogram design which allows a single camera operator to vary camera height, angle, pan, tilt, boom, zoom, and focus simultaneously in one smooth continuous motion. Great in the studio or on location, easy to set up (about 10 minutes), and simple to operate.

Barber "Baby" Boom\$9950.00

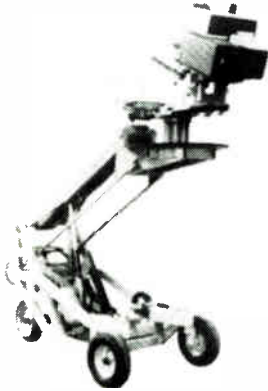
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(516) 694-8963

SPECIALIZED JIB ARMS

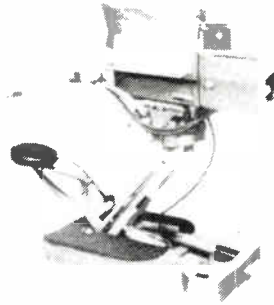
KESTREL CRANE



3754-3 POWERED JIB
3743-3 MANUAL JIB

CAPACITY: 450 LBS.
RANGE: 23" - 77"
WEIGHT: 668 LBS.
SUPPLIED WITH:
PNEUMATIC TIRES
(OPTIONAL
SOLID RUBBER WHEELS
WITH CABLE GUARDS)
3754-3 \$35,000.00
3743-3 29,000.00

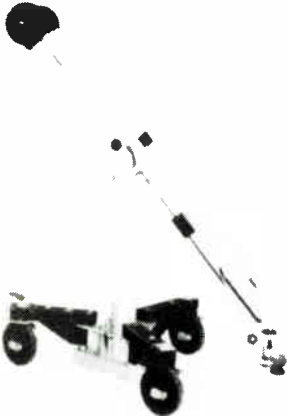
CRABBING LOW ANGLE DOLLY 3224-3



CAPACITY: 350 LBS.
RANGE: 4-1/2" - 25-1/2"
WEIGHT: 150 LBS.
SUPPLIED WITH:
CAMERA MOUNTING PLATFORM
CAMERAMAN'S SEAT
DETACHABLE PUSH BAR
FRONT AND REAR
CARRYING HANDLES
3224-3 \$9,450.00

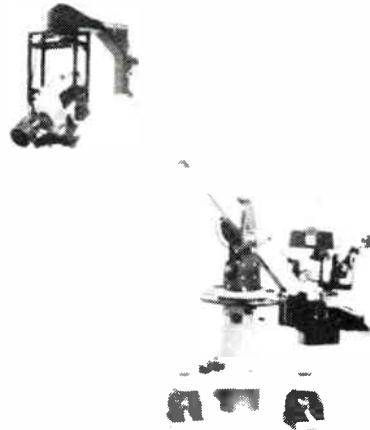
DOLPHIN CRANE ARM

3067-3 (Shown on 3064-3 Tritrack Folding Dolly)



CAPACITY: 50 LBS.
RANGE: 0" - 69-1/2"
(Standard Mounting)
WEIGHT: 51 LBS.
(Excluding Counterbalancing Weights)
SUPPLIED WITH:
BALANCE WEIGHTS
CHOICE OF BASE MOUNTING
CHOICE OF HEAD MOUNTING
3067-3 \$6,875.00

MERLIN REMOTE CONTROLLED JIB ARM 3257-3A/D



CAPACITY: 40 LBS.
RANGE: 0 - 7'
(with Studio Pedestal)
WEIGHT: 200 LBS.
SUPPLIED WITH:
WEIGHTS
(Monitor Optional)
(Available with
Over or Under Slung Head)
3257-3A/D \$21,000.00 ea.

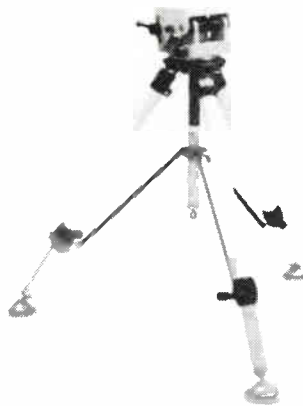
Vinten TRIPODS/DOLLIES/ELEVATION UNITS

ENG/EFP
3211-3/3214-3 Short
3201-3/3212-3 Long



	3211-3	3201-3
CAPACITY:	45 LBS.	45 LBS.
RANGE:	12"-30"	21"-61"
WEIGHT:	6 LBS.	8 LBS.
PRICE:	\$550.00	\$600.00
	3214-3	3212-3
CAPACITY:	100 LBS.	100 LBS.
RANGE:	12"-30"	21"-61"
WEIGHT:	9-1/2 LBS.	15 LBS.
PRICE:	\$600.00	\$650.00

Microwave
3280-3 Head \$1,200.00
3261-3 Tripod \$1,350.00



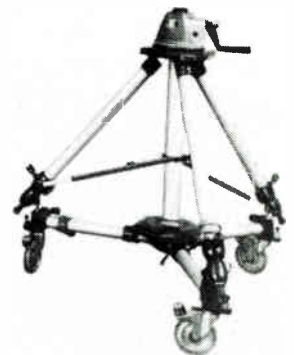
CAPACITY: 150 LBS.
FULLY ADJUSTABLE
POSITIVE LOCKING

Combo Package
3063-3 \$2,200.00
Tripod/Dolly/Elevation



CAPACITY: 100 LBS.
RANGE: 36" - 72"
WEIGHT: 38 LBS.

Heavy Duty
3206-3 Short \$1,725.00
3207-3 Long \$1,725.00



CAPACITY: 250 LBS.
RANGE: SHORT 22" - 37"
LONG 27" - 46"
WEIGHT: 26 LBS.
COMPATIBLE DOLLY: 3719-3
(Shown with optional
3737-3 Elevation Unit)

COMPATIBLE DOLLY: 3208-3
(OPTIONAL SPREADER AVAILABLE)

VC-286

Prices and Specifications Subject to Change Without Notice.

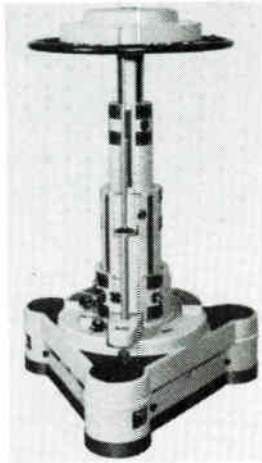
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Plainview, NY 11803
(516) 694-8963

3702-3 FULMAR THREE STAGE PNEUMATIC PEDESTAL

CAPACITY: 350 LBS.
RANGE: 21" — 58 1/2"
WEIGHT: 382 LBS.
MINIMUM BASE: 34"
\$19,500.00

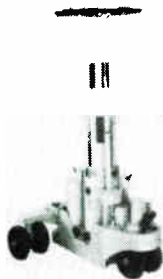


3056-3E PORTAPED EFP PORTABLE PNEUMATIC PEDESTAL



CAPACITY: 120 LBS.
RANGE: 27" — 55"
WEIGHT: 33 LBS.
\$4800.00

3179-3 PLOVER OB THREE STAGE PNEUMATIC PEDESTAL



CAPACITY: 230 LBS.
RANGE: 25 1/2" — 60"
WEIGHT: 200 LBS.
\$22,000.00 to \$22,500.00

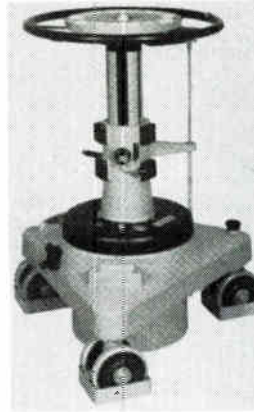
3267-3 HAWK EXTENDED RANGE PNEUMATIC PEDESTAL



CAPACITY: 150 LBS.
RANGE: 24" — 59"
WEIGHT: 212 LBS.
\$15,500.00

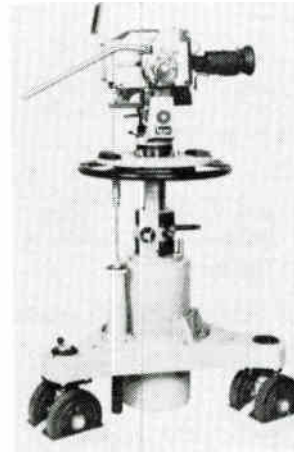
PNEUMATIC PEDESTALS

3741-3 TERN SINGLE STAGE PNEUMATIC PEDESTAL



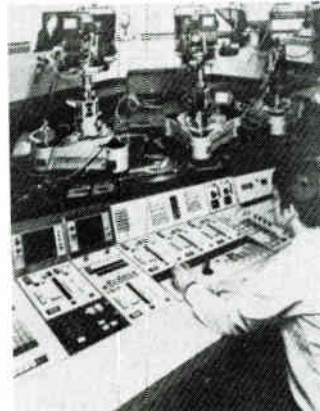
CAPACITY: 290 LBS.
RANGE: 33" — 54"
WEIGHT: 250 LBS.
MINIMUM BASE: 29 1/2"
\$9450.00

3197-3 TEAL SINGLE STAGE PNEUMATIC PEDESTAL



CAPACITY: 140 LBS.
RANGE: 30 1/2" — 51 1/2"
WEIGHT: 170 LBS.
MINIMUM BASE: 32"
\$7575.00

DIGITAL REMOTE CONTROLLED CAMERA SYSTEM (DRCCS)



FEATURES

- Prebroadcast Preparation Of:
- Storage And Recall Of 99 Shots Per Camera Relating To Pedestal Height, Pan And Tilt Head Position, Zoom, Focus, Iris, Black Level, Color Balance, And Color Suppression.
 - Complete Shot Modification In Real Time For Unplanned On-Air Situations.

P.O.R.

Prices and Specifications Subject to Change Without Notice.

VC-287

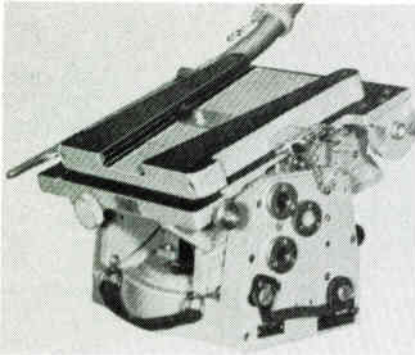
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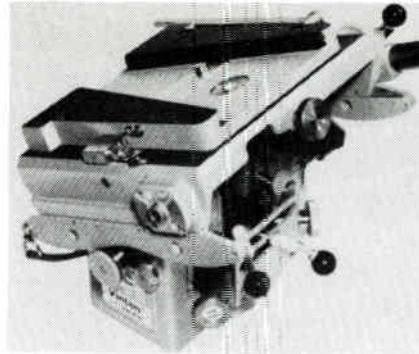
PAN AND TILT HEADS

3717-3 MARK IIIA CAM HEAD



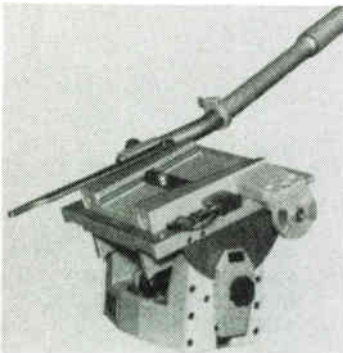
CAPACITY: 400 LBS.
TILT RANGE: $\pm 50^\circ$
WEIGHT: 44 LBS.
(Shown with Optional Female Wedge Adapter)
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$3830.00

3084-3 MARK VII L.F. CAM HEAD



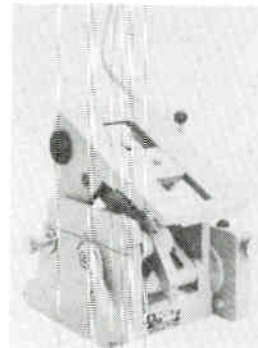
CAPACITY: 200 LBS.
TILT RANGE: $\pm 60^\circ$
WEIGHT: 35 LBS.
(Shown with Optional Female Wedge Adapter)
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$4200.00

3716-3 MARK V CAM HEAD



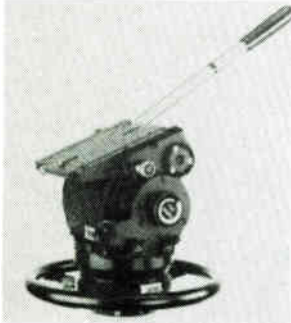
CAPACITY: 180 LBS.
TILT RANGE: $\pm 50^\circ$
WEIGHT: 24 LBS.
(Shown with Optional Female Wedge Adapter)
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$3000.00

3076-3 PETREL MARK II FLUID LINK HEAD



CAPACITY: 100 LBS.
TILT RANGE: $\pm 40^\circ$
WEIGHT: 15 LBS.
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$2250.00

3259-3D CORMORANT 90° EFP FLUID SPRING HEAD



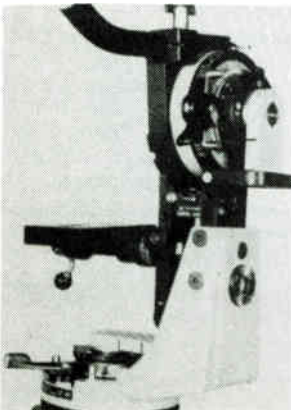
CAPACITY: 80 LBS.
TILT RANGE: $\pm 90^\circ$
WEIGHT: 22 LBS.
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$4945.00

3198-3 AVOCET 90° FLUID SPRING HEAD 3228-3 AVOCET 70° FLUID SPRING HEAD



	3198-3	3228-3
CAPACITY:	30 LBS.	30 LBS.
TILT RANGE:	$\pm 90^\circ$	$\pm 70^\circ$
WEIGHT:	7 1/2 LBS.	7 1/2 LBS.
SUPPLIED WITH:	FULL SIZED PAN BAR PAN BAR CLAMP BASE FITTING 3/8" BOLT FIXING TO CAMERA	
	3198-3	3228-3
	\$2750.00	2750.00

3078-3B SWAN FLUID POST HEAD



CAPACITY: 50 LBS.
TILT RANGE: 360°
WEIGHT: 20 LBS.
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$3750.00

3089-3 CYGNET FLUID MINI-POST HEAD



CAPACITY: 25 LBS.
TILT RANGE: 360°
WEIGHT: 11 LBS.
SUPPLIED WITH:
FULL SIZED PAN BAR
PAN BAR CLAMP
BASE FITTING
3/8" BOLT FIXING TO CAMERA
\$2200.00

Weaver-Steadman

1646 20th St.
Santa Monica, CA 90404
(213) 829-3296

TRIPOD HEAD

CENTER OF GRAVITY

Camera floats in perfect balance—the camera's center of gravity is coincident with the tilt axis, eliminating springs and providing a precise balance of pan and tilt dampening. Dampening remains constant regardless of the camera's operating position.

UNIQUE FLUID DAMPENING MECHANISM

Each tripod head contains 12 individually sealed dampening chambers, 8 of which can be selectively engaged with precision spring plungers, allowing a fine degree of tension adjustment and a smooth, effortless feel.

VARIABLE GEOMETRY MEANS VERSATILITY

The tripod head can be adjusted to obtain magazine clearance for the largest cameras—you can get a 360° tilt range with Panaflex, BL3 and all ENG-EFP video cameras.

Tripod head can be mounted upside down as well as right side up—perfect for snorkel lenses.

The capacity for a low-profile configuration—ideal for passing the camera through an aperture or operating in limited space.

Camera can be positioned with lens axis directly over pan axis.

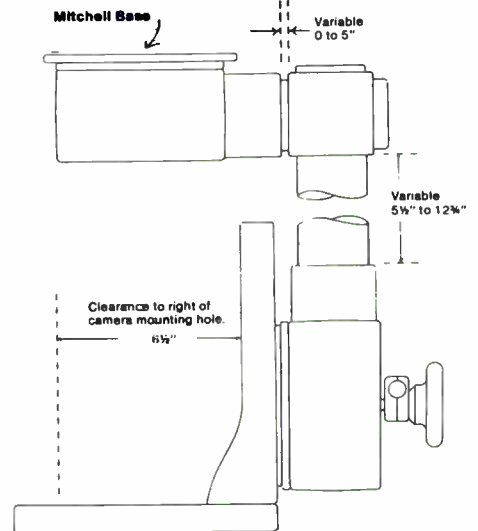
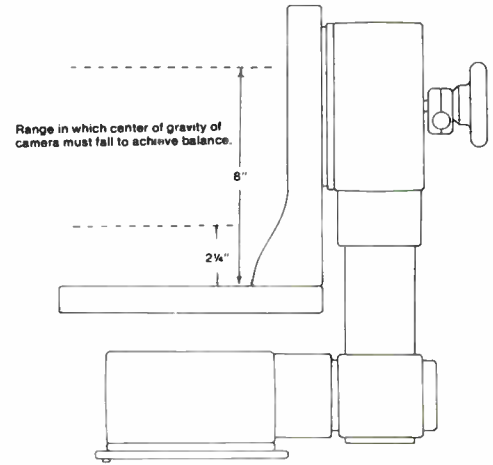
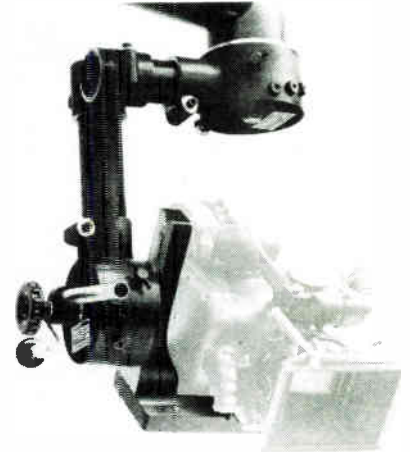
SPECIAL DESIGN FEATURES

Ultra-thin camera shoe allows camera placement within 1.064" of the deck for low-angle perspective.

Dual brakes on both tilt and pan cylinders allow access from either side—important when suspending the camera.

Maximum stiffness-to-weight ratio is achieved with thin wall, tempered magnesium castings and large-diameter bearings.

Lightweight—only 18 pounds, the tripod head will carry a 75-pound camera in perfect balance.



FEATURES:

	Weaver/Steadman	Ronford 7
Center of gravity design	YES	YES
Weight	18 lbs	24 lbs.
Camera sag with 57 pound Arriflex	0°21'	1°26'
Dampening increments	5	4
Arri BL-3 compatible	YES	YES
Panaflex compatible	YES	NO
Variable geometry	YES	NO
Camera to deck clearance	1-1/16"	1-9/16"
Level for inverted mounting	YES	NO
Dual brakes on pan and tilt	YES	NO

WEAVER/STEADMAN BALANCED FLUID HEAD COMPLETE \$4,700.00
EXCALIBUR CASE 210.00

Price Includes:

- 1-PAN CYLINDER
- 1-TILT CYLINDER
- 1-90 DEGREE BRACKET
- 3-CAMERA SHOES
- 1-5" TUBE
- 2-10" TUBES
- 1-18" TUBE
- 1-PAN HANDLE MOUNTING HARDWARE

Prices and Specifications Subject to Change Without Notice.

VC-289

Video Systems and Tripods from Welt/Safe-Lock **LAST FOREVER!**

Consider the sturdy yet lightweight versatility and portability of all Welt units, and you'll understand our worldwide reputation for quality and design excellence backed up by the famous Welt lifetime guarantee.

Consider our Video Rol-O-Pod (VRP) with optional adjustable Recorder Attachment (RA)

Lightweight, sturdy, speedy shooting through advanced small camera technology, with our unique adjustable recorder attachment unit.

Complete VRP/RA: \$175.95
Video Rol-O-Pod (VRP): \$139.95
with fluid movement head: \$159.95
Recorder Attachment (RA): \$38.00



Unit folds compactly for storage and transporting.

Consider our Complete Video System (VID/CS)

Complete VID/CS System:
with spring loaded head: \$228.50
with fluid loaded head: \$248.50

Video Tripod (VID)
with spring loaded head: \$129.95
with fluid movement head: \$149.95

Adjustable Recorder Attachment (RA): \$38.00

Optional Center Support Wheel for AD-IL (CSW): \$8.50

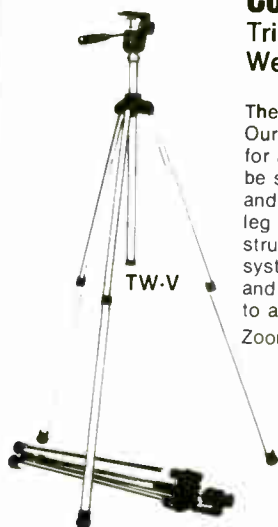


Adjustable RA unit is easily attached and sold separately as an accessory

For Smaller Cameras, Consider our Lightweight Tripods with Unique Welt Features:

The "Zoom Leg" Tripod (TW-V) - Our lightest tripod was designed for any climate and terrain. It can be set in water, mud, dirt, or snow and closed without wiping lower leg sections, due to unique construction. Patented Twist-Lock system allows legs to extend and lock in one instant motion to any height.

Zoom-Leg Tripod (TW-V): \$62.95



The "Flip-Lock" Tripod (FL-V) Famous "flip-lock" leg controls have made the FL-V a favorite of photographers world-wide because of its instant one-hand positioning to any height. Allows photographer to adjust legs without taking eye from camera viewfinder. No fiddling with leg adjustments.

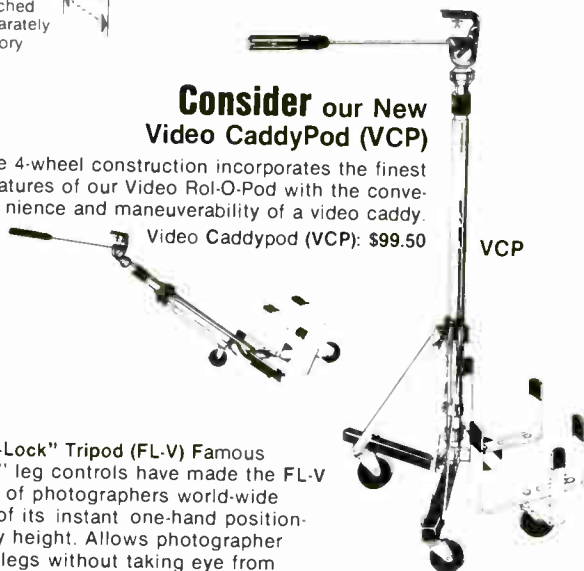
Flip-Lock Tripod (FL-V): \$74.00



Consider our New Video CaddyPod (VCP)

Unique 4-wheel construction incorporates the finest features of our Video Rol-O-Pod with the convenience and maneuverability of a video caddy.

Video CaddyPod (VCP): \$99.50



For information and free catalog about our complete line of photographic and video tripods and equipment, contact:

Welt/Safe-Lock, Inc.

A Heritage Communications Company

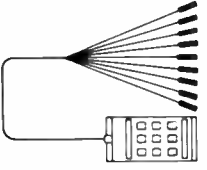
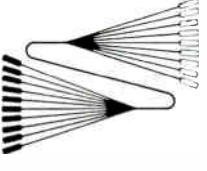
2400 West 8th Lane, Hialeah, Florida 33010, (305) 885-6401

Outside Florida dial Toll-Free: 1-800-521-1928

WIREWOKS CORP.

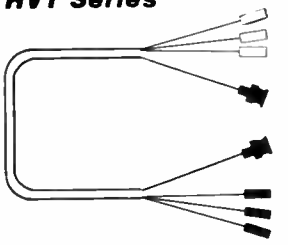
380 Hillside Avenue
Hillside, NJ 07205
(201) 686-7400 (800) 621-0064
TWX 710-985-4675

AUDIO-VIDEO MICROPHONE CABLES

Hardwired Microphone Multicables	Single unit systems designed to replace individual microphone cables, available in nine channel capacities and various lengths.						
	Channel Capacity	100 ft. (30.5m)		150 ft. (45.8m)		200 ft. (61.0m)	
		Product Code	Pro Net	Product Code	Pro Net	Product Code	Pro Net
M Series  Chassis to tails female xlr-type chassis connectors wired to male xlr- type line connector tails	3	M3-100	\$ 352.00	M3-150	\$ 394.00	M3-200	\$ 436.00
	6	M6-100	445.00	M6-150	522.00	M6-200	598.00
	9	M9-100	564.00	M9-150	668.00	M9-200	771.00
	11	M11-100	652.00	M11-150	777.00	M11-200	901.00
	15	M15-100	805.00	M15-150	960.00	M15-200	1116.00
	19	M19-100	990.00	M19-150	1194.00	M19-200	1397.00
	27	M27-100	1343.00	M27-150	1637.00	M27-200	1928.00
	36	M36-100	1897.00	M36-150	2367.00	M36-200	2836.00
	50	M50-100	2510.00	M50-150	3137.00	M50-200	3762.00
	HMT Series  Tails to tails female xlr-type line connector tails wired to male xlr- type line connector tails	3	HMT3-100	\$ 167.00	HMT3-150	\$ 212.00	HMT3-200	$ 255.00
6		HMT6-100	299.00	HMT6-150	378.00	HMT6-200	457.00
9		HMT9-100	411.00	HMT9-150	518.00	HMT9-200	624.00
11		HMT11-100	494.00	HMT11-150	621.00	HMT11-200	747.00
15		HMT15-100	635.00	HMT15-150	794.00	HMT15-200	952.00
19		HMT19-100	815.00	HMT19-150	1022.00	HMT19-200	1227.00
27		HMT27-100	1150.00	HMT27-150	1445.00	HMT27-200	1739.00
36		HMT36-100	1667.00	HMT36-150	2139.00	HMT36-200	2610.00
50		HMT50-100	2248.00	HMT50-150	2876.00	HMT50-200	3503.00

Hardwired Multicables are also available: chassis to tails-male xlr-type chassis connectors wired to female xlr-type line connector tails; HMX Series, chassis to tails-female xlr-type chassis connectors with 3 male xlr-type returns wired to male xlr-type connector tails with 3 female xlr-

type returns and HMQ Series, same as HMX except with quarter inch returns. Hardwired Multicables are also available in standard lengths or any custom length and configuration.

Audio/Video Multicables	Audio/Video hardwired multicables with male/female xlr and male/male BNC connectors.						
	Length	HVT2		HVT4		HVT7	
		1 Audio/1 Video		3 Audio/1 Video		6 Audio/2 Video	
Product Code		Pro Net	Product Code	Pro Net	Product Code	Pro Net	
HVT Series 	10 ft. (3.05m)	HVT2-10	\$ 61.00	HVT4-10	\$111.00	HVT7-10	\$ 191.00
	25 ft. (7.63m)	HVT2-25	83.00	HVT4-25	148.00	HVT7-25	270.00
	50 ft. (15.25m)	HVT2-50	120.00	HVT4-50	212.00	HVT7-50	403.00
	75 ft. (22.87m)	HVT2-75	156.00	HVT4-75	275.00	HVT7-75	534.00
	100 ft. (30.5m)	HVT2-100	192.00	HVT4-100	337.00	HVT7-100	666.00
	125 ft. (38.1m)	HVT2-125	228.00	HVT4-125	401.00	HVT7-125	797.00
	150 ft. (45.8m)	HVT2-150	265.00	HVT4-150	463.00	HVT7-150	930.00
	175 ft. (53.4m)	HVT2-175	301.00	HVT4-175	526.00	HVT7-175	1061.00
	200 ft. (61.0m)	HVT2-200	337.00	HVT4-200	589.00	HVT7-200	1193.00
	225 ft. (68.6m)	HVT2-225	373.00	HVT4-225	652.00	HVT7-225	1325.00
	250 ft. (76.2m)	HVT2-250	409.00	HVT4-250	714.00	HVT7-250	1456.00

Prices and Specifications Subject to Change Without Notice.

VC-291

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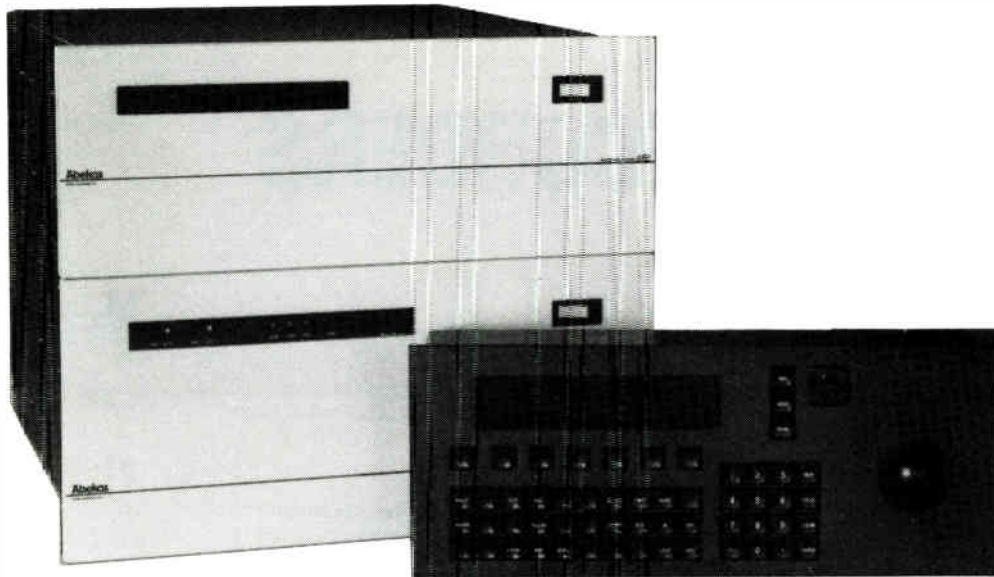
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ABEKAS VIDEO SYSTEMS, INC.

319 Lincoln Centre Drive
Foster City, CA 94404
(415) 571-1711

DIGITAL DISK RECORDER



A62 DIGITAL DISK RECORDER

FEATURES

- Real-time record and playback
- Internal digital matting
- Random access
- Simultaneous record/play
- Variable record/play speed
- Transparent signal system
- Digitally-decoded RGB outputs
- Built-in sequence editor
- SMPTE serial interface
- Precise control
- High quality color framing
- Compact size

The Abekas A62 Digital Disk Recorder is the most advanced tool available to satisfy the demanding needs of complex post-production. It is ideal for applications such as animation, video disk mastering and sophisticated multi-layered matting.

The A62 combines the well-known advantages of digital video recording with high-speed Winchester disk drives, producing a precisely controllable real-time record and playback device with storage capacities of 50 seconds and 100 seconds. Both versions offer the same basic features: namely, a full range of record/playback speeds, from still frame to faster than one times in forward and reverse; precise high-speed single frame editing; built-in sequence editor; and internal digital matting. Dramatically enhancing the value of the A62, the 100 second version also offers simultaneous real-time record/playback and color-framed random access over the entire 100 second range.

Transparent Signal System

The transparent picture quality of the A62 is the direct result of full bandwidth digital recording and advanced digital signal processing techniques. The digital decoding and freeze frame performance are identical to that of the highly acclaimed A52 Digital Special Effects system. Unlike that of video tape recorders, the A62's performance is not limited by analog recording techniques and the tape medium, but rather by the A/D and D/A performance.

Powerful Control System

The A62 offers a powerful and traditional video tape recorder type of control system using a time code based addressing scheme.

The A62 can be controlled by the A62CP control panel, which is provided with the system, or by an external computer through RS232 or

RS422 serial ports. In addition, two RS422 SMPTE serial ports are provided, enabling the A62 to emulate a VTR, thus simplifying editor interface.

Simple Control Panel

The A62CP control panel consists of an integral graphics display with associated softkeys, trackball, DataKey, numeric keypad and various dedicated function keys. Comprehensive menus are presented on the graphics display, enhancing the power and simplicity of the system. The trackball is used to browse manually through the material on the disk. The browse speed corresponds to the speed of the trackball movement. A DataKey, like the one used on the A52 Digital Special Effects system, is used for off-line storage of control parameters.

Sequence/Segment Editor

A number of variable length segments can be defined by specifying In and Out points, and can be linked in any order to form a sequence. Individual segments, or the entire sequence, can be run manually or automatically. A sequence can be modified by rearranging the order of the segments or redefining the segments by changing their In and Out points. The sequence length automatically reflects these changes.

Internal Digital Matting

The A62 greatly simplifies the sophisticated post-production task of complex multi-layer matting. The internal matting capability allows a foreground to be digitally matted over an existing background in real-time. The background always remains in the digital domain during this process; therefore, the usual problems of generation loss associated with matting are completely eliminated. This process can be repeated a countless number of times, maintaining first generation quality from start to end. The matting is accomplished in non-real-time on the 50 second version, and in real-time on the 100 second version using the simultaneous record/playback capability.

The flexible system architecture enables internal re-entry of either the background video or the foreground video and key signal. This permits the real-time matting of incoming foreground on an existing background, or the matting of an existing foreground on an incoming background. All the necessary adjustments for the matte/key processor are provided: foreground black, foreground black cleanup, fade value, key polarity, key level and key gain. The analog input/output video level and timing, and the digital matte/key adjustments are made right from the control panel.

RGB Outputs

Digitally-decoded high quality RGB outputs are provided as an option for the A62.

AGFA-GEVAERT, INC.

275 North Street
Teterboro, NJ 07608
(201) 288-4100

VIDEO CASSETTES



AGFA BROADCAST PLUS U-MATIC VIDEO CASSETTES

Video producers and engineers demand perfection from their master video cassette. They fully appreciate that their image depends upon the quality of the video tape original just as much as it does on the camera, lens and lighting. AGFA BROADCAST PLUS U-Matic video cassettes fulfill all of these expectations...and then some.

AGFA BROADCAST PLUS U-Matic Cassettes will add a new dimension of color brilliance and definition to your masters with: 3 dB more color signal-to-noise, 3 dB more video signal-to-noise, 2 dB more RF output and an exceptionally low drop out rate, as compared to the industry standard.

In addition to excellent video characteristics, AGFA BROADCAST PLUS U-Matic Cassettes utilize a black anti-static backcoating resulting in better tape transport and winding properties.

Precision molded and assembled under stringent and uncompromising quality control standards, AGFA BROADCAST PLUS U-Matic Cassettes are designed for use on all U-Matic video cassette players and recorders.



CASSETTE TYPE	PLAYING TIME Packaged/Labeled Series	TAPE LENGTH
KCS10 BP (mini)	10 min.	237 ft. (72.3m)
KCS20 BP (mini)	20 min	424 ft. (129.3m)
KCA5 BP	5 min	140 ft. (42.7m)
KCA10 BP	10 min	237 ft. (72.3m)
KCA20 BP	20 min	424 ft. (129.3m)
KCA30 BP	30 min	611 ft. (186.3m)
KCA60 BP	60 min	1175 ft. (358.2m)
	Bulk/Duplicator Series	
KCA5 BP	5 min	140 ft. (42.7m)
KCA10 BP	10 min	237 ft. (72.3m)
KCA15 BP	15 min	329 ft. (100.3m)
KCA20 BP	20 min	424 ft. (129.3m)
KCA30 BP	30 min	611 ft. (186.3m)
KCA30 BP	40 min	798 ft. (243.2m)
KCA40 BP	50 min	985 ft. (300.2m)
KCA60 BP	60 min	1175 ft. (358.2m)

Broadcast Quality Tape at Regular Tape Prices

Technical Data

VIDEO PERFORMANCE	<ol style="list-style-type: none"> 1. Video Signal to Noise Ratio 2. Chroma Signal to Noise Ratio 3. Dropouts (16dB, 10μs) 4. RF Output (5MHz) 5. Still Frame 6. Tape Life 	≥ 51 dB $\cdot 3$ dB 10/min. max. average $\cdot 2$ dB capable of exceeding 3 hours capable of exceeding 2000 passes														
AUDIO PERFORMANCE	<ol style="list-style-type: none"> 1. Audio Signal to Noise Ratio 2. Audio Output Uniformity 3. Relative Frequency Response 	52dB ± 1 dB $\cdot 1$ dB														
MAGNETIC PROPERTIES	<ol style="list-style-type: none"> 1. Oxide 2. Orientation 3. Coercivity H_c 4. Retentivity B_{rs} 	CrO ₂ Longitudinal 500 Oersteds 1500 Gauss														
PHYSICAL PROPERTIES	<ol style="list-style-type: none"> 1. Thickness (Nominal) <ul style="list-style-type: none"> - Base - Coating - Backcoating - Total 2. Width <ul style="list-style-type: none"> - Tolerances 	<table border="1"> <tr> <td>19μm</td> <td>0.75 mils</td> </tr> <tr> <td>5μm</td> <td>0.20 mils</td> </tr> <tr> <td>2μm</td> <td>0.07 mils</td> </tr> <tr> <td>26μm</td> <td>1.02 mils</td> </tr> <tr> <td>19mm</td> <td>.748 in.</td> </tr> <tr> <td>$\cdot 0.025$mm</td> <td>$\cdot 001$ in.</td> </tr> <tr> <td>-0.010mm</td> <td>-0004 in.</td> </tr> </table>	19 μ m	0.75 mils	5 μ m	0.20 mils	2 μ m	0.07 mils	26 μ m	1.02 mils	19mm	.748 in.	$\cdot 0.025$ mm	$\cdot 001$ in.	-0.010 mm	-0004 in.
19 μ m	0.75 mils															
5 μ m	0.20 mils															
2 μ m	0.07 mils															
26 μ m	1.02 mils															
19mm	.748 in.															
$\cdot 0.025$ mm	$\cdot 001$ in.															
-0.010 mm	-0004 in.															

ALLSOP, INC.

P.O. Box 23
 Bellington, WA 98227
 (206) 734-9090 (800) 426-4303
 Telex 15-2101

AUDIO/VIDEO CLEANING SYSTEM



60200



71300



71200



60100-A



58030

60100-A VCR Cleaner For VHS

Utilizes an exclusive ribbon that feeds into your machine like a conventional tape. A few drops of Allsop 3 solution are placed on the soft ribbon which then circles critical parts to remove oxide residues from the video and audio heads. Additional soft pads swab contaminants from the capstan and pinch rollers. This great cleaning system is effective for up to 30 cleaning cycles. Non-refillable.

\$19.95

66000-A VCR Cleaner For Beta

Incorporates Allsop's unique ribbon for thorough, non-abrasive cleaning power. Simply place a few drops of Allsop 3 solution on the soft ribbon and insert the tape into your machine like an ordinary cassette. The ribbon gently swabs contaminants from critical parts, removing oxides and airborne debris from audio and video heads. Good for 20-30 separate cleanings. Non-refillable.

\$19.95

60200 Ultraline VHS Video Recorder Cleaner

Uses a technologically innovative design to provide a cleaning breakthrough offered by no other system. Small "windows" on the surface allow you to directly apply Allsop 3 solution to the internal cleaning ribbon for maximum cleaning coverage. The non-abrasive ribbon cleans entire tape path, removing contaminants from critical VCR parts. Additional felt pads clean capstan and pinch rollers. Replaceable ribbon and pads available.

\$29.95

68000 Ultraline Beta Video Cassette Cleaner

The ultimate Beta cleaning system. Strategic "windows" on the cleaning cassette surface allow you easy access to place Allsop 3 solution directly inside the cassette. The moistened cleaning ribbon then gently removes harmful contaminants and oxides from critical parts along the entire tape path. Replacements available.

\$29.95

71300 Ultraline Audio Cleaner

Our gear driven wiper arm and felt cartridge replacement system enables the user perfect cleaning action for all three areas needed. When cleaning felts become soiled, cartridges can be easily replaced to make the Ultraline like new again. System includes ½ oz. bottle of Allsop 3 cleaning solution. Use part #71010 for replacement cartridges and solution.

\$8.95

71200 Ultraline Audio Cleaner With Case

Fits nicely into any automotive glove or map compartment. This wet system cleaner performs three important tasks in one cleaning cycle. First our gear driven wiper arm insures positive wiping action for head cleaning; second our felt cartridges on both sides (for auto reverse) of the head wiper cleans the pinch roller as it revolves; and third the Allsop 3 wipes the capstan automatically. Includes a 1 oz. bottle of special Allsop 3 solution, spare felt cartridges and tweezers which all fit into an attractive leather-like case. Uses #71010 for replacement.

\$14.95

58000 Orbitrac™ Record Cleaning System

58010 Orbitrac™ Record Cleaning Solution

58030 Orbitrac™ Refill Kit

Takes a totally new approach to record care. By anchoring the cleaner in the record center, the Orbitrac™, when rotated around the record surface, delicately wipes and removes dirt from each groove. After one or two revolutions the record should be free of impurities and have no static charge because of the Orbitrac™ specially formulated cleaning solution. This system comes complete with Orbitrac™ cleaner, solution and sprayer, wipe off brush, special record cleaner anti-static mat, attractive designer case and complete instructions. Orbitrac™ record cleaner solution is also available in an 8 oz. refill bottle, and in a refill kit that includes two new cleaning pads with an 8 oz. bottle of cleaning solution.

58000

\$16.95

58010

7.95

58030

7.95

60210 Ultraline VHS Replacement Components

Contains fresh ribbon and pad cartridge. Replace after 20-30 cleanings.

\$8.95

68010 Ultraline Beta Replacement Components

Has new ribbon good for 20-30 cleanings. Available from quality video dealers.

\$8.95

71010 Audio Cleaner Replacement Cartridges & Solution

Makes the Allsop 3 audio cleaning products even more unique. This kit includes four complete capstan and pinch roller cartridges, two head felt cartridges, a 1 oz. bottle of Allsop 3 solution and a pair of specially designed tweezers. This kit is compatible with Allsop #71200 and #71300.

\$7.95

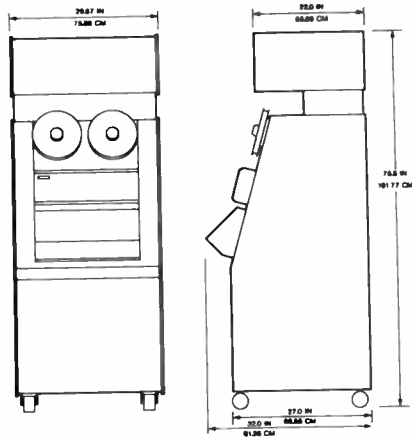
Reprinted with permission from materials in part © 1984 ALLSOP, INC.

VPR-3 Type C Video Tape Recorder

The VPR-3 has been created for the uncompromising new video production world. It has more instant functions. It is more versatile and flexible. It's more precise and sophisticated. And it's crafted for longer life and simpler maintainability.

Day-in, day-out, this machine will give you air-guided tape handling, superior video and audio features, simplified control and easy adjustment accessibility.

VPR-3. It's ideal for teleproduction where time is money. For broadcasters use where versatility is expected. And for satellite or cable distribution organizations where dependability is demanded.



CONSOLE

The optional console has provisions for mounting the VPR-3, TBC-3, a picture monitor, waveform and vector monitors, and the high power audio system.

RACK MOUNT 19 inch rack compatible

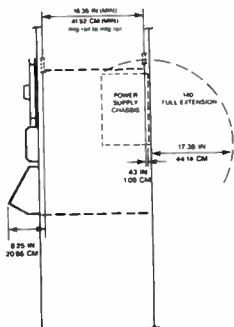
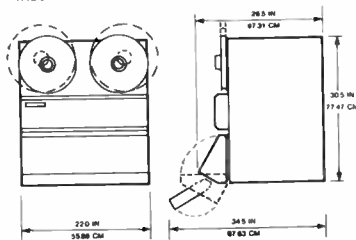


TABLE TOP



PHYSICAL DIMENSIONS

	Rack Mount	Table Top	Studio Console w/Monitor Bridge & TBC
Height	29.75 in. 75.56 cm	30.5 in. 77.47 cm	75.5 in. 191.77 cm
Width	19.0 in. (Note #4) 48.26 cm	22.0 in. 55.88 cm	29.875 in. 75.86 cm
Depth	25.75 in. 65.4 cm	26.5 in. 67.31 cm	32.00 in. (Note 5) 81.28 cm
Weight	270 lb 122.47 kg	275 lb 124.74 kg	650 lb 294.84 kg

FEATURES

- Pinch-rollerless design. Vacuum capstan with gas film and roller guides provide fast, gentle and precise tape control and handling in all operating modes for smooth, predictable acceleration/deceleration
- 500 inches/second acceleration/deceleration profile allows a 30 second segment to be re-cued and synchronously played in 2.0 seconds using one hour tape reels
- Large dot addressable fluorescent display with direct access and six menu-identified "soft keys" can easily organize, display and simplify important operational control and diagnostic functions
- Unique SCH phase meter built-in to assure better control for fast edits without picture shift
- Master Unity control
- Automatic computer optimization of video and audio record parameters, with storage for three tape types

- Single field lock-up (20 milliseconds) and synchronous start for full color frame playback in a maximum of four fields in NTSC, and a maximum of eight fields in PAL/SECAM
- Audio input and output processing ports for easy interfacing with popular noise reduction and time compression/expansion systems
- Five machine editing control
- 3-hour reel capability in either a tabletop or rackmount configuration
- Optional line-by-line autochroma
- Input cable equalizer

Additional Features

- AST Automatic Scan Tracking permits continuously variable play, from still frame to 3X play speed forward, and zero to 1X in reverse
- SMPTE/EBU Type "C", one-inch format
- Individually replaceable video and sync head assemblies
- Two SMPTE series communications ports (RS-422)

Optional Accessories

- TBC-3 Time Base Corrector
- Time Code Reader-Generator/Character Generator
- High-Powered Audio System/Speakers
- Digital line-by-line Autochroma
- SMC-100 Slow-motion Controller

AMPEX

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401 Broadway
Redwood City, CA 94063
(415) 367-2011

PROFESSIONAL VIDEO TAPE RECORDER

VPR-6

Type C Video Tape Recorder

The VPR-6 is an appealing blend of machine intelligence and ease of operation, combined to allow operators to be more productive. Powerful microprocessors help the operator to make recording and playback operations as smooth as a ballet, perform simple or complex editing steps with equal ease, or to locate a troublesome IC if necessary. The mechanical design and packaging, based on proven Ampex designs, offer more reliability and greater accessibility.

"User friendly," a term often applied to computers, applies equally well to the VPR-6. A well laid out control panel allows the operator to easily access the logical and powerful software. Virtually all board edge controls have been eliminated, allowing the operator to perform machine setup procedures from the control panel.

With RS-422 serial communications capability, the VPR-6 operates efficiently as an element of state-of-the-art systems, responding to computer editing systems such as the Ampex ACE edit controller.

Helping the VPR-6 attain its full potential is the TBC-6 digital time base corrector, performance matched to the VPR-6. Expanded memory and a very compact package make the TBC-6 the ideal companion for the VPR-6.

FEATURES

- AST™ Automatic Scan Tracking is standard, allowing variable play speeds, 1 to 3X normal
- Shuttle speeds approaching 500 ips with viewable picture
- Forward and reverse single-frame jog
- Video and audio confidence playback
- Optional sync channel
- Optional fourth audio channel (EBU systems)
- Microprocessor-controlled optimization of servos for gentle tape handling of all reel sizes from spot to 2 hours
- Automatic unthread mode prevents head breakage from ragged tape ends
- Virtually all machine functions can be run from control panel
- Extensive built-in diagnostics monitor VTR status continuously
- Expanded diagnostic routine utilizing test probe can be run from control panel

ACCESSORIES AND OPTIONS

Sync Channel

An option to permit all vertical sync information to be recorded according to the SMPTE/EBU Type "C" formats.

Four Channel Audio

This EBU option provides a fourth high quality audio channel in the track space normally allotted to the sync channel.

Audio Processing Kit

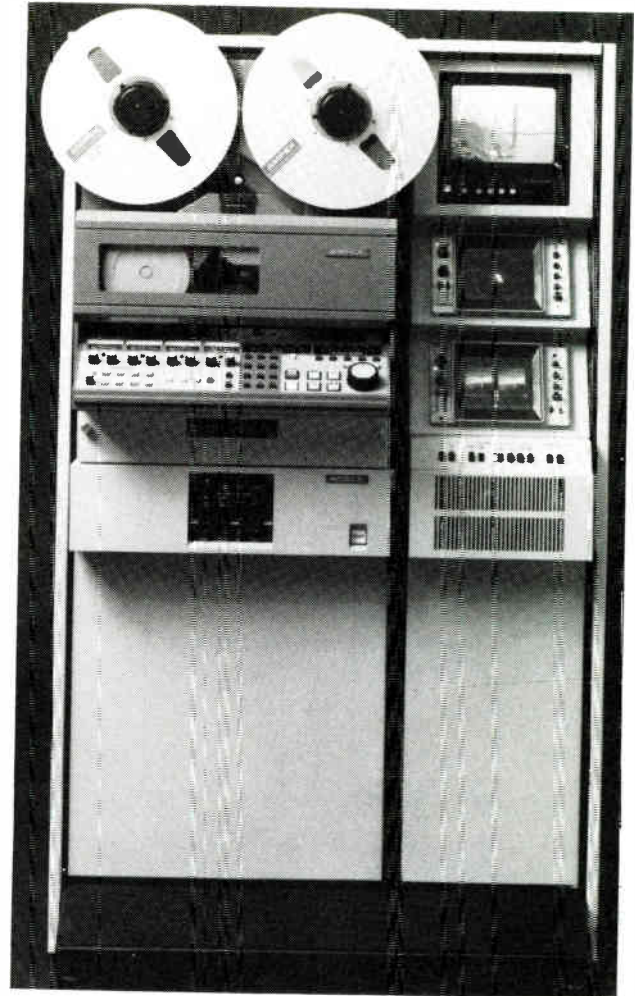
This kit provides a harness and connectors to allow simple interfacing of the VPR-6 to external processing devices.

Rack Size Monitoring

A compact, rack mountable monitoring assembly is available for use with the VPR-6.

Time Code Generator/Reader & Character Display

A printed wiring assembly plugs into the VPR-6 electronics bay to add longitudinal time code generation and reading capability.



Parallel Remote Interface PWA

Installation of this accessory adds a 75-pin remote connector which is pin-compatible with Ampex VPR-2B's and VPR-80's.

Serial Remote Interface PWA

Installation of this PWA provides RS-422A-compatible connection to the serial control bus of a microprocessor-based editing system.

Diagnostic Probe

Standard diagnostics capability in the VPR-6, consisting of wakeup and background tests, can identify system malfunctions to assembly or subassembly level.

SMC-100

The traditional sports slow motion controller provides full variable speed playback control of the VPR-6 from up to 100 feet away.

STC-100

This multi-point search-to-cue accessory provides up to 99 cue point assignment and search capability. All cues can be recorded on tape for later recall.

PHYSICAL DIMENSIONS

	Rack Mount	Table Top	Console with Monitoring	Side Car Monitoring Console	Overhead Monitoring Console
Height	21.0 in 533 mm	22.0 in 558.8 mm	70.5 in 1791 mm	56.4 in 1433 mm	74 in 1880 mm
Width	19.0 in 482.6 mm	22.0 in 558.8 mm	22.0 in 558.8 mm	33.0 in 838 mm	33.0 in 838 mm
Depth	21.0 in 533 mm	22.0 in 558.8 mm	26.5 in 673 mm	26.5 in 673 mm	26.5 in 673 mm
Weight	143 lb 65 kg	150 lb 68 kg	317 lb 144 kg	545 lb 247 kg	670 lb 304 kg

VPR-80 — LOW COST HIGH PERFORMANCE TYPE C VIDEO TAPE RECORDER

Reliability, simplicity, efficiency: The fundamentals behind the design of the VPR-80. It offers the video producer the latest advances in helical recording technology from Ampex.

FEATURES

- SMPTE/EBU Type C 1" format
- Advanced transport design for superior tape handling of all reel sizes, from 6-1/2" "spots" to 2-hour, 11-3/4" reels
- Dual microprocessor control of all VTR functions and servo systems
- AST™ Automatic Scan Tracking system, permits continuously variable play from still frame playback to 1-1/2 times play speed with no picture breakup
- Compact design offers table-top and rack-mount versatility
- Highly functional control panel, all operational controls are up front, logically placed for efficient operation
- Sophisticated, frame-accurate editing including search-to-cue
- Control panel includes Key Pad entry system
- Edit trim
- Exit to entrance edit cue transfer
- Extensive built-in fault detection
- Power-down memory holds control panel setup and tape timer information for up to four days
- Easy access to PWAs, transport components and internal electronics
- State-of-the-art materials, designed to meet the most stringent international safety requirements
- Optional diagnostic probe systems for user-interactive fault tracing
- Compatible with the Ampex VPR-series options and accessories
- High-band FM video recording system for the highest quality video signal performance



VPR-80

- Three full, high quality audio channels, third channel is time-code-compatible
- Built-in speaker monitors any combination of channels
- Tape speed override for VTR synchronization
- Unthread mode protects heads and master tapes

ACCESSORIES

Remote Interface

The VPR-80 offers optional parallel and serial remote control data interfaces for external control panels or editing systems such as the Ampex Computerized Editing (ACE) system.

Diagnostic Test Probe

Using the VPR-80's control system microprocessor, an optional handheld test probe is available for troubleshooting component-level faults in the VPR-80 electronics circuitry.

Rack Size Monitoring

A compact, standard rack width monitoring assembly is offered with space provided for picture waveform and vectorscope monitoring, and an integral two-source video monitor switch panel.

Time Code Generator/ Reader Character Display

A microprocessor-based, plug-in printed wiring assembly (PWA) provides time code generation and reading on Audio Track 3. An eight digit character display provides time code information on the picture monitor.



TBC-80 Time Base Corrector

A digital TBC that provides full performance time base correction of the VPR-80's off tape signal during playback, from still-frame up to 1.5X play speed. The TBC-80 includes full color dropout and velocity error compensation, and color slow motion processing as standard features.

PHYSICAL DIMENSIONS

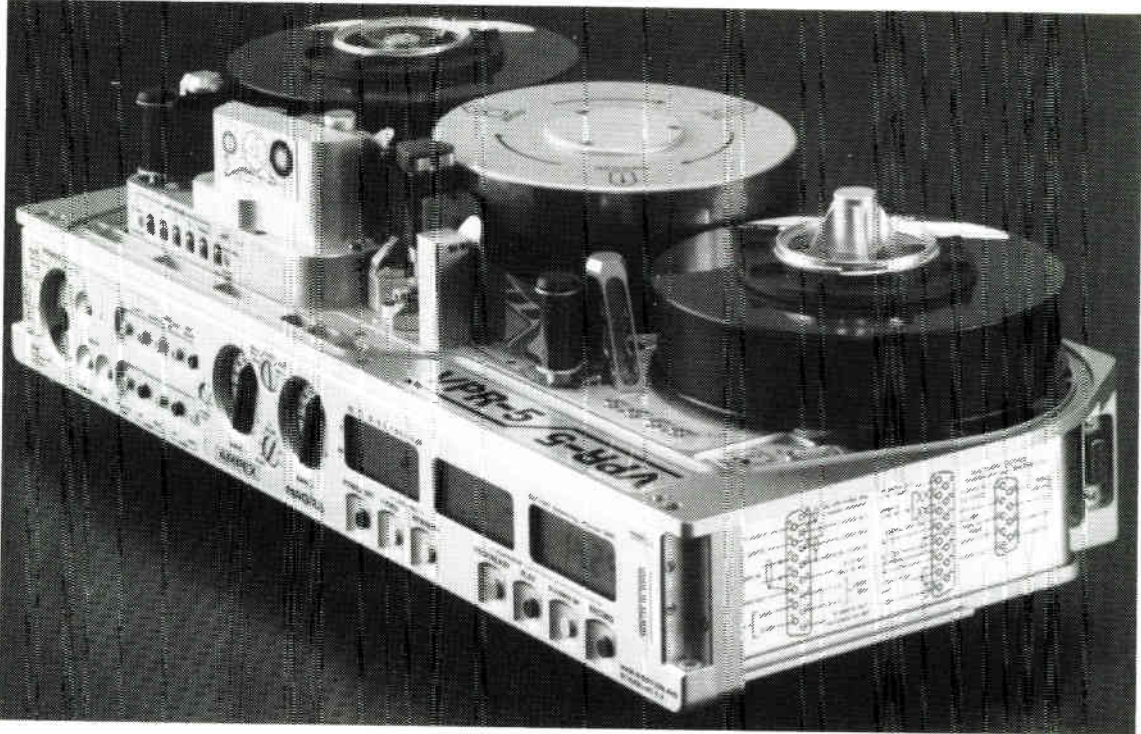
	Rack Mount	Table Top	Consolette with Monitoring	Side Car Monitoring Console	Overhead Monitoring Console
Height	21.0 in 533 mm	22.0 in 558.8 mm	70.5 in 1791 mm	56.4 in 1433 mm	74 in 1880 mm
Width	19.0 in 482.6 mm	22.0 in 558.8 mm	22.0 in 558.8 mm	33.0 in 838 mm	33.0 in 838 mm
Depth	21.0 in 533 mm	22.0 in 558.8 mm	26.5 in 673 mm	26.5 in 673 mm	26.5 in 673 mm
Weight	138 lb 63 kg	145 lb 66 kg	312 lb 142 kg	540 lb 246 kg	655 lb 299 kg

AMPEX

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401 Broadway
Redwood City, CA 94063
(415) 367-2011

PROFESSIONAL VIDEO TAPE RECORDER



AMPEX NAGRA VPR-5

Type C Video quality from Ampex, Nagra Audio quality, all in the world's finest field recorder.

Combined in this machine are the quality and features of an Ampex one-inch type C VTR with Nagra audio quality from Kudelski SA, in the most practical field acquisition recorder, no bigger than a briefcase and weighing only 15 lb. (6.8 kg.)

The VPR-5 adapts to all kinds of situations, thanks to its own versatility and a full complement of options and accessories. It adapts to the user's working style. One person can handle both a camera and the VPR-5, or the VPR-5 can be manned by a dedicated operator, with the recorder connected to either a shoulder-held or fixed camera. The machine also conveniently fits into any kind of field production vehicle or aircraft.

Despite its compact size, the VPR-5 offers a full range of features needed for sophisticated production. To begin, you're in C-format, which pays off in the quality of your material. Added to that are some other VPR-5 amenities, such as its exclusive dual-cue editing that allows studio-type control. Four edit-related functions characterize this VTR's professional ability: from "let's see it" reviews and precise returns to the next edit point, to total control when replacing undesired material, and even mid-segment edits to new material.

Advanced audio technology is built into the VPR-5. You'll find features like a variety of interfaces available for microphone types and/or line inputs. And seven built-in switch-selectable filters to match scene acoustics, particularly low frequency reverberation cancellation.

You'll find a unique display using LCD for VU or PPM level. Even full individual record channel lockouts for two audio channels and standard time code channel.

You'll also discover that the VPR-5 features an audio confidence playback selector independent of the video.

Physical Dimensions:

Height: 5.5" (13.7 cm)
Width: 17.5" (44.2 cm)
Depth: 8.5" (21.5 cm)

ACCESSORIES

Extended Record/Play

When a production calls for recording times longer than the standard 20-minute reels, the VPR-5 can be converted in a matter of seconds to hold NAB 9-inch, one hour tapes.

Power Systems

The VPR-5 is powered from a variety of sources. Two on-board, pluggable battery packs of different capacities are available: the lightweight standard capacity version for use with 20-minute tapes, and an extended capacity pack to accommodate one-hour tape operation.

The Battery Charger Unit can charge six battery packs at one time.

An ac power mains adapter that works with all world power standards is available. The VPR-5 can also be powered from low impedance dc sources of 12 to 18 Vdc, such as vehicle batteries.

Field Playback

When the normal monochrome confidence-quality video replay is not satisfactory, the optional Color Stabilizer Unit produces a color-locked signal with excellent color rendition on any monitor or conventional TV receiver.

Audio Inputs

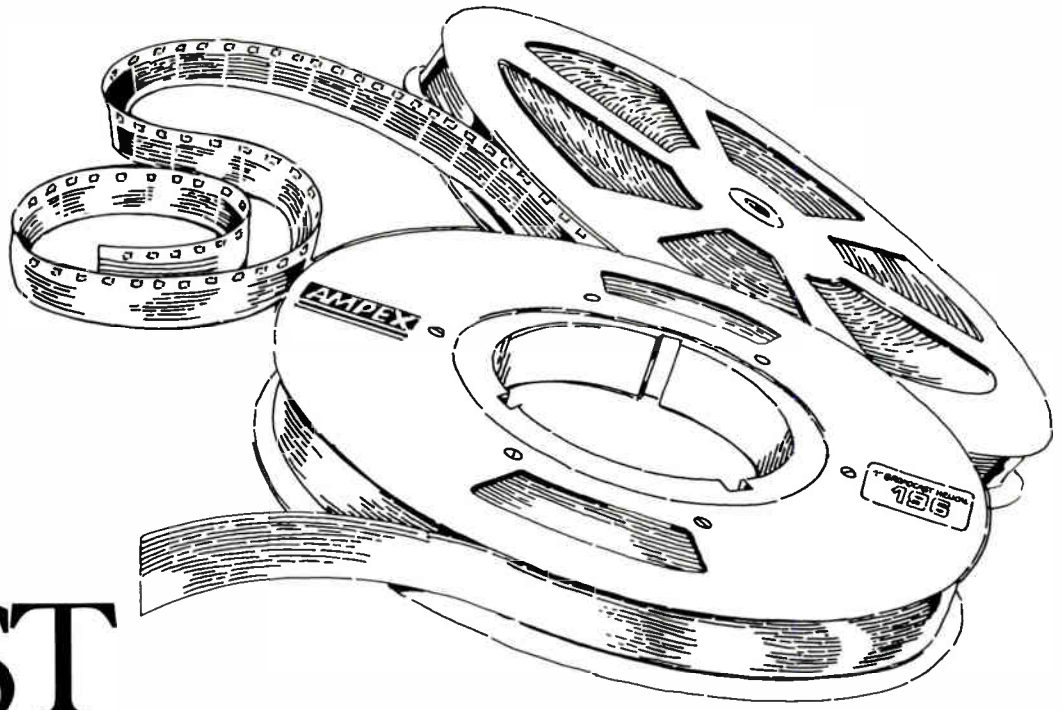
A modular approach has been taken for audio inputs of the VPR-5, so that field reconfigurations dictated by audio sources can be quickly accommodated.

Carrying Aids

The VPR-5, with its light weight and compact size, is easy to take where C-format has never gone before. To enhance this portability, a protective soft case and a pack frame with carrying harness are available.

Video Interface

The VPR-5 has optional, pluggable modules for most EFP applications.



BEST OF BOTH WORLDS

When you've produced the best show in town, transferring to Ampex 196 Professional Video Tape lets you keep all the emotion, color and snap of the original. And it stays that way, run after run. Nothing is lost, especially the subtleties and the 'little things' that can make your show memorable.

Ampex 196 High Energy Video Tape offers superb color and crispness. Plus the kind of audio performance that has made Ampex tape number one in the music industry.

Video tape quality won't be the only reason

your show's a hit, but if you specify film-to-tape transfer on Ampex 196, you'll see on the screen what you first saw in the script.

To find out more about how Ampex 196 Video Tape can give you the best of both your worlds, call our Regional Sales Office in Glendale (213) 240-5000 or write Ampex Corporation Magnetic Tape Division, 401 Broadway, Redwood City, CA 94063.



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**WE'VE GOT
A LOT TO SHOW
FOR IT.**



1/2" INDUSTRIAL VIDEO CASSETTES BETA AND VHS FORMAT INDUSTRIAL VIDEO CASSETTES

Catalog No.	Play Time - Minutes			Ctn.	Qty.	Price
	BI	BII	BIII			
Beta Format Video Cassettes						
SLEEVE						
101-K250-6C	30	60	90	20		\$ 9.29
101-K500-6C	60	120	180	20		11.69
PLASTIC BOX						
101-K250-6A	30	60	90	20		\$10.29
101-K500-6A	60	120	180	20		12.49
BULK						
101-K125-6B	15	30	45	40		\$ 7.69
101-K250-6B	30	60	90	40		8.69
101-K370-6B	45	90	135	40		9.59
101-K435-6B	52	105	157	40		10.29
101-K500-6B	60	120	180	40		11.09
101-K530-6B	64	128	192	40		11.59

VHS Format Video Cassettes

Catalog No.	Play Time - Minutes			Ctn.	Qty.	Price
	X1	X2	X3			
SLEEVE						
102-KV30-6C	30	60	90	20		\$11.99
102-KV60-6C	60	120	180	20		12.89
102-KV90-6C	90	180	270	20		15.09
102-KV120-6C	120	240	360	20		16.29
PLASTIC BOX						
102-KV30-6A	30	60	90	20		\$13.09
102-KV60-6A	60	120	180	20		13.99
102-KV90-6A	90	180	270	20		16.19
102-KV120-6A	120	240	360	20		17.39
BULK						
102-KV15-6B	15	30	45	40		\$10.59
102-KV30-6B	30	60	90	40		11.39
102-KV45-6B	45	90	135	40		11.89
102-KV60-6B	60	120	180	40		12.29
102-KV90-6B	90	180	270	40		14.39
102-KV105-6B	105	210	315	40		15.09
102-KV120-6B	120	240	360	40		15.69
102-KV127-6B	127	254	381	40		16.19

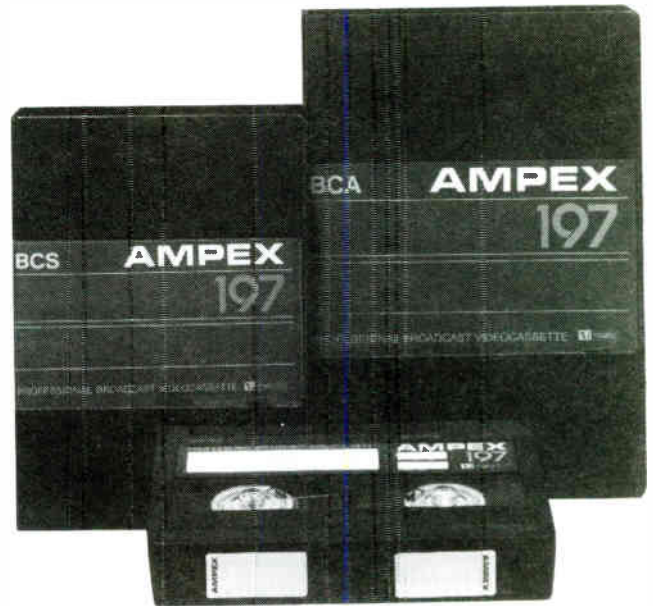
HELICAL BROADCAST VIDEO TAPE For MASTERING

196 Series

1" Broadcast Helical Ampex/Sony, A Wind (Backcoated)					
196-1630CD	1633'	1" x 9"	Prec. M, 34 min.	5	\$ 73.10
196-1630CR	1633'	1" x 9"	Prec. M, 34 min.	5	79.60
196-3170CD	3169'	1" x 9"	Prec. M, 66 min.	5	\$107.71
196-3170CR	3169'	1" x 9"	Prec. M, 66 min.	5	114.21
196-4610HD	4610'	1" x 10 1/2"	Prec. M, 96 min.	5	\$164.37
196-4610HR	4610'	1" x 10 1/2"	Prec. M, 96 min.	5	170.87
196-5100HD	5100'	1" x 10 1/2"	Prec. M, 106 min.	5	\$172.60
196-5100HR	5100'	1" x 10 1/2"	Prec. M, 106 min.	5	179.10
196-6050NE	6050'	1" x 11 1/4"	Prec. M, 126 min.	5	\$204.72
196-7500FE	7500'	1" x 12 1/2"	Prec. M, 156 min.	5	253.80
196-9200KF	9200'	1" x 14"	Prec. M, 192 min.	5	\$351.00

196 Series

1" Broadcast Helical Bosch-Fernseh, B Wind (Backcoated)					
196-1630CR-B	1633'	1" x 9"	Prec. M, 34 min.	5	\$79.60
196-3170CD-B	3169'	1" x 9"	Prec. M, 66 min.	5	107.71
196-3170CR-B	3169'	1" x 9"	Prec. M, 66 min.	5	114.21
196-4610HD-B	4610'	1" x 10 1/2"	Prec. M, 96 min.	5	164.37
196-4610HR-B	4610'	1" x 10 1/2"	Prec. M, 96 min.	5	170.87
196-5100HD-B	5100'	1" x 10 1/2"	Prec. M, 105 min.	5	172.60
196-5100HR-B	5100'	1" x 10 1/2"	Prec. M, 105 min.	5	179.10
196-6800JE-B	6800'	1" x 12"	Prec. M, 141 min.	5	259.11



187 SERIES Industrial Helical Scan 3/4" Video Cassettes

KCA — 3/4" U-MATIC CASSETTES — SHELF BOX

		CTN. QTY.	PRICE
187-KCA10	3 4" Video Cassette, 10 min	10	\$26.69
187-KCA15	3 4" Video Cassette, 15 min	10	27.49
187-KCA20	3 4" Video Cassette, 20 min	10	28.29
187-KCA30	3 4" Video Cassette, 30 min.	10	31.69
187-KCA40	3 4" Video Cassette, 40 min	10	36.89
187-KCA50	3 4" Video Cassette, 50 min.	10	43.29
187-KCA60	3 4" Video Cassette, 60 min.	10	45.29

KCA — 3/4" U-MATIC CASSETTES — SHIPPER

187-KCA-10W	3 4" Video Cassette, 10 min.	10	\$27.89
187-KCA-20W	3 4" Video Cassette, 20 min.	10	29.39
187-KCA-30W	3 4" Video Cassette, 30 min.	10	32.89
187-KCA-60W	3 4" Video Cassette, 40 min	10	46.49

KCA — 3/4" U-MATIC CASSETTES — BULK/TRAY

187-KCA-05B	3 4" Video Cassette, 5 min.	20	\$23.79
187-KCA-10B	3 4" Video Cassette, 10 min.	20	24.59
187-KCA-15B	3 4" Video Cassette, 15 min.	20	25.39
187-KCA-20B	3 4" Video Cassette, 20 min.	20	26.19
187-KCA-30B	3 4" Video Cassette, 30 min	20	29.59
187-KCA-40B	3 4" Video Cassette, 40 min.	20	34.79
187-KCA-50B	3 4" Video Cassette, 50 min	20	41.19
187-KCA-60B	3 4" Video Cassette, 60 min.	20	43.19

197 SERIES Helical Scan 3/4" Video Cassettes

BCA — 3/4" U-MATIC CASSETTES — SHELF BOX

		CTN. QTY.	PRICE
197-BCA-10	3 4" Video Cassette, 10 min.	10	\$26.25
197-BCA-20	3 4" Video Cassette, 20 min.	10	30.86
197-BCA-30	3 4" Video Cassette, 30 min.	10	35.89
197-BCA-60	3 4" Video Cassette, 60 min.	10	46.97

BCS — 3/4" U-MATIC CASSETTES — SHELF BOX

197-BCS-10	3 4" Video Cassette, 10 min.	10	\$26.25
197-BCS-20	3 4" Video Cassette, 20 min	10	30.86

BCA — 3/4" U-MATIC CASSETTES — BULK

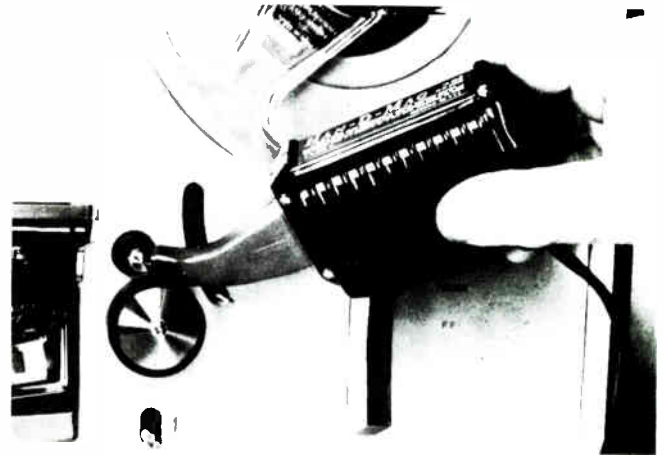
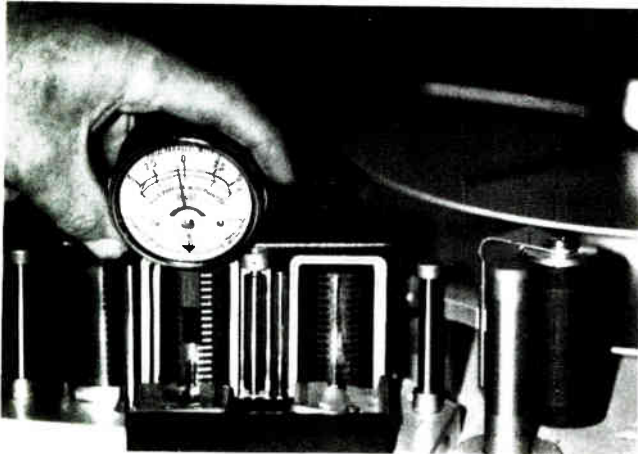
197-BCA-05B	3 4" Video Cassette, 5 min.	20	\$22.06
197-BCA-10B	3 4" Video Cassette, 10 min.	20	25.25
197-BCA-20B	3 4" Video Cassette, 20 min.	20	29.86
197-BCA-30B	3 4" Video Cassette, 30 min.	20	34.89
197-BCA-60B	3 4" Video Cassette, 60 min.	20	45.97

ANNIS

Protect valuable recorded tapes with an...

Audiophile HAN-D-KIT

Provides everything needed to measure and eliminate magnetism in recorder components before recorded tapes are damaged permanently



1 Check Magnetism in Recorder Components

The Annis Pocket Magnetometer quickly and accurately measures residual magnetism levels in recorder heads, drive capstans or tape guides. Indicates when it's time to demagnetize and lets you know when it's again safe to use the recorder.

2 Demagnetize Components When Necessary

Whenever the Magnetometer indicates any appreciable level of magnetism in a tape transport component, you can demagnetize it effectively with the powerful Annis Han-D-Mag before it causes permanent damage to recorded tapes.

Valuable audio and video tapes can be damaged when played on equipment that is not thoroughly and regularly demagnetized. Magnetism can easily build up in capstans, tape guides or recorder heads to a point where it will degrade the magnetically recorded signal on tapes passing over them. Tape damage is first apparent as a loss of recorded high frequencies and a progressive increase in background noise each time they are played on magnetized equipment.

Until recently, there has been no easy way to tell when demagnetizing was needed, and most Demagnetizers on the market were far too weak to be effective, particularly on offending hardened steel guides or capstans, etc. Now, with the introduction of the Audiophile Han-D-Kit, both measurement and correction problems can be solved easily at modest cost.

Here in one convenient package is everything needed to measure magnetic levels quickly, along with a handy, powerful unit to demagnetize components completely before they can spoil valuable tapes.

THE AUDIOPHILE HAN-D-KIT CONTAINS

ANNIS POCKET MAGNETOMETER

Measures level of magnetism in components. Calibrated to read directly in gauss. Model 20/B5 shown.

TEST STRIPS

One of these sensor strips is magnetically soft and the other magnetically hard. For experiments and testing your demagnetizing technique.

CLIP-ON EXTENSION PROBE

Extension probe is 1 3/4" long. Can be formed with fingers. Improves checking of magnetism in hard to reach components.

"NOTES ON DEMAGNETIZING" ETC.

Explains causes of magnetism, with particular reference to tape recorders. How to measure it accurately and how to eliminate it. Interesting experiments also included.

ANNIS AUDIOPHILE HAN-D-MAG

A rugged, dual-use Demagnetizer having a powerful, sine wave demagnetizing field strength of over 350 oersteds 1/4" beyond the tip of the 2 1/4" long probe.



Standard Han-D-Kit Model K20/B5

Includes all items shown above. Model 20 Magnetometer has polarity indicating center zero scale, calibrated to read 5-0-5 gauss.

Deluxe Han-D-Kit Model K25/S5

Same as above except for the Magnetometer. This kit includes the larger, more rugged Model 25 jewelled Magnetometer with ten times the calibration stability of standard Model 20.

	Shipping Wt.	Price
Standard Han-D-Kit Model K20 / B5 For operation on 115 V. 50 / 60 Hz.	2 Lbs.	\$49.00
Deluxe Han-D-Kit Model K25 / S5 For operation on 115 V. 50 / 60 Hz.	2 1/4 Lbs.	83.00

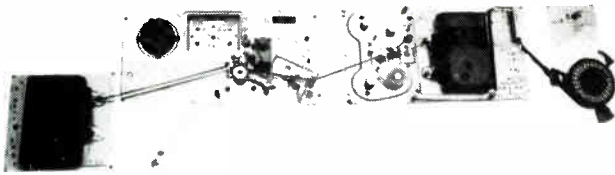
SPECIAL SAVINGS ON PREPAID ORDERS: When money order or check accompanies your order, add \$1.00 for handling. Surface delivery to your door is included Via UPS or Parcel Post in USA. Air shipment, or export, is extra.

R. B. ANNIS COMPANY • 1101 N. Delaware St. • Indianapolis, Ind. 46202 • Ph. (317) 637-9282

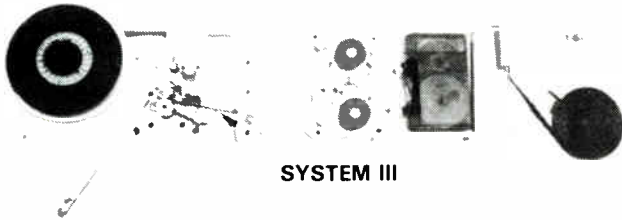
AUDICO INC.

219 Crossen
Elk Grove, IL 60007
(312) 640-1030
Telex 4992690 AUDCO UI

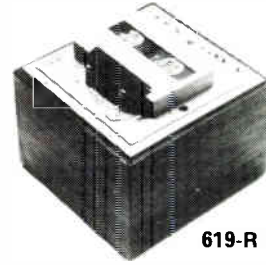
TAPE LOADING SYSTEMS/ACCESSORIES



SYSTEM III WITH 619-P PAY-OFF UNIT



SYSTEM III



619-R REWINDER



"HOCKEY PUCK" SPLICER



VIDEO TAPE LOADING SYSTEMS UMATIC, VHS AND BETA — (Also Load Audio)

Systems can be equipped to load Umatic, VHS, and Betamax video cassette and cookies as well as audio cassettes, cartridges and reels. Tape loading speed is 135 inches per second. Counter allows selection of exact tape length desired. Built-in cleaner is included which can be used to wipe both sides of video tape during loading or rewinding. Space is provided to mount a burnisher/scraper.

All systems consist of a 751-V Delivery Unit and an 829 Receiving Unit with one interchangeable Take-up Module. Systems II and III also include the 29R Unloading Unit. The 829 Receiving Unit, which contains a processor that continuously monitors in-path tape loading tension, may be upgraded: System I or II to System II or System III.

Systems I and II require only one Take-up Module for both VHS and Beta; System III requires separate modules for each format. Umatic modules handle both KCA and KCS housings. When ordering, specify desired module — Umatic or 1/2" on System I or II; Umatic, VHS or Beta on System III.

System I Video Loader Loads new tape into new cassette housing. **\$6075.00**

System II Video Loader/Reloader Has additional feature that automatically removes old tape from cassette housings without taking them apart, and thus allows for their convenient reuse **7075.00**

System III Video Loader/Reloader/Rewinder Adds ability to rewind and fast-forward cassettes, and to wipe tape while rewinding. When reloading, tape can be removed from either reel. **7275.00**

Take-up Modules Extra interchangeable modules (in addition to one selected with Receiving Unit).

Load (All Systems) **450.00**

Load/Reload (Systems II and III) **600.00**

Load/Reload/Rewind (System III) **750.00**

Audio Tape Loading Options (1) Audio Cassettes, (2) Type-A Broadcast and 8-track Carts, and (3) Nagra Reels.

First Option **325.00**

Second and Third Option (each) **50.00**

619-P Pay-off Unit Used with video loader to transfer tape directly from a cassette housing or cookie into another housing. Mounts to left of Delivery Unit which counts desired length. Built-in leader detector stops loading, and length loaded is indicated. VHS unit transfers tape from VHS housings to both VHS and Beta housings.

Umatic or VHS **975.00**

Umatic and VHS **1175.00**

Economy Video Loader Loads new tape into new cassette housings. Includes 751-V Delivery Unit and 619-T Take-up Unit with tape wiper and one Take-up Module, either 1/2" (VHS and Beta) or Umatic, Audio tape loading options also available **4475.00**

Second Take-Up Module **450.00**

VIDEO CASSETTE REWINDER

619-R Video Cassette Rewinder Rewinds and fast-forwards Umatic, VHS and Beta cassettes. Unit can also be used as either 619-P Pay-off Unit or 619-T Take-up Unit on Economy Video Loader (Take-up tape wiper is \$150 extra).

Rewinder One format — Umatic, VHS or Beta **\$1125.00**

Each additional format **700.00**

Rewinder/Unloader 29-R Unloader added to above 619-R. Allows old tape to be removed from housings and stops automatically when leader is detected. One format **1975.00**

Each additional format **700.00**

VIDEO TAPE SPLICERS

"Hockey Puck" Splicer Tape and leader are butted together and held in place by vacuum holes in tape slot. Splicing tape is placed on top of block across ends to be spliced. The "puck", a precision fitting, hardened metal roller, is rolled down the slot and cuts and applies splicing tape in one motion.

1/2" Tape **\$550.00**

3/4" Tape **550.00**

Vacuum Source The "Hockey Puck" Splicer requires a vacuum source for tape hold-down, either a small vacuum pump or a compressed air source connected thru a venturi.

Venturi Kit Consists of venturi, flow control and fittings to generate vacuum from compressed air source. **75.00**

Vacuum Pump **125.00**

SUMMARY

Costs for various formats and features, including optional "Hockey Puck" Splicer(s) and vacuum pump.

ECONOMY LOADER	SYSTEM I	SYSTEM II	SYSTEM III
Umatic (or one 1/2" format on System III)			
\$5150.00	\$6750.00	\$7750.00	\$7950.00
VHS and Beta			
\$5150.00	\$6750.00	\$7750.00	\$8700.00
Umatic, VHS and Beta (two "Hockey Puck" Splicers)			
\$6150.00	\$7750.00	\$8900.00	\$10,000.00

Above System III for Umatic, Plus:

Umatic Pay-off Unit **\$8925.00**

VHS/Beta System II Load/Reload Module, and 1/2" "Hockey Puck" Splicer **9100.00**

Add **\$325.00** to above prices for audio cassette or broadcast cart loading option; add **\$375.00** for both.

Subtract **\$50.00** from above prices for Venturi Kit instead of Vacuum Pump.

All prices F.O.B. Elk Grove, IL, and subject to change without notice.

Prices and Specifications Subject to Change Without Notice.

VR-13

AUDICO INC.

219 Crossen
Elk Grove, IL 60007
(312) 640-1030
Telex 499-2690 AUDCO UI

VIDEO TAPE/ACCESSORIES

VIDEO TAPE LOADING SYSTEMS

LOAD/RELOAD* Your Own...and Save!

*Easily Reuse Cassette Housings Without Taking Them Apart

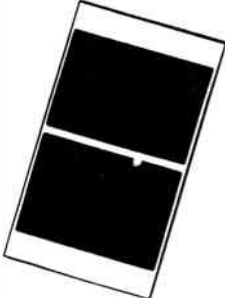
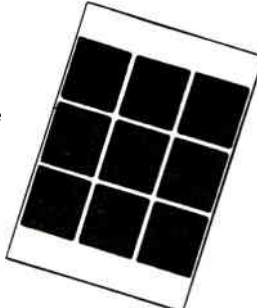
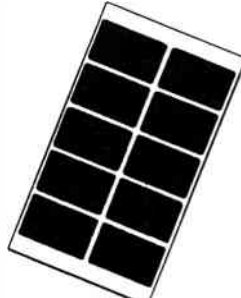
	Length	Material Costs	
		Tape Only (Reload)	Tape and Housing
Umatic	5 min	\$.83	\$ 5.53
	20 min	3.30	8.00
	60 min	9.90	14.60
VHS	T-5	\$.08 - \$.12	\$1.18 - \$1.37
	T-30	.48 - .71	1.58 - 1.96
	T-120	1.93 - 2.82	3.03 - 4.07
Beta	L-50	\$.12 - \$.18	\$1.22 - \$1.43
	L-500	1.20 - 1.75	2.30 - 3.00

CASSETTE LABELS Umatic, VHS, Beta

- Die Cut • Pressure Sensitive • Ready to Use
- Suitable for Typing, Printing, Duplicating, etc.
- Available in Pewter, Sand and Matte White

ACTUAL LABEL SIZES

100 SHEETS PER PACKAGE

<p>umatic</p> <p>6-1/4" x 4-3/8"</p> <p>2 LABELS PER SHEET 200 Labels per package</p> <p>SHEET SIZE: 6-3/8" x 11-1/4"</p> 	<p>(Types, colors and whites may be mixed to achieve quantity prices)</p> <table border="1"> <thead> <tr> <th></th> <th>1-4</th> <th>5-9</th> <th>10-19</th> <th>20 & More</th> </tr> </thead> <tbody> <tr> <td>Audio</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Whites</td> <td>\$17.00</td> <td>\$15.30</td> <td>\$13.80</td> <td>\$12.40</td> </tr> <tr> <td>Colors</td> <td>21.00</td> <td>18.60</td> <td>16.50</td> <td>14.60</td> </tr> <tr> <td>Video</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Whites</td> <td>22.00</td> <td>19.80</td> <td>17.80</td> <td>16.00</td> </tr> <tr> <td>Colors</td> <td>26.00</td> <td>23.00</td> <td>20.40</td> <td>18.00</td> </tr> </tbody> </table> <p>RAINBOW ASSORTMENT PACKAGES:</p> <p>Audio— 10 Colors and 2 Whites: 10 sheets of each (120 sheets total) \$30.00 2 sheets of each (24 sheets total) 10.00</p> <p>Video and Audio— Choice of any 50 sheets 20.00</p> <p>Prices FOB Elk Grove, Illinois (When orders are prepaid, surface freight is allowed within the continental U.S.A.)</p>		1-4	5-9	10-19	20 & More	Audio					Whites	\$17.00	\$15.30	\$13.80	\$12.40	Colors	21.00	18.60	16.50	14.60	Video					Whites	22.00	19.80	17.80	16.00	Colors	26.00	23.00	20.40	18.00
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Whites	22.00	19.80	17.80	16.00																																
Colors	26.00	23.00	20.40	18.00																																
<p>beta</p> <p>2-1/2" x 2-3/4"</p> <p>9 LABELS PER SHEET 900 Labels per package</p> <p>SHEET SIZE: 7-7/8" x 11-1/4"</p> 	<p>vhs</p> <p>3-1/16" x 1-7/8"</p> <p>10 LABELS PER SHEET 1,000 Labels per package</p> <p>SHEET SIZE: 6-3/8" x 11-1/4"</p> 																																			

TD-1B Tape Degausser

(With Automatic Overheat Thermal Protection)

- Erases audio, video, computer, data tape, magnetic films, cartridges and cassettes.
- For tapes up to 3/4 inch.
- Accommodates up to 10 1/2 inch NAB reels.
- Provides a wide focused magnetic field to assure complete erasure.
- Positive results every time with a simple two pass operation for broadcast NAB audio cartridges.
- Transient protection to prevent permanent tape damage.
- Operate light flashes, indicating auto-shutoff by thermo protector, resets automatically.
- 115 and 220 volt, 50-60 Hz models available.

Power Requirements: TD-1B 115 volts AC ± 10% 50-60 Hz.

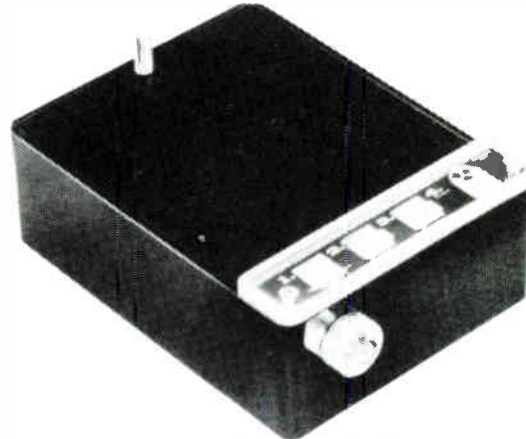
TD-1BF 230 volts AC ± 10% 50-60 Hz.

Duty Cycle: One minute ON — Three minutes OFF.

Dimensions: 5 1/4 x 7 1/4 x 3 inches high. 133 x 184 x 76.2 MM.

Weight: Net — 9 1/2 lbs. Shipping — 10 lbs.

Reel Size: Up to 10 1/2 inches in diameter. Removable center post for large carts.



TD-1B - \$105.00
(115V 50-60 Hz)

TD-1BF - \$118.00
(230V 50-60 Hz)

TD-4 Tape Degausser

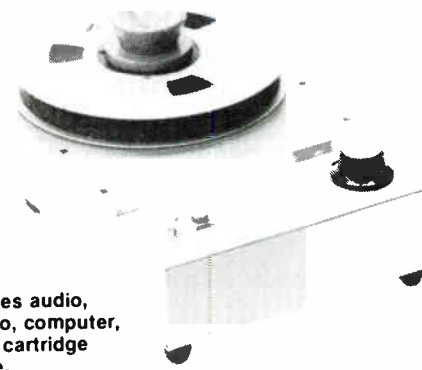
- Erases audio, video, data tapes, U-Matic cassettes up to 750 oersteds, reels to 14 inches in diameter. See performance chart.
- Provides 2550 effective gauss field.
- Built in timer has adjustable "on" cycle and automatic shut-off.
- Automatic cooling fan operation.
- Overheat light with automatic thermal protection prevents exceeding duty cycle on "HI" position. Thermal protection resets to normal operation automatically.
- Hi-Lo operation allows continuous duty erasing on Lo position for most tapes. See performance chart.
- Standard 5/16 inch center post with 3 inch NAB hub supplied.
- Conservative design assures long reliable performance.

MODEL NUMBER	LINE VOLTAGE	LINE FREQUENCY	LINE CURRENT		MAXIMUM GAUSS		
			HI	LO	HI	LO	
TD-4-115-60	110-125 VAC	60 HZ	8A	4A	2550	2000	\$735.00
TD-4-115-50	110-125 VAC	50 HZ	8A	4A	2550	2000	775.00
TD-4-230-60	220-250 VAC	60 HZ	4A	2A	2550	2000	825.00
TD-4-230-50	220-250 VAC	50 HZ	4A	2A	2550	2000	825.00

Duty Cycle: Hi position 50%, 20 minutes. Lo position - continuous.

Dimensions: 10 x 13 x 4 inches. (25.4 x 33 x 10.1 mm)

Shipping Weight: 45 lbs. (14.97 kg)



Erases audio, video, computer, and cartridge tape.

TD-5 Tape Degausser

- Erases audio, video, data U-Matic cassettes up to 1100 oersteds and 16 inches diameter.
- Provides 3500 effective gauss field.
- Built in timer has adjustable "on" cycle and automatic shut-off.
- Automatic cooling fan operation.
- Overheat light and automatic thermal protection prevents exceeding duty cycle on "Hi" position, resets to allow normal operation.
- Hi-lo selectable operation allows continuous duty erasing on Lo position for many tapes. See performance chart.
- Standard 5/16 inch center post with 3 inch NAB hub supplied.
- Conservative design assures long reliable performance.

MODEL NUMBER	LINE VOLTAGE	LINE FREQUENCY	LINE CURRENT		MAXIMUM GAUSS		
			HI	LO	HI	LO	
TD-5-115-60	110-125 VAC	60 HZ	10	4	3400	2600	\$845.00
TD-5-115-50	110-125 VAC	50 HZ	10	4	3400	2600	885.00
TD-5-230-60	220-250 VAC	60 HZ	5	2	3400	2600	915.00
TD-5-230-50	220-250 VAC	50 HZ	5	2	3400	2600	915.00

Duty Cycle: Hi position 50%, 20 minutes. Lo position - continuous.

Dimensions: 13 x 17 x 4 inches. (33 x 43.2 x 10.1 mm)

Shipping Weight: 46 lbs. (20.87 kg)



Erases audio, video, computer, and cartridge tape.

BASF SYSTEMS CORP.

Crosby Dr.
Bedford, MA 01730
(617) 271-4000

VIDEO CASSETTE TAPE



- Chromium dioxide formulation for the highest quality reproduction available.
- Extensive Quality Control testing assures consistent stability, long durability, and brilliant pictures.
- Unique vinyl sleeve eliminates shedding which causes dropouts and signal loss.
- Compatible with all VHS or Beta equipment

Cassette Type	Playing Time	Part Number	Master Carton Pieces	Ship Weight (lbs.)	Sugg. Retail
T-60	1-2-3-hrs.	54554	20	14	\$14.95
T-120	2-4-6-hrs.	54555	20	15	16.95
T-120 CARDED	2-4-6-hrs.	56002	20	16.5	16.95
T-160	2½-5½-8 hrs.	56008	20	15	21.95
TC-20 HG	20 minutes**	56009	50	8	14.95
T-120 HG	2-4-6-hrs.	54937	20	15	21.95
T-160 HG	2½-5½-8 hrs.	56010	20	15	—
L-250	½-1-1½ hrs.	56001	20	12	12.95
L-500	1-2-3 hrs.	54552	20	12	14.95
L-500 CARDED	1-2-3 hrs.	56003	10	6.5	14.95
L-750	3-4½ hrs.	54553	20	13	16.95
L-750 CARDED	3-4½ hrs.	56006	10	6.5	16.95
L-830	3½-5 hrs.	56011	20	13	—
L-500 HG	1-2-3 hrs.	54929	20	12	16.95
L-750 HG	3-4½ hrs.	56007	20	13	21.95

**60 min. on units properly equipped.

BENJAMIN INTERNATIONAL

232 Sherwood Avenue
Farmingdale, NY 11735
(516) 753-0700

AUDIO-VIDEO ACCESSORIES



Gibson Girl® Tape Splicer

Precision made—produces slight trim cuts on the edge of the splicing tape to prevent adhesive from contacting parts. Knob has cut and trim position blade adjustment provided to maintain lifetime accuracy.

26-038 1/4" tape (reel to reel) splicer . . \$9.95
26-043 Cassette splicer 9.95



Cordless Cassette Tape Eraser

Erases recorded material from standard and micro or mini cassettes in seconds—no outside power or batteries needed.

24-004 \$14.95



Robolite

Battery operated dustcover lamp. Light turns on when cover is raised, off when lowered. Uses two D-cells (not supplied).

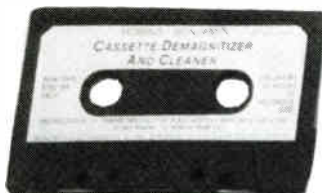
40-002 \$12.95



Cassette Tape Head and Capstan Cleaner

This unique wet cleaning system will clean the tape heads, capstan and pinch rollers in one operation. It will bring back the original clarity and performance of your cassette unit without scratching or damaging the tape head.

35-005 \$4.95



Cassette Head Demagnetizer and Cleaner

Operates with home & auto cassette player/recorders. Features rotary magnet and non-abrasive head cleaning tape.

25-007 \$3.95



Stylus Cleaning Kit

Removes dust and dirt from stylus tip. Increases life of stylus and records.

40-052 \$1.95



Audio Cassette Care Kit

A complete care kit for auto, home & office cassette recorder/players featuring the Audible Tone cassette head demagnetizer. Non-abrasive cassette tape head and capstan cleaner (cat. no. 35-005) packaged in a plastic storage box.

25-010 \$19.95



Universal Tape Splicer

Low cost splicer for both 1/4" and cassette tapes—blades included. Uses standard splicing tape.

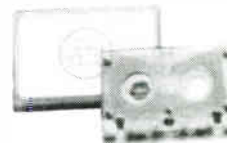
26-030 \$2.50



Micro/Mini Cassette Tape Eraser

Erases recorded material from micro and mini cassettes.

24-005 \$9.95



Micro-Cassette Head Cleaner

Non-abrasive cleaning cassette thoroughly cleans recorder heads.

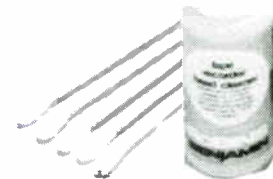
35-008 \$4.95



Audible Tone Electronic Cassette Head Demagnetizer

Restores original full range recordings by demagnetizing heads which have lost high frequency response or show distortion. Audible tone confirms electronic demagnetizing action.

25-005 \$19.95



Tape Head Cleaning Kit

Contains bottles of head cleaner and head guide lubricant, audio clean swabbies (10 pcs.) for safe easy cleaning and lubricating of hard to reach recorder heads.

30-005 \$1.95

24-022 Audio-Video Bulk Tape Eraser, Industrial grade, erases up to 1" wide tape (3/4" helical scan video) on reels up to 10-1/2" diam. UL listed \$200.00

24-026 Heavy Duty Bulk Tape Eraser, Industrial grade, erases up to 1" wide tape (3/4" helical scan video) on reels up to 17" diam. UL listed 500.00

24-032 3" Hub Adaptor for 24-022, 24-026 10.00

24-033 3-11/16" Hub Adaptor for 24-022, 24-026 10.00

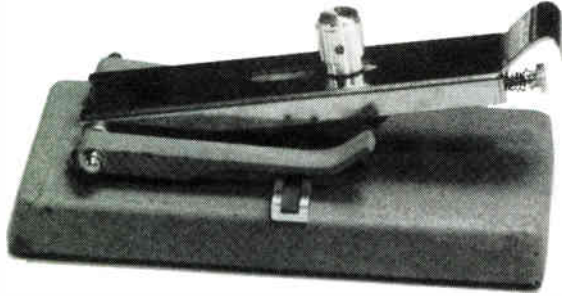
Prices and Specifications Subject to Change Without Notice.

VR-17

BENJAMIN INTERNATIONAL

232 Sherwood Avenue
Farmingdale, NY 11735
(516) 753-0700

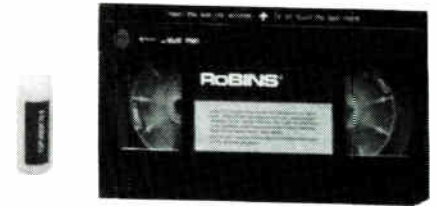
AUDIO-VIDEO ACCESSORIES



Professional "Gibson Girl"® Video Tape Splicer

Heavy duty with precision features: tape guide and arms secure tape, control knobs for precise "cut and trim" positions. Precision blade centering adjustment is provided for lifetime accuracy.

- 26-048 1/4" Audio/Visual
Tape Splicer..... \$125.00
- 26-051 1/2" Audio/Visual
Tape Splicer..... 125.00
- 26-054 1" Audio/Visual
Tape Splicer..... 125.00
- 26-081 3/4" Audio/Visual
Tape Splicer..... 125.00



Video Head Cleaner

A non-abrasive wet system which thoroughly cleans the entire tape path. It will not damage the heads in your recorder. The special fluid control system prevents over saturation of the cleaning surface which may activate the moisture sensing circuit of some VCRs.

- 29-520 VHS Cleaner..... \$19.95
- 29-525 Beta Cleaner..... 19.95



Deluxe Video Cassette Bulk Tape Eraser

Powerful eraser restores magnetic qualities of video cassettes. Erases virtually all signals and does it in seconds. Works on VHS & Beta formats. UL Listed.

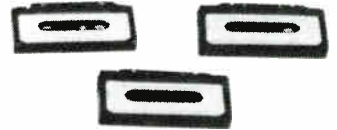
- 24-001..... \$39.95



Video Head Cleaning Fluid

Special Freon TF formulation as used in 29-500 kit.

- 29-501..... \$1.95



Video Screen Care Kit

Pre-saturated pads clean and restore original screen brightness and clarity. Pre-saturated screen restorer covers minor scratches on screen.

- 29-505..... \$3.95



Video Head Cleaning Applicators

Special non-abrasive chamois type applicators (5).

- 29-502..... \$6.95



Universal Bulk Tape Eraser

Our lowest cost quality bulk eraser restores like-new performance to video cassettes in seconds. Works on VHS & Beta formats. UL Listed.

- 24-017..... \$19.95



Video Head Cleaning Kit

Contains Freon TF base cleaner, which removes oxides and dirt from heads, guides and pinch rollers; and five long-reach applicators with specially angled chamois-like tips to permit complete cleaning. Packaged in a plastic storage box.

- 29-500..... \$7.95

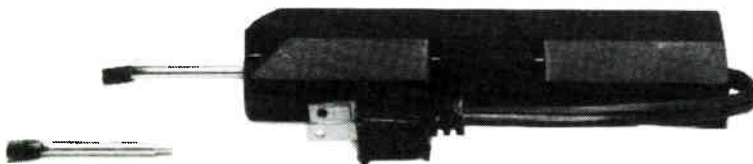
Splicing Tape for Splicing Recording Tape

- 23-018 1/4" x 100"..... \$1.50
- 23-030 3/8" x 100"..... 1.75
- 23-033 1/2" x 100"..... 1.95

23-235 Aluminum Foil Sensing & Cueing Tape—1/4" x 100"..... 1.95

30-004 Tape Recorder Head Cleaner Fluid —removes accumulated oxide, grime & other particles from recording heads..... 1.00

30-011 Audio Clean Swabbies—cotton- tipped applicator for cleaning hard to reach places—100 pcs. 1.95



Universal Head Demagnetizer

Removes residual magnetism from all heads and other metal parts in the tape path. On/off switch and special designed interchangeable tips for video recorders. UL Listed.

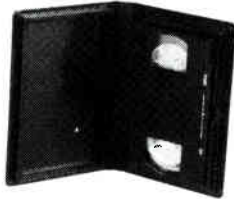
- 24-055A..... \$12.95

BLACKBOURN INC.

10150 Crosstown Circle
Eden Prairie, MN 55344
(612) 944-7010

VHS ALBUM

- Single cavity VHS cassette album
 - 4" clear label holder on bottom of front cover and spine
 - Available in Chocolate Montana, Black, Red, Azure Blue, Ginger Montana, White, and Royal Blue
 - All albums have black trays except Ginger and White, which have white trays
 - Packed 50 per carton. Carton weight is 21 lbs.
 - Excellent for attractive dust proof cassette storage
- Suggested Retail Price** \$2.75 ea.



BETAMAX ALBUM

- Single cavity VHS cassette album
 - 3" clear label holder on bottom of front cover and spine
 - Available in Chocolate Montana, Black, Red, Azure Blue, Ginger Montana, White, and Royal Blue
 - All albums have black trays except Ginger and White, which have white trays
 - Packed 50 per carton. Carton weight is 19 lbs.
 - Excellent for attractive dust proof cassette storage
- Suggested Retail Price** \$2.50 ea.



3/4" U-MATIC ALBUM

- Single cavity 3/4" U-Matic cassette album
 - Molded hub locks prevent tape creasing
 - 4" clear wrap-around label holder centered on front cover and spine
 - Dust proof closure
 - Available in Chocolate Montana or Black vinyl with black trays
 - Packed 48 per carton. Carton weight is 32 lbs.
- Suggested Retail Price** \$3.75 ea.



PROFESSIONAL VIDEO PACKAGING

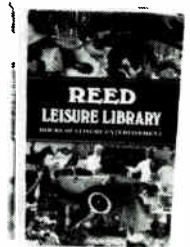
INJECTION MOLDED COMBO ALBUM

- Easily accommodates either VHS or Beta videocassettes
 - Unique internal loading tray locks cassette in place
 - Impact resistant, hard plastic construction
 - 3" clear label holder centered on front cover and spine
 - Professional looking black, brown, or clear leather grain textured exterior
 - Ideal protection for transporting or storing videocassettes
- Suggested Retail Price** \$2.50 ea.



CP-T CLEAR COMBO ALBUM with CLEAR POCKETS

- Manufactured in clear transparent vinyl
 - Designed to hold either a VHS or Beta cassette
 - Full-length clear pockets on front cover, spine and back cover allow insertion of literature or title material
 - Dust proof closure
 - Packed 50 per carton. Carton weight is 12 lbs.
- Suggested Retail Price** \$2.50 ea.



POST COMBO ALBUM

- Holds in place either VHS or Beta videocassettes
 - White or Black exterior vinyl with full open trap unsealed at spine
 - Dust proof closure
 - Packed 50 per carton. Carton weight is 22 lbs.
 - Versatile album for retail or professional use
- Suggested Retail Price** \$3.00 ea.



CP-S CLEAR COMBO ALBUM

- Manufactured in clear transparent vinyl to attractively display either a VHS or Betamax movie sleeve with or without its cassette
 - Prevents handling wear in displaying movie sleeves
 - Packed 50 per carton. Carton weight is 10 lbs.
- Suggested Retail Price** \$2.50 ea.





BOSCH

VIDEO TAPE RECORDERS/SYSTEMS

2300 S., 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

BCN 21 Portable VTR for Recording, Play-back and Editing

Features

- Weight: 16.6 lbs. (7.5kg) without battery and tape — 20.1 lbs. (9.1kg) with battery and tape
- 6.5 inch standard reels for 20 minutes playing time — 6.5 inch Bosch reels for 30 minutes playing time — 9 inch standard reels for 60 minutes playing time
- Color monitoring output
- Video and audio monitoring on any home receiver (with optional HF modulator)
- Internal 12 V/2.5 Ah battery or external 12 V DC-supply
- Field editing with the scene
- Correction of edit decisions
- Status monitor (LCD display) for time code, operating modes or failure
- Built-in μ C time code generator
- Presetting of time code and user bits
- Output for time code for simultaneous recording on two BCN 21
- Integrated audio mixer
- Three audio inputs
- Audio cross dubbing (on-site postproduction)
- Overload protection for audio tracks (limiter)
- Integrated supply line for condenser mike
- Integrated automatic editing facilities with edit simulation
- IN, OUT cue marks for Master and Slave
- Search function with two frame editing accuracy (tape timer)
- Fully remote control facilities
- Instant edits with 1 second backspace
- Interface for external editing systems

BCN 41/51 - One Inch Video Tape Recording System

The BCN 41 is the basic unit of the system. It consists of:

- Standard tape deck
- Control panel
- Electronics

Operating modes

- Recording with broadcast quality
- Insert and assemble editing (manual)
- B/W reproduction
- Color reproduction on request

Applications

- Compact unit for OB vans especially suitable due to low weight
- Optional operation with one processor switchable to two BCN 41s for broadcast playback
- All applications where time-base-corrected signals are not necessary but a top-quality recorder is required. An economical solution

The BCN 41 can be upgraded with the processor BCPC 49C and an additional monitoring bridge BCBM to the BCN 51

version which then includes the following features:

- Time base correction
- Play-back in broadcast quality
- Drop-out and velocity error compensation
- Delay time and subcarrier phase correction
- Monitoring of picture level and vector signals
- Audio monitoring
- Test point selection

Digital Vario Motion

The BCN 51 basic version can be further upgraded with a digital BCN store BCQE 620.

The following features can be added for a more time saving and therefore more economical production.

Functions

- As per BCN 51 basic version
- Still frame reproduction
- Step motion
- Slow motion
- Visible search
- BCN 51 with BCN store is the basic version for further optional peripheral units

Applications

- Demanding electronic productions
- Fast and economical decision making for editing; fast take search possible
- Analysis of moving sequences, e.g. sports events
- Artistic use of quad split mode

BCN 41/51 A Production Peripherals

A BCN 51 with the store unit and additional control interface ZPQ is capable of being used with four further control panels:

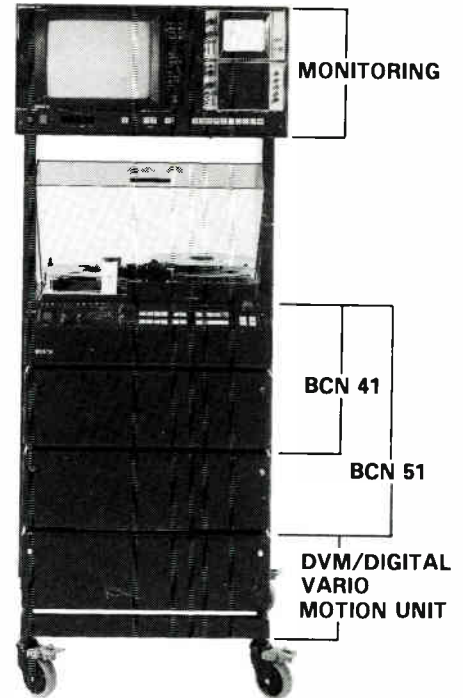
- Single frame display BFS 9B
- Slow motion programmer BPS 9A
- Production editing systems
- Remote control

A further specialty of the BCN system is the digital split system. The digital quad split control RCSH can be connected to every BCN 51 with the DVM unit.

- For picture archiving with fast access to individual pictures, (135,000 pictures on a 90 minute one-inch tape), picture sequences (programmer takes) or logos
- Replacement of slide archives where the slides have so far been reproduced conventionally

Functions

- Single frame recording and reproduction
- Remote control of main tape deck functions
- Automatic frame selection
- Automatic reproduction of picture sequences
- Fast search mode



BPS9A Slow Motion Programmer

Applications

- Programmable slow motion replay of various takes or high-lights (e.g. goal scene etc.) Analysis of motion sequences or for replay of still picture from any kind of program
- Substitute for complex disk store systems

Functions

- Programmable slow motion, forward and reverse
- Programmable single frame selection
- Automatic selection between normal and slow motion mode
- Variable slow motion speed
- Remote control of the main tape deck functions

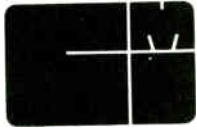
RC SH Digital Quad Split Effects

Applications

- Analysis of motion sequences
- Artistic picture designing
- Production revising
- Industrial, scientific and medical applications

Functions

- Display of all effects with moving pictures in color
- Display of still pictures
- Adjustable frequencies of picture sequences when still pictures are reproduced (Skip field mode)
- Reduction of picture area down to 1/4
- 4 fold simultaneous display (Quadsplit)
- Repetition of Quadsplit produces 8 fold reduction (Restore)
- Selectable freeze frame of individual quadrants (Quad Freeze)
- Display of various mirror effects



CHANNELMATIC
 821 Tavern Road
 Alpine, CA 92001
 (619) 445-2691

BROADCASTER I

Automatic Video Cassette Changer

(Patents Pending)

BROADCASTER I is the basic unit of a revolutionary new series of ultra-reliable and highly flexible video cassette changer systems. It can random access amongst up to fifteen video cassettes or, optionally can also random access up to 100 individual spots on each video cassette. It is designed to be used in broadcast stations, CATV systems, LPTV systems, hospitals, schools, hotels and other facilities where quality programming must be originated automatically on a pre-programmed weekly time schedule.

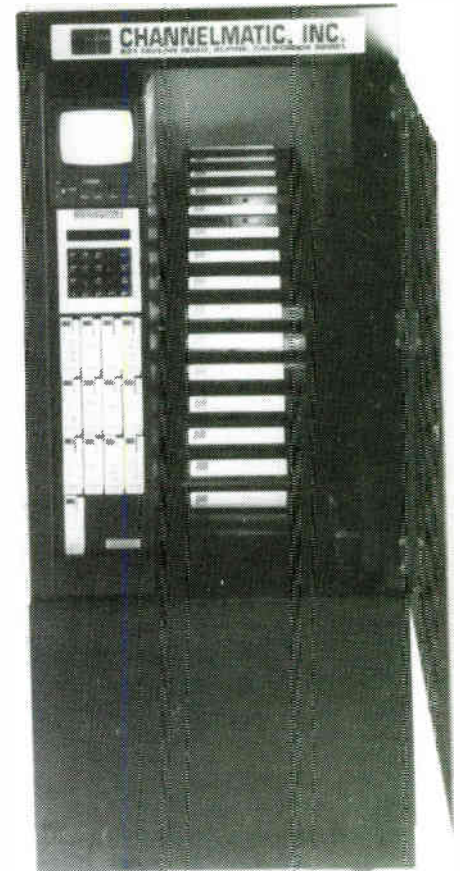
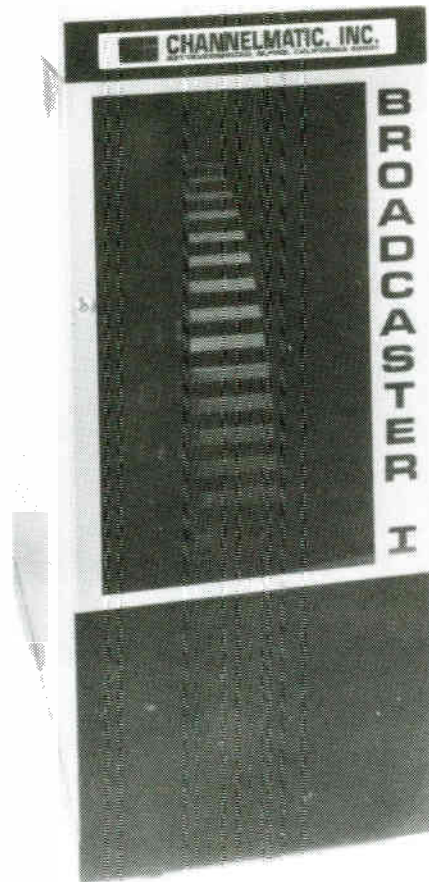
The microcomputer in BROADCASTER I is operator programmed to select any one of the standard 3/4 inch video cassettes from the integral tape storage magazine, insert it into an unmodified Sony Type-5 VCR, playback the tape and then replace it in its designated slot. Provisions are included for precisely prerolling the VCR and audio/video switching is accomplished in a broadcast fashion, with vertical interval transition as referenced to the primary program source.

BROADCASTER I may be operator programmed to rewind a video cassette immediately after it has played, or to delay tape rewinding until a specific time, such as midnight, when each tape which has been played will be inserted into the VCR, rewound and replaced in the magazine. All tape rewinding is totally automatic and requires no operator attention.

FEATURES

- Random Access of up to 15 Video Cassettes
- Total Microcomputer Control
- Easy Programming-Display Prompted in English
- Full 7-Day Programming (100 Events per Day)
- No VCR Modification Required
- Computerized Stepper Motor Drive — Indexing Accuracy Within .005 Inch
- Reliable...No Oil, No Gears, No Belts, No Chains
- Minimal Moving Parts for Ultra Long Service Life
- Units May Be Cascaded for Additional Capacity
- Will Play Multiple Sequential Segments on Each Tape
- Built-In Vertical Interval Switching
- Automatic Switching to Auxiliary Source During Cassette Change
- Automatic Record and Delayed Playback Optional
- Built-In Video Monitoring Optional
- Optional Electronic Modules can add Numerous Features

AUTOMATIC VIDEO CASSETTE CHANGER



OPTIONAL EQUIPMENT

In its basic form BROADCASTER I can solve many of the problems associated with loading and operating a video cassette machine, but when options are added, BROADCASTER I becomes a custom workhorse capable of almost any operation involving video tape.

PHYSICAL DIMENSIONS

BROADCASTER I is housed in a free-standing, castered cabinet measuring 52" H x 22" W x 37" D and weighing approximately 200 lbs.

BROADCASTER I **\$13,500.00**

Single channel Random Cassette Changer including Microcomputer Controller, Audio/Video Switcher with two additional inputs and DTG-102A Tone Generator for encoding tapes.

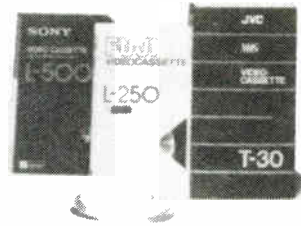
OPTIONS:

5-Inch Monochrome Video Monitor	\$ 300.00
Additional 3-Input Audio/Video Switch	450.00
Tone Decoder (Satellite)	400.00
8-Page Character Generator Including Programming	900.00
Video Presence Detector	325.00
Balanced Audio, 3-Input and 1-Output	300.00
HANDIMOD I Accessory for Sony Type 5 VCR	300.00
SONY VP-5000 Video Cassette Player, Installed	1895.00
Video Distribution Amplifier, 6 Isolated Outputs	325.00
Audio Distribution Amplifier, 6 Isolated Balanced Outputs	325.00
Logging System Including 80-Column Printer	1500.00
Random Access Within Tape (Incl. Logging and Tape Encoder)	5500.00
Automatic Record and Playback	3000.00

20665 Manhattan Place
Torrance, CA 90501 USA
(213) 320-0808 (800) 421-2955
TWX 910-349-6260

MAXERASE®-16B

**BULK VIDEO/AUDIO
TAPE DEGAUSSER** A 30-second
one pass total erasure of all high coercivity
video tape formats and sizes.



For the first time high coercivity tape (up to 1500 oersted) can be completely and automatically degaussed at the touch of a button. The Christie MAXERASE-16B, provides hands-off, fast degaussing, and eliminates the uncertainty of previous degaussing systems.

MOST POWERFUL DEGAUSSER

The MAXERASE-16B (Model ME-16B) with its advanced design is the most powerful professional degaussing machine on the market today. It makes use of a patented high-power [equivalent flux of over 16 kilowatts] assembly composed of upper and lower magnetic cores, assuring total erasure of any video tape.

There is no other degaussing machine currently available which: [1] comes even close to the magnetic flux levels generated; [2] directs almost all of the degaussing flux through the tape; [3] simultaneously rotates the tape reel or cassette while passing it non-linearly through the magnetic field preventing "spoking"; [4] does all this in one pass, automatically, in about 30 seconds.

ERASES HIGH COERCIVITY TAPE

Difficult to erase high coercivity tape rated at 700 to 1000 oersteds is degaussed by the MAXERASE-16B to levels typically exceeding -85 dB in one pass. Degaussing to typically more than -95 dB is achieved on 300 to 500 oersted tapes. Multi-track audio tapes are usually also degaussed to levels exceeding -80 dB.

HANDLES ALL FORMATS/SIZES

The MAXERASE-16B is the only automatic degausser capable of being quickly adjusted to accommodate maximum degaussing fields for all widths of audio, computer, video, and instrumentation tape from 0.25 inch up to 2.6 inches and any

tape reel size up to 16 inches in diameter. It handles all magnetic tape formats—reels, cassettes, cartridges and disc. For even faster degaussing, on smaller formats and sizes, several tapes can be erased at once by the MAXERASE-16B.

HEAVY DUTY APPLICATION

Many degaussers quickly overheat and stop functioning until they cool down. They also can cause the tape to overheat and perhaps even be damaged if multiple passes are required. The MAXERASE-16B is built with an enhanced duty cycle for long-term continuous operation with most tapes, without overheating the tapes or the degausser.

SIMPLE AUTOMATIC OPERATION

The MAXERASE-16B operation is simple, safe and automatic. A tape is placed into the holding tray. The tape width is reset if different from the prior tape as indicated on the control panel. The operator then presses the start button, which causes the degaussing operation to begin. A motor drives the tape into the high-energy flux field and back out, while uniformly rotating the tape tray first in one direction and then in the opposite direction.

HIGH QUALITY CONSTRUCTION

The unit employs a high quality drive motor, all solid-state control logic, high-current resonant technology, visual display control panel, heavy cast base construction, and a sturdy molded fiberglass enclosure.

ONE-YEAR WARRANTY

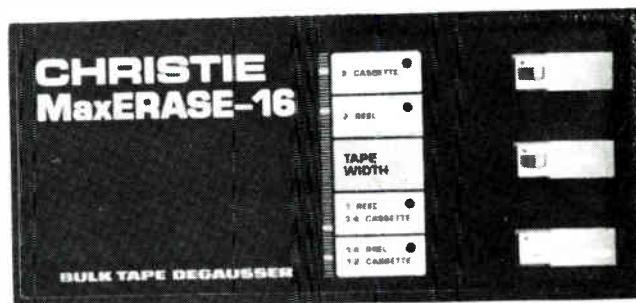
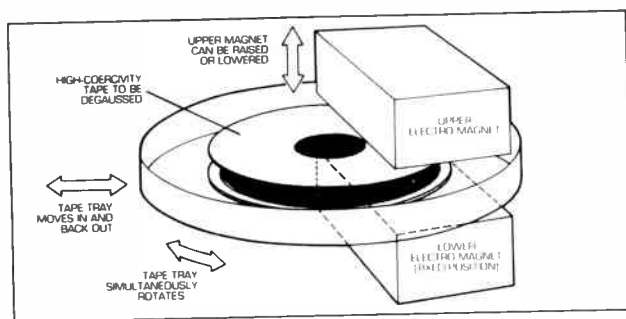
The Christie MAXERASE-16B carries a one-year warranty on all parts. The warranty also includes labor if the unit is returned to Christie for repair. A complete copy of the Christie warranty containing all provisions is available from Christie Electric Corp.

MAXERASE-16B (Cont'd)

TECHNICAL FEATURES

UNIQUE CORE DESIGN

The task of degaussing today's high coercivity tape requires a magnetic flux field of maximum intensity. Since the magnetic flux density decreases exponentially with the distance, the MAXERASE-16B locates one magnet core just under the reel tray, in close proximity to the bottom of the tape. The top core assembly can be raised or lowered to bring it close to the top of the tape. Operating with flux equivalent to more than 16 kilowatts, these electro-magnets produce an extremely concentrated flux field to penetrate the tape.



CONTROL/INDICATOR PANEL

Push-button controls and an indicator display panel make the MAXERASE-16B easy to operate. A linear scale indicates the top magnet position which can be adjusted for standard or non-standard tape widths. If an operator loads a tape which is too tall for the magnet position selected, the unit reverses and a light on the display panel flashes.

SELECTABLE FLUX FIELD

- For high and low coercivity tapes, the unit has selectable high and low power settings for each of the electro magnets.
- To assure the best erasure for every type of tape, the unit also provides switch selection between two orientations of the flux field.

SPECIFICATIONS OF MODEL ME-16B*

Operation Cycle:	One-pass, approximately 30 seconds.
Formats/Sizes:	All diameters up to 16 inches [41 cm]. All widths up to 2.6 inches [6.6 cm].
Degaussing Level:	- 80 to - 95 dB typical, one-pass. (Degaussing level will vary with temperature, tape coercivity, tape width, depth inside tape stack, reel type, reel construction, wave-length recorded, power setting, and number of passes.)
Controls:	Front display panel.
Mechanical Drive:	Single gearmotor.
Electro-Magnets:	Heavy duty, patented core assemblies.

Flux Power	High and low power settings.
Flux Field Orientation:	Two settings.
Power Input:	230 Volts, 60 Hz, 30 amps max., twist lock plug.
Protection:	Main Power: Magnetic circuit breaker; Control circuitry: fuse.
Dimensions:	H 16" [41 cm] x W 35" [89 cm] x D 24" [61 cm].
Base Construction:	Heavy cast aluminum.
Cabinet:	Molded fiberglass.
Mounting:	Bench mount.
Net Weight:	150 lbs. [68 kg.].

*Subject to change without notice.

MAXERASE-16B \$5,550.00

Optional Features

Suffix: Z: 230V, single phase
50Hz (only),
30 amps maximum input \$400.00



STC-100

A highly flexible microprocessor-based search-to-cue controller designed for use with Ampex VPR-1 and VPR-2/2B VTRs, the STC-100 can designate, store and recall up to 99 separate cue points, and remotely control the VTR's record, normal speed play and full speed bi-directional shuttle functions. Cue points may be keyed-in via a number pad in SMPTE/EBU format, or they may be marked on-the-fly from SMPTE/EBU time code being read off a moving tape. Each designated cue point is automatically assigned a two-digit file number which may be keyed-in to recall the associated SMPTE/EBU time code address of the cue point, allowing the STC-100 to "rapid search" VTRs under its control to specific cue points.

INTERNAL MEMORY:

An internal memory with battery backup stores all cue point information. The memory can be dumped to or loaded from audio track 3 of the VTR under the STC-100's control, allowing cue point lists to be stored on the same tape as the program material to which they apply, for convenient recall. The entire 99 cue point capacity of the STC-100 memory occupies only 40 seconds of tape, so the list can easily be recorded onto the leader ahead of the program material, if desired.

APPLICATIONS:

The STC-100 has a wide range of uses in both live production and post-production. For sports, it can be used to rapidly designate cue points for "instant replay" at any time during recording or playback. It can increase the efficiency of spot commercial playback by allowing a series of commercials to be recorded on a single reel, with cue points designated at the beginning of each spot to allow rapid searching to those selected for playback. For postproduction, an entire library of still-frame recordings can be selected and the cue point information stored right on the video tape for recall during subsequent editing sessions. The list of STC-100 applications is limited only by the user's imagination.

MANUAL, STILL AND SLOW-MO OPERATION:

Cue points may be marked, assigned cue numbers and searched in manual, still and slow motion mode.

Manual: Provides normal remote control of the VTR via the STC-100's record, play, stop and shuttle buttons. Cue points may be marked or searched-to during any motion sequence.

Still: Allows up to 99 stills to be selected in an auto-assemble sequence, providing a rapid-access still store. Each still segment is 10 frames long. 99 recordings occupy approximately 33 seconds of real time (NTSC). Maximum access time is 5 seconds, with a ± 2 frame target accuracy.

Slow Motion: Similar to manual mode, except that the transport controls on the STC-100 are disabled. Transport control is provided by an Ampex SMC-60/100 slow motion controller, while cue points are marked and searched by the STC-100. Operating in conjunction with the STC-100, the SMC-60/100's memory is expanded from one auto cue point to 99. The SMC-60/100 plugs directly into the back of the STC-100.

SIMPLE INSTALLATION:

The STC-100 plugs directly into the VTR's remote connector, and may be remotod up to 100 feet. No VTR modifications are required.

MODEL NO.	PART NO.	PRICE
STC-100	260211-02	\$8,950

Includes 10' Interconnect Cable

EECO Incorporated, 1601 E. Chestnut Ave., Santa Ana, CA 92701
Phone: (714) 835-6000, TWX 910-595-1550, Telex 67-8420

Prices and Specifications Subject to Change Without Notice.

Elcon

DISTRIBUTED EXCLUSIVELY BY
TELEVISION EQUIPMENT ASSOCIATES, INC.

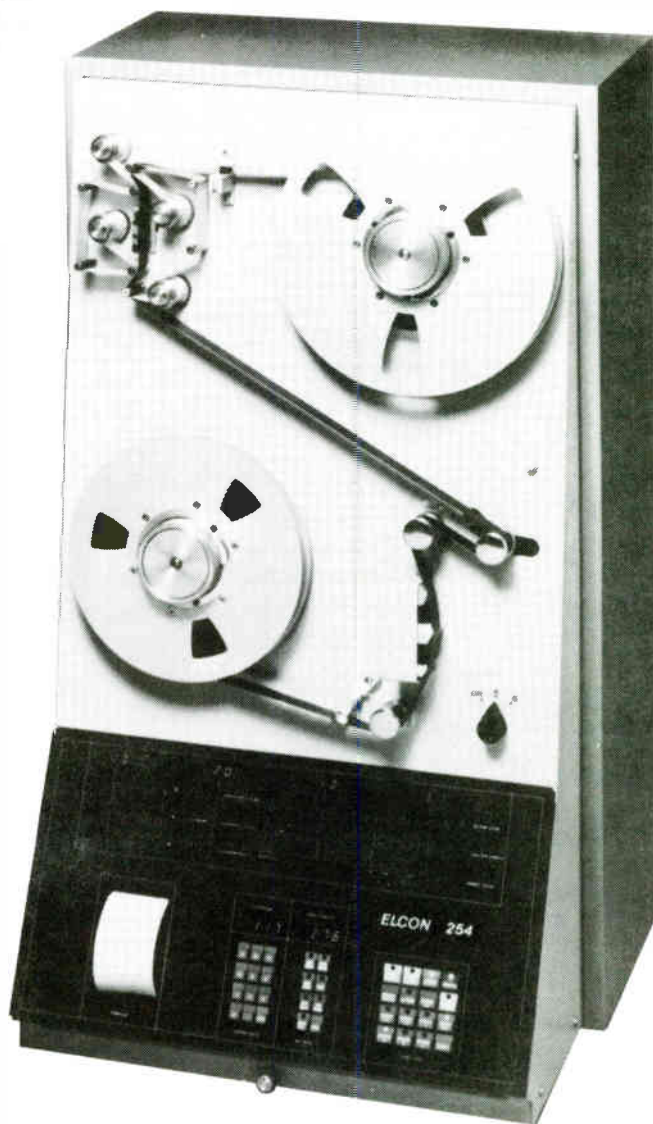
Box 393
S. Salem, NY 10590
(914) 763-8893 TWX 710-575-2600

VIDEO TAPE CLEANER/EVALUATOR

3/4 INCH CASSETTES MODEL EA750



ONE INCH TAPE MODEL EA 254



The Elcon Tape Evaluators are fully automatic, high-speed tape cleaners and profilers, specifically designed and precision-engineered for professional tape maintenance and evaluation. The Elcon offers a unique LED linear display system that makes thorough tape evaluation quick and easy. Push-button accessing of three pre-established acceptance levels simplifies classification into common categories, i.e., "Master Stock", "Commercial", and "Dub" quality, making this system particularly suited to operation by non-technical personnel. In one pass, tapes are cleaned, evaluated and rewound in 1/10 the normal running time.

Operation is fully automatic. The machines shuttle tape from head to tail end, cleaning only. The tape reverses automatically. On the rewind pass, the tape is cleaned a second time, and, if profile has been selected, the tape is degaussed and profiled electronically.

Electronic profiling will locate and identify damaged tape areas by illuminating the appropriate section on the LED linear display panel. The panel is divided into three illuminated channels representing the "Top Edge", "Video", and "Bottom Edge" of the tape. These channels are calibrated in 1/4 minute segments. No light indicates that the number of defects is below the predetermined acceptability level.

After a tape has been profiled, the operator evaluates the tape by pressing the buttons labeled A, B and C. These alter the display illumination to reflect three separate user-programmed acceptance levels.



350 Fifth Ave.
 New York, NY 10118
 (212) 736-3335 Telex ITT 423298

VIDEO TAPE



Fuji features 1-inch "C" format video tape in hard plastic shippers. The rigid, flame-retardant cases are available in 10½-inch and 14-inch sizes with built-in handles. Fuji H621 video tape is acclaimed for its reliability, particularly under adverse conditions.

H621 Professional 1-Inch Video Tape

Fuji H621 1-inch video tape gives you better color, better S/N ratio, fewer dropouts, longer life, lower abrasion, and lower jitter from the capstan and drum. You get better results on the master, and with each subsequent generation you make.

High-density particles of Fuji's exclusive BERIDOX (Berthollide iron oxide) are specially sensitized, then held together and fastened to the tape's backing material with Fuji's special U-binder. The backing material has uniform thickness and an extremely fine finish to prevent edge damage during winding, and is treated to reduce static. Fuji H621 provides superb performance in virtually any recording or playback situation.

For extra protection, a flame retardant shipping case is also available.

Length	Recording Time	Reel	Carton Quantity	Case
1640'	34 Min.	8"	5	FRS or carrying case
3170'	66 Min.	9"	5	FRS or carrying case
4620'	96 Min.	10.5"	5	FRS or carrying case
5070'	105 Min.	10.5"	5	FRS only
6070'	126 Min.	14"	2	FRS only
7540'	157 Min.	14"	2	FRS only
9100'	189 Min.	14"	2	FRS only

All the above lengths are available in the Type C Format. The 34 min., 66 min., 96 min., and 120 min. lengths are available in the Type B Format.



350 Fifth Ave.
New York, NY 10118
(212) 736-3335 Telex ITT 423298

VIDEOCASSETTES



Super XG H451 VHS/H351 Beta

Proudly dubbed "The Master Tape". A magnetic layer 2.7 times higher in density than Super HG ensures the highest possible image and sound quality.

"Additionally, a new binder developed specifically for the Super XG features the lowest friction co-efficient of any binder yet available, enhancing reliability and durability to the maximum."

VHS: T-120, T-60 BETA: L-500, L-250

H521 BR Professional U-Matic Videocassettes

Fuji's new H521 BR is a high grade version of our H521 which is already considered to be the top of the line as far as 3/4" inch videocassettes go. Fuji has now taken U-Matic tape technology a step further by suppressing dropouts to the absolute minimum technically possible—less than 4 per minute. We've also boosted video and color S/N performance a maximum of +2 dB over the H521. Fuji's H521 BR is the ultimate 3/4 inch video cassette.

BR KCA-30, BR KCA-60, BR KCS-10, BR KCS-20



H521 Professional U-Matic Videocassettes

Employing its new backcoating technology, Fuji has recently developed the "H521", the highest quality U-matic videocassette available to professional producers and broadcasters. With the dramatic reduction in dropouts and increased durability, the H521 becomes the most ideal U-matic cassette around, delivering the sharpest, cleanest picture—just what professional broadcasters expect and demand. The H521—the reliable 3/4-inch videocassette that can stand up to the toughest of operating conditions. Its outstanding features include:

KCA-10, KCA-15, KCA-20, KCA-30, KCA-60, KCS-10, KCS-20

Super HG VHS/Beta

The pioneer of super high-grade videocassettes. Exclusive DURO-BACK backcoating realizes both super picture quality and excellent running stability.

VHS Videocassettes

T-20	T-80
T-30	T-100
T-40	T-120
T-60	T-160

BETA Videocassettes

L-125	L-500
L-250	L-750
L-370	L-830



H421/H321 Professional Super HG Videocassettes

In response to the introduction of 1/2-inch ENG and EFP video systems, Fuji now offers new professional-use 1/2-inch videocassettes: Fuji Super HG H421 (for the M-format) and H321 (for the BETACAM format).

Model #	Size	Recording Time
H421	T-120	20 Min.
H421	T-60	10 Min.
H321	L-500	20 Min.
H321	L-250	10 Min.



VHS/Beta Videocassettes

Renowned Fine Grain BERIDOX magnetic particles ensure vivid, life-like color reproduction. Stable images—even after hundreds of playbacks—are guaranteed.

VHS Videocassettes

T-30	T-120
T-60	T-160
T-90	

BETA Videocassettes

L-125	L-500
L-250	L-750
L-370	

Head Cleaners
VCL-10/VHS

BCL-10/BETA

Prices and Specifications Subject to Change Without Notice.

VR-27

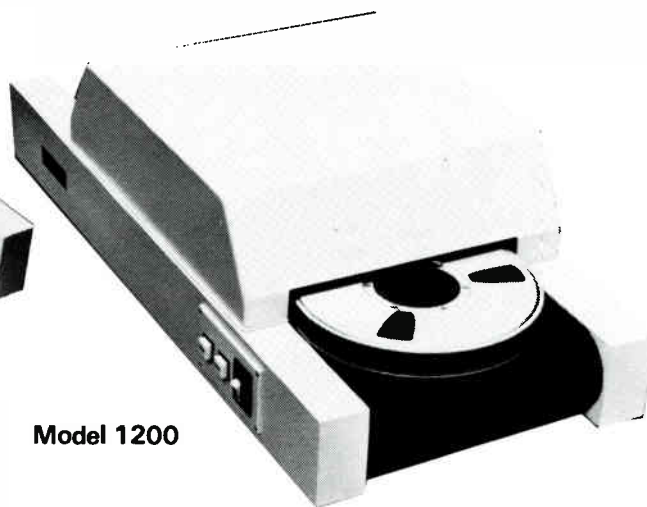
GARNER INDUSTRIES

4200 N. 48th
Lincoln, NE 68504
(402) 464-5911 Telex 438-068

DEGAUSSERS



Model 1400



Model 1200

The Standard In Video and Computer Degaussers

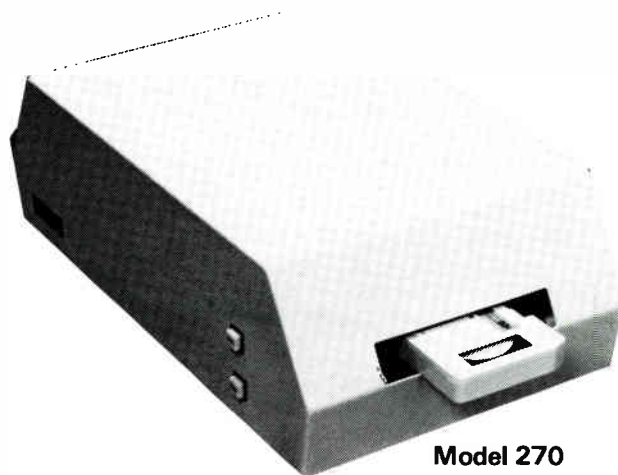
Garner serves the video and computer industries with a full line of automated video tape erasers engineered for both the speed and effectiveness professionals demand.

Depth of Erasure: Garner's erasure of a heavily saturated, high coercivity tape is the standard of the industry.

Speed: Erases high-energy tape completely in 5 to 15 seconds. Other erasers take many times that long.

Ease of Operation: No one beats Garner's ease of operation. Just touch the "on" switch and place the tape on the conveyor. There are no drawers, no spindles and no height adjustments.

Dependability, Guaranteed. For over 13 years, Garner has set the standard for tape erasers. Just one look at the rugged construction shows you why.



Model 270

SPECIFICATIONS:

Overall Dimensions	Model 270 (for 1/2" to 3/4" cassettes)	Model 1200 (for 1" reels and cassettes up to 10 1/2" in diameter)	Model 1400 (for 1" reels and cassettes up to 14" in diameter)
Length	28 1/2"	33 1/2"	33 1/2"
Width	16"	20 1/4"	23 3/4"
Height	9"	11"	11"
Weight	90 lbs.	140 lbs.	160 lbs.
Max Reel Diameter	8 1/2"	10 1/2"	14"
* Power	* 120 VAC	* 208/220 VAC	* 208/220 VAC
Erasure Level	-75 dB	-90 dB	-90 dB
PRICE	\$2,985.00	\$4,850.00	\$5,750.00

* All models available in 220, 230 & 240 VAC / 50 Hz



HITACHI

Hitachi Denshi, Ltd.

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

VIDEO TAPE RECORDER/PLAYER

HR-230

High Performance 1-Inch Production VTR

- High quality recording/reproduction
- Interchangeability with all Type C tapes
- 2-hour/3-hour reel operation selectable
- -1 to +3 times variable play speed (option)
- Built-in 4Hp-p TBC (option)
- Auto setup of optimum record current
- Video confidence (simultaneous playback)
- DG/DP compensation circuit
- Deviation marker for modulation setting
- Auto chroma function
- Built-in cable compensator
- Auto setup of optimum bias current
- Audio confidence (simultaneous playback)
- Linked left-right volume control possible
- Peak level display by LED
- Audio spot erase function
- Built-in monitor speaker
- Digital servo system
- Quick start of tape travel
- Hand advance of tape under servo control
- Automatic color framing
- Any size of reel usable without servo switching
- PRO (Protective Reverse Oxide) tape path
- Non-contact head drum in standby and FWD/REW modes
- Retracting entrance and exit guides
- Escape tension mechanism
- Retracting master erase head
- Automatic audio head cover opening and closing
- Built-in monitor select buttons
- Controls with unity setting and center click
- Various displays for ease of operation
- Assemble/insert editing with 1-frame accuracy
- Split edit and forced edit possible
- Cue shift and variable preroll
- Preview and review operation
- Change and display of edit data
- Edit point setting by ten-key entry

The Hitachi HR-230 is a newly designed 1-inch helical-scan VTR in accordance with the SMPTE Type C standard and provides the same highly acclaimed performances that made the former HR-200 series so popular with many new added features that make it even more useful for various applications.

The HR-230 inherits the same features as the former models such as the tape transport designed by CAD to assure stable tape travel, the PRO (Protective Reverse Oxide) tape path to protect oxide surface of a tape, the air support system to reduce resistance to tape travel, and the retracting entrance guide for ease of tape loading. In addition to these features, air tension arm posts are newly adopted to further reduce resistance to tape travel and an escape tension mechanism and retracting exit guide, to make tape loading more simple and accurate in combination with the retracting entrance guide.



Only by changing the mounting position of reel motors, both of the 3-hour and 2-hour reel operations are possible; the former for desk-top and console configurations, and the latter for rackmount configuration.

Other performances improved, and functions added, are two micro-processors which independently control the operation system and servo system, -1 to +3 times variable play speed and its memory function (option), auto setup function of the optimum video record and audio bias currents, variable play time function which can increase or decrease program time, master/slave control function, reduction of tape accelerating time and lock-in time, incorporation of 4Hp-p TBC (option), various alarms and error messages for ease of fault diagnosis and maintenance, etc.

The HR-230 can be used in any configuration of desk-top, console and rackmounting and is most suitable for broadcast station, production house and other high end industrial and educational applications.

HR-230-1

Package Includes:

HR-230 — Recorder/Player
TC-030 — Plug-In Digital TBC
Take Up Reel
Set of Extender Boards
Service Manual

Price
\$57,900.00

HR-230-2

Package Includes:

HR-230 — Recorder/Player
TC-230 — Digital TBC
SL-30 — Slow Motion
(Head Scan Tracking)

Take Up Reel
Set of Extender Boards
Service Manual

Price
\$78,800.00

Prices and Specifications Subject to Change Without Notice.

VR-29

INTERAND CORPORATION

3200 W. Peterson Ave.
Chicago, IL 60659
(312) 478-1700 Telex 91022-15279
INTERANDCO CGO

IMAGE STORAGE/TRANSCIVER AND PROCESSOR

FASTSCAN™ 200

Multipoint Freeze-Frame Transceiver and Image Processor

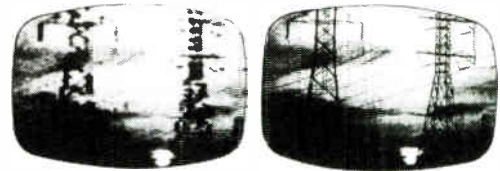
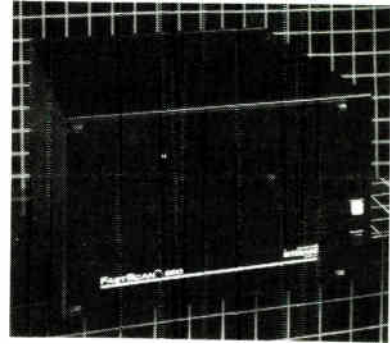
FEATURES

- A true communicating image processor
- Can accept future transmission/compression programs
- Easy to use
- Compact
- Microprocessor-based
- Remote control
- Full color
- High resolution - 640 by 480 pixels
- Fast transmission - initial image in 4 seconds (V2.3)
- Automatic error detection/correction
- Compatible with other members of the DISCON family
- Upgradeable

FastScan 200 is the entry level member of the DISCON™ family. Both affordable and upgradeable, it allows users to transmit to multiple locations any image that can be captured by a video camera or created by a video compatible professional computer. FastScan 200 systems can be used in a stand-alone network or as part of a DISCON 700 or 1000 network.

FastScan (with Image Processor Program 2.3) transmits the initial image over ordinary telephone lines to multiple sites in 4 seconds. As users discuss the image, the system adds color and detail. High resolution allows decision-makers to review such complex images as blueprints, mechanical parts, circuit boards, molded pieces, financial documents, seismic charts, typewritten copy, and photographs. Advanced Image Processor Programs can be installed as they are made available.

FASTSCAN 200 \$14,000.00



4 Sec. Initial Image 21 Sec. First Color



47 Sec. Completed Image

FastScan Transmission Time*
(Using Image Processor Program 2.3)

IMAGE FILE™ II

Video Image Storage System

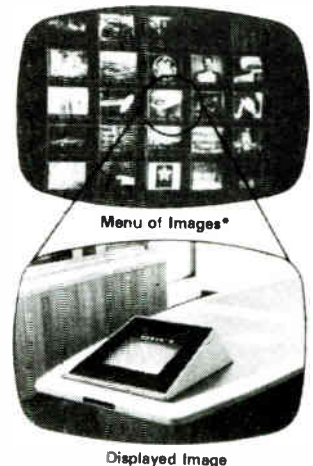
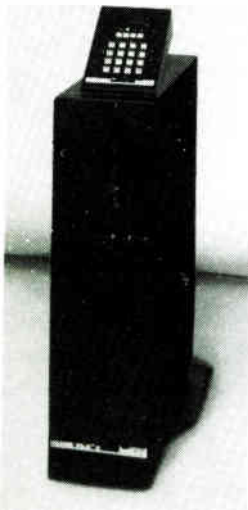
FEATURES

- Easy to use
- "Help" menu
- Remote control
- Instant image storage and retrieval
- Automatically generated menu of images, including record of date and time of storage
- Automatic display mode
- Automatic send mode
- Tape drive for image backup and restore
- Capacity expandable from 200 to 1400 full-color high resolution images

A significant addition to DISCON™ 1000, 700, or FastScan™ 200, Image File allows storage and retrieval of any image that can be captured by a video camera or created by a video compatible professional computer. With expansion modules, up to 1400 full-color high resolution images can be stored, any of which can be called up on DISCON display terminals in less than three seconds.

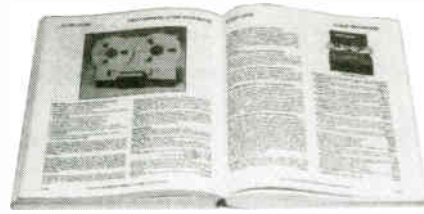
Using FastScan, images can be transmitted over ordinary telephone lines and remotely stored in Image Files at all locations. Users can then call up any of these images simultaneously at all sites for fast, effective problem-solving and telepresentations. Images can also be sequenced for automatic display at all sites to create a remote electronic slide show.

IMAGE FILE II \$15,000.00

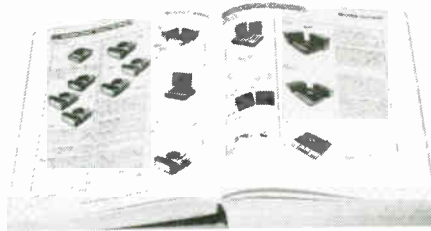


*Unretouched Photo From Display Monitor
™ TRADEMARKS OF INTERAND CORPORATION

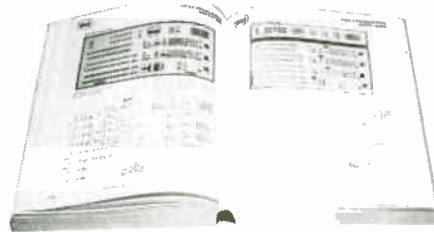
ILLUSTRATED TRADE REFERENCES



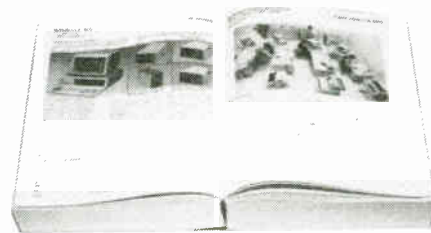
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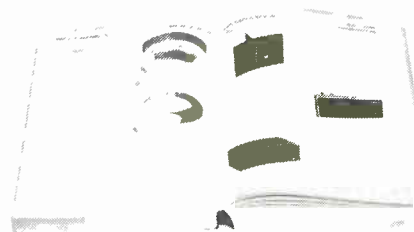
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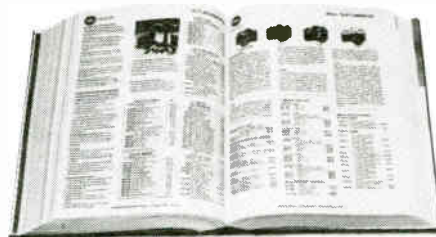
BROADCAST EQUIPMENT & SERVICES Buyers Guide — 1280 pages of Studio, Remote & Location Equipment & Systems for television, commercial & tape production, broadcast television, radio, cable, pay & satellite TV, special effects, animation & music video. **\$95.00**



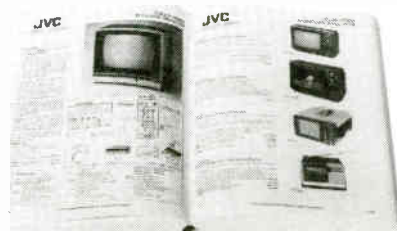
COMPUTER EQUIPMENT Buyers Guide — For Professional, Scientific, Business, Industrial & Commercial Applications. 1280 pages of micros, minis, disk drives, furniture, graphics, digitizers, plotters, boards, cables, cases, consultants, diagnostic & test keyboards, magnetic media, maintenance, modems, monitors, networks, paper/forms, power/protection, printers, software, supplies, tape drives, telecommunications, terminals. **\$95.00**



SECURITY & CCTV EQUIPMENT Buyers Guide — For Industrial, Professional, Commercial & Business Applications. 1280 pages of controls, annunciators, power supplies, dialers, closed circuit TV, wire, cable & equipment for remote monitoring, space protection & central station. **\$95.00**



PROFESSIONAL PHOTOGRAPHY/MOTION PICTURE Buyers Guide — Professionals in Photography, Motion Picture, Multi-Image, Audio-Visual, Film Production & Post Production — 1280 pages of studio, remote & location equipment systems & supplies for Still, Cine, AV & Film Production. **\$95.00**



INDUSTRIAL & PROFESSIONAL VIDEO EQUIPMENT Buyers Guide — 1280 pages of cameras, recorders, production & terminal equipment, monitors, lighting, telecine, RF equipment, enclosures, wire & cable. **\$95.00**

BILL DANIELS COMPANY, Inc.

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VR-31

3/4" EDITING RECORDER CR-850U

JVC®

FEATURES (Preliminary)

- 4-Heads
- Front Loading
- Direct Drive Reel Servo
- SMPTE Time Code Track (3rd Audio)
- Diagnostic Warning System
- Front Panel Test Points
- S/N 47dB Video
- Vertical Interval Head Switching
- Improved Drop-Out Compensation
- Die-Cast Chassis
- LED Indication for Fuse Condition Status
- Record, Playback and Editing Capabilities



CR-850U

CR-850U 3/4" EDITOR

The CR-850U is a very high quality 3/4" editing VCR with characteristics that make it suitable for a wide variety of applications. It was designed with the following objectives in mind:

It should have a picture reproduction quality second to none.

It should be easy to use.

It must adapt to a wide variety of systems and applications. Above all, it must be reliable.

The CR-850U achieves all of these goals and more. It incorporates a variety of innovations in VCR technology and will certainly set new standards of performance.

Signal Quality, Performance. The most important attribute of a 3/4" editor is its picture quality. Design engineers made every effort to see to it that the CR-850U would have absolutely the best picture reproduction quality of any 3/4" VCR on the market.

Through the use of a variety of circuits, the CR-850U has exceptionally low noise — 47dB signal to noise ratio in the color mode. And the less noise produced by a VCR, the cleaner the picture. This is especially important in the editing process, since noise is usually compounded as multi-generation dubs are being made.

Y-688 Dubbing System. Normal tape-to-tape transfers result in deterioration of the video signal. To minimize this, the CR-850U employs a Y-688 dubbing system, utilizing a standard 7-pin cable (provided).

Convenience. Line Input Switcher. On the CR-850U there are two video inputs labeled "Line A" and "Line B". These inputs are selectable by pressing a pushbutton on the front panel. An LED lights to indicate which input is active.

When switching from Line A to Line B, the CR-850U performs the switching in the vertical interval. If the signals are genlocked together, then the transition is glitch-free, even when it is recorded. To further this benefit, a connector is provided on the rear panel for remote operation of this function. Contact closure of this connector causes the VCR to switch from Line A to Line B. The VCR can actually be used as a "mini-switcher".

Built-In Editing Control Functions. In many instances, a separate editing controller is not necessary to perform editing functions. The CR-850U has a built-in Z-80 microprocessor which controls these functions. A close look at

the control panel on the CR-850U shows many of the same functions found on popular editing controllers: Preroll, Preview, Entry In, Entry Out, Assemble, Insert, Edit Start, Edit Stop.

Digital Tape Counter. The LED digital tape counter on the CR-850U displays Hours, Minutes, Seconds, and Frames. Its count is based on the FG pulse from the capstan circuit, and will continue to read even if control track is lost. If the control track reference is desired, a DIP switch can be flipped internally to make this selection. In addition to displaying tape travel, the counter in the CR-850U has another function unique to a VCR: it has a built-in Lap Timer. This is like having a separate tape timer working independently of the normal counter. It can be used to measure tape travel distance from a given point. It is especially useful when doing fixed length edits.

Visible Picture Search. The front panel search dial on the CR-850U provides a convenient way to shuttle the tape with a viewable picture at speeds from 1/30th to 15 times normal in forward and reverse.

Jog Mode. In addition to visible picture search, another function is provided, which can be accessed when using a

serial editing controller. "Jog" is a feature which allows the picture to accurately follow the movement of the search dial on the controller, as it is turned to the right or left.

Full Capstan Control In All Modes. When the cassette is inserted into the CR-850U, mechanism fully loads the tape around the head drum. The tape remains threaded in this fashion until the eject button is pressed. This permits much faster cueing times, as well as more positive control over the tape. A special "standby" mode is provided which stops the head drum and disengages the pinch roller after 10 minutes in still. This permits rapid drum-up to full picture while protecting the tape and vital components.

Independent Audio Limiters. Besides adjusting the audio levels manually, the CR-850U can adjust levels automatically with its built-in limiter circuit. Separate on/off switches are provided for each channel, a JVC exclusive feature.

Flexibility. It is fitting that an editing VCR as advanced as the CR-850U be able to adapt to a wide variety of systems and applications. For this reason, JVC incorporated a number of features which are explained below.

Front Loading Design. Besides saving space the front loading design permits mounting in a standard 19" rack, with an optional rack slide kit. All operational controls are mounted on the front panel.

Serial (RS-422) Control. A 9-pin "D" type connector is located on the rear panel for connection to editing controllers and other components. Using the serial port permits connection to a wide variety of sophisticated controllers. The serial connector is also used for the JVC RM-G850U controller.

Parallel Control. A 45-pin connector is located on the rear panel for connection to existing JVC editing controllers. Direct connection can be made to the RM-86U or VE-90AT/VE-93 controllers.

SMPTÉ Time Code Capability. SMPTÉ time code is a digital code which can be recorded on one of the VCR's audio

channels, to provide accurate indexing of the tape and to provide an accurate reference for editing. The CR-850U is equipped with a 3rd audio track (address track) for SMPTÉ code. A front panel LED illuminates when a signal is present on this track.

Balanced XLR Audio. The audio inputs and outputs on the CR-850U are balanced, and utilize standard 3-pin XLR connectors. The inputs can be switched for three levels, depending on the audio source.

Reliability. Diagnostic Warning System. Advanced microprocessor technology was applied to a sophisticated array of sensors and detectors throughout the CR-850U. If a problem occurs the VCR will immediately detect it and go into the "warning" mode. All functions will immediately be terminated so as to protect the tape and the machine. A digital readout on the front panel will display a code number from 01 to 99. This code number corresponds to the type of problem detected.

Front Panel Test Points. To aid in troubleshooting and preventive maintenance, test points were placed onto the front panel. A technician would normally connect test gear to these points and analyze the machine's performance. Adjustments can be made by opening the top or side panels.

Direct Drive Motors. The CR-850U uses a fully direct drive reel servo system (separate motors for the supply and take-up reels), which keeps tape tension constant during all modes. In addition, the head drum and capstan are also directly driven. There are no belts, pulleys, or idlers to require maintenance.

Die-Cast Chassis. All critical components are mounted onto a heavy-duty die-cast chassis. This assures stability, even when the machine is moved around a lot. Circuit boards are easy to access, and can be unplugged from the machine if necessary.

SPECIFICATIONS (Preliminary)

GENERAL

Format:

U-VCR

Video Signal System:

NTSC

Power Requirements:

85 - 135V/170 - 270V (switchable)

Dimensions:

17-9/16"W x 11-3/16"H x 21-1/8"D
(446 x 284 x 535mm)

Weight:

73 lbs. (33kg)

Operating Temperature:

5-40°C (-4 to 140°F)

Storage Temperature:

-20 to 60°C (-4 to 140°F)

Operation Position:

Horizontal

VIDEO

Input:

0.5 to 2.0V p-p, 75 ohms BNC x2

Output:

1.0V p-p, 75 ohms BNC x2

Resolution:

(B/W) 340 line, (Color) 260 lines

Signal-To-Noise Ratio

47dB (Color)

Video Input Select:

Line (A or B)/DUB

H-Phase Adjustment:

Auto

Dubbing Systems:

Y-688

RF Out for DOC:

0.5V p-p, 75 ohms

Audio Output:

+4/-20dB (Low impedance) balanced XLR

Monitor Output:

4dB (Low impedance) balanced XLR

Headphones:

-46 -- -24dB variable, 6.3mm jack, 8 ohms

Frequency Response:

50 to 15,000Hz

Rec. Level Adjustment:

Manual with meter, Limiter On/Off

OTHER

FF/REW Time (w/KCA-60):

4 min. (FF), 3 min. (REW)

Wow/Flutter (by JIS):

0.15% RMS

Search:

1/30 to 15 times

Jog Mode:

Yes (with Serial Controller)

Tracking Adjustment:

Yes

Suggested List Price TBA

CR-8250U

3/4" RECORDER/PLAYERS

JVC®

FEATURES

- SMPTE Address Channel
- Balanced Line Audio Inputs/Outputs
- Vertical Interval Head Switching
- Full Metering
- H-Phase Control
- Full Capstan Control with Standby Mode
- Real-Time Electronic Tape Counter
- Professional-Quality Editing Functions
- FM-FM Dubbing System for High Quality Copies
- Color Dubbing Switch
- Automatic Pre-Roll
- Capstan Servo System with External Lock Function
- Automatic Search Mechanism
- Automatic Repeat Mechanism



CR-8250U

CR-8250U 3/4" Recorder/Players

With 3/4" videocassettes used in production houses throughout the world, there is a pressing need for recorders that are able to make the precise edits required for professional results. Various sophisticated features have been added to the recognized reliability and dependability of our previous Tape Handler models. The improvements include:

Addition of a third audio (address) channel for time code; Balanced line audio inputs/outputs with XLR connectors; Vertical interval head switching; Video input level meter with manual adjustment; Tracking meter for precise playback adjustment; H-phase control to prevent edit flagging; Full capstan control in all modes except load and eject; Standby mode to protect tape and machine components while allowing quick drum-up; External hour meter; Increased dubbing flexibility through the use of FM-FM dubbing or Color Dub; Faster tape search (15X); Real-time tape counter that reads at search speed, even through blank tape; Improved horizontal resolution

H-Phase Control. This allows the CR-8250 to be accurately synchronized with the horizontal phase of the player for more accurate editing.

Full Capstan Control With Standby Mode.

The tape remains threaded in all modes except load and eject, permitting faster cuing times as well as better control. Tape search speed is variable from 0 to 15 times in forward and reverse when an edit controller is used. A special "standby" mode is provided which stops the head drum and disengages the pinch roller after 2½ minutes in still. This permits rapid drum-up to full picture while protecting the tape and vital components.

Real-Time Electronic Tape Counter. The electronic tape counter has an easy-to-read fluorescent display that shows elapsed time up to 59 min. 59 sec., facilitating indexing. It operates at search speeds, even while winding through blank tape.

Professional-Quality Editing Functions. The CR-8250U has a rotary erase head and a blanking switcher which make possible assemble and insert editing with virtually no distortion at the edit points. Editing flagging is minimized by use of framing servo and extremely stable horizontal phase lock.

FM-FM Dubbing System For High Quality Copies. In the FM-FM dubbing system, the signals are transferred in the form of FM signals without modulation and demodulation; this greatly reduces the

degradation of picture quality, making the CR-8250U ideal for use as a master VCR in software production and in copying and editing systems.

Color Dubbing Switch. When FM-FM dubbing is not suitable for your editing situation, the Color Dub switch, located on the rear, improves the color dubbing quality.

Automatic Pre-Roll. When the pause button is pressed during recording or when the edit stop button is pressed during assemble-editing, the tape is automatically pre-rolled and stops after being rewound by about 2 seconds of program time.

Capstan Servo System With External Lock Function. This permits playback to be locked to external sync signals so that the CR-8250U can be used in any existing video system. The external subcarrier input terminal also enables connection of a time base corrector (TBC).

Automatic Search Mechanism. This function operates together with the tape counter so that any section of the program can be located automatically.

Automatic Repeat Mechanism. In the auto repeat mode, playback is continuous; when the tape reaches the end, it is automatically rewound and repeated.

SMPT E Address Channel. By connecting a time code generator, SMPT E time codes can be recorded on the tape allowing access to exactly the required frame for precise edits.

Balanced Line Audio Inputs/Outputs. XLR audio connectors, the type most commonly used on professional audio equipment, are provided for line inputs/outputs.

Vertical Interval Head Switching. The head switching line, sometimes visible in the picture area, has been moved into the vertical interval — out of the picture completely.

Full Metering. For demanding professionals, a video level meter and adjustments are provided to allow the video recording current to be optimized. A tracking meter is provided for precise playback adjustment. Independent audio level meters are provided for channels 1 & 2. The audio levels of the two channels can be adjusted referring to the meters, or automatically using the audio limiter. The limiter can be switched out on either or both audio channels as needs require. An external hour meter is also provided.

Based On A Heavy-Duty Mechanism For Assured Reliability

Direct-Drive Head Drum And Capstan Servos For Stable Rec And Play. The rotary head drum and heads which trace 85 micron tracks for the accurate recording and playback of the video signal are the most crucial parts of the video system. In the CR-8250U, the head drum is directly driven by a servo-controlled brushless DC motor. Together with the servo-controlled capstan which is also driven by an independent brushless DC motor, it assures highly stable pictures as well as greatly improved reliability.

Reel Servo System With Independent Motors. The stability of the tape transport mechanism is maintained by the independent motors driving the supply and take-up reels, and the servo system which keeps tape tension constant during fast forward and rewind, as well as recording and playback, so there is no overload on the tape at any speed.

Aluminum Diecast Chassis Supporting The Heavy-Duty Mechanism. The advanced mechanisms used in the CR-8250U are supported by a rugged, durable aluminum diecast chassis. A two-motor gear-driven tape loading mechanism and powered cassette eject mechanism are used to further assure reliability.

Microprocessor-Based Logic Control. The logic control system using a microprocessor allows direct changeover between modes without having to enter the stop mode. It is this facility that makes possible remote control over all the recorder's functions. Modes are clearly shown by the lighting of LED indicators corresponding to various controls which perform an intelligent tally function.

Skeletal Construction For Ease Of Maintenance. To make the CR-8250U easier to service and maintain in optimum condition, its front and rear, top and bottom and side panels can be detached independently, giving easy access to all circuit boards. For easy maintenance, the circuit boards use plug-in connectors.

PRICING		Suggested List Price
CR-8250U	Tape Handler 3/4"	
	Videocassette Editing Recorder	\$5220.00
CR-6650U	Recorder/Player Version with Assemble Edit	\$3415.00
	(No Insert Editing)	
CP-5550U	Player Only Version	\$2600.00

SPECIFICATIONS (CR-8250U)

GENERAL

Power Requirement:

AC 120V ~, 50/60Hz, 140W

Dimensions:

56.4(W) x 22.1(H) x 47.1(D) cm
(22-1/4" x 8-3/4" x 18-9/16")

Weight:

30.6kg (67.3 lbs.)

Operating Temperature:

(40°F to 104°F)

5°C to 40°C

Operating Position:

Horizontal only

Tape Speed:

9.53 cm/sec

Recording Time:

Max. 60 min. with JVC KCA-60

Fast Forward/Rewind Time:

Within 4 min. 30 sec. for 60 min. tape

Wow & Flutter:

Less than 0.15% RMS

VIDEO

Recording System:

Rotary two-head, helical scanning

Video Signal System:

NTSC-type color, 525 lines

Input Line/TV:

0.5 — 2.0V p-p, 75 ohms

FM Dubbing: 0.5V p-p, 75 ohms

Output Line/TV:

1.0V p-p, 75 ohms

FM Dubbing: 0.5V p-p, 75 ohms

Signal-To-Noise Ratio:

More than 46dB (color)

More than 49dB (B/W)

(Rohde & Schwarz noise meter)

Horizontal Resolution:

Monochrome 340 lines, Color 260 lines

Sync Input:

0.5 to 4.0V p-p, 75 ohms

Time Code:

Input: -10dBs, more than 10K ohms

Output: 2.2V p-p, low impedance

Input Select:

TV/LINE/FM DUB

AUDIO

Input Line:

-20/0dBs, 10K ohms, balanced

Mic.: -70dBm, 600 ohms, unbalanced

TV: -20dBs, high impedance, unbal

Output Line:

-20/0dBm, 600 ohms load, low

impedance, balanced

Monitor: 0dBm, 600 ohms load, low

impedance, balanced

TV: 0dBs, 1K ohm, unbalanced

Signal-To-Noise Ratio:

More than 48dB

(at 3% distortion level)

Frequency Response:

50 to 15,000Hz

3/4" RECORDERS/PLAYERS

CR-6060U/CP-5200U

JVC®

FEATURES

- Remote Control Option
- Timer Start Capability
- Dubbing Switch (CR-6060U)
- Audio Level Control w/Limiter (CR-6060U)
- Two Audio Channels
- Auto Replay Feature
- Solenoid Operation
- Still Frame
- Optional RF Converter



CP-5200U



CR-6060U

CR-6060U/CP-5200U 3/4" RECORDERS/PLAYERS

The CR-6060U and CP-5200U...proven 3/4" U-Format performers.

The CR-6060U is a basic 3/4" recorder/player offering excellent economy, simplicity, and reliability. The CP-5200U is a player only model based on the same design philosophy. Both models offer the right combination of features and performance and are priced within the reach of most industrial users.

Sharp, Clear Pictures. Highly stable, sharp images and well defined colors are provided by the AGC and double function Automatic Color Control circuits.

Dubbing Facility (CR-6060U). A feature normally found on more expensive 3/4" VCRs, the CR-6060U provides a dubbing switch which allows some of the color processing circuitry to be bypassed, thus improving the quality of machine-to-machine transfers.

Still Frame Playback. During playback, you can stop the action to analyze

individual pictures. Both the CR-6060U and CP-5200U are equipped with this capability.

Timer Start Capability. By plugging the deck into an external timer (not included), unattended recording (playback on the CP-5200U) can take place. In the timer start mode, the machine automatically enters the record mode (CR-6060U) when the AC power is supplied.

Audio. Dual audio channels are provided. On the CR-6060U, recording levels can be adjusted using the meters, or automatically with the built-in limiter circuit. In addition, the CR-6060U is equipped with an audio-dub feature which allows the audio on channel-1 to be re-recorded, if desired.

Auto-Repeat. Tape playback can be repeated from beginning to end as many times as desired using the auto-repeat feature. An auto-search feature also lets you fast forward or rewind to counter "0000".

Solenoid-Control. Solenoid operation not only provides easier operation, but enables an optional remote control to be used. The RM-60U (CR-6060U) and RM-51 (CP-5200U) provide remote control of most tape transport functions and have tally indication.

Optional RF Converter. Both machines can be connected to an ordinary TV receiver through the use of an optional RF converter, KR-234 (Ch 3-4) or KR-256 (Ch 5-6).

PRICING/ACCESSORIES	Suggested List Price
CR-6060U 3/4" Recorder/Player	\$1685.00
CP-5200U 3/4" Player	1230.00
RM-51U Remote Control for CP-5200U ...	110.00
RM-60U Remote Control for CR-6060U ...	165.00
SW-200UF Switchbox and Antenna Cable for CR-6060U	7.25
MCB-20 Carrying Case	115.00
KR-234U RF Converter (Ch 3-4)	100.00
KR-256 RF Converter (Ch 5-6)	100.00

FEATURES

- Video Confidence Heads
- SMPTE Time Code Capability makes Possible Edits with Single-Frame Accuracy
- Automatic Backspace Editing for Assemble Edits in the Field
- Real-Time Tape Counter; for Convenience, Shows Tape Running Time in Minutes and Seconds
- Microprocessor-Based Logic Controls All Tape Operations for Precise Control
- Full-Function Remote Control (optional); Useful when the Recorder is Operated by the Cameraperson
- Shuttle Search at about 10 Times Normal Speed in either Direction



CR-4900U

CR-4900U VIDEOCASSETTE RECORDER

Lightweight. Complete with its rechargeable NB-P2U battery pack and a KCS-20 videocassette, the CR-4900U weighs only 19.6 lbs. (8.9kg). This is less than similar machines; lighter weight makes it more portable so that it can be used on more demanding assignments.

Low Power Consumption. The CR-4900U has a low power consumption, only 12 watts, an important advantage when it is used on location. The optional multi-charger/AC adaptor can charge the NB-P2U battery pack; four battery packs can be connected to this multi-charger and charged either in sequence (taking 90 minutes per battery pack) or simultaneously in a total of 10 hours.

Video Confidence Heads. The CR-4900U is the first 3.4" U-format recorder to be equipped for real-time monitoring of the signal immediately after it has been recorded while recording is taking place. This allows instantaneous detection of unsatisfactory sections so that they can be rerecorded immediately. This gives the CR-4900U an impressive advantage over competing machines.

Recording Current Adjustment. While recording is taking place, the level of the video signal recorded on the tape is measured; this is displayed so that the video recording current can be optimized. By turning a control on the

bottom, the recording current can be adjusted. When the meter makes its biggest deflection, the recording current is optimum.

Microprocessor-Controlled. All tape operations are controlled by a microprocessor. This makes it possible to use feather-touch operation buttons; when these buttons are touched lightly, they generate electrical signals which are fed into the microprocessor, which analyzes the feasibility of mode changes and the necessity of entering other modes during the changeover process before issuing the appropriate signals.

Remote Control. Microprocessor control also facilitates remote control using the optional remote control unit. All functions of the recorder can be controlled using this except audio dubbing and videocassette eject; this flexible remote control is particularly useful when the CR-4900U is operated by the cameraperson.

SMPTE Time Code Capability. With the optional TG-P47U Time Code Generator connected, the SMPTE time code — an eight-digit address — can be recorded on the tape so that the exact frame can be accessed for precise editing.

Frame Servo Mechanism. The frame servo mechanism allows accurate frame-to-frame editing.

Automatic Editing. Whenever the recorder enters the pause mode by use of the front panel pause button, the remote control unit's pause control or the camera's start switch, the tape is backspaced. Then, when recording starts again, the control track previously recorded on the tape is read so that the subsequent recording is correctly synchronized.

Real-Time Tape Counter. The 4-digit LCD tape counter shows the amount of tape that has run in minutes and seconds. This is a convenient way to indicate the amount of tape that has run and allows the required section of the tape to be accessed with a fair degree of precision. An identical 4-digit LCD tape counter is provided on the optional remote control.

Shuttle Search. In playback, the picture can be seen on the screen with the tape running in either direction at about 10 times normal speed. This is convenient when you want to locate any section of the program quickly.

PRICING/ACCESSORIES	Suggested List Price
CR-4900U Portable 3/4" Recorder	\$3285.00
AA-P47U AC Adaptor/Charger	370.00
TG-P47U Time Code Generator	1470.00
CB-P47U Custom Shoulder Case	115.00
RM-P47U Remote Control	245.00
BA-P47U Battery Case for NB-P2U	170.00

EDITING CONTROLLER VE-93

JVC®

FEATURES

- Joystick Control
- Keypad Entry
- Automatic Edit-In/Edit-Out
- Entry On-The-Fly, Auto Tag
- Variable Pre/Post Roll Times
- Dual Channel Time Code Readers
- SMPTE Time Code Generator
- Jam Sync, Time Code Copy Mode
- Edit Decision List Output for Printer Connection
- Fade to Black Module
- Machine Synchronization (Bump)
- Time Code Offset Compensation
- Multiple Edit Replay Feature
- Full Audio Preview
- Built-In Cooling Fan



VE-93
SHOWN WITH OPTIONAL
CI-90 CHARACTER INSERTER

VE-93 EDITING CONTROLLER

The VE-93 brings state-of-the-art computer technology to video tape editing. Utilizing a single, rugged joystick for controlling both record and source machines, the VE-93 is one of the easiest to operate controllers on the market.

Time Code Capability. One of the most useful features of the VE-93 is that it generates, reads, and references SMPTE time code. Tapes with time code can be searched, catalogued, and edited with frame accuracy. This greatly simplifies and speeds up the post-production process.

CI-90 Character Inserter (optional). The CI-90 is actually a separate time code reader which displays the time code in the picture area. This enables you to make a copy of the master tape (the copy can be in any format) with numbers on the screen which correspond with the code on the original tape. The lengthy process of reviewing footage and making edit lists can be done away from the editing system.

Other Features of VE-93. With the JVC TapeHandler 3/4" series, tape speeds are variable from 0-15 times in forward and reverse. Edit points and search locations can be directly accessed by entering the exact location into the controller via a numerical keypad. In addition, edit points can be entered in a variety of other ways, depending upon application. With the tape running, edit points can be entered "on-the-fly". In the parked position, edit points can be entered either manually or automatically using the Trim or Auto Tag functions. The VE-93 will also compute in-points automatically for back-timed edits.

When connected to an external monitor, a Status Display Generator generates a screen full of pertinent information including edit times, program length, etc. Other advanced features:

Variable pre/post roll times (0-9 sec.); Last edit recall; Machine synchronization; Cruise (full speed search without joystick); Abort capability; Time code offset compensation; Multiple edit replay; Fade in/out to and from black; Edit decision lister with printer interface.

PRICING/ACCESSORIES		Suggested List Price
VE-93	Editing Controller	\$6,900.00
CI-90	Character Inserter	1,250.00

FEATURES (Preliminary)

- Controls 2 Source Decks
- RS-422 Serial Control
- LED Indicators
- Lap Time Function
- Automatic Back-Timed Edits
- Monitor Audio Volume Controls
- Audible Alarm Warning
- Dial Search with Jog Mode
- Automatic Edit Control
- Switchable Total Time/Lap Time Counter
- "Go To" Edit-Point Location
- Preview Perform/Review Functions
- Auto-Tag Operation
- Frame-by-Frame Correction



RM-G850U

RM-G850U AUTOMATIC EDIT CONTROLLER

The RM-G850U controller uses a built-in microprocessor to automatically produce edits from any three In/Out points entered — especially convenient for fixed-length and back-timed edits. Smooth editing accuracy is provided by twin Search dials for the master and slave recorders, jog capability and frame-by-frame edit correction.

"Conversational" Operation. Self-illuminating control buttons light in proper sequence to guide operators naturally through editing procedures.

Audible Warning. An electronic alarm confirms activation of key functions including tape-transport, Preview, Perform, Review, etc. The alarm will also sound to indicate tape-transport abnormalities.

Dial Search with Jog Mode. Twin dials control recorder and player search at several different speeds between 1/30 and 15 times normal playback. The jog mode, which can be entered directly from any other, provides the fine adjustment for exact edit-point location.

Automatic Edit Control. This system allows entry of edit points in the still mode or on the fly (while the tape is running), and will automatically determine the fourth point in a set of edit locations.

Switchable Total Time/Lap Time Counter. Independent counter displays are provided for the player and the recorder. Memorized edit points or the duration of an edit can be displayed in hours, minutes, seconds and frames. Elapsed time indication is also available.

"GOTO" Edit-Point Location. Edit points can be called up directly from the player or recorder for on-screen checks.

Preview and Review. Programmed edits can be previewed (rehearsed) without actual recording, and then reviewed after completion at the push of a button.

Auto-Tag Convenience. After completion of an edit, the recorder returns to the edit-out point and enters the Still mode. Pressing the Perform or Preview button automatically makes it the starting point for the next edit.

Frame-by-Frame Correction. Correction of edit locations to single-frame accuracy is provided using the Shift button.

Variable Pre-Roll Time. 3, 5, 7, 10 or 15 seconds.

9-Pin Remote Control Terminal (RS-422)

Suggested List Price TBA

Audio Monitor Level Adjustment. Permits audio level reduction in high-speed search modes.

25-Frame and 30-Frame Compatibility

SPECIFICATIONS

Power Source:
AC 120V, 50/60Hz

Dimensions:
16-15/16"W x 4-11/16"H x 12-11/16"D
(430 x 118 x 322mm)

Weight:
Approx. 13.7 lbs. (6.2kg)

VCR CONTROLS

Control Buttons:
Play, REC (recorder side only), FF, REW, Stop, Pause/Still, Search/Jog, Eject

Dial Search

0, 1/30, 1/5, 1, 2, 5, 10 and 15 times normal speed in both directions

Edit Modes:

Assemble and Insert

Edit-Point Memory:

Edit-in and edit-out points held in memory

Edit-Point Shift:

Frame-by-frame shift in both directions

COUNTER DISPLAY

Time Counter:

Up to 9 hours, 59 minutes, 59 seconds, 29 frames

Display:

Total time/elapsed time and edit-in/edit-out points

VHS RECORDER/PLAYER BR-6400U/BP-5300U

JVC®

FEATURES

- Direct-Drive Motors
- Rugged Diecast Aluminum Chassis
- Motorized Front Cassette Loading
- 4-Head System
- Microprocessor Full-Logic Control
- Shuttle Search at up to 10 Times Normal Speed in either Direction
- Playback at any Speed from Still to 5 Times Normal Speed in either Direction
- Capstan Servo and External Sync Capability
- Two-Channel Audio
- Hi-Fi Sound
- Remote Control and Random Access Options
- Electronic Tape Counter/Lap Timer with Fluorescent Display
- Audio Level Control with Meters
- Two-Channel Selectable Audio Dubbing (BR-6400U only)
- Editing Control Interfacing
- Easy Serviceability



BR-6400U



BP-5300U

BR-6400U VIDEOCASSETTE RECORDER BP-5300U VIDEOCASSETTE PLAYER

These machines embody the latest and best of JVC's VHS technology. They are designed to offer every possible user-oriented convenience. The BR-6400U and BP-5300U can be used as source decks with JVC's VHS and 3/4" editing systems.

Direct-Drive Motors. The motor used to drive the head drum is a direct-drive, servo-controlled, brushless DC motor, while the capstan and reels have independent direct-drive DC motors. This system keeps jitter down to an absolute minimum, assuring stable pictures and more reliable operation.

Rugged Diecast Aluminum Chassis. Robust and durable, the diecast aluminum chassis gives the firm support that the mechanism requires for years of trouble-free operation in a demanding professional environment.

Motorized Front Cassette Loading. Simply insert the edge of the videocassette into the front panel slot and the loading motor moves the

cassette gently so that it is positioned for correct operation. With all controls on the front panel, this loading mechanism allows the machine to be mounted in a stacked configuration to save space.

4-Head System. Both these machines have two pairs of video heads; one pair for recording (BR-6400U only) and normal speed playback, the other pair for search and variable-speed playback. This is in keeping with JVC policy; as well as assuring that recording is of the highest possible quality, this system gives stable pictures in any playback mode.

Microprocessor Full-Logic Control. Feather-light touch operation and highly reliable tape transport control are made possible by advanced full-logic electronics.

Shuttle Search at up to 10 Times Normal Speed in Either Direction. No more guesswork in locating the particular section you want to view; you can scan through a whole 2-hour program in about 12 minutes. Run the tape at about 10 times normal speed either forward or in reverse while watching the speeded-up picture on the screen. This takes you to the scene you want quickly and accurately.

Playback at any Speed from Still to 5 Times Normal Speed in either Direction. When controlled from either of the optional remote control units, the playback speed can be varied continuously from still to 5 times normal in both forward and reverse directions. This is a great help in editing; you can accurately and quickly locate any required frame. It also allows more detailed analysis of action.

Capstan Servo and External Sync Capability. Because of its capstan servo mechanism and the fact that it can accept external sync signals to which playback is synchronized, these machines can easily be incorporated in an existing video system.

Two-Channel Audio. Two audio channels make the system more versatile and increase the range of applications. Either of the two channels can be played independently; stereo playback is also possible.

Hi-Fi Sound. Advanced audio circuitry ensures excellent sound reproduction that's further improved by the built-in Dolby® noise reduction system.

Remote Control and Random Access Options. A choice of cable and infrared full-function remote control units using microprocessors are optionally available; choose the one which meets your needs best. As well as giving control over tape operations, they also control high-speed picture search and variable-speed playback. An optional random access unit equipped with a digital fluorescent display allows you to input any tape address for quick retrieval of any scene.

Electronic Tape Counter/Lap Timer with Fluorescent Display. 4-digit tape counter provides a convenient means of addressing tape segments. The display doubles as a 5-digit lap timer showing tape running time in hours, minutes and seconds.

Audio Level Control with Meters (BR-6400U only). To prevent over-level recordings, an audio limiter circuit is provided in each of the audio channels. These limiter circuits can be switched on and off. In either condition, manual level control referring to the meters is possible.

Two-Channel Selectable Audio Dubbing (BR-6400U only). For greater flexibility and better control over sound, either of the two audio channels can be selected for dubbing.

Editing Control Interfacing. For more elaborate editing, direct interfacing with JVC's Automatic Editing Control Units is possible, enabling 1/2" to 3/4" or 3/4" to 1/2" edits to be made quickly and accurately.

Easy Serviceability. Main circuit boards can be checked conveniently by connecting an extension board. This makes a major contribution to dependable operation throughout the unit's long service-life.

PRICING/ACCESSORIES	Suggested List Price
BR-6400U 2 Hour VHS Recorder/Player	\$1785.00
BP-5300U 2 Hour VHS Player	1400.00
BR-6400TR Multi-Standard VHS Recorder/Player	1995.00
RK-6400 19" Rackmount for BR-6400U/BP-5300U	86.00
RM-P53U Wired Remote Control for BR-6400U/BP-5300U	95.00
RM-P54U Wireless Remote Control for BR-6400U/BP-5300U	115.00
RM-P500U Random Access Control for BR-6400U/BP-5300U	330.00

SPECIFICATIONS

GENERAL

Format:

VHS 1/2" (12.7mm) NTSC standard

Power Requirement:

120V AC, 50/60Hz

Power Consumption:

73 watts (with remote control, DC 12V, max. 0.55A) 53 watts (in the record mode)

Dimensions:

17-11/32"W x 6-15/32"H x 17-21/32"D (44.0 x 16.4 x 44.8cm)

Weight:

37.8 lbs. (17.2kg)

Operating Temperature:

5°C to 40°C (41°F to 104°F)

Tape Speed:

33.35 mm/sec (1.31 inches/sec)

Fast Forward/Rewind Time:

Less than 4 min. for 120 min. tape

VIDEO

Recording System:

Rotary two-head, helical scanning system

Luminance: FM recording

Color Signal: Phase shift, converted subcarrier direct recording

Video Signal System:

NTSC-type color signal (EIA standard)

Input Line/TV:

0.5 to 2.0V p-p, 75 ohms, unbalanced

Output Line/TV:

1.0V p-p, 75 ohms, unbalanced

Signal-to-Noise Ratio:

45dB (Rohde & Schwarz noise meter)

Horizontal Resolution:

Monochrome: more than 280 lines

Color: more than 230 lines

Sync Input:

1 to 4V p-p, 75 ohms, unbalanced

Sync Select:

INT/EXT

AUDIO

Input Line:

-6/-20dBs (selectable), 10K ohms, unbalanced (CH-1/CH-2)

Mic: -70 to -60dBm, 600 ohms, unbalanced

Output Line:

-6dBs, low impedance, unbalanced

Monitor: 0dBs, low impedance, unbalanced (CH-1/CH-2/MIX)

TV: 0dBs, low impedance, unbalanced

Signal-to-Noise Ratio:

48dB (NR-on), 45dB (NR-off) (at 3% distortion level)

Frequency Response:

20 to 12,000Hz



BR-6400TR

**Multi-Standard VHS Recorder
BR-6400TR VideoCassette Recorder**
Features and specifications similar to BR-6400U; Records PAL, SECAM signals;

Playback in PAL, SECAM and NTSC 4.43 formats; Power requirement: 100/120/220/240 VAC 50/60Hz

HI-FI VHS DUPLICATOR BR-7000UR

JVC®

FEATURES

- Quality Hi-Fi Sound
- Direct-Drive Motors Plus Heavy-Duty Chassis
- Professional HI-FI Dubbing System
- Oversize Cassette Mounting Guide
- Big, One-Glance Audio/Video Level Meters
- Manual/Auto Video Recording Level
- Accidental Erasure Override
- High Quality Sound in Normal Audio Mode
- Two Audio Inputs for Recording Flexibility
- Easy Frontal Access to Essential Test Points
- Front Panel Hour Meter
- Easy Tape Path Maintenance
- Serial Parallel Remote Control Flexibility



BR-7000UR HI-FI VHS DUPLICATOR

JVC, the originator of the world's most popular video format — VHS, has designed and built a VHS Hi-Fi recorder specifically for tape duplication. The new BR-7000UR was conceived with the anticipation of a large consumer demand for pre-recorded VHS Hi-Fi tapes during the next few years. And it was conceived with the idea that people duplicating the video cassettes would be expecting the very highest quality video and audio reproduction from a machine designed for such a purpose.

Why A Video Recorder Just For

Duplicators? JVC engineers visited a number of major duplication facilities throughout the world, and it became apparent that the needs of duplicators were unlike those of any other user of video tape products. There was the temptation to design an "all purpose" recorder/player that would incorporate some of the features the duplicators needed — and many features that were not needed. But there were already such machines on the market, and that's not what the duplicators were asking for.

Instead, JVC engineers took the ideas and suggestions of the engineers and

technicians specializing in duplication, and came up with a VCR that was designed Inside and Out especially for them. Complete with punch-outs on the rear panel for user modifications, and front panel test points, the BR-7000UR was designed for one application: continuous duty tape duplication in the VHS Hi-Fi format at the Standard Play tape speed.

Durability. The BR-7000UR is based on the most advanced electronic tape transport system available today. The transport, mounted on a solid die-cast aluminum chassis, has been designed to give continuous, trouble-free use for years. Servo-controlled direct-drive motors not only ensure greater viewing stability, but they are also more reliable.

Ease Of Maintenance. Despite its low maintenance design, JVC engineers wanted a recorder that technicians could keep in peak operating condition with utmost ease. It is for this reason that several innovations were incorporated: Front panel test points. Provided are the following: Ground; Drum Pulse; Video RF (FM Carrier); Hi-Fi Audio RF (FM Carrier); Normal Audio RF-Out

Plug-in circuit board construction. Most circuit boards are designed for quick replacement and can be swung out or unplugged. In addition, a replaceable fuse is located on the rear panel.

Front panel hour meter and serial number. Most people wouldn't want these items on the front of the machine, but the BR-7000UR wasn't designed for most people. Duplication houses want the ability to quickly identify a machine and its operating hours. The plug-in hour meter indicates up to 5000 hours of head drum operation, and can be reset by simply un-plugging and turning around.

Window for tape path cleaning. On the top cover of this front load machine is a trap door. Inside, there is access to the head drum and tape path components.

Duplicator-Friendly Operation. The following features were asked for by the professional duplication houses:

1. Wide opening for accepting the cassette with a guide for easy loading and unloading of the cassette.
2. At-a-glance large recording indicator (possibly the largest LED recording indicator in the industry.)

3. Recording capability of a cassette with the safety-tab off. (Bulk duplication tape is shipped and recorded with the safety tab already broken off. This eliminates the need for the duplicator to remove the tab.) The BR-7000UR goes one step further. A front panel LED tells the duplicator whether the tab is in the cassette or not.

4. Large video/tracking and audio meters.

5. A cover for operational buttons is provided which prevents accidental misoperation. Since all transport functions are normally remote controlled, there is no need for the person loading and unloading tapes to have access to these controls.

6. Video AGC on/off switch. Provided as a convenience, the video recording level can be adjusted manually or automatically, using the AGC. The BR-7000UR is equipped with a video level meter.

Outstanding Performance. The performance of the BR-7000UR is second to none. With no compromise either electronically or mechanically, JVC engineers built the very best VHS machine possible.

Improved video processing circuitry including: A pulse response improvement circuit; S/N improvement circuit; Improved filter response; Improved head resonance characteristics.

Dolby B noise reduction circuits on the normal audio channels.

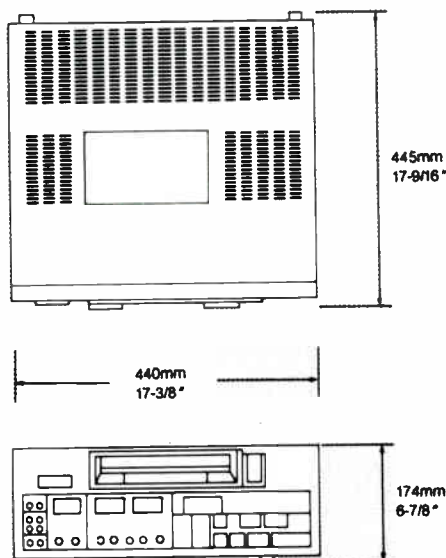
Utilization of the "VHS Hi-Fi" audio format, incorporating two rotary audio heads. Audio dynamic range is more than 85dB, with a frequency response of 20 to 20,000Hz.

Serial Or Parallel Control System. Thanks to the BR-7000UR's built-in serial coding system, you can create a whole professional system carrying out hi-fi dubbing operations with matchless efficiency. Dubbing operations are further simplified by the BR-7000UR's remote control capability covering, Record, Play, FF, REW, Stop, Pause, Rec. Pause, Eject, plus Hi-Fi Record on/off functions. Simply interconnect any number of BR-7000UR units using an RCA pin cable. Each unit is supplied with a cover over the control buttons and switches on the front panel, which prevents the BR-7000UR from operating accidentally when under serial coded remote control.

For installation into duplication facilities using parallel control, the BR-7000UR is equipped with a 34-pin connector, which gives access to most machine functions.

Suggested List Price \$1795.00

DIMENSIONS



SPECIFICATIONS

GENERAL

Format:

VHS 1/2" NTSC Standard

Power Requirement:

AC 120V, 50/60Hz

Power Consumption:

55 watts (Max. 67 watts with remote control unit, 12V DC, 550 mA)

Dimensions:

17-3/8"W x 6-7/8"H x 17-9/16"D
(440 x 174 x 445mm)

Weight:

39 lbs. (17.5kg)

Operating Temperature:

5°C to 40°C

Tape Speed:

33.35 mm/sec.

Recording Time:

Max. 120 min. with T-120 cassette

FF/REW Time:

Less than 4.0 min. for T-120 cassette

VIDEO

Video Signal System:

NTSC color and EIA monochrome signals, 525 lines

Input:

0.5 to 2.0V p-p, 75 ohms, unbalanced

Output:

1.0V p-p, 75 ohms, unbalanced

Signal-To-Noise Ratio:

45dB (Rohde and Schwarz)

Horizontal Resolution:

240 lines (Color); 300 lines (B/W)

AUDIO

Input:

-6dBs, 10K ohms, unbalanced

Output:

-6dBs, into 1K ohm, unbalanced
(Normal, Hi-Fi)

Frequency Response:

20Hz to 12kHz (Normal)

20Hz to 20kHz (Hi-Fi)

Dynamic Range:

85dB (Hi-Fi)

Signal-To-Noise Ratio:

48dB (NR-on), 44dB (NR-off)

(Normal) at 3% distortion

Wow and Flutter:

Less than 0.005% WRMS (Hi-Fi)

Less than 0.25% WRMS (Normal)

CONNECTORS

Video Input/Output:

BNC-type

Audio Input:

RCA (Normal, Hi-Fi)

Audio Output:

RCA (Normal, Hi-Fi)

Remote Control:

34-pin connector

AC IN:

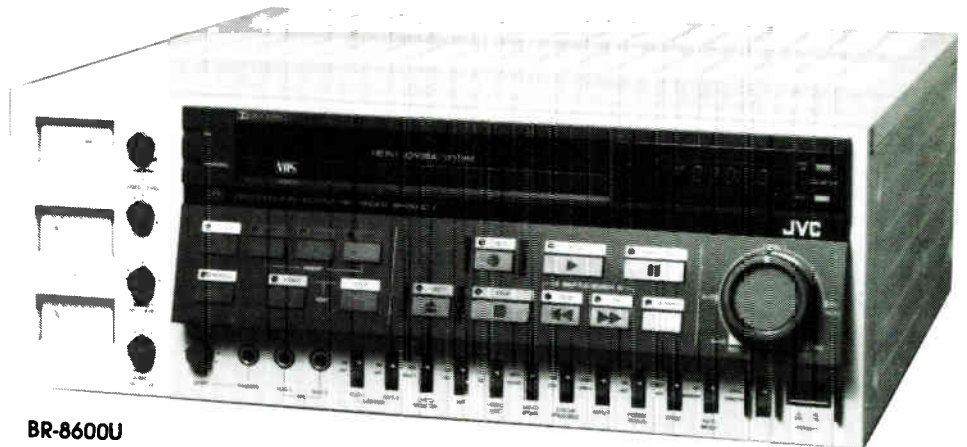
3-wired AC connector

VHS EDITOR BR-8600U

JVC®

FEATURES

- Professional-Quality Editing Functions
- Flying Erase Heads
- Preroll Function for Automatic Editing
- Direct-Drive Transport
- Variable-Speed Dial Search
- New Video Processing Circuit
- Two-Channel Audio
- Dolby® B Noise Reduction
- Improved Color Dubbing Quality
- Three Video Inputs Selectable
- External Sync Capability
- Total Front Operation
- Electronic Tape Counter/Lap Timer
- Tape End Warning
- External Hour Meter
- Automatic Rewind
- Electronic Tape Tension Control
- 45-Pin Connector for Edit Controller



BR-8600U Videocassette Editing Recorder

Engineered for professionals, a full-function VHS editor with the features, styling, and feel of advanced ¾" systems.

The VHS format, now the most popular videocassette format in the world, has grown immensely popular within the professional video community. As the originator of the VHS format, JVC is totally committed to its success and has responded to the demand for a full function editing recorder.

The BR-8600U is a VHS editor based on JVC's advanced heavy-duty technology. It incorporates 6 video heads! One pair is used for standard 2-hour recording and playback. Another pair is for still and search functions. And two rotary erase heads provide perfect insert edit capability. System configurations are flexible: a choice of professional VHS and ¾" recorders and players are available as a playback source. For a complete automatic editing system, a choice of editing controllers is also available.

Professional-Quality Editing Functions.

The BR-8600U has a pair of rotary erase heads and a blanking switcher which make possible assemble and insert

editing with virtually no distortion at the edit points. Edit flagging is minimized by use of a framing servo and extremely stable horizontal phase lock.

Preroll Function for Automatic Editing.

An independent Preroll button is provided on the control panel to automatically backspace the tape by about 3 seconds of program time. When no edit controller is being used, reasonably accurate editing can be accomplished with two BR-8600U's utilizing the Preroll buttons on the recorder and source. After locating the edit-in points using the convenient dial search controls, the machines are each prerolled. When Edit Start buttons are pressed simultaneously, the edit takes place at the predetermined edit points.

Heavy-Duty Mechanism with Direct-Drive Motors.

The head drum is directly driven by a servo-controlled brushless DC motor, while the capstan and reels are also directly driven by independent DC motors. This assures highly stable pictures as well as greatly improved reliability. To add further to reliability and durability, the mechanism is supported by an aluminum diecast chassis.

Variable-Speed Dial Search. A convenient, easy-to-operate control dial is provided for fast and accurate location of edit points. Turning this rotary dial varies the tape speed from still to 10 times normal, in both forward and reverse directions. The sensitivity of the control is dependent on the selected speed, so that fast, positive control of the tape is always maintained.

New Video Processing Circuit. VHS picture quality is improved due to a new video signal processing circuit. The BR-8600U conforms to the standard VHS format and a single cassette (T-120) provides 2 hours of quality recording and playback.

Video Recording Adjustment—Video Level/Tracking Meter. Normally the Automatic Gain Control (AGC) circuit optimizes the video recording current depending on the input video signal. For demanding professionals, however, this circuit can be defeated and the video level can be manually adjusted referring to the video level meter. During playback, the meter functions as a tracking meter and helps in precise playback adjustment together with an independent tracking control.

Two-Channel Audio for Stereo Recording and Playback. Independent audio level meters are provided for channels 1 and 2. The audio levels of the two channels can therefore be separately adjusted. Independent audio limiters are provided and can be switched in and out as needs require.

Dolby® B Noise Reduction Incorporated. To further improve sound quality by reducing tape hiss, Dolby B noise reduction circuitry is incorporated in the audio recording and playback circuits.

Improved Color Dubbing Quality. The playback video signal is normally subjected to compensation so that the picture quality on the monitor is improved. However, non-compensated color signals are more suitable for dubbing and result in higher-quality color copies. In order to make this kind of signal available at the Video Out terminals, the BR-8600U is equipped with a switch labeled Color Process. When the BR-8600U is used in a copying system, set this switch to Off; the resulting tape will have a significantly improved color quality.

Three Video Inputs Selectable. Three video inputs (Line-1, Line-2, 8-Pin TV) are provided and the input select switch on the front panel makes it possible to incorporate signals from a tape, a camera or a TV monitor onto an edited tape by simply operating the switch.

Field-Still and Slow-Motion Playback. The BR-8600U has two pairs of video heads: one pair for recording and normal-speed playback, the other pair (extra video heads) for still and slow-motion playback. This is in keeping with JVC policy; recording of the highest possible quality is assured and stable pictures can be obtained even in still and slow-motion modes. Ease of locating edit points is considerably enhanced.

External Sync Capability. The BR-8600U is equipped with all the terminals and connectors required by video professionals for editing; the Sync In connector enables external synchronization so that the BR-8600U can easily be incorporated

in an existing video system. By use of the Sync In connector, a time base corrector (TBC) can also be connected.

Total Front Operation. As well as the front cassette loading system, all switches and controls are accessible from the front. Conforming to the 19" rack mount standard, the BR-8600U presents no problem at all when it is to be installed in your existing production house.

Electronic Tape Counter/Lap Timer with Fluorescent Display. A 4-digit counter provides a convenient means of addressing tape segments. The display doubles as a 5-digit lap timer showing tape running time in hours, minutes and seconds. The fluorescent display used assures easy readability.

Tape End Warning. About 5 minutes before the end of the tape, the electronic tape counter starts flashing, indicating that the tape is coming to an end.

Shuttle Search at About 10 Times Normal Speed. Run the tape at about 10 times normal speed either forward or in reverse while watching the speeded-up picture. You can scan through a whole 2-hour program in about 12 minutes.

Automatic Search and Repeat. In conjunction with the tape counter, the automatic search mode enables any section of the program to be located automatically. In the automatic repeat mode, the entire tape is automatically played back any number of times.

*Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

PRICING/ACCESSORIES		Suggested List Price
BR-8600U	VHS Editor	\$2995.00
RK-8600	Rack Mount Kit for BR-8600U	86.00
(Monitors, Racks & Rack Kits not included)		
VEP-1	Edit System (BP-5300U, RM-86U, BR-8600U) ...	5495.00
VEP-2	Edit System (BP-6400U, RM-86U, BR-8600U) ...	5850.00
VEP-3	Edit System (BP-8600U, RM-86U, BR-8600U) ...	6995.00

SPECIFICATIONS:

GENERAL

Format: VHS 1/2" (12.7mm) NTSC standard

Power Requirement: 120 VAC, 50/60 Hz

Power Consumption: 80 watts (with the Automatic Editing Control Unit, 12 VDC, 550mA) 68 watts

Dimensions:

44.0W x 16.0H x 44.8D cm
(17-11/32" x 6-5/16" x 17-21/32")

Weight: 18.5kg (41.0 lbs.)

Recording & Playback Time:

Max. 120 min. with JVC T-120

Fast Forward/Rewind Time:

Less than 5 min. for 120 min. tape

Wow and Flutter: Less than 0.25% rms

Search Speed:

Shuttle FWD/REV ±10X,

Variable 0 - ±5X, ±10X

VIDEO

Signal-to-Noise Ratio:

45 dB (Rhode and Schwarz noise meter)

Horizontal Resolution:

Monochrome: 300 lines, Color: 240 lines

Sync Input:

4+0/-3 Vp-p, 75 ohms, unbalanced

Input Select: TV/LINE 1/LINE 2

Sync Select: INT/EXT

AUDIO

Input:

LINE: 6/-20 dBs (selectable), 10 k-ohms, unbalanced (CH-1/CH-2)

MIC: -70 to -60 dBm, 600 ohms, unbalanced

TV: -20 dBs, 10 k-ohms, unbalanced

Output:

LINE: -60 dBs, low impedance, unbalanced

MONITOR: 0 dBs, low impedance, unbalanced (CH-1/MIX/CH-2)

HEADPHONE: High/Med/Low, 8 to 300 ohms, unbalanced

TV: 0 dBs, low impedance, unbalanced

Signal-to-Noise Ratio:

48 dB (NR-on), 44 dB (NR-off) (at 3% distortion level)

Frequency Response: 20 to 12,000 Hz

Input Select: TV/LINE

Monitor Output Select: CH-1/MIX/CH-2

CONNECTORS

Video:

LINE INPUT/OUTPUT: BNC-type connectors

SYNC INPUT: BNC-type connector

TV INPUT/OUTPUT: EIAJ 8-pin TV connector

Audio:

LINE INPUT/OUTPUT: RCA-type pin jacks

MIC: 6mm jacks

MONITOR OUT: RCA-type pin jack

HEADPHONE: 6mm jack

Remote Control: 45-pin connector

AC IN: 3-lead AC connector

Accessories:

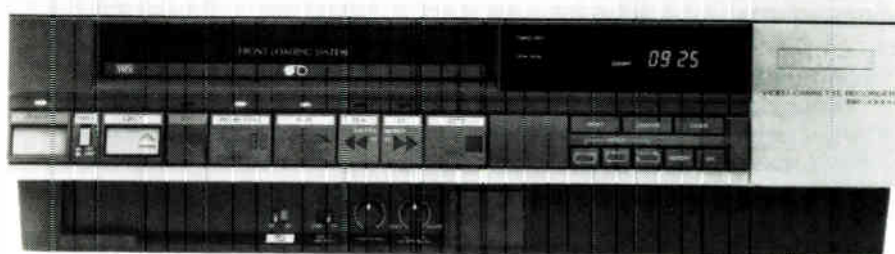
Power cord, monitor cable, dust cover

VHS RECORDER/PLAYER BR-3000U

JVC®

FEATURES

- Motorized Front Loading Design
- 2/4/6 Hour Playback, 2/6 Hour Record
- 4 Video Heads
- Shuttle Search FWD/REV at 7x
- Wireless Remote Control Included
- Auto Repeat To/From Counter "0000"
- Auto Rewind
- Picture Sharpness Control
- Timer Playback and Record
- EIAJ 8-Pin Connectors
- Built-In RF Converter
- 3-Prong Grounded Detachable AC Cord



BR-3000U

BR-3000U VHS RECORDER/PLAYER

JVC, the originator of the VHS format, continues to expand its growing VHS product line-up with the BR-3000U. This state-of-the-art recorder/player has the features professionals need most, in an attractive, economical package. Moreover, the BR-3000U is extremely simple to operate, and can be easily connected into any existing video system.

4-Head System for Excellent Picture Quality in all Speeds. The BR-3000U utilizes four video heads for recording and playback: one pair provides an optimum track width for the SP (2 hour) speed; the other pair is for the EP (6 hour) speed. Playback is also possible in the LP (4 hour) speed. With the BR-3000U, recording and playback is possible for up to 8 hours, using a T-160 cassette (EP).

Built-In Clock Timer, Fluorescent Display. An electronic clock with a 14-day timer is built into the BR-3000U. This permits the user to preset the VCR to automatically record or playback a segment of material up to 14 days in advance. Setting the VCR to operate in the unattended mode is a very simple process.

Shuttle Search. A very useful and convenient way of locating material on the recorded tape is through the use of shuttle search. The tape can be reviewed quickly (about 7 times normal speed) in either the SP or EP modes, forward and reverse.

Wireless Remote Control Included. A full function infrared remote control unit is provided with each BR-3000U. All tape transport control functions (except eject) may be controlled with this unit.

Electronic Tape Counter. Also integrated with the fluorescent clock, is a digital tape counter. This four-digit counter provides an accurate reference for tape location, and can be reset to "0000" by pressing the reset button.

Flexible Auto Repeat, Auto Rewind Functions. One very important feature for institutional applications is auto-repeat. The BR-3000U can be set to automatically rewind the tape and repeat a desired segment over again. The auto-repeat feature has three modes:

1. Full repeat — from the beginning of the tape to the end.
2. From counter "0000" to the end of the tape.
3. From the beginning of the tape to counter "0000".

The auto-repeat function can be a very important feature for applications where the VCR is to be used for unattended playback operations, such as point-of-purchase displays, etc. It can be used in conjunction with the automatic timer, so that the VCR can be turned on at a specified time, for repeat playback.

Suggested List Price \$715.00

SPECIFICATIONS

Format:

VHS Standard, Less NTSC System

Recording/Playback System:

Rotary, slant azimuth two-head helical scan system with two pairs of video heads, one pair exclusively for the SP mode and one pair for the EP mode.

Tape Speed:

SP: 33.35mm/s (1-5/15 ips) (1.31 ips)
EP: 11.12mm/s (7/16 ips) (0.43 ips)

Max. Recording Speed:

SP: 160 min. with JVC T-160 cassette
EP: 480 min. with JVC T-160 cassette

Temperature:

Operating: 5°C to 40°C (41°F to 104°F)
Storage: -20°C to 60°C (-4°F to 140°F)

VHF Output Signal:

Channel 3 or 4 (switchable; preset to channel 3), 75 ohms, unbalanced

Power:

Consumption: 30 Watts
Requirement: AC 120V, 50/60Hz

Video:

S/N Ratio: More than 45dB (Rhode & Schwarz Noise Meter)

Horizontal Resolution:

240 lines (SP mode)

Audio:

S/N Ratio: More than 40dB
Freq. Response: 70Hz to 10kHz
(SP mode)

Dimensions:

17-3/16"W x 5-1/8"H x 14-1/2"D
(435 x 130 x 368mm)

Weight:

20.1 lbs. (9.1kg)

Provided Accessories:

Remote Control Unit, Antenna Cable (F-type), Power Cord, Matching Transformer

Specifications shown are for SP mode unless otherwise specified.

FEATURES

- 9-Function Remote Controllable
- Pictograph Indicators For Operation At A Distance
- Memory Function For Automatic Stop
- Dependable 4-Motor System Design
- 4-Head Recording And Shuttle Search In Both SP And EP Modes
- Automatic Rewind At Tape End
- Automatic Edit Function Makes Scenic Transitions Smooth And Noiseless
- Pause Button For Still Frame Advancement



BR-1500U

BR-1500U VHS RECORDER/PLAYER

Eight Hours Recording Time in EP Mode, 4-Heads. The BR-1500U has four video heads — two used exclusively for the SP mode, two for the EP mode — to ensure a sharp, clear picture always. The EP mode offers an extra-long eight hours of recording time from a single cassette (T-160).

Detachable Remote Control. You can attach the wireless remote control to the front panel of the videocassette recorder, an arrangement that comes in handy when loading or unloading a tape. Control buttons jut out slightly from the surface of the control panel for easy operation.

Push the right side of the remote control unit and it pops out into your hand so you can operate the videocassette recorder from anywhere in the room. Controls include Recording, Play, Stop, Pause, Shuttle Search (forward and back), Power On/Off, Channel Up/Down, Video/TV Switching, and Cassette Eject.

To prevent accidental operation, the buttons for recording, channel up/down and video/TV switching are hidden behind a sliding cover. The remote control even operates when its batteries have run down; merely mount it on the videocassette recorder to regain full control.

Built-In Timer — Four TV Programs/Two-Week Period. You can program the BR-1500U to record unattended up to four TV programs over the coming two-week period. This means you can automatically record programs at any time of the day or week — late at night, weekends — for later viewing at more convenient times. The built-in timer also permits automatic recording of the same program at the same time every day. Setting the timer is easy. A "flowchart" like guide shows you the way, step by step.

Counter Memory. When the counter memory button is touched at the start of recording or play, the tape stops at "0000" on the counter automatically during rewind or fast forward.

Special Effects Playback. Whether in the EP or SP mode, you can move the tape back and forth at high speed, freeze a frame or advance one frame at a time. Thus you can search for a specific scene more efficiently, and take a closer look at a critical moment. (Note: Noise bars may appear on screen during special effects playback.)

Suggested List Price \$620.00

SPECIFICATIONS

Format:

VHS Standard

Recording & Playback System:

Rotary, slant azimuth two-head helical scan system with two pairs of video heads, one pair exclusively for the SP mode and one pair for the EP mode.

Video Signal System:

NTSC-type color signal

Tape Width:

12.65mm (1/2")

Tape Speed:

SP: 33.35mm/s (1-5/16 ips)

EP: 11.12mm/s (7/16 ips)

Maximum Recording Time:

SP: 160 min. w/JVC T-160 videocassette

EP: 480 min. w/JVC T-160 videocassette

Channel Coverage:

VHF: Channels V_L 2-6
V_H A-1
7-13
J-W

UHF: Channels 14-83

VHF Output Signal:

Channel 3 or 4 (switchable), 75 ohms, unbalanced (preset to channel 3 when shipped)

Power Consumption:

28 Watts

Power Requirement:

AC 120V ~, 60Hz

Dimensions:

17-3/16"W x 4-3/16"H x 14-13/16"D
(15-1/4" with remote control attached)
435mm x 105mm x 376mm
(386mm with remote control attached)

Weight:

16.8 lbs. (7.6kg)

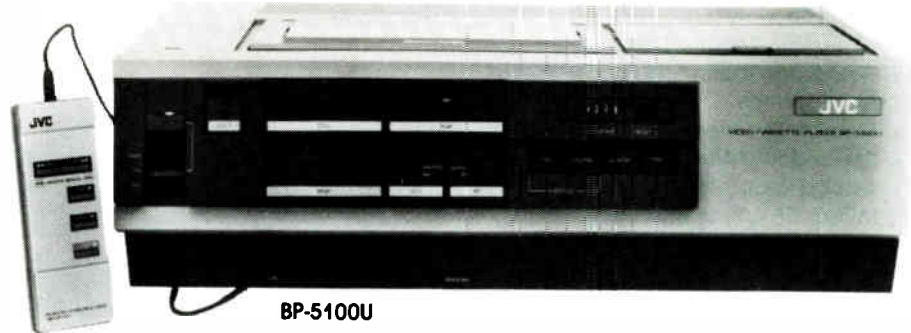
VIDEOCASSETTE PLAYER

BP-5100U

JVC®

FEATURES

- 7-Function Remote Control
- Flexible Repeat Playback
- Memory Function for Automatic Stop
- Automatic Timer Playback
- Flexible Connection
- Dependable Four-Motor System
- Four-Head System for Consistently Excellent Picture in All Playback Modes
- Two-Way Shuttle Search
- Automatic Rewind at Tape End
- Pause Button



BP-5100U VIDEOCASSETTE PLAYER

7-Function Remote Control. Control all tape operation, including Shuttle Search, from the most convenient and desirable position.

Flexible Repeat Playback. This welcome feature is ideal for training sessions or sales demonstration where repeated viewing is essential. You can set the BP-5100U to automatically playback all of the tape or a certain part of it repeatedly as many times as required.

Memory Function for Automatic Stop. Another useful function that can eliminate a lot of unnecessary guesswork is this memory function which automatically stops the tape during rewind or fast forward when a "zero" counter reading is reached.

Automatic Timer Playback. Besides connecting a separate timer between the BP-5100U power cord and an AC outlet in the usual manner, a Timer connection is provided on the back panel of the BP-5100U to accommodate a "shorting timer". In this way, in addition to playback beginning automatically at a preset time, the built-in preheater circuit will remain continuously operative to prevent moisture condensation.

Flexible Connection. A standard 8-pin TV connector is provided for direction connection to a TV monitor; an RF Out terminal is also provided to accommodate any ordinary television through the built-in RF converter. Video (BNC) and Audio (RCA) outputs are also provided.

Dependable Four-Motor System. To guarantee long-term reliability, this model is driven by a four-motor system that comprises separate motors for tape loading, the capstan, and the take-up reel, as well as a brushless, quartz-locked direct-drive motor to ensure accurate rotation of the head drum.

Four-Head System for Consistently Excellent Picture in All Playback Modes. Clear, stable pictures are assured in all three playback speeds (SP, LP and EP), and a detection circuit automatically determines the mode in which a tape has been recorded and plays it back at the appropriate speed.

Two-Way Shuttle Search. For quick, accurate access to a desired program segment, follow a clearly visible picture in either direction at about 7 times normal speed in the SP mode, or 21 times normal speed in the EP mode.

Automatic Rewind at Tape End. To further relieve users of burdensome, time-consuming operations, the BP-5100U automatically rewinds tapes when they reach the end in the Play or Fast Forward mode.

Pause Button. When this button is pressed during playback, a still picture with noise bars will appear. The still picture can be advanced frame by frame each time this button is pressed.

And More. A tape protection circuit that cancels the Pause mode after about five minutes and engages the Stop mode.

Suggested List Price \$650.00

SPECIFICATIONS

Format:

VHS Standard

Playback System:

Rotary, slant azimuth two-head helical scan system with two pairs of video heads, one pair exclusively for the SP mode and one pair for the EP mode.

Video Signal System:

NTSC-type color signal

Tape Width:

12.65mm (1/2")

Tape Speed:

SP: 33.35mm/s (1-5/16 ips)

LP: 16.67mm/s (21/32 ips)

EP: 11.12mm/s (7/16 ips)

Maximum Playing Time:

SP: 160 min. w/JVC T-160 cassette

EP: 480 min. w/JVC T-160 cassette

Temperature:

Operating: 5°C to 40°C (41°F to 104°F)

Storage: -20°C to 60°C (-4°F to 140°F)

VHF Output Signal:

Channel 3 or 4 (switchable; preset to when shipped) 75 ohms, unbalanced

Power Consumption:

28 watts

Power Requirement:

120V, 50/60Hz

Horizontal Resolution:

240 lines (SP mode)

Frequency Response:

70Hz to 10,000Hz (SP mode)

Dimensions:

17-3/8"W x 5-9/16"H x 12-13/16"D
(440 x 140 x 325mm)

Weight:

20.1 lbs. (9.1kg)

Provided Accessories:

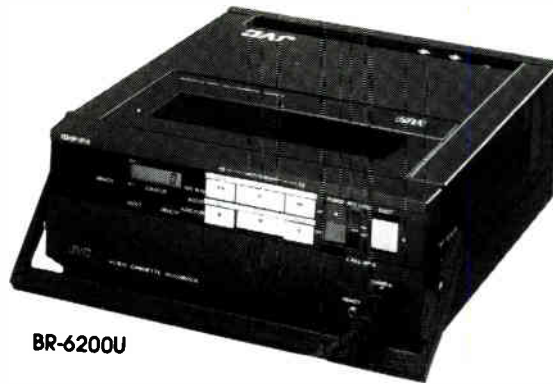
Remote control unit x 1

Antenna cable (F-type) x 2

Antenna selector x 1



PORTABLE VIDEOCASSETTE RECORDER BR-6200U



FEATURES

- Two-Channel Audio Track
- BNC Video Connectors
- Shuttle Search
- Full-Function Wireless Remote Control
- Automatic Backspace Editing
- Extended-Time Recording Capability

BR-6200U PORTABLE VHS RECORDER

In sales, education, medicine and all types of business communication, the half-inch VHS video format has earned extensive acceptance for its cost-effective, high-impact communications capability. JVC's portable BR-6200U possesses the technological features and the rugged, reliable construction to provide years of trouble-free service in the widest variety of professional and institutional applications.

Easy Connection to Professional Equipment. Professional-type BNC video input and output jacks are provided on the BR-6200U for direct connection to other professional video gear.

Power Economy. The low power-consuming design of the BR-6200U is enhanced by a unique REC LOCK power economy switch. This feature allows the operator to shut down power for indefinite periods and return to the record mode, with smooth edits.

Full-Logic Operation. Microprocessor control over all functions allows direct changeover between modes and feather-touch pushbutton operation.

Two-Channel Audio Track and Dolby Noise Reduction. This two-channel system enhances production flexibility, allowing the recording of "voice-over" narration, bilingual sound-tracks or full stereo sound. Dubbing can be

performed independently onto the left channel only, or simultaneously onto both.

Extended-Time Recording and Playback. In addition to normal-speed operation (two hours of recording or playback with a T-120 cassette), the BR-6200U functions in an extended play mode to give you extra recording time in those situations where your supply of tape is limited but the subject matter is not.

Advanced Editing Functions. During recording, backspace editing prerolls the tape between takes so that the end of the previous segment is neatly synchronized to the beginning of the next one, thereby eliminating distortion at the edit points in assembled recordings. The BR-6200U's improved editing capabilities permit program segments from different video and audio sources to be edited into a previously recorded tape with minimum distortion at the start and end of the new material.

Shuttle Search. This JVC-developed high-speed visual scanning system lets you view the tape at 7 or 21 times normal speed (depending on the playback mode) in either direction, for quick easy access to any desired portion of a video program.

Flexible Power Supply System. Rechargeable NiCad battery packs

(NB-P1) are the basic power source for the BR-6200U; their compact yet high-capacity design makes it easy to carry extras for on-location applications. Power can also be supplied from regular household AC outlets or a car battery, via appropriate adaptors.

Also Included:

Built-in RF converter for connection to the antenna terminal of any TV receiver; LCD (Liquid Crystal Display) 4-digit tape counter with memory function; LED tape running, insert editing and audio dubbing indicators; Battery depletion and moisture condensation warning indicators; Automatic quick review function

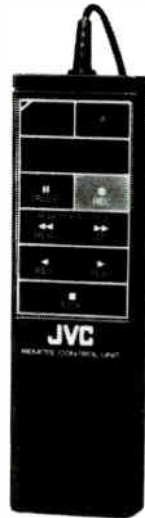
PRICING/ACCESSORIES		Suggested List Price
BR-6200U	Portable Videocassette Recorder	\$1185.00
AA-P26U	AC adaptor/battery charger for the BR-6200U. This unit can be used to charge the NB-P1 NiCad battery pack, used in the BR-6200U, HR-2200U, and TM-22U...	180.00
AC-P2U	AC adaptor for BR-6200U. Slides into battery compartment. For playback only.	100.00
AP-P4U	Car battery cord for BR-6200U...	24.00
CB-P62U	Soft carrying case for BR-6200U while operating	80.00
NB-P1	Rechargeable NiCad battery pack for BR-6200U	75.00
TU-26U	Tuner/Timer for BR-6200U. 105 channel capability. 14 day/8 event programmable	375.00

PORTABLE VIDEOCASSETTE RECORDER BR-1600U

JVC®

FEATURES

- Extremely Compact
- Four Video Heads
- Operates from Three Power Sources
- Wired Remote Control
- Shuttle Search
- Memory Counter
- Counter Panel
- Simplified Insert Editing Function
- Direct Video Connection



BR-1600U

BR-1600U PORTABLE VHS RECORDER

Four Heads For A Crisp, Sharp Picture. Pictures are crisp and sharp at any speed because the JVC BR-1600U uses one pair of heads exclusively for the Standard Play mode, and another for the Extended Play mode. A choice of two tape speeds also means economy: use the tape-saving EP mode to file away less important documents and visual presentations, while saving the high-resolution SP mode for documents and presentations of top importance.

It's Portable Light Weight So It Can Be Used Almost Anywhere. Whenever sales and deals are made, indoors or out, the BR-1600U is extremely compact (8-1/16" x 3-3/16" x 8-7/8") and weighs only 5.3 lbs. Its remarkable small size and weight give it flexibility to be used almost anywhere. For full versatility, it connects to most video cameras without an adaptor.

Operable On Three Power Sources. Enhancing the mobility of the BR-1600U is its ability to operate on any of three power sources.

Outdoors, it can receive its power from an optional battery pack. Indoors, it operates from standard household AC through an optional AC pack. And in and around the car, it taps into the car's 12V DC power supply by means of an optional car battery adaptor. So wherever you go, just select the most accessible power source.

Clean Scene Changes. All recordings you make on the BR-1600U are clean and free of annoying "streaking." The backspace editing function assures clean transitions from scene to scene. The automatic recording lock provides an uninterrupted transition between two recording sessions even if the power has been turned off after the first.

Easy Operation. Using the BR-1600U is very simple. A memory counter lets you quickly review a specific segment of the tape. The counter panel serves as a tape counter and also as a dew indicator and a battery condition indicator. There's a built-in jack that accepts an optional earphone so you can monitor the audio on playback. Playback speed automatically matches the speed at which a tape was recorded, either SP or EP.

PRICING/ACCESSORIES		Suggested List Price
BR-1600U	Portable Videocassette Recorder	\$815.00
AC-P3U	AC Adaptor for BR1600U/TMP3U/GXS700U	50.00
AP-P3U	Car Battery Cord for BR1600U/GXS700U	18.00
BB-P3U	Battery Charger for NBP3U/NBP4U	93.00
NB-P3U	Battery Pack for BR1600U, GXS700U (.7 AH)	30.00
NB-P4U	Battery Pack for BR1600U, GXS700U (1.2 AH)	46.00
CB-P10U	System Carrying Case for BR-1600U	126.00

SPECIFICATIONS

Format:
VHS Standard

Recording System:
Rotary, slant azimuth two-head helical scan system with two pairs of video heads, one pair exclusively for the SP mode and one pair for the EP mode.

Video Signal System:
NTSC-type color signal

Tape Width:
12.65mm (1/2")

Tape Speed:
SP: 33.35mm/s (1-5/16 ips)
EP: 11.12mm/s (7/16 ips)

Maximum Recording Time:
SP: 160 min. w/JVC T-160 videocassette
EP: 480 min. w/JVC T-160 videocassette

VHF Output Signal:
Channel 3 or 4 (switchable; preset to channel 3 when shipped) 75 ohms, unbalanced

Power Consumption:
8W (18W with camera)

Power Requirement:
DC 12V ---

Camera Connector Output
DC 12V---, 10W maximum

Dimensions:
8-1/16"W x 3-3/16"H x 8-7/8"D
(204 x 80 x 225mm)

Weight:
5.3 lbs. (2.4kg)

Provided Accessories:
Remote control unit; Remote control adaptor; Shoulder strap; Matching transformer (300-75 ohm); Battery for remote control unit; Dubbing connector; Connector cover; Dummy battery

Specifications shown are for SP mode unless otherwise specified.

EDITING CONTROL UNIT RM-86U

JVC®

FEATURES

- Insert, Assemble Edit Capability
- Independent Dial Search Controls
- Preview/Perform/Review Functions
- Automatic Back-Timed Edits
- Frame by Frame Edit Trim Feature
- Auto Tag (to last Edit-Out Point)
- Lap Time Function
- LED Indicators
- Record Monitor Control (REC-EE)
- Monitor Audio Volume Controls
- VCR Interface Cables Provided



RM-86U

RM-86U VIDEO EDITING CONTROLLER

With the introduction of JVC's new BR-8600U VHS editing recorder, JVC engineers saw fit to design a new, economical editing controller — one that would offer the convenience and ease of operation necessary for a VHS system, yet one that would also provide a degree of sophistication applicable to JVC's 3/4" TapeHandler Series. The RM-86U, a highly sophisticated micro-processor based automatic editing controller, offers features previously not found on units in its price range.

Dial Search Controls. Two Dial Search knobs provide tape shuttle control (visible picture search) for each VCR. Detent positions give indication as to machine speed, depending upon which VCR is being used. Tape search speeds are variable, forward & reverse.

Independent LED Indicators. Two large, easy to read LED displays show the tape location in Hours, Minutes, Seconds, and Frames for both recorder and player. In addition, these indicators provide "lap time" indication, edit in point locations, edit out point locations, and computed edit duration.

Preview/Perform/Review Buttons. Edits may be rehearsed (previewed) prior to

actually erasing any tape. This "preview" function allows the operator to make any corrections or adjustments to the edit points prior to doing the edit. The Perform button actually initiates the editing process which continues until the edit is completed, or until the Edit Stop button is pressed. The Edit Stop button can be used to manually end the edit, or to abort an unwanted edit in progress. The Review button replays the just completed edit.

Automatic Edit Computation. When any three edit points are entered, the fourth point is automatically computed. This controller allows you to enter two out-points and one in-point. The controller will compute the other in-point. This is a very important feature because it permits automatic back timed edits.

A back timed edit is one in which two events must end simultaneously at the edit out point. Other edit controllers in this class don't have this feature.

Frame By Frame Trim Feature. Edit in and out points can be trimmed one frame at a time by holding down "shift +" or "shift -" and touching In or Out once for each frame to be trimmed. (A computed edit point cannot be trimmed.)

"Go To" Button. With edit points set, pressing "Go To" and In or Out will

command the respective VCR to search to that edit point and stand-by. This is convenient when the operator wants to make corrections without using the trim feature.

Edit Lap Time Indication. When an edit point is entered, the lap timer is reset to zero, automatically. This timer indication can be viewed by pressing the Lap button next to the digital readout. The purpose of the lap timer is to allow the operator to use the tape counter with a zero reference during each edit, without disturbing the normal counter reading, which is used as a program timer and for locating segments on the tape.

Record Monitor Control (REC-EE). This alternating pushbutton switches the recorder's video and audio circuits to the player's signals. This permits an editing set-up using only one monitor.

PRICING/PACKAGE	Suggested List Price
RM-86U Editing Control Unit	\$1,295.00
VEP-1 Edit System (BR 5300U, RM-86U, BR-8600U) ...	5,495.00
VEP-2 Edit System (BR 6400U, RM-86U, BR-8600U) ...	5,850.00
VEP-3 Edit System (BR-8600U, RM-86U, BR-8600U) ...	6,995.00

RM-70U REMOTE CONTROL

- Full Remote Control of most Tape Operations
- Variable-Speed Tape Shuttling
- Large-Sized, Self-Locking Dial
- Pre-Roll Editing Possible (when combined with the CR-8250U)
- Simple Design
- Intelligent Tally Function Controls
- Dimensions: 5-3/4"W x 2-11/16"H x 9-3/8"D
- Weight: 4 lbs. (1.8kg)



RM-70U

Suggested List Price \$370.00

RM-P500U RANDOM ACCESS CONTROL

By dividing the information recorded on the tape into up to 64 segments and allowing access to these segments as required, the RM-P500U Random Access Control Unit is an extremely useful tool wherever information retrieval and random access playback are required, when used in combination with suitable JVC professional VHS VCRs. Applicable Models BR-6400U, BP5300U.



RM-P500U

Suggested List Price \$330.00

RM-P54U WIRELESS REMOTE CONTROL

- Infrared Transmitter and Receiver Included
- All Tape Functions Provided
- Operating Distance Up to 22' in Front of Recorder/Player
- Requires Four "AA" Batteries
- Applicable Models BR-6400U, BP-5300U



RM-P54U

Suggested List Price \$115.00

RM-P53U WIRED REMOTE CONTROL

- Dial Search Knob Varies Tape Speed to 10X Forward and Reverse
- All Tape Functions Provided
- 16' Cable Provided
- Applicable Models BR-6400U, BP-5300U



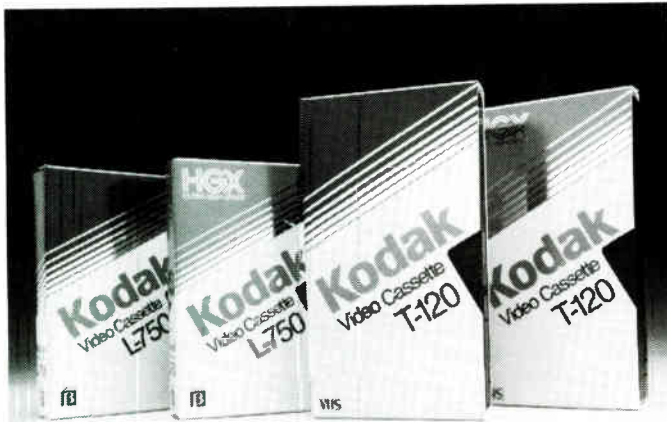
RM-P53U

Suggested List Price \$95.00

EASTMAN KODAK CO.

343 State St.
Rochester, NY 14650
(716) 724-4000

VIDEO TAPE



KODAK VIDEO CASSETTES 1/2" VHS/BETA

Kodak Video Cassettes for use with 1/2" VHS and Beta format video recorders. And for the new generation of 8mm video systems.

Each Kodak Video Cassette is designed and manufactured to meet exceptionally high standards of quality, performance, reliability, and consistency.

- For beautifully accurate images
- Excellent picture sharpness, color brilliance, sound clarity
- Quality that lasts even after repeated use

KODAK VIDEO CASSETTES (REGULAR GRADE)

For use with 1/2" VHS and Beta format video recorders. Designed for excellent picture sharpness, color brilliance, sound clarity, and reliability.

KODAK VIDEO CASSETTES, HGX (EXTRA-HIGH GRADE)

Extra High Grade video cassettes in both VHS and Beta recorder formats. For use at extended playing speeds and for repeated recording and playback. High-density particle packing has excellent capability for re-recording, erasure, and signal stability.

1/2" KODAK VIDEO CASSETTES

VHS		BETA	
T-30	\$14.89	L-250	\$12.19
T-60	15.59	L-500	14.79
T-90	16.29	L-750	16.29
T-120	16.99	L-250 HGX	15.29
T-160	25.49	L-500 HGX	18.59
		L-750 HGX	20.39
		L-830 HGX	27.49
T-30 HGX	18.69		
T-60 HGX	19.49		
T-90 HGX	20.39		
T-120 HGX	21.19		
T-160 HGX	31.89		

8mm KODAK VIDEO CASSETTES

8mm Kodak Video Cassettes for use with the Kodavision Series 2000 Video System and other 8mm systems. MP video tape offers an advanced metal-particle coating for excellent density and sensitivity, and ME video tape offers highest-quality metal-evaporated coating for excellent performance and dubbing.

CAT. #	PRODUCT DESCRIPTION	PRICE
8mm		
173-3427	MP6-30	\$12.99
100-9455	MP6-60	13.99
101-2301	MP6-90	15.99
110-7069	ME6-30	18.99
111-0592	ME6-60	21.99
115-6520	ME6-90	23.99



3/4" U-MATIC

EASTMAN PROFESSIONAL VIDEO CASSETTE

	(Professional)	(Broadcast Quality)
3/4"	EP-900	EB-900
Standard	KCA-10	KCA-10
	KCA-20	KCA-20
	KCA-30	KCA-30
	KCA-50	KCA-50
	KCA-60	KCA-60
Mini	KCS-20	KCS-10 KCS-20

1" EASTMAN PROFESSIONAL VIDEO TAPE

One-inch Eastman professional video tape affords the optimum reproduction capability your important programs demand generation after generation.

EASTMAN PROFESSIONAL VIDEO TAPE EVT-1000*

	C-Format	B-Format
1"	VT-34	VT-34
	VT-48	VT-48
	VT-64	VT-64
	VT-96	VT-96
	VT-105	VT-105
	VT-126	VT-126
	VT-157	
	VT-188	

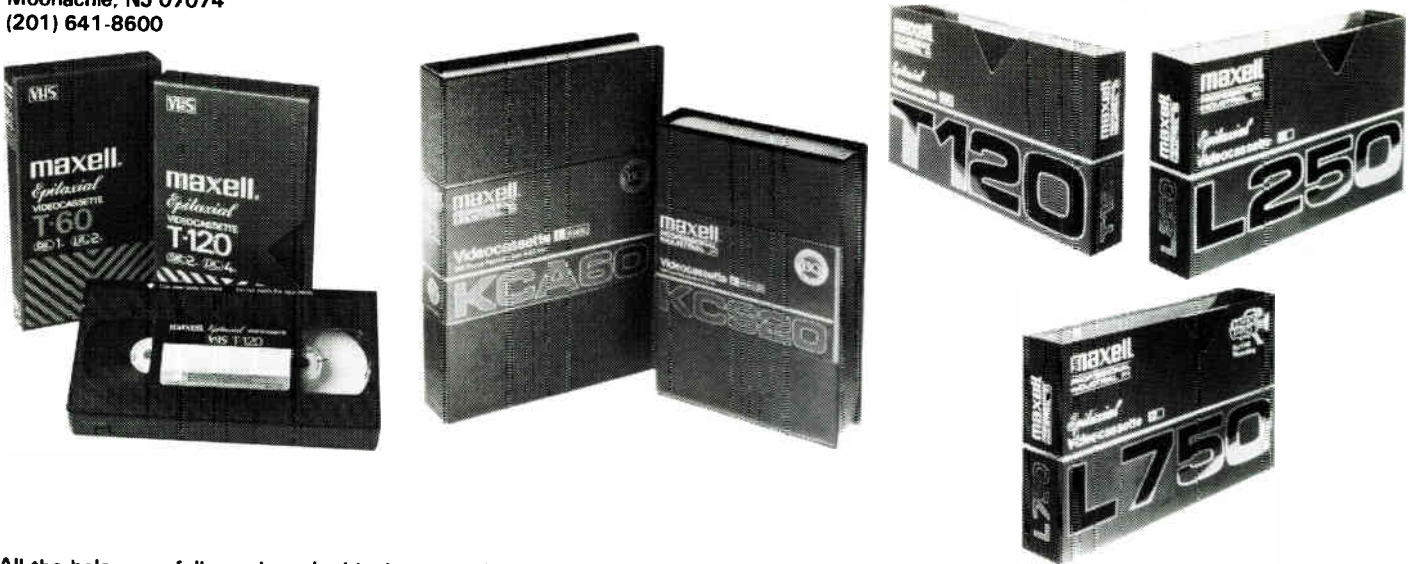
*VT-34 through VT-105 lengths are available in flame-retardant shippers or cardboard containers. VT-126 through VT-188 lengths are available only in cardboard containers.

MAXELL CORP. OF AMERICA

PROFESSIONAL/INDUSTRIAL DIVISION

60 Oxford Drive
Moonachie, NJ 07074
(201) 641-8600

VIDEO CASSETTES



All the below are fully packaged with sleeves and labels.

KCA-HG 3/4" VIDEO CASSETTES

Product	Length	Quantity	Price
KCA-5HG	5 min.	12/24	\$23.00
KCA-10HG	10 min.	12/24	25.00
KCA-20HG	20 min.	12/24	26.50
KCA-30HG	30 min.	12/24	28.50
KCA-60HG	60 min.	12/24	41.50

KCA 3/4" - BROADCAST QUALITY VIDEO CASSETTES

Product	Length	Quantity	Price
KCA-5BQ	5 min.	12/24	\$23.90
KCA-10BQ	10 min.	12/24	25.90
KCA-20BQ	20 min.	12/24	27.43
KCA-30BQ	30 min.	12/24	29.51
KCA-60BQ	60 min.	12/24	47.95

KCS 3/4" MINI VIDEO CASSETTES - BROADCAST QUALITY

Product	Length	Quantity	Price
KCS-10BQ	10 min.	12/24	\$22.54
KCS-20BQ	20 min.	12/24	27.01

VHS 1/2" VIDEO CASSETTES

Product	Length	Quantity	Price
T-30 PI	30 min.	10/50	\$ 7.99
T-60 PI	60 min.	10/50	8.99
T-90 PI	90 min.	10/50	9.25
T-120 PI	120 min.	10/50	9.99
T-160	160 min.	10/50	16.99

BETA 1/2" VIDEO CASSETTES

Product	Length	Quantity	Price
L-250 PI	30 min.	10/50	\$7.99
L-500 PI	60 min.	10/50	8.99
L-750 PI	90 min.	10/50	9.99

HIGH GRADE VHS

Product	Length	Quantity	Price
HGXT-60	60 min.	10/50	\$11.99
HGXT-120	120 min.	10/50	12.99

HIGH GRADE PRO VHS

Product	Length	Quantity	Price
HGX-PRO T-30	30 min.	10/40	\$16.99
HGX-PRO T-60	60 min.	10/40	17.99
HGX-PRO T-90	90 min.	10/40	18.59
HGX-PRO T-120	120 min.	10/40	20.36

HIGH GRADE BETA

Product	Length	Quantity	Price
HGXL-500	60 min.	10/50	11.99
HGXL-750	90 min.	10/50	12.99

HIGH GRADE PRO BETA

Product	Length	Quantity	Price
HGX-PRO L-250	30 min.	10/40	\$16.99
HGX-PRO L-500	60 min.	10/40	17.99
HGX-PRO L-750	90 min.	10/40	18.99

COMPACT HIGH GRADE VHS

Product	Length	Quantity	Price
HGX-TC 20	20 min.	10/100	\$9.99

MEMOREX MEMTEK PRODUCTS

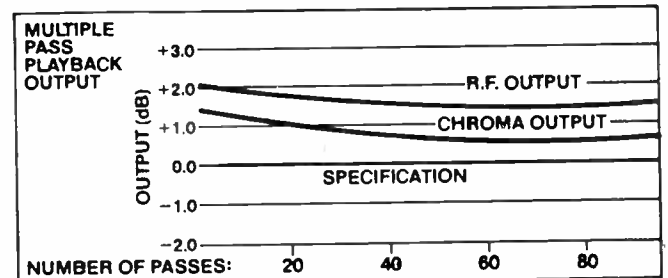
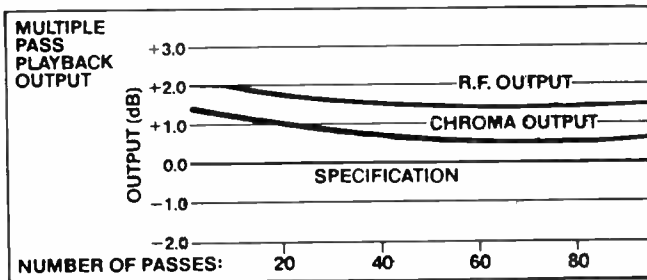
P.O. Box 988
Santa Clara, CA 95052-0988
(408) 987-2495

VIDEO CASSETTES



- Video signal-to-noise ratio Better than 43.0 dB
- Stop motion Better than 1 hour
- Tape life Better than 2,000 passes

- Video signal-to-noise ratio Better than 43.0 dB
- Stop motion Better than 1 hour
- Tape life Better than 2,000 passes



PREMIUM VIDEO CASSETTES

Formulated to exceed the demanding standards of today's state-of-the-art equipment. Memorex video cassettes deliver consistently accurate reproduction, play after play.

- Colors that are richer, more lifelike—because the high density Memorex oxide provides a higher chroma output even at super long play.
- Pictures that are crisper, clearer—because the mirror-like tape surface affords a higher signal-to-noise ratio.
- Long term performance reliability—thanks to the tough binder material, low friction Acetel rollers, and rigorous quality control.
- Comes with extra labels for your convenience and a dust-proof album for extra protection.
- Superior results with all VHS and Beta recorders.
- Full 180 day warranty

PLAY LENGTHS	SLOW	LONG	EXTENDED
VHS T-30	1/2 hour	1 hour	1 1/2 hours
T-60	1 hour	2 hours	3 hours
T-90	1 1/2 hours	3 hours	4 1/2 hours
T-120	2 hours	4 hours	6 hours
	Beta I	Beta II	Beta III
BETA L-250	1/2 hour	1 hour	1 1/2 hours
L-500	1 hour	2 hours	3 hours
L-750	1 1/2 hours	3 hours	4 1/2 hours
L-830	—	—	5 hours

Prices and Specifications Subject to Change Without Notice.

VR-55

MITSUBISHI ELECTRIC SALES AMERICA, INC.

110 New England Ave. West
Piscataway, NJ 08854
(201) 981-1414 (800) 631-5377

VIDEO PRINTER

P-50U Video Printer

Within the last decade, the role of the television set has taken on dynamic new dimensions. It now encompasses home videotaping, cable, satellite, and videodiscs. Personal computers have provided us with powerful resources and conveniently linked the home with vast database/information services. Teletext and videotext services are now in operation and expanding.

What was once a simple source of entertainment, has been suddenly transformed into an extremely useful tool. And this transformation has created a need for new and innovative video-related products.

Until now, there has been no cost-effective way of obtaining "hard copies" of video images from the TV set. You could certainly photograph them, but the quality, cost and convenience of that process leaves a lot to be desired. And unless you have a costly printer for your home computer, you have no way of recording permanent records and important data on paper.

The Mitsubishi P-50U Video Printer solves these problems. It provides low-cost printouts of any video image at the simple touch of a button.

Instant Hard Copies

Simply connect the Video Printer to any direct composite video output, or in-line between TV and VCR, videodisc, etc. Then at the touch of a button on the front panel or remote control, it stores the current image on the screen and prints a clear, legible 3-15/16" x 3-5/16" copy in less than 15 seconds. Printouts are reproduced in 16 discrete tones ranging from black to white with image resolution of 280 x 234 dots. Print contrast can be adjusted in three steps (dark, normal and light). Darker images can be lightened, brighter images can be darkened.

Prints are made on special thermo-sensitive paper that's available at your Mitsubishi dealer. The 82-1/2' rolls will accommodate approximately 220 prints.

Remote Control

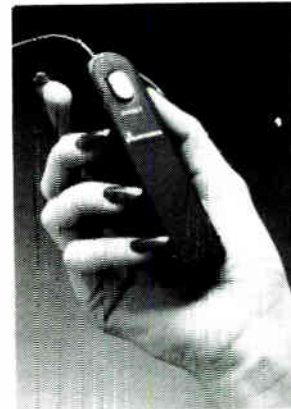
The P-50U is also equipped with a wired remote control (16 ft.) It's a handy feature that enables printing without getting up from your easychair.

Positive/Negative

Normally, the printout is a positive image (the same as the picture display). It can, however, be reversed to a negative image for special applications. White letters on a dark background (as in a computer display) can be reversed to print as black letters on a white background for improved legibility.



Mitsubishi P-50U Video Printer provides quick, legible "hard copies" of any TV or video image.

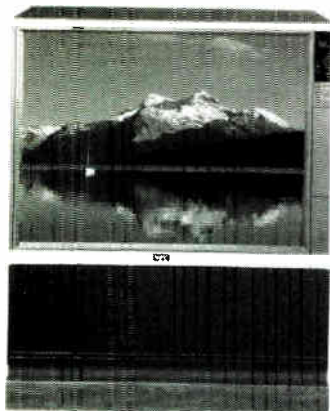


Remote control for initiating prints from across the room.

Reverse Scanning

Under ordinary circumstances, printing advances from the bottom of the image to the top. But when printing several images that need to be in sequence, we've included a special reversing function. The image orientation is printed upside-down to create a continuous "real-time" sequence of prints.

P-50U \$390.00
K-50U Thermal Paper per roll / \$18.00



PJ-4600EN/3700EN

PJ-4600EN/3700EN Stereo Rear-Projection TVs

- Horizontal Resolution/450 lines
- Built-in Stereo and SAP Decoder
- 142-Channel Cable Capable w/Skip Memory
- 20 Function Wireless Remote Control
- 90 Minute Sleep Timer

PJ-4600EN-46" Screen \$3000.00
PJ-3700EN-37" Screen \$2400.00

PJ-4010EN Rear-Projection TV

- Bright 40-inch screen with wide 120° horizontal viewing angle
- Rear projection console, only 22 inches deep
- Powerful 20W audio output with Sound Wide
- 134-channel CATV-ready PLL electronic tuning
- Infrared remote control
- Input/output terminals for CATV, video games, VCR, etc.

PJ-4010EN \$2800.00

N895EU

Hi-Fi VHS Video Cassette Recorder

- Hi-Fi VHS for superb audio specs
- Dual (stereo) audio tracks with Dolby NR
- Four heads for excellent picture
- 139-channel cable-ready frequency synthesizer tuner
- Full-function wireless remote control

N895EU \$1400.00

VC-N70EU

Stereo Beta Hi-Fi Video Cassette Recorder

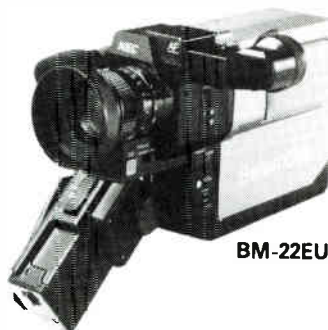
- 4 Head design
- 3 week/8 event
- 17 function wireless remote control
- 134 channel cable-ready

Beta Hi-Fi is a breakthrough in audio technology. While conventional audio is recorded by a stationary head along the edge of a tape, Beta Hi-Fi frequency-modulates audio and records it along with the video signal on the tape's video tracks by means of a rotary drum. Called AFM (Audio Frequency Modulation), this is the same system used in FM radio broadcasting, and it's one of the two reasons why Beta Hi-Fi sounds so good. The second reason is that the Hi-Fi signal is recorded at a much higher relative head-to-tape speed than with a conventional stationary audio head — 7m (23 feet, 4 inches) per second vs. 1.33cm (1/2 inch) or 2cm (13/16 inch) per second.

VC-N70EU \$999.00



SA-84A



BM-22EU

VC-N60EU

Super Beta Hi-Fi Video Cassette Recorder

- Stereo ready — all audio inputs and outputs are stereo
- Multichannel decoder terminals to connect a multi-channel decoder for stereo TV and SAP (Secondary Audio Programs)
- Super Beta — a new video technology for higher resolution
- Programmable 1-week/3-event timer with daily repeat
- 14-function wireless remote control
- 105-channel cable-ready tuner for VHF, UHF and Midband cable channels

Beta Hi-Fi yields audio that is devoid of wow and flutter and noise, producing clear, accurate sound and a dynamic-range approaching digital quality.

In addition to Beta Hi-Fi, the VC-N60EU also features MPX connectors designed to interface with NEC's TV Stereo Adaptor, the SA-84A. When interfaced, TV stereo can be recorded in Beta Hi-Fi.
VC-N60EU POR

VC-N40EU

Beta Video Cassette Recorder

- 4-head design for better picture
- 134-channel cable-ready PLL synthesizer tuner
- 3-week/8-event programmable timer
- Full 17-function wireless remote control
- Picture search at 8 times normal speed

VC-N40EU \$749.00

BM-22EU

Beta Movie Camera/Recorder

- Camera/VCR combination
- Auto-focus f1.2 6X power zoom lens with macro capability
- Lightweight (2.64kg/5.8lbs) and compact
- Recording time up to 3 hours and 20 minutes
- Fully compatible with Beta format; no adaptor required

BM-22EU \$1595.00

CD-705E Compact Disc Player

- Front loading
- Remote control
- 15 tracks memory play
- Cue and review
- Search with instant access/repeat/time access

CD-705E \$995.00

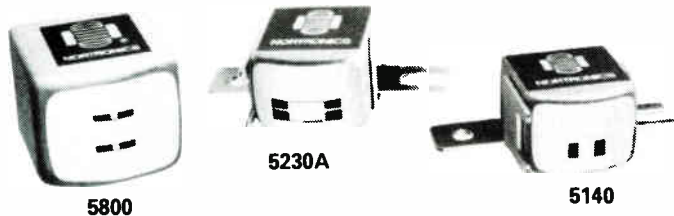
SA-84A TV Stereo Adaptor

Interfaces with CT-1901A and CT-2501A monitor/receivers, projection TV models PJ-4000 and PJ-4010 and the VC-N70EU Beta Hi-Fi VCR. This compact unit can also be used with other TV receivers and tuners with suitable multiplex sound input/output terminals.

SA-84A \$99.95

NORTRONICS COMPANY, INC.

8101 Tenth Avenue North
 Minneapolis, MN 55427 U.S.A.
 (612) 545-0401 Telex 29 0304



NORTRONICS UNIVERSAL REPLACEMENT HEADS

Nortronics offers the most complete line of replacement heads for virtually every recording application. Its Universal Replacement Magnetic Tape Heads are specially designed for a wide variety of cassette (.150") and 8-track cartridge players. Nortronics can provide a precise replacement head for hundreds of home and auto stereo cartridge and cassette tape players manufactured by both foreign and domestic firms. Only Nortronics offers one-stop shopping for heads. Because only Nortronics is the world's leading designer and manufacturer of magnetic heads for virtually every recording application.



AT-320B BROADCAST CARTRIDGE ALIGNMENT TAPE

Professional full-track broadcast cartridge alignment tape offering unmatched versatility to fully align and calibrate broadcast cartridge machines.

AT-320B \$82.00



VCR-95 MAINTENANCE KIT

Nortronics new video cassette recorder maintenance kit is designed to help keep your VCR operating at its peak performance level. Kit includes specially-formulated QM-103 head cleaner and QM-505 cellular foam swabs for removing accumulated tape oxide debris that can cause snowy pictures and damage tape. Also included, an anti-static dust cloth and a special screwdriver for removing headcover screws. Complete instructions provided to guide even a novice through the maintenance operation.

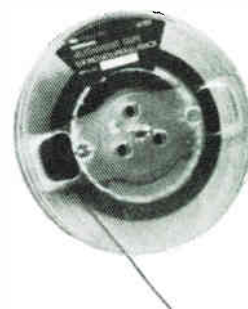
VCR-95 \$21.40

TAPE HEADS/ACCESSORIES



DURACORE™ REPLACEMENT TAPE HEADS FOR PROFESSIONAL RECORDERS

Professional recording equipment users need magnetic heads with greatly-extended wear life to directly reduce operational costs by eliminating electronic adjustments, requiring fewer service calls and cutting recorder downtime. Nortronics now offers a new series of direct replacement magnetic heads constructed with a new wear-resistant material called Duracore. It provides ten times the operational lifespan of conventional Mumetal replacements to yield meaningful cost advantages. More than three years of extensive testing have proved Duracore to be the ideal material for long-life replacement heads. You'll find that Duracore heads provide excellent wear resistance and they're also affordable. Duracore replacements are currently available for popular professional reel-to-reel and cartridge recorders/players manufactured by many well-known companies.



AT-200B CASSETTE ALIGNMENT TAPE AT-120 REEL-TO-REEL ALIGNMENT TAPE

Nortronics AT-200B is a versatile full-track professional cassette alignment tape recorded at 1.875 ips.

Nortronics AT-120 is a versatile full track 1/4" reel-to-reel, 7-1/2 ips professional alignment tape.

AT-200B \$82.80

AT-120 91.20



PF-211 HAND-HELD BULK ERASER

The contoured hand-held PF-211 Bulk Tape Eraser produces a powerful 2400 gauss flux intensity on its surface.

PF-211 \$54.95

Prices and Specifications Subject to Change Without Notice.

VR-59

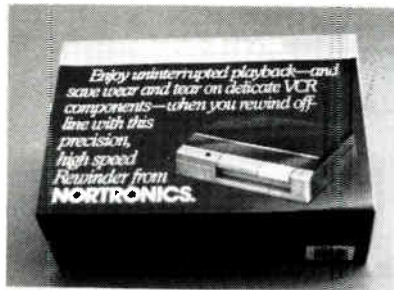
NORTRONICS COMPANY, INC.

8101 Tenth Avenue North
 Minneapolis, MN 55427 U.S.A.
 (612) 545-0401 Telex 29 0304

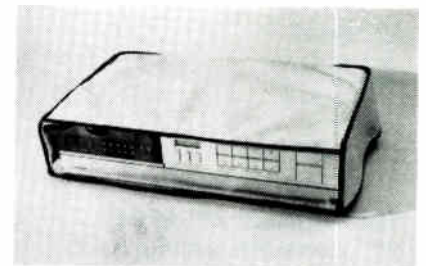
VIDEO RECORDER CARE PRODUCTS



VCR-800



VCR-350



VCR-300

VCR-50 Deluxe Video Maintenance Kit

Professional kit includes five essential products necessary for video recorders to function at peak performance level: 25 highly absorbent, lint-free cellular foam swabs. 16 oz. can of 100% pure TF spray head cleaner. Static-free cleaning cloth. Super Blast compressed air duster. 280 lint-free cellular tissues. **\$40.00**

VCR-90 Video Foam Swabs And Cleaner

"Maxi" performance from a "mini" kit.
 Compact "mini" care kit for thorough manual cleaning. 18 highly absorbent, lint-free cellular foam swabs. 3 oz. bottle of 100% pure TF liquid head cleaner. Detailed, easy to follow instructions. **\$15.20**

VCR-95 Video Maintenance Kit

Industry's top selling complete video maintenance kit includes: 15 highly absorbent, lint-free cellular foam swabs. 3 oz. can of 100% pure TF spray head cleaner. Anti-static dust cloth. Specially designed screwdriver for original equipment VCR screws. Complete, illustrated instructions for thorough manual cleaning. **\$21.40**

VCR-109 Video Super Blast Duster

High velocity jet of air blasts away loose dirt and dust from hard to reach areas within the recorder. Completely safe for use on all metals, plastics, rubber, painted surfaces and elastomer parts. Available in 10 oz. spray cans. **\$7.20**

VCR-111 Video Head Spray Cleaner

Scientifically formulated, 100% pure TF solution cleans magnetic heads, pinch rollers, and capstans without leaving harmful residue. Non-flammable, non-toxic formula will not harm metal, plastic, rubber, painted surfaces or elastomer parts. 2 oz. can. **\$4.40**

VCR-130 Video Head Cleaning Cassette — VHS

Unique, non-abrasive, wet system drop-in video cleaner thoroughly cleans the entire VCR tape path. All magnetic heads and critical parts are exposed to a fresh-moving cleaning surface with each application. Spun-bonded pure polyester cleaning tape consists of tiny cross-weave pockets which give a deep-down cleaning action and carry away debris. 100% pure TF spray cleans all critical areas without leaving residue or harming any sensitive recorder parts. **\$29.95**

VCR-135 Video Head Cleaning Cassette — Beta

Unique, non-abrasive, wet system drop-in video cleaner thoroughly cleans the entire VCR tape path. All magnetic heads and critical parts are exposed to a fresh-moving cleaning surface with each application. Spun-bonded pure polyester cleaning tape consists of tiny cross-weave pockets which give a deep-down cleaning action and carry away debris. 100% pure TF spray cleans all critical areas without leaving residue or harming any sensitive recorder parts. Available with effective counter rack or counter merchandiser. **\$29.95**

VCR-205 Video Head Demagnetizer

290 gauss field intensity removes residual magnetism from all video heads, capstans and guides for a sharper picture and sound. Angled, Plastisol-coated probe tip designed for hard to reach locations will not

harm sensitive head surfaces. Rugged Lexan housing withstands years of heavy use. Thermal-fused to prevent overheating and burn-out. Also available as VCR-207 for 220-250VAC. **\$36.40**

VCR-211 Video Tape Bulk Eraser

Recognized as industry's finest and most reliable video tape bulk eraser. Powerful 2300 gauss flux intensity erases all video cassettes back to original level of virgin tape. Burn-out proof design automatically shuts off power to the coil when core temperature reaches 70°C. Thermal protective device resets once core returns to normal operating temperature. Convenient microswitch activates with fingertip pressure. Hand-contoured housing is constructed of rugged Lexan. Also available as VCR-212 for 220-250VAC. **\$54.95**

VCR-300 VCR Dustcover

The neutral tan, 100% cotton cover has brown fabric trim and a high-quality, clear plastic insert which allows for easy viewing of the VCR controls. The fabric breathes well so the cover can be put back on the VCR immediately after use without concern about it holding in heat. In addition, the washable fabric has no objectionable odor, as do some vinyl models.

The Dustcover comes in a standard size which fits 80-90% of the recent model tabletop units and many portables as well. It measures 18" wide by 15" deep by 4" high **\$14.95**

VCR-350 VCR Speed Rewinder

The Rewinder allows a VCR user to enjoy uninterrupted playback of videotapes by putting them directly into the rewriter after use. The Rewinder is capable of rewinding a T-120 VHS Videotape in about two minutes, compared to four or more minutes for a VCR to do the same job. The unit has forwarding as well as rewind capability and features auto stop and auto power off for added safety and ease of operation **\$59.95**

VCR-510 Video Foam Cleaning Swabs

10,000 pores per square inch polyester urethane foam absorbs more solution, is completely non-abrasive, and provides optimum cleaning action. Completely lint-free, foam swab will not harm even the most delicate recorder parts. For use in conjunction with Nortronics 100% pure TF liquid or spray head cleaner. Package contains 12 foam cleaning swabs. **\$5.80**

VCR-800 Video Dubbing Kit

Permits convenient dubbing with any combination of VHS, Beta and video disc systems. Highly shielded, very low 25 pico farads per foot cable capacitance ensures quality duplication. Convenient 3-foot cable length makes dubbing easy. Kit includes Beta "mini-jack" adaptors for dubbing to or from Beta format machines. **\$17.20**

VCR-820 VCR Dubbing Kit

The RCA style plugs are gold electro-plated because gold is the best conductor of electricity available. Attached to them are low capacitance, ultra flexible cables that minimize attenuation of the signal, resulting in excellent transmission quality of both the audio and video signals. **\$11.95**

AG-6300 VHS Video Cassette Recorder

A high performance VCR perfect for use in editing systems with all the precision and connectors required for professional use.

- Two DD Reel motors for smooth tape transport
- Forward (noiseless) and reverse slow motion playback and frame shift
- 17 step dial
- Audio dubbing selector
- Audio level/tracking meter
- EXT SYNC IN
- Time code IN and OUT Connectors
- DUB/NORMAL switch select
- Random auto repeat functions
- Real time counter
- Two channel audio with Dolby NR System
- Audio limiter and audio level meter
- Headphone level control
- Loophrough recording for dubbing
- Intermediate loading system
- Mode lock function
- Optional remote control
- External clock timer
- 19" rack mountable
- Multiple AC Power sources

AG-6300 \$1895.00



AG-6300

AG-6200 VHS Video Cassette Recorder

Ideal for dubbing and a wide range of other applications including education, research, medical analysis and demonstration.

- Noiseless slow (forward)
- 14-step dial search
- Intermediate loading
- Audio dubbing possible on channel 2
- Headphone level control
- Audio limiter and audio level meters
- 2-Channel audio w/Dolby NR System
- Realtime counter with "tape remaining" time counter
- Random auto repeat
- Optional remote control
- Mode lock function
- Time code connectors
- Loophrough recording for dubbing
- 19" rack mountable
- Multiple AC power sources

AG-6200 \$1750.00



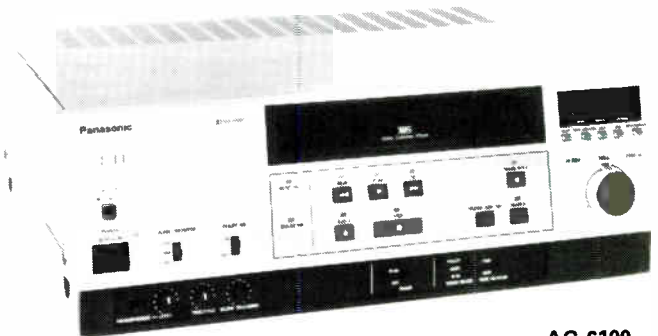
AG-6200

AG-6100 VHS Video Cassette Player

A playback only video cassette deck that offers the advanced functions of the AG-6200.

- Noiseless slow (forward)
- 14-step dial search
- Frame advance
- Intermediate loading
- 2-Channel audio w/Dolby NR System
- Random repeat
- Optional remote control
- External clock timer can be connected for timer—playback control
- Mode lock function
- Loophrough operation
- 19" rack mountable
- Multiple AC power sources

AG-6100 \$1395.00



AG-6100

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

AG-6200E

Multi-System VHS Video Cassette Recorder

A multi-system VTR for international video PAL, CCIR & 4.43 MHz NTSC

- PAL CCIR (recording and playback), 4.43MHz NTSC (playback only)
- Noiseless slow (forward) and noiseless frame advance make it possible to locate exact edit points
- 14-step dial search for quick and accurate program searching. (forward: 1/25, 1/10, 1/5, 1/2, 1, 2, 6, 10, Still, reverse: 1/2, 1, 2, 6, 10)
- Real time counter with "tape-remaining" time counter and lap time can display up to 9 hours, 59 minutes, 59 seconds
- Random auto repeat function, other versatile counter. The unit automatically stops at 000 on the counter (Rew./FF). Set the beginning and end points. At the end point, the unit will automatically rewind to the beginning point and stop. The unit will consecutively repeat playback between these points.
- Intermediate loading system aids in random access by reading the control signal in the FF and REW modes
- Loop through recording remote control makes multiple dubbing easy up to 500* units at the same time
- Two channel audio with Dolby** NR system enables stereo playback and recording with very low noise
- Audio limiter and 2 audio level meters make independent adjustment of channels 1 and 2 possible
- Audio dubbing possible on channel 2
- Mode lock function locks the unit into the current mode and overrides front panel controls
- Time code In and Out connectors permit recording and playback of time code signals on audio track 2



AG-6200E

- See-through front loading mechanism and EIA 19" rack mounting size makes it possible to install a large number of units in a limited space
- A 34-pin remote-control connector is provided and the optional remote control AG-A600 controls of the Play, REC, FF, REW, Stop, Pause/Still, Frame ADV., Search and Audio DUB modes
- Multiple AC power sources

AG-6200E **\$1850.00**

*Use of the AWG-24 cords with units spaced 1m apart.

**"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

AG-6300MD

VHS Video Cassette Recorder for Medical Applications

Meets UL-544 Standards

- Microcomputer-controlled full logic operation, and two direct drive reel motors provide the precise tape handling
- See-through front loading mechanism and EIA 19" rack mounting size
- A 34-pin remote-control connector is provided, and the optional 9-mode remote controller (AG-A600) controls of the play, record, fast forward, rewind, stop, pause/still, frame advance, search, and audio dub modes
- 17-step dial search for quick and accurate program searching. (forward: 1/25, 1/10, 1/5, 1/2, 1, 2, 6, 10, Still, reverse: 1/25, 1/10, 1/5, 1/2, 1, 2, 6, 10)
- Forward (noiseless) and reverse slow motion playback and noiseless frame shift
- Real time counter with "tape-remaining" time counter and lap time can display up to 9 hours, 59 minutes, 59 seconds
- Random auto repeat function, other versatile counter. The unit automatically stops at 000 on the counter (Rew/FF). Set the beginning and end points. At the end point, the unit will automatically rewind to the beginning point and stop. The unit will consecutively repeat playback between these points.
- Time code In and Out connectors permit recording and playback of time code signals on audio track 2
- Two channel audio with Dolby* NR system enables stereo playback and recording with very low noise
- Audio dubbing selector enables dubbing on either channels 1 or 2, or both
- Audio limiter and 2 audio level meters make independent adjustment of channels 1 and 2 possible
- Audio level meter for Ch. 2/tracking meter switch-select
- Headphone level control



AG-6300MD

- Ext Sync In makes it possible to connect an external sync source
- Intermediate loading system aids in random access by reading the control signal in the FF and REW modes
- Loop through recording remote control makes multiple dubbing easy up to 500** units at the same time
- Mode lock function locks the unit into the current mode and overrides front panel controls
- An external clock timer can be connected for unattended timer-recording and playback
- Multiple AC power sources

AG-6300MD **\$1925.00**

**"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

**Use of the AWG-24 cords with units spaced 1m apart.

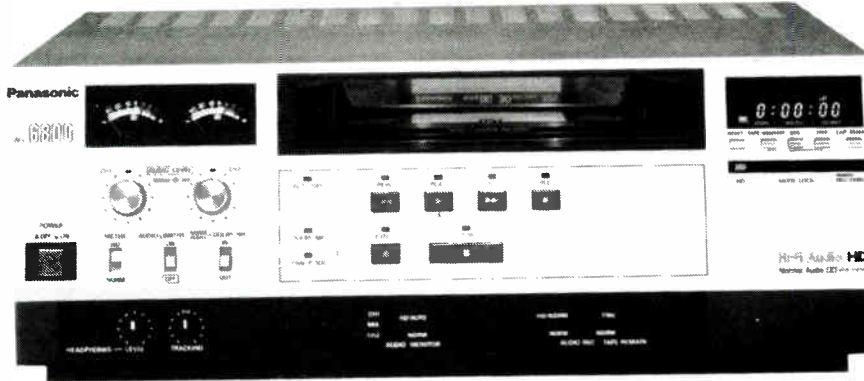
OPTIONAL ACCESSORIES — AG-SERIES

AG-A600 Remote Controller **\$140.00**

AG-M600 19" Rack mount Bracket **60.00**

NV-A850 Programmable Auto Search Controller (NV-9240/NV-8170/NV-8200/AG Series) **420.00**

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



**AG-6800 HI-FI VHS VIDEO
CASSETTE RECORDER**

FEATURES

- Extra 2 Audio Channels
- Precision Heads for Full 58 μ m Tracing
- Loop-through Recording for Dubbing
- See-through Front Loading Mechanism
- Rack Mountable (optional frame available)
- Real Time Counter and Random Repeat
- Remote Control Connector
- SMPTE Time Code Recording Possible

Presenting the AG-6800, the professional VHS Hi-Fi video cassette recorder designed for recording studio and dubbing applications. The AG-6800 uses the newly developed VHS Hi-Fi system to provide stereo sound with full conventional VHS video compatibility. Technically speaking, VHS Hi-Fi is an FM multiplex depth recording system. Two additional audio heads are mounted on the same cylinder as the usual video heads. These record the audio signal on a deep layer of the video tape, then the video heads record the video signal on the shallow surface layer. Azimuth angles of the audio and video heads are different ($\pm 6^\circ$ for video and $\pm 30^\circ$ for audio) so there is no problem of interference or intermodulation distortion. Furthermore, the left and right audio channel information is completely independent, unlike FM stereo broadcasts, so stereo separation is complete.

On a VHS Hi-Fi VTR you have four channels to work with — two hi-fi audio channels and two conventional audio channels. The AG-6800 is equipped with complete input and output connectors, level controls, and metering facilities to handle each channel independently, all at once, or any combination in between. Therefore, you enjoy the ideal balance of flexibility and convenience.

Note: AG-6800S is for duplication only.

SPECIFICATIONS

Power Source: 110, 120, 220, 240V AC, 50/60Hz
Power Consumption: Approx. 60 watts
Television System: EIA Standard (525 lines, 60 fields)
 NTSC color signal

Video Recording System: 2 rotary heads, helical scanning system
 Luminance: FM azimuth recording
 Color signal: converted subcarrier phase shift recording

Audio Channel: 4 channels
 NORMAL (CH1/CH2): 2 fixed heads
 HD (CH1/CH2): 2 rotary heads

Tape Format: Tape width 1/2 inch (12.7 mm),
 high density tape

Tape Speed: 1-5/16 ips (33.35 mm/s)
Record/Playback Time: 120 min. with NV-T120
FF/REW Time: Less than 4.0 min. with NV-T120
Input Level: Video: Video In (BNC), 1.0Vp-p,
 75 ohms unbalanced

Output Level:

Audio: Line In (RCA): unbalanced
 Normal (CH1/CH2) -20dB
 (reference input -8dB),
 47K ohms, unbalanced
 HD (CH1/CH2) -20dB (reference
 input -8dB), 47K ohms, unbalanced

Time Code: Time Code (BNC), 1.0Vp-p,
 10K ohms, unbalanced

Video: TV Monitor (8 pin), 1.0Vp-p,
 75 ohms, unbalanced
 Video Out (BNC), 1.0Vp-p,
 75 ohms, unbalanced

Audio: TV Monitor (8 pin), 0dB, 600 ohms
 unbalanced
 Audio Out (RCA), Normal
 (CH1/CH2) -8dB, 1K ohms,
 unbalanced
 HD (CH1/CH2) -8dB, 1K ohms,
 unbalanced
 Headphones, -60dB ~ -16dB
 8 ohms, unbalanced

Time Code: Time Code (RCA), 2.4Vp-p,
 low impedance, unbalanced

Remote Control: Remote Control Connector (34 pin)
 Camera Remote (M2)
 Rec. Remote (RCA)

Video Horizontal Resolution: Color; more than 240 lines
 B/W; more than 300 lines

Audio Frequency Response: 50 ~ 12,000 Hz (Normal Audio)
 20 ~ 20,000 Hz (HD Sound)

Signal-to-Noise Ratio: Video: better than 46dB (B/W)
 better than 45dB (Color)
 Audio: better than 48dB (Normal Audio/
 Dolby NR IN)

Audio Dynamic Range: better than 80dB (HD Sound)
 less than 0.005% (HD Sound)

Wow and Flutter: 41°F ~ 104°F (5°C ~ 40°C)

Operating Temperature: 35% ~ 80%

Operating Humidity: 30.9 lbs. (14.0 kg)

Weight: 17" x 6-1/4" x 15-1/2"
 (430 x 158 x 392 mm)

Dimensions (WxHxD): 1 pc. Dust cover (VFB0043)
 2 pcs. Volume protector (VKF0358)

Accessories Supplied:

OPTIONAL ACCESSORIES

AG-M600 Rack Mounting Frame \$ 60.00
 NV-A850 Program Auto Search Controller 420.00
 AG-A600 Remote Controller 140.00
 AG-6800 1800.00
 AG-6800S (for duplication) 1800.00

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NV-8500 1/2" VHS Editing System

This system combines the professional features of 3/4" editing systems with the convenience and economy of 1/2" VHS. The system is comprised of Panasonic's advance design NV-8500 editing recorder/player combined with the NV-A500 automatic editing controller and may be expanded through the NV-A505 remote controller. The new editing system provides excellent versatility and performance that was previously limited to larger tape formats.

NV-8500 Recorder/Player

- Accurate 8-step search dials for fast editing point location
- Microprocessor based operation
- Dolby* noise reduction
- 2-track audio with audio limiter, playback level adjustment and meters for each channel
- Second audio track can be selected to accept time code information
- S/N ratio 45dB color, 46dB monochrome
- Horizontal Resolution 240 lines color, 300 lines B/W
- Hot pressed ferrite video heads
- Dub in/Dub out connectors
- 100-240VAC, 50/60Hz
- LED indicators
- Adjustable headphone out level

NV-8500 \$3250.00

NV-A500 Editing Controller

Designed to work effortlessly with the NV-8500 deck. It offers outstanding features for easy and accurate assembly edits with non-locking feather touch controls, designed around an advanced microprocessor that allows for a variety of professional editing functions.

- Preview mode allowing for a trial run
- Review mode for rapid review of a completed edit
- Edit time + /1 function for locating a specific edit point
- Bi-directional search dials
- Searching speeds: 1/25, 1/10, 1/5, 1/2, 1, 2, 5 and 10 times normal playing speeds
- Pause function with a visible still picture and frame by frame advance in either forward or reverse
- Two LED counters for source and editing deck

A full-function remote control, model NV-A505, is also available for this system.

NV-A500 Full Function Editing Controller \$1500.00

NV-A505 Full Function Remote Search Controller 750.00

NV-J500 Multi-Source Switcher 450.00

*Dolby is a trademark of Dolby Laboratories

AG-6300 VHS Video Cassette Recorder

A high performance VCR perfect for use in editing systems with all the precision and connectors required for professional use.

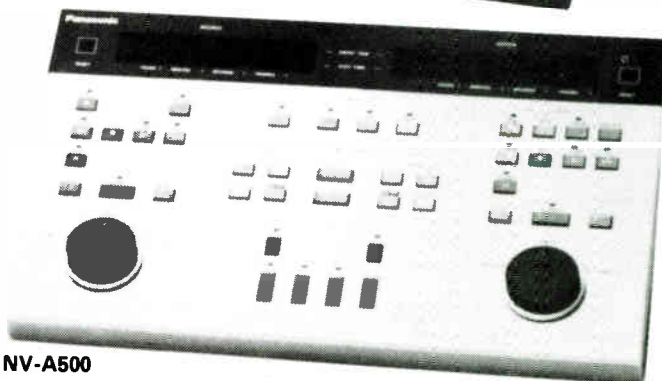
- Two DD Reel motors for smooth tape transport
- Forward (noiseless) and reverse slow motion playback and frame shift
- 17 step dial
- Audio dubbing selector
- Audio level/tracking meter
- EXT SYNC IN
- Time code IN and OUT Connectors
- DUB/NORMAL switch select
- Random auto repeat functions
- Real time counter
- Two channel audio with Dolby NR System
- Audio limiter and audio level meter
- Headphone level control
- Loophrough recording for dubbing
- Intermediate loading system
- Mode lock function
- Optional remote control
- External clock timer
- 19" rack mountable
- Multiple AC Power sources

AG-6300 \$1895.00

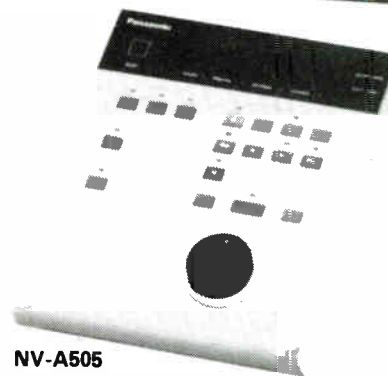
VR-64



NV-8500



NV-A500



NV-A505



AG-6300

Prices and Specifications Subject to Change Without Notice.

NV-8350
2 Hour 1/2" Video Cassette Recorder
w/Multi-Motion Playback Function

- Two Hours Playback Time on NV-T120
 - Two Audio Channels—Dual Audio Meters
 - Dolby NR System Increases the Range of the Audio Signal, Improves S/N Ratio to 45 dB
 - Convenient High Speed (9X) Search in Forward or Reverse
 - Clear, Sharp Still Pictures of Crucial Scenes Can Be Viewed Slowly and Thoroughly by Means of the Pause/Still Playback
 - Frame Advance Playback Makes It Possible to View and Analyze Scenes One Frame at a Time
 - Standard Wired Remote Controller
 - Four Video Heads for High Performance
 - Noise Free Slow Motion at 1/30—1/5X Speed
 - Variable Slow Playback
 - Instant Recording Makes It Possible To Insert New Scenes Onto Tapes That Have Already Been Recorded
 - 14-Day/4 Programmable Timer with Built-In Timer Back-Up
 - One-Touch Timer Recording Allows Automatic Recording for 30 Min., 60 Min., 90 Min., and 120 Min.
 - The Picture Quality Control Adjustment Can Be Adjusted
 - Dimensions: 18-15/16"(W) x 5-3/8"(H) x 14-3/8"(D)
 - Weight: Approx. 24.9 lbs. (11.3kg)
- NV-8350** \$1395.00



NV-8350

NV-8950 Motion Analyzer-Recorder/Playback

- Two Hour/Six Hour Recording on NV-T120
 - Variable Playback Speeds
 - Audio Switchover Function for Multiplex Recording Playback
 - Wireless Remote Control of 14 Modes
 - Quick Program Selection
 - Front Loading
 - Electronic Display Type of Tape Counter
 - Automatic Rewind
 - Dolby NR System
 - Includes Camera Connector for Video Camera
- NV-8950** \$1995.00
- NV-V950 Tuner/Timer** 375.00



NV-8950

NV-8420 2 Hour 1/2" VHS Portable VCR

- Compact Quartz Direct-Drive Cylinder
 - Flat Type Direct-Drive Capstan Motor
 - High Density Circuit Modules
 - Lightweight Annealed Die-Cast Chassis
 - Still-Frame, Variable Slow and High Speed Search
 - Video-Add and Audio Dubbing
 - Automatic Backspace
 - Multi-Function Digital Display
 - 12-Function Remote Control
 - Auto-Rewind and Memory Rewind
- NV-8420** \$995.00
- NV-V410 Matched Tuner/Timer (NV-8420)** 425.00



NV-8420

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AG-2100
VHS Video Cassette Player

- 4-head video system
- Front loading with top/front windows, safety mechanism
- Auto-play and auto-repeat with video end mode
- 2/4/6 hour playback capability
- Direct drive cylinder motor
- Multi-function display
- 8-pin connector for monitor
- Noiseless still picture and frame advance

AG-2100 \$750.00



AG-2100

AG-2200
VHS Video Cassette Recorder/Player

- 2/4/6 Hour record and playback capability
- Advanced 4-head system greatly enhances picture quality. Clear still and frame advance pictures with minimal noise and jitter
- Frame advance button permits slow motion playback. Speed search forward and reverse
- 107-channel cable ready with 12 button tuning
- Supplied wired remote control with 9 modes
- Multi-function display confirms all tape modes and shows time and day
- Front loading
- 8-pin connector permits single cable connection to monitor
- 2 week/single event unattended recording

AG-2200 \$895.00



AG-2200

AG-2400 4-Head System
W/Quartz-Servo Direct Drive Cylinder

AG-2400 is ideal for use with a portable video camera and is also perfect for stationary VCR applications when connected to the matching AG-V340 Video Tuner/Timer (optional). There are four precision video heads mounted on the cylinder. Two heads are used for conventional recording and playback, while the other two enable clear STILL, FRAME ADVANCE, and SLOW playback modes. In addition, a SPEED SEARCH mode is included, making it easy to locate any desired point on the tape. Recording is possible in the 2-hour and 6-hour VHS modes and playback is possible in all 2/4/6 Hour modes.

With liquid crystal display (LCD), this single panel can transport speed modes (LP, SLP), cassette status, tape counter, remaining tape time, battery charge level, audio dubbing, and video adding. By simply connecting a single 20-pin cable, the AG-V340 can be added to provide you with the capabilities of a full-size conventional VCR. In addition, a standard 10-pin connector on the AG-2400 allows the unit to be used with most conventional video cameras. Weight: 4.84 lbs. (w/o internal battery pack). Dimensions: 8-7/16" x 2-3/4" x 10-3/8".

FEATURES

- 2/4/6 Hr. Playback; 2/6 Hr. Record
- 4-Head System W/Quartz-Servo Direct Drive Cylinder
- 5-Speed Search/Variable Slo-Mo Playback
- Multi-Function LCD Display
- Diecast Aluminum Chassis
- Wired Remote Control Enables Variable Slo-Mo Playback
- Video Adding For Basic Insert Editing
- Audio Dubbing Capabilities
- Memory Function
- Auto-Rewind



AG-2400

ACCESSORIES SUPPLIED:

- | | |
|-----------|-------------------------------------------------|
| VSQ0251 | Wired Remote Control |
| VFB0053 | Shoulder Strap |
| VFA0020 | 300-75 ohms Transformer, 75-75 ohms Transformer |
| VSQ0107 | Antenna Selector |
| VEB0003 | Earphone |
| VSQ0015-1 | VHF Matching Box, 75-300 ohms Transformer |
| VFB0050 | V Lock Tool |
| VUP5075 | Adaptor Connector (RCA-BNC) |
| VJP1431 | Audio-Output Cord |
| VJA0147-1 | Coaxial Cable With One-Touch Type F Connector |
| VFC0036 | Carrying Case |

AG-2400 \$950.00

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NV-A850

NV-A850 Programmable Search Controller

The NV-A850 is designed for use with the VHS-format VTR models NV-8200 and NV-8170 or the 3/4" VTR models NV-9240 and NV-9600.

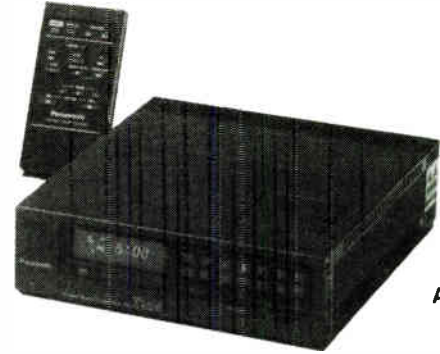
FEATURES

- Memorizes up to 64 Tape Segments that can be Referenced Later by Direct Recording of Their Position Data on the VHS Videocassette Tape
- Push Button Remote-Controllable Operation of the Connected VTR's Tape Transport Functions
- Unsurpassed Random Segmenting for Automatic Search and Playback

NV-A850 \$420.00

OPTIONAL ACCESSORIES—INDUSTRIAL RECORDERS

AG-A600	Remote Controller for AG Series	\$140.00
AG-M600	19" Rack Mount Bracket for AG Series	60.00
LCR-3012VBP	Rechargeable Panaloid Battery (NV-9400/8400)	47.50
LCS-2012V	Rechargeable Battery, 12V (NV-8420, CT-300VT)	42.50
NV-A800A	Auto Search Controller (NV-9240/9600/AG6000 Series)	350.00
NV-A810	Remote Control Unit (NV-9240/9600/8170/8200/8500)	125.00
NV-A850	Programmable Auto Search Controller (NV-9240/NV-8170/8200/AG6000 Series)	420.00
NV-B51	AC Adaptor/Battery Charger for NV-8400	135.00
NV-B58	AC Adaptor/Battery Charger for NV-8420	155.00
NV-B59	Plug-in AC Adaptor for NV-8420	125.00
NV-C15	VTR/TV Connection Control Cable (5 ft.)	18.50
NV-C21	VTR/TV Extension Cable (10 ft.) for NV-C15	24.50
NV-C37	External Battery Cable for Car or Boat Battery for NV-8420	17.50
NV-C80	Extension Cable (16.4 ft.) (NV-A800/A810/A850)	95.00
NV-J240	VTR/Tuner/Timer Adaptor for Use Between the Optional NV-V240 Tuner/Timer and NV-8200/9300A	120.00
NV-U234	RF Modulator CH 3 and 4 Switchable	80.00
NV-V240	VHF/UHF Tuner/Timer for NV-8410/8400	325.00
NV-V410	Programmable VHF/UHF Tuner/Timer for NV-8420	425.00
NV-V950	Programmable Tuner/Timer for NV-8950 Only	375.00
PC-801	Hard Shell Carrying Case for NV-8110/8350	150.00
PC-842	Hard Shell Carrying Case (NV-8420)	120.00
PC-845	Hard Shell Carrying Case for NV-8420, CT-500V	125.00
PC-895	Hard Shell Carrying Case for NV-8950	150.00
TU-1012T	Tuner/Signal Switcher	495.00



AG-V340

AG-V340 Video Tuner/Timer

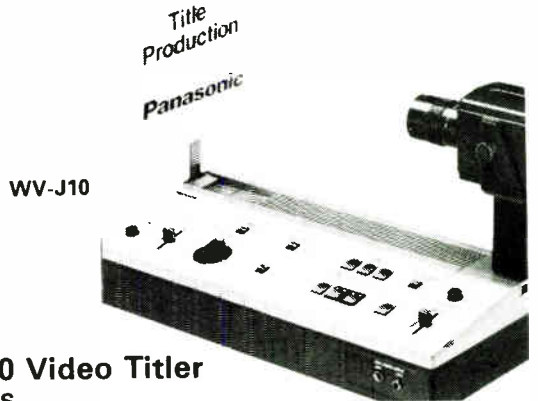
FEATURES

- 2/4/6 Hour Playback; 2/6 Hour Record
- 4 Head System w/Quartz-Servo Direct Drive Cylinder
- 5-Speed Search/Variable Slow Motion Playback
- Multi-Function LCD Display
- Diecast Aluminum Chassis
- Wired Remote Control Enables Variable Slow Motion Playback
- Video Adding for Basic Insert Editing
- Audio Dubbing Capabilities
- Memory Function
- Auto-Rewind

AG-V340 \$425.00

OPTIONAL ACCESSORIES

AG-CR240	Car Battery Cord	\$ 17.50
AG-B11	AC Adaptor/Battery Charger	155.00
AG-B12	Plug-In AC Adaptor/Battery Charger	125.00
AG-BP202	Battery Pack	42.50
AG-C240	Conversion Cable (use AG-2400 w/NV-V410)	25.00



WV-J10

WV-J10 Video Titler

FEATURES

- Superimposition of Titles and Graphics on Color Camera or Video Tape Recorder Video Signal
- Seven Different Color Selections
- Super Auto Fade In/Out
- Two Separate (Switchable) Video Outputs
- Key Level Control
- Soft/Sharp Select for VTR Playback Picture Tone
- Pattern (Picture) Reversal Between Input Signal and Title Camera Signal
- VTR Remote Control
- Four Audio Inputs
- Audio Fade In, Fade Out
- 2X Variable Focus Zoom Lens for Title Camera (Supplied)

WV-J10 \$695.00

Prices and Specifications Subject to Change Without Notice.

VR-67

NV-9100A 3/4" Video Cassette Player

Features

- Automatic phase control for stability of the color signal
- Auto Repeat and Auto Search functions
- Adjustable still framing
- Non-locking pushbutton controls with logic memory
- Tapes can be viewed on conventional TV using optional RF modulator

NV-9100A \$1475.00 ✓



NV-9100A

NV-9200A 3/4" Video Cassette Recorder

Features

- DD cylinder and DD capstan for high stability
- Can be used as slave player in editing system
- Automatic or manual video and audio level meters
- Automatic search modes with auto rewind at end of tape
- Still frame playback
- Printed circuit boards with low density component layout for ease of servicing
- External sync input, for better stability in editing and dubbing systems

NV-9200A \$2500.00 ✓



NV-9200A

NV-9200E Records in PAL/SECAM, plays back NTSC.
Two audio channels and meters \$3000.00

NV-9300A 3/4" Video Recorder/Player

Features

- VHF and UHF tuners to record TV broadcasts
- Auto Repeat and Auto Search
- Tapes can be viewed on conventional TV set using optional RF modulator
- Automatic phase control for stability of the color signal
- Adjustable still framing
- Non-locking pushbutton controls with logic memory

NV-9300A \$2150.00 ✓



NV-9300A

Optional Accessories

- NV-P23** 30 min. 3/4" video cassette tape \$ 30.00
- NV-P26** 60 min. 3/4" video cassette tape 40.00
- NV-P20** Head cleaning tape 19.50
- NV-A810** Remote control unit 125.00 ✓
- NV-U234** RF modulator 80.00

**NV-9240XD 3/4" High-Resolution
Video Cassette Recorder**

FEATURES

- HPF heads and a comb filter provide excellent picture quality with high horizontal resolution of over 500 lines
- Six special DC motors, direct drive tape transport, and all-new chassis for a mechanism which is both reliable and durable
- Automatic functions such as auto-search, auto-rewind, and auto-stop for easier and more convenient operation
- Microcomputer-controlled soft-touch operation buttons for direct control
- Independent motors for cassette insertion/ejection and tape loading provide errorless operation
- Four independent level meters for video, audio CH1, audio CH2, and tracking facilitate precise adjustments
- Selection of automatic or manual video recording level adjustment, audio recording level adjustment limiter on/off switching
- Indicator lamps are provided for frame lock, servo lock, stand-by, and time code use

NV-9240XD \$4500.00



NV-9240XD

**NV-9200E 3/4" High Performance
Video Cassette Recorder**

FEATURES

- PAL/SECAM recording/playback and NTSC playback
- 3 motors; reel drive, rotating video head, and capstan servo motors
- Recording and playback in either color or high-resolution b/w
- Picture resolutions of 350 lines b/w, and 250 lines color; HPF heads
- Signal to noise ratio is 46dB
- Sync and subcarrier input, FM output allow time base corrector (TBC) connection
- One-piece aluminum die-cast chassis
- Automatic tape rewind; Auto Search stops either FF or REW mode at zero
- Two audio level meters for each audio channel; audio limiter on/off switch
- Audio Dub In on CH1; audio monitor selector for CH2 or mix
- Optional remote controllable

NV-9200E \$3000.00



NV-9200E

Optional Accessories

AU-A70	High performance Editing Controller (AU-700)	6500.00
AU-J10	Multiple Source Adaptor (AU-A70)	750.00
NV-A970	High Performance Editing Controller with SMPTE Time Code Generator and Reader (NV-9600, NV-9240, NV-9200A)	4950.00
NV-A500	Full Function Editing Controller	1500.00
NV-A505	Full Function Remote Search Controller	750.00
NV-J500	Multi-Source Switcher (NV-8500, NV-A500, NV-A505)	450.00
NV-A800	Auto Search Controller (NV-9240/9600/8170/8200/8500)	350.00
NV-A810	Remote Control Unit (9100A, 9200A, 9200E, 9240XD, 9300A, 9600/8170/8500/8050)	125.00
NV-A850	Programmable Auto Search Controller (NV-9240, NV-8170, NV-8200, NV-9600)	420.00
NV-C80	Extension Cable Deck to Controller (16.4 ft., NV-A800, A810, A850, A152, A970)	95.00
NV-C15	TV/Monitor Connection Cable (5 ft.)	18.50
NV-C21	VTR/TV Extension Cable (10 ft.)	24.50
NV-U234	RF Modulator CH3 and 4 Switchable	80.00
TU-1012T	Tuner/Signal Switcher	495.00

NV-9450 3/4"
Portable Video Cassette Recorder

FEATURES

- Real time monitoring with video confidence heads
- SMPTE time code capability
- TBC connection capability
- Professional-standard connectors (Video/BNC, Audio/XLR)
- Automatic Backspacing for assemble editing
- Microprocessor controlled operation
- Remote control facility
- 3-way power supply
- 2 audio meters
- 10x picture search capability
- Lightweight 19.6 lbs. (including battery)
- Supplied with handle and shoulder strap

NV-9450 \$4250.00



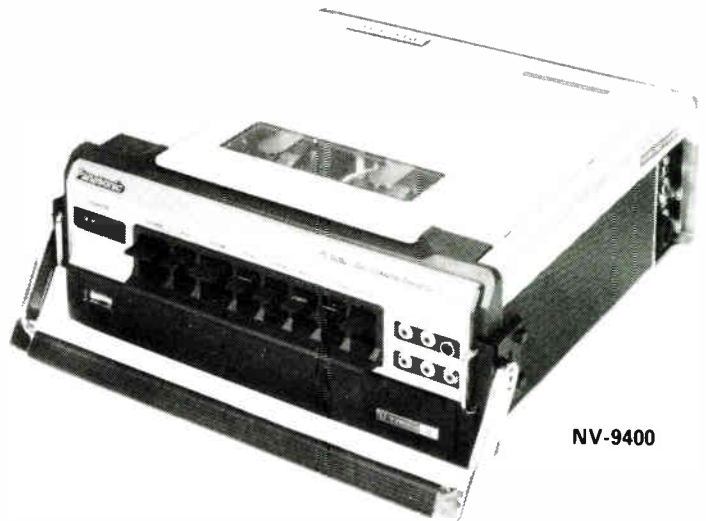
NV-9450

NV-9400 3/4"
Portable Video Cassette Recorder

FEATURES

- NV-9400 has three-way power: Rechargeable Panaloid battery (included); 12V battery power with optional car/boat battery cable, NV-C24; or optional AC adaptor/battery rechargers, NV-B50 and NV-B50R (NV-B50R for use with AK-750)
- NV-9400 has a capstan servo system with a crystal reference signal generator to help insure precise head-to-tape speed and high picture stability
- Automatic Assembly Editing (AAE) from Stop mode. AAE feature assembles the record segments without tear or roll
- Dropout/noise compensator
- Automatic Phase Control (APC) for stable color signal
- Dubbing mode turns off APC to maintain luminance/chroma relationship when dubbing
- Pause control stops tape travel in Record mode, and features a still frame in Playback
- Two audio channels; audio dubbing on channel 1; balance control for channels 1 and 2 during Playback
- Five function meter: monitors video level, audio channel 1, audio channel 2, battery voltage and servo lock
- Optional RF modulator NV-U956 plugs into VCR for playback on TV channels 5 or 6 (switchable)
- NV-P22S 3/4" cassettes recorded on NV-9400 can be played on other U-format VCRs
- Mates with Panasonic ENG/EFP color cameras, such as AK-750 and WV-3800

NV-9400 \$3200.00



NV-9400

OPTIONAL ACCESSORIES

3/4" PORTABLE VCR SYSTEMS (NV-9400/9450)

NV-U956	RF Modulator (NV-9400)	\$ 125.00
NV-B50	AC Adaptor/Battery Charger (NV-9400)	325.00
LCR-2012V	Rechargeable Panaloid Battery (NV-9400, NV-8400)	42.50
NV-C45	10P 14P Cable (f/NV-9450)	60.00
NV-H25	Carrying Case with Shoulder Strap (NV-9400) ..	60.00
NV-A450	Remote Control Unit (NV-9450)	250.00
NV-B450	AC Adaptor/Charger (NV-9450)	370.00
NV-C450	Car/Battery Cable (NV-9450)	20.00
NV-F450	Time Code Generator (NV-9450)	1500.00
NV-H450	Soft Vinyl Carrying Case	100.00
NV-BP450	Battery Pack 12V/2.2A NiCad (NV-9450)	100.00

**NV-9600 High Performance
3/4" Video Cassette Editing Recorder**

- S/N 46 dB color, 50 dB monochrome
- Horizontal Resolution 260 lines color, 330 lines monochrome
- Direct drive video head cylinder for high stability and a direct drive capstan servo for maintaining precise head-to-tape speed
- Microprocessor-based system control; governs the non-locking pushbutton controls; allows direct mode changes without passing through the STOP mode; and permits use with Panasonic editing controllers NV-A960 and NV-A950
- DUB IN and DUB OUT connectors enhance the picture quality of multi-generation dubs
- Special APC circuitry automatically switches OFF during Video-to-Video edits or duplication
- Video frequency response adjustment is provided for normalizing the playback picture
- Video head switching has been moved to the vertical blanking interval
- Electronic digital tape counter counts recorded control pulses (CTL) and provides LED readout in minutes and seconds
- Indicator lamps are provided for servo lock, frame lock, stand-by and time code use
- AUTO-OFF indicator flashes to show tape slack, or stays on steady to indicate dew problems
- A flying erase heads help ensure the quality of edits performed
- A frame servo and horizontal phase adjustment
- Individual editing selection switches for insert and assembly edits
- Audio track 1 can be used either for audio or as a time code control track (switchable)



NV-9600 with optional remote control unit NV-A152

- A recessed front panel features controls for frequency response, chroma level, video mode selection, horizontal phase adjustment and frame servo ON/OFF
 - Deck includes 6 DC motors and provides beltless tape drive system. Motors are: direct drive video head cylinder motor, direct drive capstan motor, reel drive motor, skew motor, loading motor and elevator motor
 - External sync/subcarrier inputs and FM output for use with a time base corrector (TBC)
 - Loop-through video input connectors with 75 ohm termination switch
 - Selectable headphone levels: -32 dB, -26 dB
 - Die-cast aluminum chassis
 - 100-240VAC, 50/60 Hz Power operable
 - 26-1/8" x 18-3/4" x 9-3/8" (WHD) Weight: 77 lbs.
- NV-9600** **\$6500.00**

**NV-9240 High Performance
3/4" Video Cassette Recorder**

- S/N 46 dB color, 50 dB monochrome
- Horizontal Resolution 260 lines color, 330 lines monochrome
- Microprocessor-based system control; governs the non-locking pushbutton controls; allows direct mode changes without passing through the STOP mode; and permits use with Panasonic editing controllers NV-A960 and NV-A950
- Direct drive video head cylinder for high stability, and a direct drive capstan servo for maintaining precise head-to-tape speed
- New DUB IN and DUB OUT connectors enhance the picture quality of multi-generation dubs
- Audio track 1 can be used either for audio or as a time code control track (switchable)
- Special APC circuitry automatically switches OFF during Video-to-Video edits or duplication
- A frame servo adjustment
- Video frequency adjustment is provided for normalizing the playback picture
- Video head switching has been moved to the vertical blanking interval
- Electronic digital tape counter counts recorded control pulses (CTL) and provides LED readout in minutes and seconds
- Indicator lamps are provided for frame lock, servo lock, stand-by, and time code use
- AUTO-OFF indicator flashes to indicate tape slack or stays on to show dew problems. Controls for frequency response, chroma level, video mode selection, and frame servo ON/OFF
- Deck includes 6 DC motors and provides a beltless drive system. Motors are: direct drive video head cylinder motor, direct drive capstan motor, reel drive motor, skew motor, loading motor, and elevator motor
- Die-cast aluminum chassis
- External sync/subcarrier inputs and FM output for use with a time base corrector (TBC)
- Loop-through video input connectors with 75 ohm termination switch
- Selectable headphone levels: -32 dB, -26 dB



- 100-240VAC or 60 Hz power capable
 - Weighs 90.2 lbs.
- NV-9240** **\$4250.00**

NV-9240 XD 3/4" High-resolution Video Cassette Recorder delivers 500 lines horizontal resolution (B/W) X-ray, Medical uses .. **\$4500.00**

Standard Accessories for NV-9600 and NV-9240:

- 1 pc. AC power cord, VJA0129
- 1 pc. Dubbing cable, VJA0151
- 1 pc. Dust cover, VFB0006

Optional Accessories for NV-9600 and NV-9240

- 3/4" video cassette tape:
 - NV-P23 approx. 610 ft. (186m), 30 min.
 - NV-P26 approx. 1,175 ft. (358m), 60 min.
- Head cleaning tape, NV-P20
- Remote control unit, NV-A152
- Editing controller, NV-A950
- Editing controller, NV-A960
- Auto search controller, NV-A800

Prices and Specifications Subject to Change Without Notice.

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

**NV-A970 SMPTE
Time Code Editing Controller**

- Insert and Assembly editing
- Microprocessor based logic control
- Edits both 1/2" and 3/4" formats
- 100-240VAC, 50/60Hz power operable
- ± 2 frames accuracy
- 4.5 seconds Pre-roll time
- 17-1/8" x 9-1/4" x 17" (WHD) Weight: 31.9 lbs. approx.

NV-A970 \$4950.00

- Standard Accessories:** 1 pc. AC power cord, VJA0129
2 pcs. 34-pin remote control cables, VJA0149 approx. 16.4 ft. (5m)
1 pc. Dust cover, VFB0003



NV-A970

3/4" Component Editing System

Deluxe 3/4" Editing Systems: NV-9600 (2 units), NV-A970. Panasonic introduces a system package providing the ultimate in advanced-feature editing. The system includes two NV-9600 3/4" high performance editing recorders and one NV-A970 editing controller combined in a total system package. 221 lbs. (3 ctn. total) \$17,950.00

High Performance 3/4" Editing System: NV-9600, NV-9240 and NV-A970. A practical approach to the many demands of modern-day video production and editing. A single package of exceptional Panasonic 3/4" equipment designed for precision results throughout the use of one NV-9240 production recorder as source, one NV-9600 3/4" high performance editing recorder and one NV-A970 editing controller. 221 lbs. (3 ctn. total) \$15,700.00

**NV-A500
Editing Controller**

Designed to work effortlessly with the NV-8500 deck. It offers outstanding features for easy and accurate assembly edits with non-locking feather touch controls, designed around an advanced microprocessor that allows for a variety of professional editing functions.

- Preview mode allowing for a trial run
- Review mode for rapid review of a completed edit
- Edit time + /1 function for locating a specific edit point
- Bi-directional search dials
- Searching speeds: 1/25, 1/10, 1/5, 1/2, 1, 2, 5 and 10 times normal playing speeds
- Pause function with a visible still picture and frame by frame advance in either forward or reverse
- Two LED counters for source and editing deck
- 15-3/8" x 2-7/8" x 9-5/8" (WHD)
- Weighs 5.28 lbs.
- 2 pcs. 34-pin remote control cable supplied

A full-function remote control, model NV-A505, is also available for this system.

NV-A500 Full Function Editing Controller \$1500.00

NV-A505 Full Function Remote Search Controller 750.00

NV-J500 Multi-Source Switcher 450.00

*Dolby is a trademark of Dolby Laboratories.



NV-A500



AG-6010 1/2" TIME LAPSE VIDEO CASSETTE RECORDER A New Era In Time Lapse Recording

AG-6010 is Panasonic's all new time lapse video cassette recorder. Equipped with multiple search functions and a built-in time/date generator, the AG-6010 provides reliability and economy of operation. In addition to the 24-hour and 72-hour time lapse recording features for observation and surveillance applications, this new model also includes 2-hour standard play and 6-hour super-long play VHS modes. Engineered and built for time lapse operation by the world's largest manufacturer of video recorders, the AG-6010 boasts these additional quality engineering features...

- 4 Video Heads
- Resolution: 300 lines B/W; 240 lines color
- Front-loading tape system
- Built-in RF converter for viewing tapes on a conventional television receiver
- Automatic Repeat Recording
- Recording lock protects against external tampering once recording has started
- Multiple Search Functions
- Hour Meter (up to 10,000 hours)
- Sturdy die-cast chassis stability

VHS Mode/Time Lapse Mode Recording

In addition to time-lapse recording in the 24-hour and 72-hour modes, the AG-6010 is also equipped for 2-hour (SP) and 6-hour (SLP) VHS recording. Since the AG-6010 has a built-in RF converter, it can be conveniently used with a conventional television to meet a wider variety of requirements and effectively serve as two units in one.

Recording System Versatility

For surveillance and monitoring applications, such features as timer recording, automatic-repeat recording, external timer recording, and alarm recording greatly enhance the versatility and convenience of the overall system.

Timer Recording

The built-in time/date generator also functions as a single-event 24-hour recording timer.

Built-in Time/Date Generator

The built-in time/date generator automatically superimposes complete date and time information, including the hour, minute and second, upon recorded images for later reference or evidence. This data can be moved to any of the image's four corner areas. In addition, the power-failure compensation function assures the retention of time/date and recording time mode data in the unit's memory for approximately 72 hours, providing the unit was in operation for a minimum of 48 hours prior to the power failure.

Automatic Repeat Recording

By simply setting the automatic-repeat recording switch in advance, recordings are automatically made repeatedly end-to-end on the tape, thereby eliminating the need for manual reloading of the cassette or resetting the controls.

Automatic Recording After Power Failure

If the external timer recording switch is set to the "ON" position, recording will automatically resume if a power failure occurs during operation. This switch can also be used for timer recordings.

Recording-Lock

The recording-lock switch protects the unit against external tampering once a recording has started.

Alarm Recording

If the unit detects any abnormal activity in the area under surveillance while in the time-lapse recording mode, it immediately switches to the 2-hour (standard play) recording mode and records all activity in full detail. After 3.5 minute interval has elapsed the unit will return to the former time lapse mode.

Multiple Search Functions

The advanced four-head system makes a wide range of search functions possible for utmost versatility. Search functions include clear still, clear slow, frame shift (forward and reverse) search, and speed search (forward and reverse). Thus, you can quickly and precisely locate any desired scene for study or analysis.

High Reliability and Durability

Image stability assured by direct-drive capstan. Tape-transport mechanism mounted on sturdy die-cast chassis to assure complete stability.

Built-in RF Converter

Because the RF converter (CH 3/4) is built-in, video playback is possible on any TV.

Hour Meter

The hour meter indicates the approximately total time (power supply time), up to a maximum of 10,000 hours.

SPECIFICATIONS

Power Source:	120V AC, 60/50 Hz
Power Consumption:	Approx. 45W
Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	2 rotary heads, helical scanning system Luminance: FM azimuth recording Chrominance: converted subcarrier phase shift recording
Audio Track:	1 track
Tape Format:	Tape width 1/2" (12.7mm), μ s tape
Tape Speed:	SP; 1-5/16 i.p.s. (33.35mm/s), SLP; 7/16 i.p.s. (11.12mm/s)
Record/Playback Time:	2/6/24/72-hour mode with NV-T120 tape
FF/REW Time:	Less than 4.5 min. with NV-T120 tape
Input Level:	Video (BNC): 1.0Vp-p, 75 ohms unbalanced Audio (RCA): -20dB, 47 kohms unbalanced Alarm Signal input: contact closure for alarm Alarm Reset input: + 12V (min, current 2mA)
Output Level:	Video (BNC): 1.0Vp-p, 75 ohms unbalanced Audio (RCA): -6dB, 1 kohms unbalanced Alarm Recovery output: + 5V, 220 ohms RF Modulated: Channel 3 or 4 (selectable) 66.5dB μ (open voltage), 75 ohms unbalanced
Video Horizontal Resolution:	Monochrome: more than 300 lines Color: more than 240 lines
(on monoscope test pattern)	
Audio Frequency Response:	50-12,000 Hz (SP mode)
Signal-to-Noise ratio:	Video: more than 45dB (SP mode) Audio: more than 43dB (SP mode)
(Rohde & Schwarz noise meter)	
Operating Temperature:	41°F-104°F (5°C-40°C)
Operating Humidity:	35%-80%
Weight:	25.3lbs (11.5 kg)
Dimensions:	16-15/16" W x 4-9/16" H x 4-11/16" D 430(W) x 115(H) x 372(D) mm

Weight and dimensions shown are approximate.

\$1895.00

AG-6050
1/2" Time Lapse Video Cassette Recorder



The Panasonic AG-6050, a 1/2-inch time lapse VCR with advanced features for security, industrial, scientific and other professional applications.

Maximum recording time on a single VHS video cassette is 480 hours (20 days) in color or black & white. Simultaneous audio recording is possible in the 2-hour (real time) and 12-hour modes. 24, 48, 72, 120, 240-hour and 1-shot modes are also included to meet a variety of needs.

For surveillance and security applications, the deck is equipped with a sophisticated alarm function. Timer, auto-repeat, auto-rewind and series recording modes provide additional performance. To permit detailed analysis of recorded contents, advanced technology boosts resolution to an impressive 350 lines (B&W).

Convenient playback functions include 6 times normal speed forward and reverse search, reverse playback, forward/reverse field advance and automatic playback of alarm triggered segments.

The AG-6050 boasts rugged, durable construction. There are special protection features such as recording mode lock (to protect against tampering and accidental mode switching), recording monitor display of video head record status, power failure reset switch and auto-off display in case of improper internal conditions. Standard connectors are provided for video/audio input/output, simple video monitor hookup (8-pin terminal), camera switching and camera number and remote control.

RECORDER/PLAYER-TIME LAPSE SYSTEM 1/2"-VHS

Panasonic
AUDIO-VIDEO SYSTEMS GROUP

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

High-Resolution Playback

Black & white recording provides 350-line high resolution picture reproduction which is particularly valuable for close analysis in the still playback mode. The picture sharpness control can be adjusted for maximum viewing comfort.

9-Mode Recording

Nine recording modes are available. The real time 2-hour mode and 12-hour mode allow simultaneous audio recording. The time mode selector also offers 24, 48, 72, 120, 240 and 480-hour recording modes. Thus, unattended time lapse recording is possible for a maximum of twenty days on a single VHS video cassette. The 1-shot mode is convenient for special situations such as animation or data files.

	2-Hour	12-Hour	24-Hour	48-Hour	72-Hour	120-Hour	240-Hour	480-Hour	1-Shot
Sound Recording	○	○	—	—	—	—	—	—	—
Video Record Intervals (sec.)	1/60	0.1	0.2	0.4	0.6	1.0	2.0	4.0	1min. 30sec. (Manual) 2min. 30sec. (Auto)
Camera Selector Intervals (sec.)	1	12	1.6	2.0	2.4	4	8	16	4 (field)

Built-in Time/Date Generator with Alarm Function

This can be used to automatically add month, day, year, hour, minute and second displays to the recorded picture. Camera number can also be added. Data memory of date and time of alarm triggered recording can be recalled and displayed. If desired, the activation of an alarm can switch

the deck to the 2/12 hour mode for extra detail while also sounding an audible alarm and lighting an indicator lamp. The lamp stays on after the end of the tape is reached.

Multi-Function Recording Versatility

To better meet your particular needs, the AG-6050 is equipped with a variety of convenient recording functions. Timer (built-in) recording can be used to record at the same time every day or the same day every week. The auto-repeat function can be selected to rewind at the end of the tape and begin recording again. Simple auto-rewind is also possible. Series recording lets you cascade a number of AG-6050 decks so that when one finishes recording, the next begins.

Multi-Mode Playback

To quickly find desired segments of a recording, the AG-6050 is equipped with convenient 6 times normal speed search (normal mode), reverse playback and forward/reverse field advance. An alarm triggered recorded segment can be found and played back automatically at any time.

Other Features

- Rear panel facilities include video/audio input/output, 8-pin connector for video monitor, camera switching terminal, camera number terminal and 34-pin remote control connector
- 10,000-hour operation time meter for reminder of maintenance schedule
- Semi-fine slow motion interval playback
- Audio level meter with audio limiter
- 1/2H lock switch
- Counter memory
- Alarm buzzer switch

Specifications (Tentative)

Power Source: AC 120V 50/60Hz
Power Consumption: Approx. 70 watts
Recording System: 2 rotary heads, helical scanning
Tape Speed: 1-5/16ips (33.35mm/s) (2-hour mode)
Tape Format: Tape width 1/2 inch (12.7mm), high density tape
Recording/Playback Times: 2~480 hours with NV-T120
FF/REW Time: Approx. 4.5 min. (with NV-T120)
Recording Time Modes: 2/12/24/48/72/120/240/480 hours and 1-shot mode

This unit is designed exclusively for time lapse use. The special recording system will not allow interchanging recorded programs with a standard VHS unit.

VIDEO
TV System: EIA Standard (525 lines, 60 fields) NTSC color signal
Modulation System: Luminance; frequency modulation recording
 Color signal; converted subcarrier, phase shift recording
Input: TV (8 pins); 1.0Vp-p, 75 ohms unbalanced
 Video Input (BNC); 1.0Vp-p, 75 ohms unbalanced
Output: TV (8 pins); 1.0Vp-p, 75 ohms unbalanced
 Video Output (BNC); 1.0Vp-p, 75 ohms unbalanced
Horizontal Resolution: More than 350 lines for monochrome
 More than 240 lines for color
Signal-to-Noise Ratio: Better than 45 dB (Rhode & Schwarz noise meter)
AUDIO
Input: TV (8 pins); -20 dB, 100K ohms unbalanced

Output:
Track: Audio Input (RCA); -20 dB, 100K ohms unbalanced
 Mic; -70 dB, 600 ohms unbalanced
 TV (8 pins); 0 dB, 600 ohms unbalanced
 Audio Output (RCA); -6 dB, 600 ohms unbalanced
 1 track
 Better than 40 dB (2-hour mode)
 50 Hz to 10,000 Hz (2-hour mode)

CONNECTORS
Alarm Signal Input: Contact closure for alarm
Alarm Signal Output: +12V, 4.7K ohms
Alarm Recovery Output: +5V, 220 ohms
Alarm Reset Input: +2~+15V
1 Shot Signal Input: Contact closure for alarm
Series Recording Input: Contact closure for alarm
Series Recording Output: Open collector (max. 5.0mA)
Camera Switching Output: 5V/0V, negative pulse
 Pulse Width; 33.3m sec
Camera No. Input: Contact closure for alarm
Alarm Recording Time: Approx. 10 sec.~6 min./tape end
Alarm Recording Speed: 2-hour/12 hour modes
Operating Temperature: 41°F~104°F (5°C~40°C)
Operating Humidity: 35%~80%
Weight: 40.7 lbs. (18.5 kg)
Dimensions: 16-7/8" (W) x 7-7/8" (H) x 17-3/8" (D)
 430 (W) x 197 (H) x 441 (D)mm

Weight and dimensions shown are approximate.

Prices and Specifications Subject to Change Without Notice.

VR-75

AG-A100 The Dubbing Controller can be used for control of as many as 10 slave VTRs and 1 or 2 master VTRs.

A complete dubbing system designed for precise and efficient simultaneous dubbing. The ideal system to solve your dubbing problems, this new Panasonic Dubbing System offers complete control over virtually every step of the dubbing process, with remote control facilities for added convenience, permitting dubbing to as many as 40 VTRs at the same time.

- Either one or two master VTRs can be connected
- From one to ten slave VTRs can be connected
- Remote control of the start and stop of the playback mode of the master VTRs (one or two units)

- Remote control of slave VTRs (one to ten units): recording, playback, fast forward, rewind, forward and reverse search, stop, pause/still and cassette ejection
- As many as 40 slave VTRs can be connected by using the multi-connection system (with four Dubbing Controllers, AV Distributors and Switchers)
- Remote control possible with any master VTR which has an RCA-type record remote jack
- Mountable in 19-inch rack

SPECIFICATIONS

Remote Control Connector: 20-pin x 10

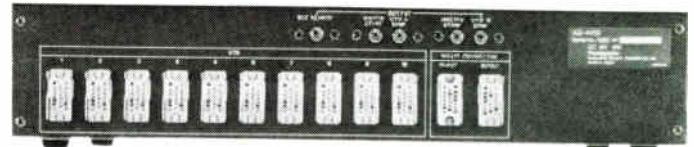
Master VTR

- Start/Stop:** RCA jack, open collector (A & B)
- Rec Start/Stop:** RCA jack, open collector
- Multi-Connection:** 20-pin (Input/Output)
- Weight:** 10.65 lbs. (4.8 kg)
- Dimensions:** 17"(W) x 3-1/2"(H) x 13"(D)
430 x 88 x 328mm
- Operating Temperature:** 41°F ~ 104°F (5°C ~ 40°C)
- Operating Humidity:** 30% ~ 80%
- Accessories Supplied:** Rack Angle x 2

AG-A100 \$750.00



FRONT VIEW



REAR VIEW

AG-DA100 The AV Distributor can be used for distribution of as many as 10 video or audio (2-channel) signals.

- Two inputs, A and B, selectable for two outputs, A (1 - 5) and B (2 - 10)
- Because loop-through type input terminals are used, video/audio distribution can be further expanded by using an additional AV Distributor
- Video and audio output levels can be adjusted while monitoring the level meter
- Distribution to as many as 40 slave VTRs is possible by using the multi-connection system (with four Dubbing Controllers, AV Distributors and Switchers)

SPECIFICATIONS

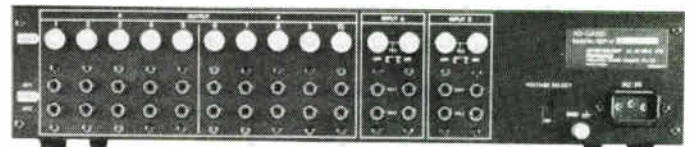
Power Supply: AC 110/120/220/240V, 50/60 Hz
Consumption: 14 W
Video Input: BNC x 4 loop-through
Video Output: BNC x 10
Audio Input: RCA jack x 8 (CH1, CH2), loop-through type
Audio Output: RCA jack x 20 (CH1, CH2), loop-through type -6 dB 600 ohms (-8, -20 dB selectable)

- Weight:** 12.76 lbs. (5.8 kg)
- Dimensions:** 17"(W) x 3-1/2"(H) x 13"(D)
430 x 88 x 328mm
- Operating Temperature:** 41°F ~ 104°F (5°C ~ 40°C)
- Operating Humidity:** 35% ~ 80%
- Accessories Supplied:** Rack Angle x 2
Power cord

AG-DA100 \$750.00



FRONT VIEW



REAR VIEW

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AG-SW100 The Switcher can be used to select any one of as many as 10 audio/video inputs for monitoring.

- Video/audio selection of one from as many as 10 input signals for monitoring
- Manual and automatic modes can be selected for the output signal
- Selection timing for the automatic mode ranges from about 1 second to 30 seconds
- Selection timing can be set according to the external pulse
- Audio monitoring selectable as either audio channel 1, mixed or audio channel 2
- Mode lock function for inhibition of remote control input (normal side) and front panel control (remote side)
- Automatic skip function makes selection quicker by skipping terminals with no input signal
- Interval switching function makes it possible to switch within the synchronized signal of the video signal if a video input signal is present at input terminal 1
- Mountable in 19-inch rack

SPECIFICATIONS

Power Supply: AC 110/120/220/240V, 50/60 Hz

Power Consumption: 9 W

Video

Input: BNC x 10 1.0Vp-p 75 ohms

Output: BNC x 2 1.0Vp-p 75 ohms

Monitor Output: BNC x 1 1.0Vp-p 75 ohms

Audio

Input: RCA jack x 10 (CH1)
RCA jack x 10 (CH2)
-6 dB 5K ohms

Output: RCA jack x 2 (CH1)
RCA jack x 2 (CH2)

Monitor Output: RCA jack x 1 -6 dB 600 ohms

Remote Control

Connector: 20-pin

Weight: 12.98 lbs. (5.9 kg)

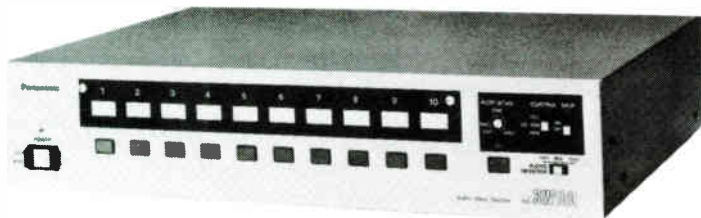
Dimensions: 17" (W) x 3-1/2" (H) x 13" (D)
430 x 88 x 328mm

Operating Temperature: 41°F ~ 104°F (5°C ~ 40°C)

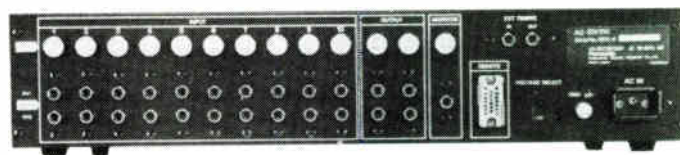
Operating Humidity: 35% ~ 80%

Accessories Supplied: Rack Angle x 2
Power cord

AG-SW100 \$850.00



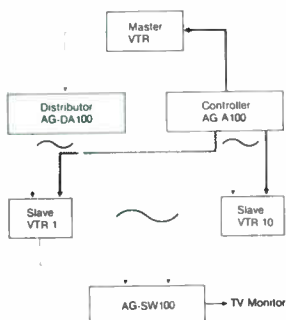
FRONT VIEW



REAR VIEW

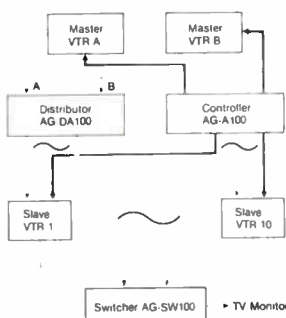
SYSTEM APPLICATIONS

BASIC SYSTEM



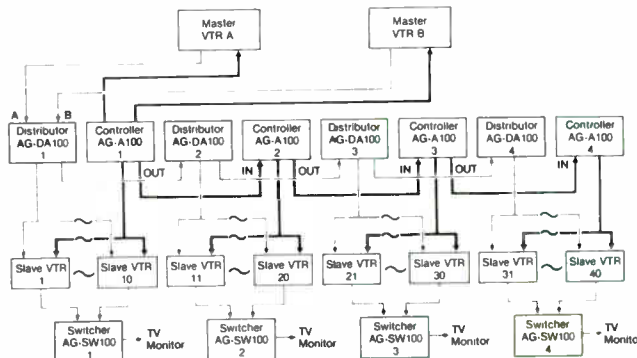
A Controller (AG-A100), AV Distributor (AG-DA100) and Switcher (AG-SW100) combine with one master VTR for dubbing to as many as 10 slave VTRs.

SYSTEM USING 2 MASTER VTRs



The Controller, AV Distributor and Switcher are combined with two master VTRs for dubbing to as many as 10 slave VTRs.

MULTI-CONNECTION SYSTEM

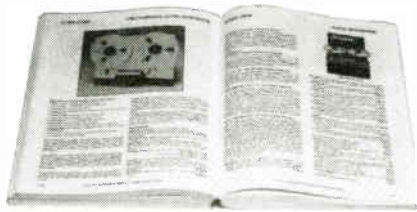


Up to 4 Controllers, 4 AV Distributors and 4 Switchers are combined to facilitate dubbing from

2 master VTRs to as many as 40 slave VTRs at one time, with full control over system operations.

Prices and Specifications Subject to Change Without Notice.

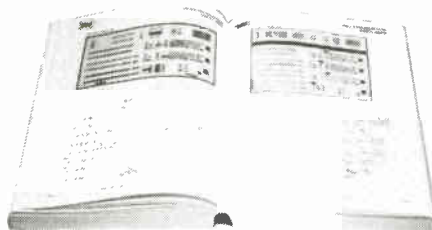
ILLUSTRATED TRADE REFERENCES



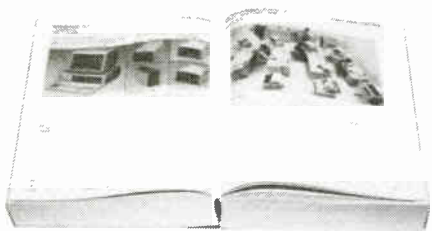
PROFESSIONAL AUDIO & COMMERCIAL/INDUSTRIAL SOUND EQUIPMENT Buyers Guide — 1280 pages of Studio & Remote Audio Recording Equipment & Systems for stage, concert, auditorium, arena, stadium, hall, church, industry, business, commercial, school, hospital & hotel sound reinforcement, background music, paging, intercommunications, telephone & telecommunications systems & equipment. **\$95.00**



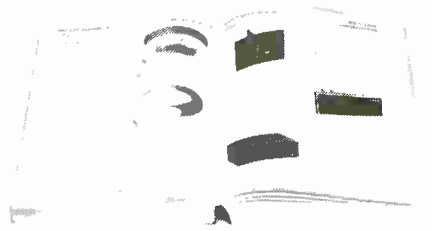
AUDIO-VISUAL & EDUCATIONAL/TRAINING COMPUTER EQUIPMENT Buyers Guide — 1280 pages of projectors, screens, recorders, learning aids, carrels, stands, tables, lecterns & equipment for multi-image & sound. Computers, disk drives, furniture, graphics, magnetic media, modems, monitors, networks, paper/forms, printers, power supplies, terminals & software. **\$95.00**



BROADCAST EQUIPMENT & SERVICES Buyers Guide — 1280 pages of Studio, Remote & Location Equipment & Systems for television, commercial & tape production, broadcast television, radio, cable, pay & satellite TV, special effects, animation & music video. **\$95.00**



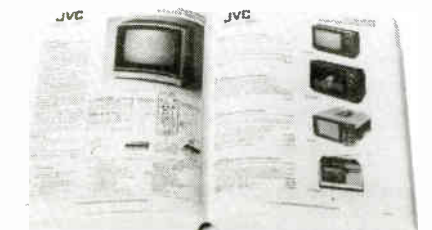
COMPUTER EQUIPMENT Buyers Guide — For Professional, Scientific, Business, Industrial & Commercial Applications. 1280 pages of micros, minis, disk drives, furniture, graphics, digitizers, plotters, boards, cables, cases, consultants, diagnostic & test keyboards, magnetic media, maintenance, modems, monitors, networks, paper/forms, power/protection, printers, software, supplies, tape drives, telecommunications, terminals. **\$95.00**



SECURITY & CCTV EQUIPMENT Buyers Guide — For Industrial, Professional, Commercial & Business Applications. 1280 pages of controls, annunciators, power supplies, dialers, closed circuit TV, wire, cable & equipment for remote monitoring, space protection & central station. **\$95.00**



PROFESSIONAL PHOTOGRAPHY/MOTION PICTURE Buyers Guide — Professionals in Photography, Motion Picture, Multi-Image, Audio-Visual, Film Production & Post Production — 1280 pages of studio, remote & location equipment systems & supplies for Still, Cine, AV & Film Production. **\$95.00**



INDUSTRIAL & PROFESSIONAL VIDEO EQUIPMENT Buyers Guide — 1280 pages of cameras, recorders, production & terminal equipment, monitors, lighting, telecine, RF equipment, enclosures, wire & cable. **\$95.00**

BILL DANIELS COMPANY, Inc.

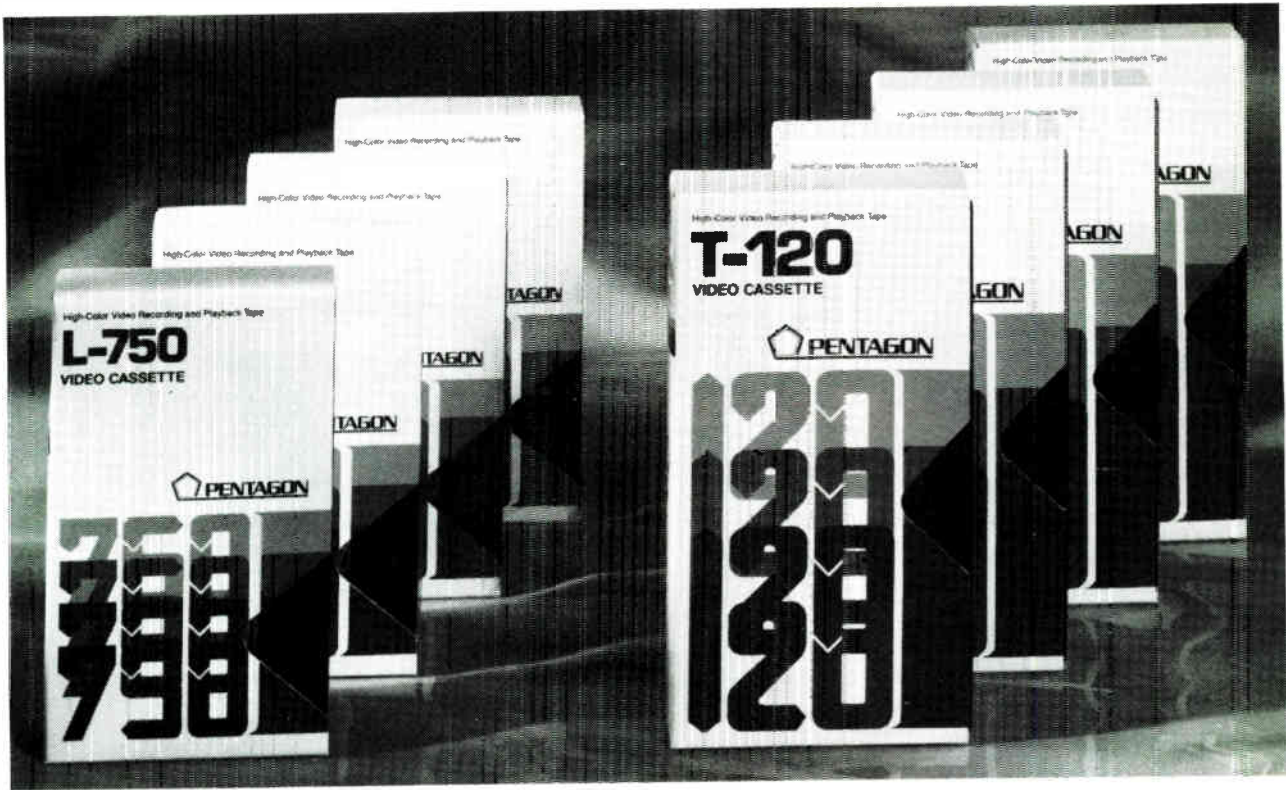
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4751 N. Olcott Ave.
Chicago, IL 60656
(312) 867-9200 (800) 621-3867
Telex 253058



HIGH-COLOR VIDEO RECORDING AND PLAYBACK CASSETTES

SPECIFICATIONS

Dimensions

Tape Width 12.650mm \pm .01mm
Thickness 19. mm + 1 -2mm

Physical Properties

Surface Resistivity less than 1×10^{11} Ω /sq.

Yield Strength

5% Elongation more than 1.8kg

Video Properties

R.F. output better than -2.0db
Signal/noise better than -2.0db
Chroma output \pm 2.0db
Chroma S/N + 2.0db
Pause Mode more than 60 min.

Audio Properties

Sensitivity \pm 2.0db
Frequency Response \pm 3.0db
Output Uniformity 0.3db
Erasability more than 65 db

VIDEO CASSETTE SIZES AVAILABLE

L-125 L-500
L-250 L-750

T-30 T-60
T-90 T-120

RECORDING TIME

REC MODE	3	2	1
L-125	45 min.	30 min.	15 min.
L-250	1 hr. 30 min.	1 hr.	30 min.
L-500	3 hr.	2 hr.	1 hr.
L-750	4 hr. 30 min.	3 hr.	1 hr. 30 min.
L-830	5 hr.	3 hr. 20 min.	N/A

RECORDING TIME

REC CODE	SP	LP	SLP
T-30	30 min.	60 min.	90 min.
T-60	60 min.	120 min.	180 min.
T-90	90 min.	180 min.	270 min.
T-120	120 min.	240 min.	360 min.

Other lengths available on special order.
Allow 8 weeks for delivery for lengths not listed.

PHASECOM CORP.

6365 Arizona Circle
Los Angeles, CA 90045
(213) 641-3501

PROGRAMMABLE VIDEO CASSETTE PLAYER/CHANGER

THE DIRECTOR

System 19, Model 12

The Automatic Programmable Video Cassette Player/Changer

The Director represents a revolutionary approach to video cassette utilization. Rather than time-link a series of VTRS, the technologically sophisticated DIRECTOR manipulates and plays a stack of video cassettes through a single VTR. Essentially, it is an electro-mechanical robot teamed with microcomputer technology to provide you with great versatility of system design and programming capability.

The Model 12 with its added abilities resulting from an integral Z-80 microprocessor, proudly succeeds the hundreds of Model 10's and 11's presently serving the industry. It is the only such comprehensive device on the market today, and its uniqueness is acknowledged by U.S. Patent #4133013.

Full Week Programming Capability

The DIRECTOR has random access to nineteen (19) video cassettes and the capability of programming an entire week or seven distinct schedule days...for automatic and continuous video distribution throughout a closed circuit or cable television system. Each cassette may contain an assembly of programs, with options for automatic "Intermission" displays between each program or cassette. Once programmed, no personnel assist is ever required. The DIRECTOR goes on working...seven days a week, week after week.

THE DIRECTOR: Loads, Plays, Unloads. Gives "Intermissions." Retrieves and Rewinds Video Cassettes. Automatically and in Any Sequence According To Your Keypad Entered Schedule.

AND You Can Specify the start of any cassette at any real time minute of the day.

THE DIRECTOR IS DESIGNED TO OPERATE WITH THE SONY U-MATIC 5000 VTR. The 3/4" tape format provides you with the best combination of economy and excellence of performance.

For Education • For Entertainment • For Training

Hospitals: FOR PATIENT EDUCATION, ENTERTAINMENT AND STAFF TRAINING.

Industrial Plants: FOR IN-PLANT TRAINING, SAFETY AND MOTIVATIONAL PROGRAMMING.

Hotels: FOR PREMIUM CHANNEL ENTERTAINMENT.

Schools, Fire and Police Depts.: FOR EDUCATIVE SUPPORT AND IN-SERVICE TRAINING.

Whether Your Program Schedule Needs Are Simple or Complex... The Director Can Solve Them.

For example, in multichannel systems you have options for time switching the video output to different channels. This has proved particularly important to hospitals for distributing programs to different floors or patient populations.

Important Facts About The Director

Each of its nineteen (19) video cassettes can start at any time of the day, any day of the week, in any sequence. Each cassette can have more than one program.

Its computer is capable of storing and executing in sequence seven (7) distinct schedule days. Each schedule day has a 49 event capacity.

Video cassettes automatically rewind at end of the day, or are automatically rewound immediately prior to their next play.

COMPUTER CONTROLLED PROGRAMMER

Sophisticated microprocessor control executes 7 distinct schedule days, with up to 49 events per day. It loads, plays, unloads. Gives "intermission" displays. Retrieves and rewinds videocassettes. All automatically.

CASSETTE RACK

Large 19 videocassette capacity with random access to each cassette in stack. You can specify the start of any cassette at any minute of the day.

Cue tones are placed before and after each program to signal computer.

CONTROL PANEL

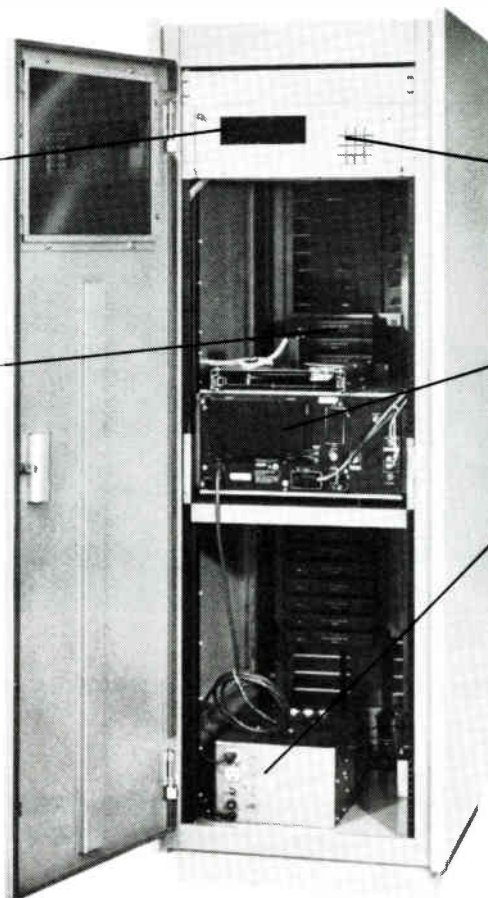
Simple keypad schedule entry. Allows easy review and editing of stored schedules. Has LED displays of the Real Time Clock and of elapsed time from start of each program.

PLAYER

The Sony Model 5000 Player. The 3/4" tape format provides the best combination of performance and economy.

POWER SUPPLY

Power supply and motor controls use 110V AC to furnish regulated DC.



\$8995.00

02 Graphic Generator
Intermission lines

021 Custom Programming
2 pages of 2 lines each. Each line has 12 characters.

Programmable Time Switch
The DIRECTOR has a Programmable Time Switch (PTS) Option. The PTS may be utilized by Multichannel Systems to change the output channel automatically at specific times, or coincident with specific programs.

ADDITIONAL OPTIONS AND ACCESSORIES

Ceramic Filter
Provides maximum protection against false cueing due to the presence of full audio or noise on audio track 1

Complex Cue Tone Generator
Crystal controlled, battery powered complex cue tone generator. Used to record cue tones compatible with Complex Tone Detectors.



**PIONEER VIDEO, INC.
INDUSTRIAL SALES DIVISION**

5150 E. Pacific Coast Highway/Suite 300
Long Beach, CA 90804
(213) 498-0300



LD-V1000 HIGH PERFORMANCE LASERDISC™ PLAYER

FEATURES:

- Full random access of up to 30 minutes (54,000 frames) of video, with two sound channels
- Plays heavy duty, aluminum-backed CAV discs as well as standard CAV discs
- Maximum access time of three seconds
- Bidirectional parallel computer interface with continuous player Status output
- Variable play speeds
- Multiple track skips in selected increments up to 100
- Maximum skip time less than 5ms
- Audio channels can be enabled during Variable Speed Play for special audio effects
- 512 user registers in player RAM
- Ability to load player RAM from disc resident "data dumps"

Designed for special purpose applications, the Pioneer-V1000 offers features tailored for external computer control in industrial, OEM, and other high usage environments.

Typical Applications:

- Simulators
- Arcade Games
- High level CAI systems

SELECTED SPECIFICATIONS

Operational Features:

Play
Fast Play: 1, 2, 3, 4, and 5 times normal play speed
Slow Play at 1/4 and 1/2 normal speed
Step Frame, Still Frame, and Scan functions
Frame accurate Search
Frame accurate Autostop
Selectable display of frame number, register number, and register contents

Design Features:

Helium neon laser
Top loading
Height 5.6 inches, 14.3cm
Width 20.7 inches, 52.5cm
Depth 15.6 inches, 39.5cm
Net weight 33 lbs, 15 kg
MTBF 4500 hours

Video Format:

NTSC, 525 lines, 350 lines horizontal resolution, 30 frames per second

SNR greater than 42 dB
Video signal available during track skip

Audio Characteristics

Two switchable audio channels
Frequency response 40-20,000 Hz
Signal-to-noise ratio better than 50 dB
Total harmonic distortion less than 0.5%

Power Requirements:

120 VAC, 60 Hz
60 watts
LD-V1000 POR

Accessories:

Wheeled carrying case for LD-V1000 \$300.00
Service Manual 50.00

LASERDISC PLAYERS



LD-V6000

LD-V6000 INDUSTRIAL LASERDISC™ PLAYER

PLAYER FEATURES:

- Multiple control modes:
 - Level II—Standalone programmable
 - Level III Computer peripheral (RS232C)
 - Normal linear play with RCU keypad
 - User programmable with RCU keypad
- Front panel disc loading
- Solid state laser signal pick-up
- Fast access—maximum of three seconds
- Compact—less than 17 inches wide, sized for rack mounting
- Built-in RS232C serial interface
- External sync and subcarrier 75 ohms looped through (adjustable)
- Playback sync out
- Video and RF out
- AutoRepeat
- Switchable AutoPlay
- Chassis access door to removable EPROM
- Displays to show frame number, register, register contents, command(s) entered, and multi-speed function entered
- CX™ noise reduction
- Plays CLV, CAV, and CAV aluminum backed discs
- Optional remote control

The LD-V6000 is a flexible, versatile industrial videodisc player. In one front loading, compact chassis is a videodisc player capable of meeting a wide variety of needs.

SPECIFICATIONS

Visual Access

- Three seconds or less access time from frame 1 to frame 54,000
- Under one second for nearby frame searches ($\pm 10,000$)

Environmental Requirements:

- Power: 120V $\pm 10\%$, 50/60 Hz, 40 watts typical, 120 watts max.
- Size: Height 5.9" (150mm), Width 16.6" (420mm), Depth 16.4" (415mm)
- Weight: 30.8 lbs. (14 kg)

Signal Parameters

- Video: NTSC, 525 scan lines, 30 frames per second
- 330 lines horizontal resolution
- SNR greater than 40 dB
- Timebase error less than $\pm 22ns$.
- Differential gain less than 10%
- Differential phase less than 12°
- Output impedance 75 ohms
- Audio: two discrete, switchable channels
- Frequency response 20-20,000 Hz $\pm 3dB$
- CX™ noise reduction decoding
- Signal-to-noise ratio 67 dB with CX™ 55 dB without
- Distortion - 1 KHz 75% mod, less than 0.5%
- Crosstalk - 1 KHz 75% mod, -50 dB
- Output impedance 3.3K ohms
- RF: Channel 3 or 4 out, switchable
- Output impedance: 75 ohms
- Synchronization: sync and subcarrier potentiometer adjustable
- Composite sync
 - 75 ohms loop-through, switchable terminator
- Subcarrier
 - 75 ohms loop-through, switchable terminator
- Sync out
 - TTL, 2K ohm pull-up

LD-V6000 \$1490.00

Accessories:

RU-V6000 Remote Control Unit \$ 45.00
Wheeled carrying case 300.00
Service Manual 50.00

Prices and Specifications Subject to Change Without Notice.

VR-81

PIONEER VIDEO, INC.
INDUSTRIAL SALES DIVISION

5150 E. Pacific Coast Highway/Suite 300
Long Beach, CA 90804
(213) 498-0300

LD-V4000 LASERDISC™ PLAYER

FEATURES:

- Front disc loading
- Solid state laser signal pick-up
- Compact size - ideal for rack mounting
- Autostop function when attached to external computer
- Expanded control features
- Maximum access time, six seconds
- Switchable AutoRepeat
- Serial computer ports
- Optional remote control keypad (wired or infrared wireless)
- Stereo headphone jack with volume control built into the keypad

The LD-V4000 can operate in a Level I standalone mode using chapters and picture stops and in a Level III mode when attached to an external computer.

Typical Applications:

- Learning centers
- Sales demonstrations
- Group lectures
- Point-of-sale information booths
- CAI with color visuals and sound
- Audi-visual libraries

SPECIFICATIONS*

Operational Controls:

- Normal play with two discrete audio channels
- Bidirectional Fast Play: 1, 2, 3 times normal
- Bidirectional Slow Motion: 1 frame per 1/2, 1/4, 1/8 or 1/16 second.
- Bidirectional Timed Step Frame: 1 frame each three seconds or each second
- Pause, with screen blanking
- Random Chapter Search
- Chapter Scan
- Frame Search (CAV)
- Picture Stop (CAV)
- Bidirectional Step Frame (CAV)
- Fast Scan
- Time Search (CLV)
- Bookmark Review (CAV)
- Selectable automatic disc Repeat or Reject
- Selectable audio channels, left, right, or stereo

Computer Ports:

- Serial TTL with pulse timing logic
- "Acknowledge" output
- Amphenol-type 24-pin rear panel, and DIN 8-pin front panel connectors

Remote Control Unit (Optional):

- Wireless infrared
- Wired, via 16" cable provided
- Stereo headphone jack with dual channel volume control, 1/4", 8 to 200 Ohms (wired mode only)
- Two AAA dry batteries included

Design Features:

- Front disc loading
- Solid state laser signal pick-up
- Height4.7 inches (12cm)
- Width16.5 inches (42cm)
- Depth16.3 inches (41.5cm)
- Weight27.3 lbs. (12.4kg)



Screen Displays:

- Frame number (CAV)
- Chapter number
- Elapsed time (CLV)
- Fast Play/Slow Play speeds

Front Panel Indicators:

- Power on/off
- Antenna/disc player out
- CX™ Noise Reduction status
- Audio channel(s)
- CAV/CLV mode
- Memory status
- Pause
- Play/standby
- Disc loading status
- Remote sensor

Video Format:

- NTSC, 525 scan lines, 30 frames per second
- 330 lines horizontal resolution
- Channel 3 or 4 RF output
- Video output

Audio:

- Dual discrete channel or stereo
- CX™ noise reduction decoding
- Frequency response: 20-20,000 Hz (± 3 dB)
- Signal-to-noise ratio
 - 70 dB with CX™
 - 58 dB without CX™

Power Requirements:

- 120 VAC 50/60 Hz
- 33 watts

Environmental Requirements:

- Operating temperature/humidity:
 - 41-95°F, 5-35°C, 0-90% non-condensing

LD-V4000 \$900.00

Optional Accessories

CU-V4000 Remote Control Unit \$ 45.00
Wheeled carrying case 300.00
Service manual 50.00

CX is a trademark of CBS, Inc.

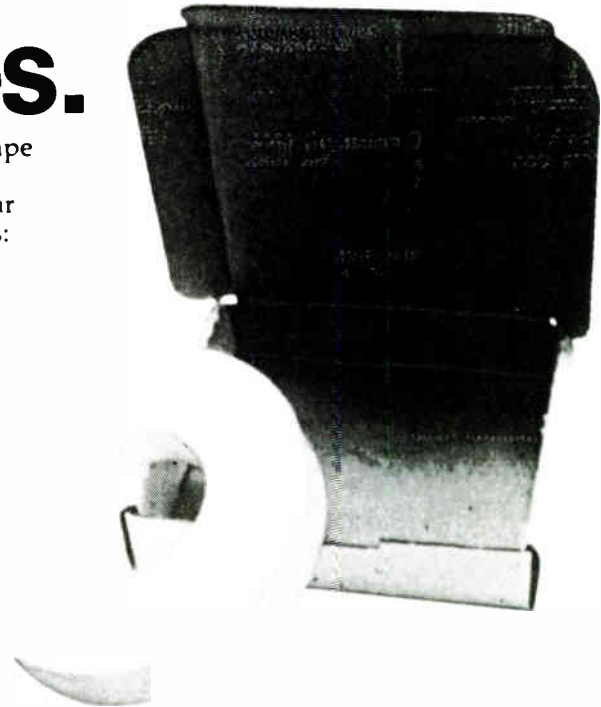
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Plio-Magic® improves the state of the art in tape reels! Plio-Magic's quality of endurance gives you precision reels that last and last for long-term dollar savings. There's a reel for all types of tape systems: 1" and 2" video tape reels with NAB centers. For shipping, transporting or storage, Plio-Magic custom designed cases are available for video tape reels and cassettes. All offer the unparalleled protection of PRC's super tough material assuring dust resistant, safe protection for your valuable programs. We maintain large inventories in four centralized locations, assuring you of product when your requirements dictate. To find out more about how we can protect your image call or write today.



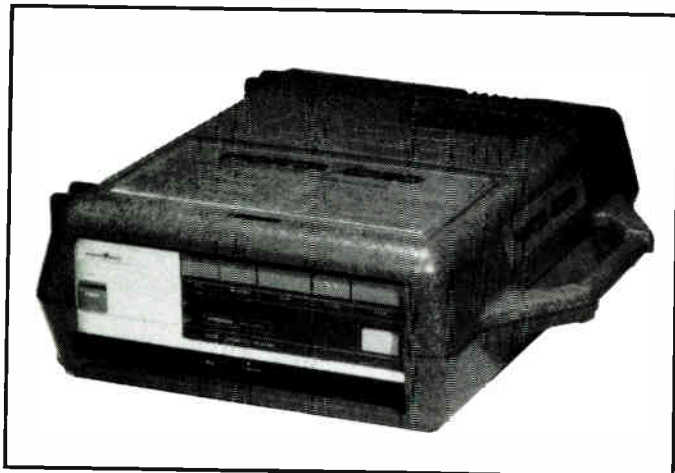
Product Number	Description	Selling Price	Ctn. Qty.
VIDEO TAPE REELS & BOXES			
		Less than Carton	1 to 25 Ctns
			26 Ctns & Up
14561	6½"x1"	2.53	1.40 1.25 48
14581	8"x1"	2.85	1.65 1.50 48
14555	5"x2"	1.01	.62 .495 60
14565	6½"x2"	2.24	1.45 1.05 48
14580	8"x2"	3.02	1.76 1.56 24
VIDEO TAPE REEL BOXES ONLY			
3955504	5½"x2"	.48	.43 40 60
3956504	6½"x2"	.60	.53 50 48
3958004	8"x2"	.67	.59 56 24
3956104	6½"x1"	.55	.48 46 48
3958104	8"x1"	.64	.56 53 48
70031BW	ZEBRA TAPE	6.00	6.00 6.00 12
VIDEO TAPE SHIPPING CASES - PLASTIC (Video Vault)			
	(Holds the following Cassettes)	1 to 24	25 & Up
38802	½" Beta Bulk	7.20	5.90 25
38800	½" Beta Plastic Box	5.90	4.60 25
38801	½" VHS Bulk	7.20	5.90 25
38800	½" VHS Plastic Box	5.90	4.60 25
38805	¾" U-Matic Bulk	5.90	4.60 25
328xx	3-10 ½" VHS or Beta	49.50	47.00 25
327xx	3-10 ¾" U-Matic	49.50	47.00 25
Inserts Only:			
39602	½" Beta Cassette	2.00	2.00
39601	½" VHS Cassette	2.00	2.00

Product Number	Description	Selling Price
VIDEO TAPE STORAGE BOXES - PLASTIC		
38213	Beta ½" Cassette Case with window	
38203	Beta ½" Cassette Case without window	
	Quantity	Price
	100-199	.91
	200-499	.83
	500-11,999	.79
	12,000-24,999	.77
	25,000-49,999	.71
	50,000-99,999	.67
	100,000 & Up	Available on Request
VIDEO TAPE STORAGE BOXES - PLASTIC		
38214	VHS/Beta ½" Cassette Case with window	
38204	VHS/Beta ½" Cassette Case without window	
	Quantity	Price
	100-199	.95
	200-499	.87
	500-11,999	.83
	12,000-24,999	.81
	25,000-49,999	.75
	50,000-99,999	.71
	100,000 & Up	Available on Request
38215	U-Matic ¾" Cassette Case with window	
38205	U-Matic ¾" Cassette Case without window	
	Quantity	Price
	100-299	1.37
	300-499	1.18
	500-11,999	1.15
	12,000-24,999	1.09
	25,000-49,999	1.04
	50,000-99,999	1.02
	100,000 & Up	Available on Request

PORTAVIDEO INTERNATIONAL, INC.

3325 West Catalina Drive
P.O. Box 11296
Phoenix, AZ 85061
(602) 269-2101 1-800-528-3350
Telex 299689

VHS VIDEOCASSETTE PLAYER



VIP-1100

Portable VHS Format Videocassette Player

FEATURES

- Playback up to 2 hours 40 minutes (T-160)
- Soft-touch controls with microprocessor
- Noise canceller (fine picture reproducer in STILL mode)
- Soft damped eject mechanism
- Auto rewind feature
- Still picture can be viewed
- Puts Hollywood movies at home within everyone's reach
- Brings learning to a higher level

It's portable Housed in a rugged, tamper-proof protective case and weighs approximately 16 pounds

It's quality-built Made with heavy-duty industrial components for years of reliable operation

It's convenient Connects in seconds to most any TV or monitor

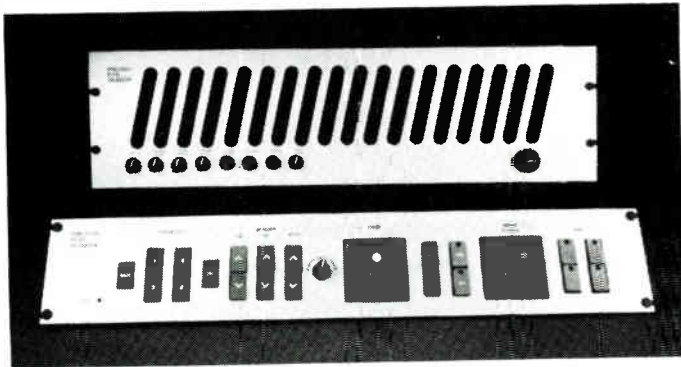
The VIP-1100 is a lightweight, portable VHS Format Videocassette player. It adds sight and sound impact to sales presentations. It can be used for employee orientation and training, recruitment, internal communications, hotels, motels and resorts, convention booths and hospitality rooms, school systems, libraries and self improvement programs.

SPECIFICATIONS:

Playback System	Twin heads, Helical Scanning system
Video Signal	525 lines, 60Hz standard TV signal
Tape Width	1/2 inch
Tape Speed	23.39mm/sec.
Playback Time	Up to 2 hours 40 minutes/T-160 tape
Usable Tape	VHS pre-recorded video cassette
RF Output	VHS ch-3 or 4
Video Output	1 Vp-p, 75 ohm unbalanced
Horizontal Resolution	240 TV lines for VHS standard recorded tapes
Video S/N	43 dB
Audio Output	Line output; - (minus) 2dB
Audio Frequency Response	100Hz to 10kHz
Audio S/N	40dB
Operation Temperature	40°F to 106°F (5°C to 40°C)
Main Input	117VAC 60Hz
Player Dimensions	10.62(W) x 4.33(H) x 12.4(D) inches
Player Weight	
With Case	Approximately 16 pounds
Without Case	Approximately 12 pounds
Accessory	RF Cord, switch box, instruction book
VP-1100	..... \$319.95
VP-1100 w/case	..... 379.95

PRECISION ECHO

3105 Patrick Henry Dr.
 Santa Clara, CA 95054
 (408) 988-0516 TWX 910-338-2328



SQUEEZER FEATURES

- Four discrete image sizes (1/4, 1/9, 1/16, 1/25)
- Universal image positioning on screen
- Four preset controls, governing image position, size, border/no border, border width and border color
- Image cropping from reduced size to infinity, and back
- Border/no border switching
- Variable border width
- 256 border colors, variable by saturation and hue
- Horizontal image flipping
- Dual joystick controls for image cropping and positioning
- Slimline master panel design
- Rugged, high reliability design

SPECIFICATIONS

Squeezer Controls
Image Size:

pushbutton selectable to four discrete sizes

Image Position:

joystick controlled to any position in screen, speed of movement controlled by joystick position

SQUEEZER/VIDEO DISC RECORDER

Image Cropping:

joystick controlled position, horizontal and vertical size, cropping speed potentiometer controlled pushbutton controlled

Freeze Frame: pushbutton controlled

Horizontal Invert: pushbutton controlled

Border On/Off: pushbutton controlled

Border Hue: dual pushbuttons for increase and decrease allow 256 color selections across the spectrum

Border Saturation: dual pushbuttons for increase and decrease

Border Size: dual pushbuttons for increase and decrease

Preselect: pushbutton storage of four separate parameter programs

Video Characteristics

NTSC Video Input Level: 1.0V p-p \pm 3 dB adjustable

NTSC Video Output Level: RS 170A standard

Genlock to composite video or black burst

Signal-to-Noise Ratio: $>$ 47 dB

Differential Phase: \leq 3°

Differential Gain: \leq 3%

Luminance Bandwidth: 4.2MHz (in squeezed mode)

Power Requirements

117V, 60 Hz

Environmental Specifications

Temperature: 32°F to 125°F

Humidity: 10% to 90% non-condensing

Mechanical Characteristics

Mainframe

Remote Controller

Interconnect Cable

Squeezer \$19,400.00

VIDEO DISC RECORDER

FEATURES

- User Erasable
- User Recordable and Re-recordable
- Video Only or Video and Audio
- 200 Frames/side, Video only
- 100 Frames/side, Video with Audio Messages
- Monochrome or Color
- Remote Operator Control or Computer Control
- Next Generation Video/Audio Discassette®
- Full Achievability and Interchangeability
- Random Access Frame Recall
- Very Lightweight, transportable
- Applicable in Teleconferencing, Medical, Training, Computer Graphics, Business Information, Advertising, and Professional Video Markets

S/N Ratio:

46 dB

Resolution:

240 lines, horizontal

Recording:

High Band Direct

Input Signal:

1.0V p-p

Output Signal:

1.0V p-p

Input/Output Z:

75 ohm

RF Modulated Output:

Ch3/ Ch4 switchable
 72 dBu, 75 unbalanced

Dimensions:

3.75" H x 16.5" W x 12" D

Disc:

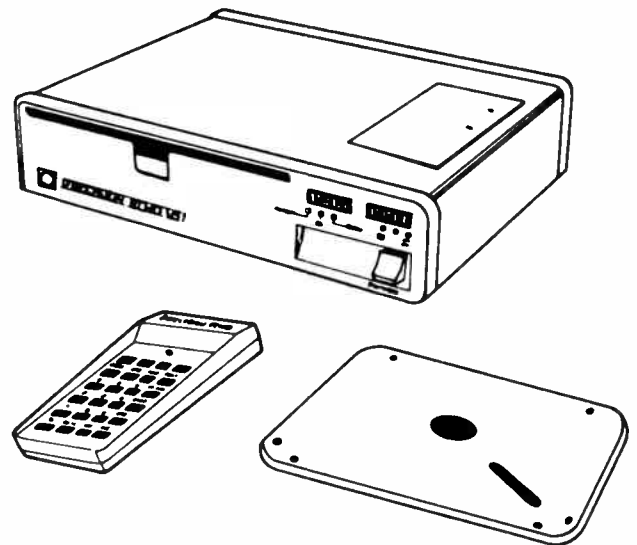
0.31" x 10.88" x 10.88"

Remote:

1" x 2.75" x 5.5"

Weight:

15 lbs.

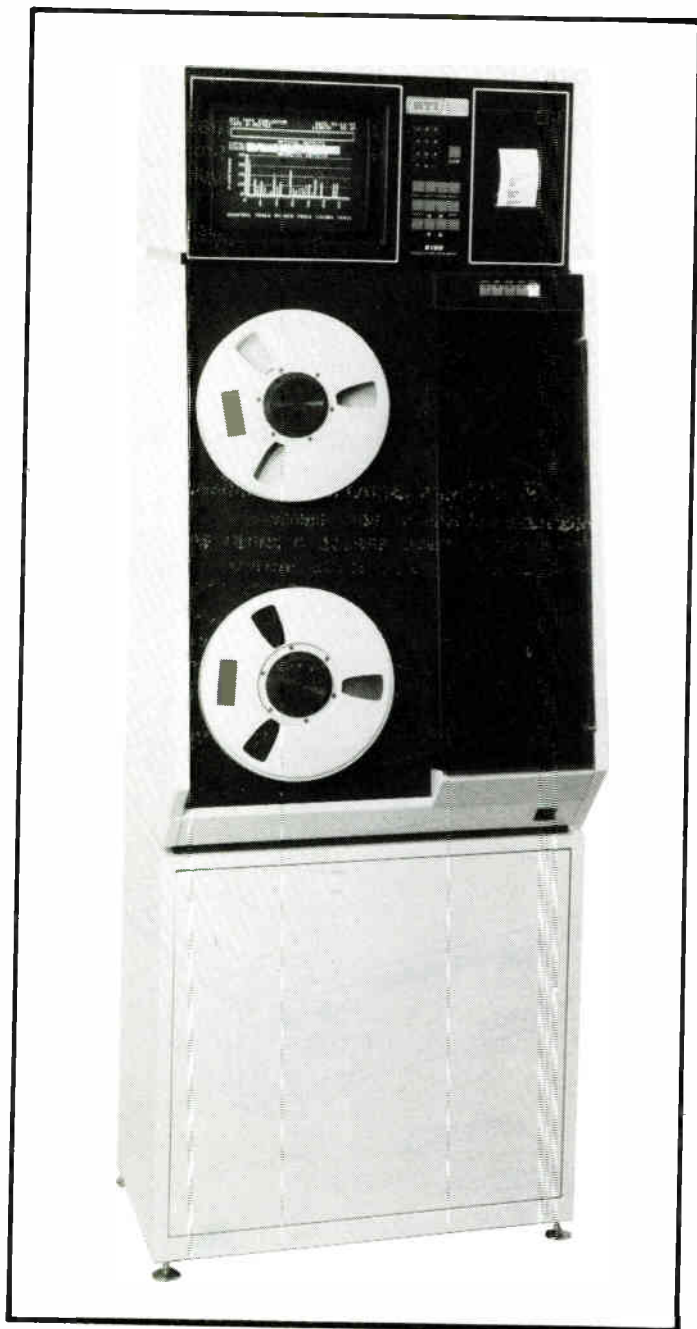


From the Engineering Labs of



TapeChek™ 6120

1" EVALUATOR/CLEANER



**When quality recordings count. . .
count on TapeChek 6120!**

- Operates automatically at over 20 times play speed
- 20-track "Micro-Pulse"™ dropout detection system
- Color CRT graphically displays magnetic and physical defect information
- Opto-electronic edge detection mode permits physical evaluation of pre-recorded tapes
- Cleans tape with dual vacuum system
- Reduces dropouts by burnishing tape oxide
- Printer provides hard copy reports of videotape condition
- Three microprocessors ensure fast and easy operation

**TapeChek 6120 1" Videotape
Evaluator/Cleaner \$16,800.00
Optional Base Cabinet 175.00**

A must for studio mastering, news, satellite feeds and all situations where costly retakes are impractical or impossible!

**WRITE OR CALL TOLL FREE
800-323-7520***

For more information on our complete line of videotape and film care products.



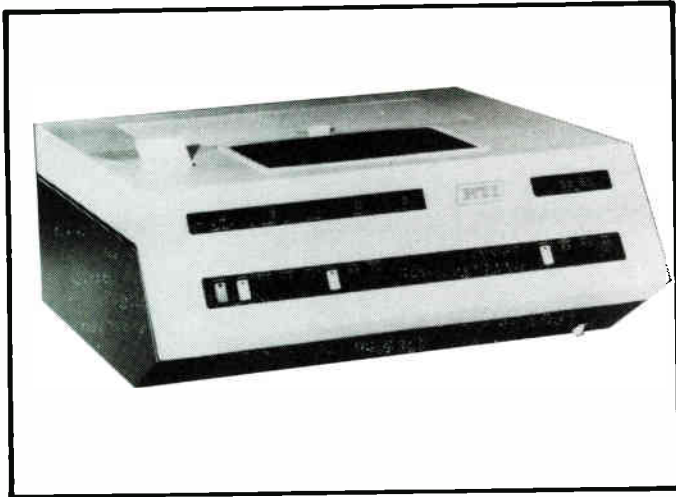
RESEARCH
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**TOTAL TAPE CARE SYSTEMS. . .
FOR VIDEO PROFESSIONALS**

The Ultimate in Professional Videotape Care

TapeChek™

PROFESSIONAL VT SERIES



Videotape Evaluators/Cleaners for:

- 3/4" U-Matic — Model VT3100
- VHS, M-Format — Model VT2100
- Beta, BetaCam — Model VT1100
- Fast, accurate, easy to use, operating at over 25 times standard play speed
- Inspects cleans and protects
- Provides digital defect reports of control, video and audio tracks
- Available with printer and high speed erase capabilities

VT3100, 2100, 1100 \$6,950.00
 Printer Option 875.00
 Erase Option 575.00

Tapechek 320 VHS Videotape Inspector/Cleaner

- Inspects and cleans a T-120 tape in less than 2 minutes
- High speed automatic operation inspects tape for wrinkles, creases and edge damage while cleaning magnetic oxide
- LED display reports number of defects
- Compact unit priced to fit smaller budgets

TapeChek 320 \$3,295.00

TapeChek™ 320



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VR-87

SCOTCH 3M CO.

MAGNETIC AUDIO/VIDEO
PRODUCTS DIVISION

3M Center — 223, 5S-01
St. Paul, MN 55144
(612) 733-1110

VIDEO TAPE

Helical Video Products

Color Plus U-Matic (3/4") Video Cassettes

"Scotch" Color Plus UCA Videocassettes use a special Color Plus oxide video tape which provides a superior signal-to-noise ratio, color-noise ratio and lower dropouts. Color Plus U-Matic videocassettes are fully compatible with all 3/4" U-Matic Videocassette Systems; the permanent oxide lubrication and time proven backside treatment assure low head wear, extended stop motion and maximum tape life.

Color Plus Mini-U-Matic Format

"Scotch" Brand Mini-U-Matic Videocassettes are designed for use with such recorders as the Sony VO-3800 and the JVC-CR-4400 portables. Features new Color Plus oxide. An "S" after the playing time (UCA-10S) indicates mini size.

Color Plus Master Broadcast U-Matic Format Video Cassettes

"Scotch" Master Broadcast U-Matic Series (MBU) provides a more rugged, longlife product suitable for repetitive playback and increment recording situations such as field (ENG) recording and editing applications. Other features are the same as the Standard Series UCA Videocassettes except MBU cassettes also feature the new Color Plus oxide. All MBU's are packaged in a distinctive two-tone shell that affords immediate identification, plus visual access to tape pack during crucial editing operations.

Color Plus Extended Play U-Matic Format

Designed for use where playing time is key factor. Features new Color Plus oxide. These Extended Play U-Matics use an extra thin polyester backing. Tape machines that are poorly aligned or with incorrect tensioning can cause damage to this product. Performance of this U-Matic on such equipment cannot be guaranteed by 3M.

Color Plus Professional Use Beta & VHS (1/2") Video Cassettes

"Scotch" Brand Color Plus Beta and VHS Format (1/2") Videocassettes, with proprietary back treatment, feature improved color, broadband signal-to-noise, improved RF output, low RF output, low dropouts, stop motion capability, and very low head wear. "Scotch" Beta and VHS Formats are compatible with all 1/2" videocassette recorders and playback units.

U-Do-It (U-Matic) Reload Kits

These items permit in the field reloading of damaged cassettes. The extra rugged Color Plus MBU Series U-Matic tape is supplied in the 18S (for Minis) and 30-minute (std. size) reload kits. The 60-minute reload kits use UCA U-Matic tape.

No. 361

No. 361 is longitudinally oriented video tape with many outstanding advantages, including a heavy duty binder system, long wearing oxide, improved signal-to-noise ratio, excellent audio and video output characteristics, low dropout count, a highly conductive backside coating which offers extended head life. Backside treatment of the film precludes interlayer slippage, scratching, and the attraction of foreign debris. No. 361 uses a thin coat of black oxide applied to a 1 mil polyester base.

No. 479

No. 479-1" helical video tape is a special application tape that can only be used with "high-density" video recorders such as the Bosch-Fernseh, Ampex VPR-1 and 2, Sony BVH-1000 and other machines having similar record/erase capabilities.

No. 480

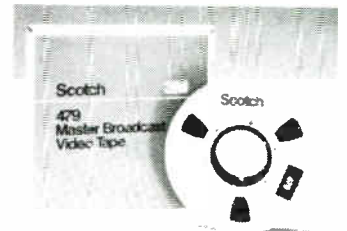
No. 480-1" helical video tape is an improved broadcast video tape providing better signal-to-noise, color-noise qualities and virtually eliminates head friction. For use on all recorders capable of using 479 mastering/broadcast video tape (type C recorders).

"SCOTCH" VIDEOCASSETTES

	Catalog Number	Playing Time	Reel Size	Units Per Carton	List Price
Color Plus U-Matics	UCA-5 CP C125 or C114	5		10	\$ 22.64
	UCA-10 CP C125 or C114	10		10	23.06
	UCA-20 CP C125 or C114	20		10	26.22
	UCA-30 CP C125 or C114	30		10	27.20
	UCA-60 CP C125 or C114	60		10	38.78
Color Plus Mini-U-Matics	UCA-10S C124 or C120	10		10	\$ 21.58
	UCA-20S C124 or C120	20		10	24.34
Color Plus MBU Series U-Matics	Mini MBU-5S C124 or C120	5		10	\$ 24.04
	Mini MBU-18S C124 or C120	18		10	27.10
	Reg MBU-30 C125 or C114	30		10	33.34
	Reg MBU-45 C125 or C114	45		10	40.60
Color Plus Extd. Play U-Matics	UCA-30S C124 or C120	30		10	\$ 37.94
	UCA-75 C125 or C114	75		10	56.78
U-Do-It Reload Kits	U-Do-It 18S (C.P. MBU Tape)	18		10	\$ 18.96
	U-Do-It 30 (C.P. MBU Tape)	30		10	23.86
	U-Do-It 45 (C.P. MBU Tape)	45		10	29.38
	U-Do-It 60 (C.P. UCA Tape)	60		10	31.36

"SCOTCH" HELICAL OPEN REEL VIDEO

Ampex VPR-1, 2, Sony BVH-1000, Video Memory VM-1000	479-1-1630-R179B	34	1" x 9"	5	\$ 90.14
	479-1-3170-R179B	66	1" x 9"	5	135.78
	479-1-4610-R179B	96	1" x 10-1/2"	5	205.18
Bosch-Fernseh, (BCN), IVC, Philips, RCA, RCA, BCN-20 Portable	479B-1-1630-R179B	34	1" x 9"	5	\$ 90.14
	479B-1-3170-R179B	66	1" x 9"	5	135.78
	479B-1-4635-R179B	96	1" x 10-1/2"	5	205.18
Ampex VPR-1, 2, Sony BVH-1000, Video Memory VM-1000	480-1-1630-R179B	34	1" x 9"	5	\$ 84.65
	480-1-3170-R179B	66	1" x 9"	5	142.57
	480-1-4610-R179B	96	1" x 10-1/2"	5	214.44
Bosch-Fernseh, (BCN), IVC, Philips, RCA, BCN-20 Portable	480B-1-1630-R179B	34	1" x 9"	5	\$ 94.65
	480B-1-3170-R179B	66	1" x 9"	5	142.57
	480B-1-4635-R179B	96	1" x 10-1/2"	5	214.44
Sony, Panasonic, Concord EIAJ/STD Recorders	361-1/2-1200-R148B	30	1/2" x 5-1/8"	10	\$ 37.51
	361-1/2-2400-R153B	60	1/2" x 7-1/8"	10	63.64
IVC 800 (B & H, RCA, GPL, Chester)	361-1-2150-R139B	62	1" x 8"	5	\$ 84.65



TAPE ACCESSORY DESCRIPTIONS

- B At end of catalog number indicates in box.
- R-139 1" x 8" phenolic NAB hub reel with aluminum flanges.
- R-148 1/2" x 5-1/8" plastic reel designed for EIAJ VTRs.
- R-153 1/2" x 7-1/8" plastic reel designed for EIAJ VTRs.
- R-179 Flat flange reel in box in sizes for 9" or 10-1/2" reels.
- R-174 1" x 9" 3-window reel with precision hub without friction ring.
- C-87 High impact shipping container for 1" NAB hub reels to 10-1/2" diameter.
- C-114 Plastic album U-Matic format videocassette storage box.
- C-116 High impact shipping container for 2" x 10-1/2" Cushion flange NAB hub reels only.
- C-120 Plastic album Mini-U-Matic format videocassette storage box.
- C-122 High impact shipping container for the R-179 reel (10-1/2").
- C-124 Plastic hanger system shipper/storage case for Mini-U-Matic format videocassettes.
- C-125 Plastic hanger system shipper/storage case for Standard U-Matic format videocassettes.
- C-127 Plastic hanger system shipper/storage case for Beta format videocassettes.
- C-128 Plastic hanger system shipper/storage case for VHS format videocassettes.
- C-130 Plastic album Beta format videocassette storage box, equal to "A" 1/2" packaging.
- C-131 Plastic album VHS format videocassette storage box, equal to "A" 1/2" packaging.
- C-132 High impact, "Fire Retardant" shipping case for the 9" R-179 reels.

SCOTCH 3M CO.

MAGNETIC AUDIO/VIDEO
PRODUCTS DIVISION

3M Center — 223, 5S-01
St. Paul, MN 55144
(612) 733-1110

VIDEO TAPE REELS/ ACCESSORIES



Hanger System

You're looking at the videocassette case design that's triggered a revolution in 3/4" videocassette storage and handling — it's at the focal point of the all new "Scotch" Hanger System from 3M Company. The shipper/storage case (patents applied for) represents a whole new design concept based upon the idea that hanging your videocassettes not only is the best way to protect them from damage, but it will organize your storage area and simplify the way you transport videocassettes. So "hang on" with the "Scotch" Hanger System.

SHIPPER/STORAGE CASE (C-125)

This sturdy C-125 box can be labeled and mailed with no other packaging needed. Its unique hanging hook and slide-snap latch are only two of the features of this case that opens to reveal a recess for storing the record-lockout button when you are not using the record mode. The stabilizer bars on the box bottom and the expandable, spine-handle simplify storage and retrieval in any situation.

CASE HANGER (CHB-4)

This extruded aluminum bar comes in four-foot lengths and can be cut to fit doors, desk backs, cabinets, shelves, walls, etc. Standard screws or bolts anchor them securely to concrete, wood, plaster or metal surfaces, and when properly mounted, the bars can maintain weights of up to 240 pounds. We call it the Case Hanger.

CASSETTE HANGER (CHH-10)

In order to handle unboxed, bulk videocassettes, 3M has designed the Cassette Hanger to snap in and out of the case hanger bar providing a hook on which to place the videocassette. The Cassette Hanger is made of heavy duty plastic and will fit any case hanger bar, whether it is attached to a shelf, door, wall or mobile cart. Another flexible adaptation of "Scotch" Hanger System.

SIX-PACK HANGER (6 PH)

What else could you call a sturdy, aluminum frame that easily totes up to 6 videocassettes, with the case or without, than the "Six-Pack Hanger"? Simple to carry, lightweight and yet durable, the "Six-Pack Hanger" can be adapted to hold bulk cassettes by adding two Cassette Hangers and two Cassette Hanger Clips on the center bar.

	PER CTN	CASE LOT
CHB-4 Bar	25	\$5.12
6-PH Six-Pack	1	7.78
CHH-10 Plastic Hanger	50 Bags 500 Units	2.55
C-124 Mini-U-Matic Hanger shipper/storage case	60	3.31
C-125 Std. U-Matic Hanger shipper/storage case	50	3.31
C-127 Beta Hanger shipper/storage case	50	3.80
C-128 VHS Hanger shipper/storage case	50	3.80

VIDEO TAPE REELS AND ACCESSORIES

	CATALOG NUMBER	SIZE	PER CTN	CASE LOT PRICE
Empty Metal Video Reels In Box	R139B-1-8	1" x 8"	5	\$ 29.85
	R159B-1-12-1/2 CFR	1" x 12-1/2" CFR	2	39.94
Empty Cardboard Video Boxes	VB-1-10-1/2	1" x 10-1/2"	5	7.91
	VB-2-10-1/2	2" x 10-1/2"	2	8.15
Empty (blue) High Impact Shipping and Storage Containers	C87-1-10-1/2	1" x 10-1/2" NAB	5	16.85
	C116-2-10-1/2	2" x 10-1/2" CFR	2	27.24
The C116 shipping case must be used with the Cushion Flange 2" reels (R150).				
Fire Retardant Empty Plastic Shipper/Storage Cases	C129-1-10-1/2	1" x 10-1/2" for Flat Flange R179	5	19.28
	The C122 shipping case is recommended for use with Cushion Flange 10-1/2" reels such as R179.			
Empty Videocassette Boxes	C132-1-9	1" x 9" for Flat Flange R179	5	17.29
	C-114 Album Box		50	3.31
Head Cleaning Videocassettes	C-120 Mini-U-Matic Album Box		70	3.31
	C-130 Beta Album Box		100	3.80
	C-131 VHS Album Box		100	3.80
	UES-HC (Mini; C-124; recorded)		2	32.27
Empty Plastic Spot Reels In Box	B-HC (Beta; Hanger box; unrecorded)		10	24.43
	V-HC (VHS; Hanger box; unrecorded)		10	25.55
Empty 1/2" Video Reels In Vinyl Box	VRB-2-6-1/2	2" x 6-1/2"	12	4.17
	VRB-1-6-1/2	1" x 6-1/2"	20	3.81
Empty Vinyl Video Box	R148B-1/2-5-1/8	1/2" x 5-1/8"	10	5.22
	R153B-1/2-7-1/8	1/2" x 7-1/8"	10	5.66
Empty Vinyl Video Box	VB-1/2-5-1/8	1/2" x 5-1/8"	10	2.92
Aluminized Splicing Tape — .5mil	* 392 1/4-66	1/4" x 66'	12	4.80
	* 392 1/2-66	1/2" x 66'	12	7.18
Aluminized Splicing Tape — .25mil	* 393 1/4-66	1/4" x 66'	12	4.80
	* 393 1/2-66	1/2" x 66'	12	7.18
* Splicing Tapes Nos. 392 and 393 are recommended for all video splicing requirements and are mandatory for use on all controlled wind video tapes.				
Diagonal Stripe Hold-Down Tape	8125 1/4-90	1/4" x 90'	12	5.20
Universal Blank Labels	UMA-L Mini Album Box Label		500	100 + .21/Label
	UMSL Mini Videocassette Label		500	.21/Label
	USSL Standard Videocassette Label		500	.21/Label
	USAL Standard Album Box Label		500	.21/Label
	UUSL C-125/4 Shipper Label		500	.21/Label
	UHAL 1/2" Album Box Label		500	.21/Label
	UHCL 1/2" Shipper Label		500	.21/Label
	UBSL Beta Videocassette Label		500	.21/Label
	UVSL VHS Videocassette Label		500	.21/Label

Prices and Specifications Subject to Change Without Notice.

PULSING VIDEORASER®



Erases Industrial and Broadcast quality video tapes

Industrial and Broadcast video tapes are the hardest to erase. The VP-2001's powerful pulsing action removes all traces of video and audio signals, and even time codes from *all grades of 3/4" U-Matic and 1" and 2" video tape*. Hand-held, weighs just 4 pounds. With thermal cutoff switch.

VIDEORASER SPECIFICATIONS

NEW

	data processing		consumer video		professional video
	VX-1401	VX-1402	VX-1601	VX-1602	VP-2001
Voltage	115 V	230 V	115 V	230 V	115 V
Cycles	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Current	8 A	4 A	12 A	6 A	10 A
Diameter (in.)	4¾	4¾	4¾	4¾	4¾
Height (in.)	4½	4½	4½	4½	4½
Weight (lbs.)	4.0	4.0	4.0	4.0	4.0
Magnetic Flux	1400	1400	1600	1600	2000
<small>(open field gauss @ ¼ inch)</small>					
Auto-Cutoff	No	No	Yes	Yes	Yes
Pulsing Feature	No	No	No	No	Yes
UL Listed	No	No	Yes	No	No
Price	\$52.00	\$65.00	\$65.00	\$74.00	\$165.00

For lower-powered requirements, including erasing data, Sonar makes the VX-1401 Dataraser™. All prices are in U.S. Dollars and are subject to change.



3000 Stirling Road, Hollywood, FL 33021 305-981-8800

Voice, Video and Data
Communications Products and Services

VIDEORASER®



Erases high grade videocassettes

The Videoraser Model VX-1601 erases VHS and Beta videocassettes in seconds for better, cleaner recordings! Reduces wear on expensive video recording heads. Erases regular, High Grade, and Extra High Grade tape. UL Listed with thermal cutoff switch. 4 pounds. No home video system is complete without it!

Sonar Radio Corporation has been manufacturing magnetic tape erasers for over 20 years.

With the new Pulsing Videoraser, Model VP-2001, we now offer 3 power levels, addressing the data processing, consumer video, and professional video markets.

Full One-Year Warranty. Your complete satisfaction is guaranteed. All Models are covered by Sonar's Full One-Year Warranty against defects in materials and workmanship.

SPECIFICATIONS

	Videoraser	
	VX-1601	VX-1602
Voltage	115 V	230 V
Cycles	60 Hz	50 Hz
Current	12 A	6 A
Diameter (in.)	4¾	4¾
Height (in.)	4½	4½
Weight (lbs.)	4.0	4.0
Magnetic Flux <small>(open field gauss @ ¼ inch)</small>	1600	1600
Auto-Cutoff	Yes	Yes
Pulsing Feature	No	No
UL Listed	Yes	No
Price	\$65.00	\$74.00

All prices are in U.S. Dollars and are subject to change.



3000 Stirling Road, Hollywood, FL 33021 305-981-8800

**Voice, Video and Data
Communications Products and Services**



VP-5030



VO-5630

VP-5030 U-MATIC® PLAYER

- PAL/SECAM/NTSC playback
- High-efficiency power supply permits operation on 110-to-220 Volts, 50/60 Hz
- Front-loading tape transport
- Tilt-out control panel
- Aluminum diecast chassis
- Direct drive drum and capstan, and digital servo IC
- High-speed search at 5 times normal speed in forward/reverse
- Still frame capability
- Long pause with automatic tape protection
- Built-in "programmed operation" function allows automatic tape-segment repeat
- End-of-tape automatic rewind
- Optional RF modulator allows playback on ordinary TV receiver
- Optional timer allows unattended, automatic playback start and stop
- Random access/interactive capability
- Exclusive data in/out connector for RX-303CE/RX-353CE Automatic Search Controls
- External sync input capability
- Weight: 48 lbs. 8 oz.
- Dimensions: 9-3/8"H x 17-5/8"W x 20-3/8"D **\$2500.00**

VO-5630 U-MATIC® RECORDER/PLAYER

- PAL/SECAM color recording/playback plus NTSC color playback
- High-efficiency power supply permits operation on 110-to-220 Volts, 50/60 Hz
- Front-loading tape transport
- Tilt-out control panel
- Aluminum diecast chassis
- Direct drive drum and capstan, and digital servo IC
- High-speed search at 5 times normal speed in forward/reverse
- Still frame capability
- Long pause with automatic tape protection
- Built-in "programmed operation" function allows automatic tape-segment repeat
- Dub-In/Dub-Out connectors
- End-of-tape automatic rewind
- Audio dubbing capability
- Audio limiter function
- Random access/interactive capability
- Exclusive data in/out connector for RX-303CE/RX-353CE Automatic Search Controls
- External sync input capability
- Weight: 51 lbs. 7 oz.
- Dimensions: 9-3/8"H x 17-5/8"W x 20-3/8"D **\$2950.00**

SONY®

Sony Drive
Park Ridge, NJ 07656
Sony Video Communications (201) 930-1000

VIDEOCASSETTE RECORDER/PLAYERS

VP-5000 U-matic Player

The most convenient and versatile U-matic player ever made. Up front controls and indicators, an all new front loading tape transport and standard EIA rack mounting head the list of exterior improvements. Inside, there's new technology with advances in the drive components, power supply and control circuits.

Features

- New front loading tape transport • Aluminum diecast chassis
- Direct drive for both drum and capstan • Digital servo LSI with "Phi Square Servo" • DC motor reel servo • x5 forward and reverse search • Noiseless still — Fine still picture • 19" rack mountable
- High picture quality • Tilt-out control panel • New switching regulator power supply provides wide range of voltage and frequency, with low power consumption — 45W • Exclusive connector for RX-303 and RX-353 • Random access/interactive capability • Micro-computer based logic control

\$1895.00



VP-5000



VO-5600

VO-5600 U-matic Recorder

A new generation of U-matic recorder with new all time high levels of performance and flexibility. Totally redesigned around a new front loading tape transport, the unit has a super-functional, tilt-out control panel and is 19" rackmountable. New circuitry and components further enhance the reliability and accuracy of video's most relied-on format.

Features

- New front loading tape transport • Aluminum diecast chassis
- Direct drive for both drum and capstan • Digital servo LSI with "Phi Square Servo" • DC motor reel servo • x5 forward and reverse search • Noiseless still — Fine still picture • 19" rack mountable
- High picture quality • Tilt-out control panel • New switching regulator power supply provides wide range of voltage and frequency, with low power consumption — 55 W • Exclusive connector for RX-353 and RX-303 • Random access/interactive capability • Micro-computer based logic control

\$2395.00

VO-5800 Videocassette Recorder

Sony expands the upgraded Type 5 U-matic system with another convenient new recorder. Compact and even more lightweight than the VO-5850 Editing Recorder, the VO-5800 offers the same professional quality and design, with front-loading tape transport, and allows smooth manual editing. It can be used alone; or as a player in a sophisticated, rack-mountable automatic editing system.

- Front loading tape transport • Aluminum diecast chassis • Direct drive of both drum and capstan • Digital servo LSI with "Phi Square Servo" • DC motor reel servo • Backspace edit capability • Vertical interval switch between two video inputs • Feeder capability with full RM-440 interface • Bidirex dial search, x1/30 to x5 • U-scan, high speed picture search (with RM-440 and KCS tape) • LED tape counter with mark-in function • Switching regulator power supply provides wide range of voltage and frequency and low power consumption — 75W • Noiseless still • 19" rackmountable • Tilt-out control panel • High picture quality • Exclusive connector for RX-353 • Random access/interactive capability • Video Recording: Rotary two-head helical scan system • External sync lock capability • Color Signal: Converted subcarrier direct recording • Video Signal System: EIA standards, NTSC color

\$4590.00



VO-5800



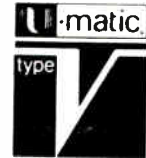
VO-5800H

VO-5800H High Resolution B/W Videocassette Recorder

The VO-5800H is a High Resolution Monochrome Videocassette Recorder with over 400 lines of resolution per field (525/60 field) compatible with both EIA and non-EIA Standard Signals from 525 to 1125 lines. The unit is equipped for widespread applications in institutions, research and medicine, able to record images from medical diagnostic systems such as X-ray, Ultrasound, Computer Axial Tomography (CAT) Scans and even Positive Emission Tomography (PET) Scans. The VO-5800H may be used to record special signals from infrared and radar systems and can also be employed as a "ground" player for an airborne VTR.

- Front loading tape transport • Aluminum diecast chassis • Direct drive of both drum and capstan • Digital servo LSI with "Phi Square Servo" • DC motor reel servo • Backspace edit capability • Vertical interval switch between two video inputs • Feeder capability with full RM-440 interface • Bidirex dial search, x1/30 to x5 • U-scan, high speed picture search (with RM-580 and KCS tape) • LED tape counter with mark-in function • Switching regulator power supply provides wide range of voltage and frequency and low power consumption — 75W • Noiseless still • 19" rackmountable • Tilt-out control panel • Exclusive connector for RX-353 or RX-303 • Random access/interactive capability • Video Recording: Rotary two-head helical scan system • External sync lock capability • 2 audio tracks • Dimensions: 9-3/8"H x 17-5/8"W x 20-1/2"D (237 x 446 x 518mm) including projecting parts and controls • Weight: 53 lbs. (24kg)

\$6000.00



U-MATIC RECORDER

VO-5850 Professional Editing U-Matic Recorder

Features

- New front loading tape transport
- Aluminum diecast chassis
- Drum and capstan direct drive
- Digital servo LSI with "Phi Square Servo"
- DC motor reel servo
- Sophisticated editing with full RM-440 interface
- Bidirex dial search +/-1/30 ~ x5, 15 different speeds
- High speed picture search (with RM-440 and KCS tape)
- LED tape timer with mark-in function
- Built-in preroll editing capability
- Noiseless still
- Accurate editing +/-2 frames with one preview
- New power supply with switching regulator, wide range of voltage, frequency and low power consumption — 75W
- 19" rackmountable
- Loop through video input with 75 Ohm termination switch
- 2 video output connectors — BNC
- Tilt-out control panel
- High picture quality

Specifications

System

Video recording: Rotary two-head helical scan system

Luminance: FM recording

Color signal: Converted subcarrier direct recording

Video signal system: EIA standards, NTSC color

Video

Video Input: VIDEO IN, BNC type, x2 with 75 Ohm termination switch and loop-through output. 1.0 V (p-p) + 1.0-0.5 V (p-p), 75 Ohms, unbalanced, sync negative. DUB IN, 8 pin, x1 TV, 8 pin, x1

Video Output: VIDEO OUT, BNC type, x2. 1.0 V (p-p) +0.2 V, 75 Ohms, unbalanced, sync negative DUB OUT, 7 pin, x1 TV, 8 pin, x1

Horizontal resolution: Monochrome: 340 lines

Color mode: 260 lines

Signal-to-noise ratio: Monochrome mode: more than 49 dB

Color mode: More than 46 dB

Subcarrier: SCIN, BNC type, x1.2 V (0.5-3V) (p-p), 75 Ohms, unbalanced, sync, negative
Sync: EXT SYNC IN, BNC type, x1.4 V (25V) (p-p), 75 Ohms, unbalanced, sync negative
Recording level: Automatic and manual

Audio

Audio Input: LINE CH-1, CH-2 IN, Phono jack, x1 in each -10 dB, 47 K Ohms. MIC CH-1, CH-2, Phone jack, x1 in each. -60 dB, for 600 Ohm microphones TV, 8 pin, x1

Audio Output: LINE CH-1, CH-2 OUT, Phono jack, x1 in each -5 dB (with 47 K Ohms load). HEADPHONES, Stereo phone jack, x1 for 8 Ohm headphones
Level: Adjustable (-24 dB to -46 dB). TV, 8 pin, x1

Signal-to-noise ratio: Better than 48 dB (at 3% distortion) Both channels 1 and 2

Frequency Response: 50 15,000 Hz (channels 1 and 2)

Recording level adjustment: Manual, with audio limiter

Edit

Assemble: Video and audio channel 1 and audio channel 2 (simultaneously)

Insert: Video, audio channel 1 and/or audio channel 2 independently (selectable)

Preroll: Possible

Automatic editing: Possible with the RM-440 Automatic Editing Control (optional)

Accuracy: +/-2 frames

Special Instructions

Pause: A still picture is obtained, with long pause function

Search: Possible (still, and 1/10 to 5 times of normal speed in forward and reverse directions). Picture search is possible with the RM-440 when KCS tape is used

Tracking control: Possible

Skew control: Possible

Sync System: Internal and external

Vertical-interval switcher: Internal

Dropout compensator: Internal

Tape Transport

Tape speed: 3-3/4 ips (9.53 cm/sec)

Recording or playback time: 60 min (with KCA-60)

Fast forward and rewind time: Within 4 min (with KCA-60)

Wow and flutter: 0.2% RMS

Tape compatibility: U-Matic videocassette tape

Usable tape: KCA, KCS type tape

General

Power requirements: 100-120 V AC +/-10%, 50/60 Hz +/-10%

Power consumption: 75 W with RM-440

AC OUT: 400 W maximum, unswitched

Operating position: Horizontal

Storage temperature: -4°F to + 140°F (-20°C to +60°C)

Operating temperature: 41°F to 104°F (5°C to 40°C)

Dimensions: 9-3/8"H x 17-5/8"W x 20-1/2"D (237 x 446 x 518mm) including projecting parts and controls

Weight: 55 lb. (25 kg)

Supplied accessory: AC power cord

Optional Accessories

RM-440 Editing Control Unit

Sony CVM and PMV Series Color Video Monitors

Sony DXC Series Color Video Cameras

RX-353 Auto Search Control

RX-303 Auto Search Control

KCS-1C Cleaning Cassette

RCC-5F Remote Control Cable

VDC-5 Dubbing Cable (5 m)

Monitor Connecting Cables: VMC-3P (3 m),

VMC-5P (5 m), VMC-10P (10 m)

Video Responder System: VRC-100, VRS-100, VRD-100, VRP-100

Price

\$7395.00

VO-6800
PORTABLE VIDEOCASSETTE RECORDER/PLAYER
 For All ENG and EFP Applications

FEATURES

- Real Time Tape Counter
- Logic Control System
- Backspace Editing Capability
- Picture Search
- Soft Eject
- Rain and Dust Proof
- RF Modulator
- Remote Control Capability

A Video Confidence Head makes it possible to monitor just-recorded images simultaneously when the VO-6800 is in the REC mode. These images can be seen in the camera viewfinder when the return video button on the camera is pressed. This function allows the operator to make sure that what he is shooting is actually being recorded on the tape.

Two NiCad Batteries (NP-1) can be installed for longtime battery operation (approximately two hours for VTR recording or one hour with the Sony DXC-M3/M3A). Since the unit can also be powered by a single battery, continuous recording or playback is possible if two batteries are used in tandem. Pop-up battery compartments are adopted for easy battery replacement.

The Tape Remaining Time can be seen in the camera viewfinder when the return video button is pressed. Eight different indications can be displayed, 15 min, 10 min, 5 min, 4 min, 3 min, 2 min, 1 min and Tape Before End. (Accuracy is ± 7 seconds when using Sony's KCS-10K/20K Series). This function conveniently lets the operator know just how much shooting time he has left.

A Complete Warning System notifies the operator of recording conditions in three different ways.

- 1.) LED indicators on the control panel of VTR.
- 2.) Warning sound (1kHz) output to the earphone of the VTR.
- 3.) Blinking warning lamp in the camera viewfinder.

This threefold warning system makes sure the operator knows in advance of any malfunctions so that the recording will come out perfect from the first time.

Picture and Sound Quality A sendust head and XLR connector (balanced) bring the signal-to-noise ratio to 50dB and widen the frequency response range from 50 to 15,000Hz. Wow and flutter is reduced to a mere 0.2%, thanks to a highly accurate capstan motor.

RF Modulator Using the RFK-634 RF modulator (option), you can play back tapes on a conventional TV receiver.

Remote Control Capability Using the RM-680 remote control unit (option), you can control REC, PLAY, F. FWD, REW, PAUSE, and STOP operations. (The cable can be extended up to 50 meters).

VO-6800
Portable U-Matic Recorder/Player **\$3800.00**



SPECIFICATIONS

VIDEO

Video Recording System: Helical scanning FM recording

Video Heads: Rotary 4-head (R/P x 2, Confi. x 2)

Video Signal System: EIA standard, NTSC color

Input: Composite, sync, negative 1.0 + 1.0/-0.5 Vp-p, 75 ohms, unbalanced

Output: Composite, sync, negative 1.0 \pm 0.2 Vp-p, unbalanced

Horizontal Resolution: 260 TV lines

Signal-to-Noise Ratio: Better than 45dB (color)

AUDIO

Input: MIC: -60dB, more than 3 K ohms, balanced, CAMERA MIC: -20dB/-60dB switchable, more than 3 K ohms balanced, LINE: (CH-1/L/DUB, CH-2/R): +4dB, more than 10 K ohms balanced

Output: LINE: (CH-1/L/MONI, CH-2/R): +4dBm (at 600 ohm load) balanced, EARPHONE: -20 to -33dB (at 8 ohm load) adjustable.

Signal-to-Noise Ratio: Better than 50dB

Frequency Response: 50 to 15,000 Hz

Dimensions: Approx. 10 $\frac{1}{8}$ "W x 4 $\frac{5}{8}$ "H x 13 $\frac{3}{8}$ "D (258 x 117 x 338mm). Not including projecting parts and controls.

Weight: Approx. 12 lbs., 2 ozs., (5.5kg)

CMA-8	Camera Adaptor / AC Adaptor	\$390.00
BC-1WA	Battery Charger for NP-1 (for 4 NP-1's)	300.00
RM-680	Remote Control Unit	110.00
AH-6800	Carrying Handle (hard)	POR
NP-1	Rechargeable Battery	60.00
RFK-634	RF Modulator	POR

BETAMAX RECORDER/PLAYERS

SLP-305 Betamax® Player

- Beta I, II and III playback capability with automatic mode selection and LED mode indication
- 2 head system
- Variable speed playback in all Beta modes, Beta I: Still, continuous slow, variable speed play up to X2 and auto frame advance, Beta II: Still, continuous slow, variable speed play up to X4, Beta III: Still, continuous slow, variable speed play up to X6
- BetaScan high speed search in all modes
- Repeat/Auto Stop function
- Exclusive connector for RX data
- 33-pin remote control connector enhances random access and interactive applications
- Logic controlled tape transport design allows direct switching between tape travel modes
- End-of-tape automatic rewind
- Dual audio tracks for playback of stereo or bilingual recording
- Direct head drum and capstan drives
- Switchable RF modulator
- Soft eject cassette mechanism
- Weight: 23 lbs. 13 oz.
- Dimensions: 5-7/8"H x 15-1/2"W x 13-7/8"D

- SLP-305 Betamax® Player \$1160.00
- SLP-305/RX-303 Betamax® Player w/automatic search controller 1510.00
- SLP-305/RX-353 Betamax® Player w/programmable automatic search controller 1560.00



SLP-305

SLO-325 Betamax® Recorder/Player

- Beta I recording and Beta I, II and III playback capability with automatic mode selection and LED mode indication
- Advanced four head system
- Variable speed playback in all Beta modes, Beta I: Still, continuous slow, variable speed play up to X2 and auto frame advance, Beta II: Still, continuous slow, variable speed play up to X4, Beta III: Still, continuous slow, variable speed play up to X6
- BetaScan high speed search in Beta I mode
- Repeat/Auto Stop function
- Exclusive connector for RX data
- 33 pin remote control connector enhances random access and interactive applications
- Logic controlled tape transport design allows direct switching between tape travel modes
- End-of-tape automatic rewind
- Dual audio tracks permit stereo or bilingual recording
- Direct head drum and capstan drives
- Switchable RF modulator
- Soft eject cassette mechanism
- Weight: 27 lbs. 2 oz.
- Dimensions: 5-7/8"H x 15-1/2"W x 13-7/8"D

- SLO-325 Betamax® Recorder/Player \$1650.00
- SLO-325/RX-303 Betamax® Recorder/Player w/automatic search controller 2000.00
- SLO-325/RX-353 Betamax® Recorder/Player w/programmable automatic search controller 2050.00



SLO-325

SLO-340 Betamax® Portable Videocassette Recorder

The SLO-340 is a portable unit for recording and playing back Betamax videocassettes. It weighs less than 20 lbs., and will record in either color or black and white for up to 90 minutes on its internal lightweight battery pack. The SLO-340 offers all the basic Betamax advantages. Quality recording on smaller, less expensive videocassettes. Lower equipment costs, and the security of equipment proven in the field. Lower shipping and distribution costs. Simple one-button operation and interchangeability of cassettes.

- SLO-340 Betamax® Portable Videocassette Recorder ... \$1295.00



SLO-340

SLO-420 Betamax® Videocassette Recorder/Player

- Super-compact size 3-1/8"H x 17"W
- Front-loading and front-panel control
- Beta II and III recording capability plus Beta I, II and III playback
- SwingSearch™ continuous search in forward/reverse at normal speed, 2 times normal speed, 1/5th and 1/10th normal speed, plus slow-motion, frame-by-frame advance and still frame
- Beta-Scan II™ search in forward/reverse at 9 times (Beta II) and 15 times (Beta III) normal speed
- Linear time counter shows exact tape position in hours, minutes, seconds
- Optional Wireless Remote Commander® RMT-312 with recording and speed control functions
- Double azimuth head eliminates frame jitter and delivers noise-free slow motion
- New Micro Timing Phase Circuitry maintains precise transitions at record/pause and on/off
- Tab Marker™ electronic indexing system
- Two channel audio
- External sync lock capability
- Weight: 20 lbs. 12 ozs.
- Dimensions: 3-1/8"H x 17"W x 13-3/8"D

- SLO-420 Betamax® Videocassette Recorder/Player \$1340.00



SLO-420

Sony, Betamax, Beta Hi-Fi, BetaScan, BetaSkipScan, Express Tuning and Remote Commander are registered trademarks of Sony Corp. of America.

SONY

Sony Drive
Park Ridge, NJ 07656
(201) 930-1000

Sony Video Communications

BETAMAX RECORDER/PLAYER



SLO-383

SLO-383 EDITING BETAMAX® VIDEOCASSETTE RECORDER/PLAYER

- Direct drive drum and capstan
- Rotary erase heads, vertical interval switching and framing servo system
- Interfaces with RM-440 Automatic Editing Control Unit
- BetaScan® high-speed search
- Playback at 1/20th to 2 times normal speed in forward/reverse
- Insert and assemble editing capabilities
- External sync-lock connector plus built-in sync-signal generator
- Manual audio recording level control plus audio limiter function
- Dub-In/Dub-Out connectors allow Beta to Beta, U-matic to Beta or Beta to U-matic tape duplication
- Soft cassette eject mechanism
- Random access/interactive capability
- Exclusive data connector for RX-353/303 Automatic Search Controls
- Weight: 34 lbs. 3 oz.
- Dimensions: 7-1/2"H x 15-1/2"W x 16-3/8"D

The SLO-383 is an editing Betamax recorder/player with new features that make the Betamax system even more effective for education and training, sales demonstration, corporate communications and a variety of other uses.

New Beta-Scan high-speed picture search ability helps you find what you want while viewing coherent picture at up to 15 times normal in the forward mode and up to 10 times normal in reverse (average speed in forward and reverse is 8 times normal).

The SLO-383 offers full editing capability, including edit preview, when used with the RM-440 Automatic Editing Controller. Video, Audio 1 or Audio 2 may be selected independently for insert editing, or handled simultaneously in assembly editing. Dubbing connectors let you work easily in both Beta and U-Matic formats.

The design of the SLO-383 assures top-rate performance. Direct-drive power for both head drum and capstan maintain precise tape alignment and smooth play, with video signal-to-noise ratio at 45 dB in color mode.

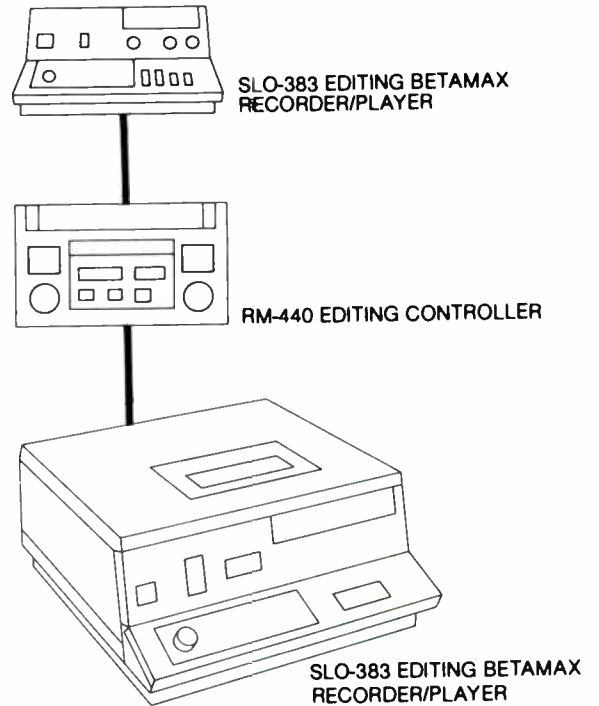
\$2335.00

SLO-383PAC

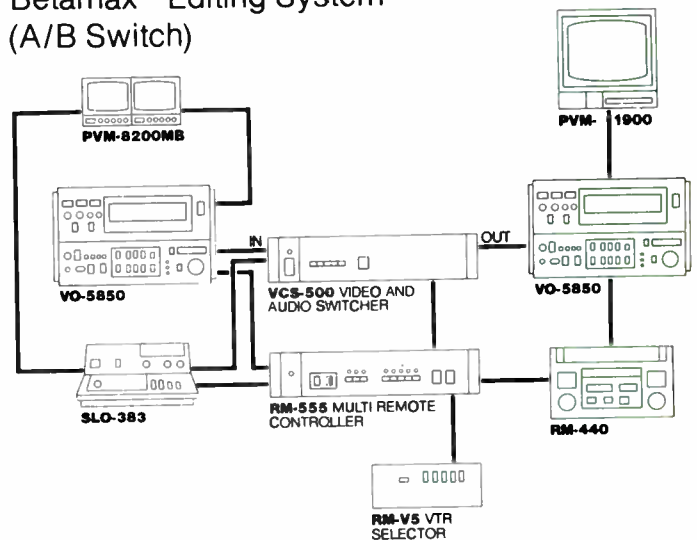
Contains 2 SLO-383, 1 RM-440, 1 VDC-5 and 2 RCC5F

\$5945.00

Typical Betamax® Editing System



Betamax® Editing System (A/B Switch)



SONY

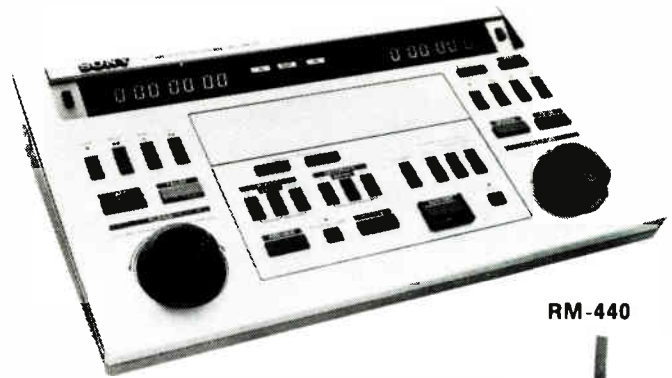
Sony Drive
Park Ridge, NJ 07656
(201) 930-1000

CONTROLLERS/INTERFACE

RM-440 Automatic Editing Control Unit

- Interfaces with both U-matic Editing Recorder/Players and Betamax Editing Recorder/Players, allowing U-matic to U-matic, Beta to Beta or Beta to U-matic editing
- Edit point memory system memorizes the edit-in points for a player and a recorder and 1 edit-out point for either machine
- Insert and assemble editing capabilities
- Preview function allows rehearsal before actual edit is made
- Review function allows instant edit review
- Return/jump function: in preview mode, tapes return to edit-in point; in review, tape fast forward to a point 5 seconds before the cutout point, then returns to normal speed to review edit-out section
- Butt edit and trim edit functions
- Cue-Out connector provides cue signal for camera recording and computer generated graphic insertion
- Automatic safety pause release
- Weight: 4 lbs. 14 oz.
- Dimensions: 3-1/8"H x 15-3/8"W x 8-3/4"D

\$1770.00

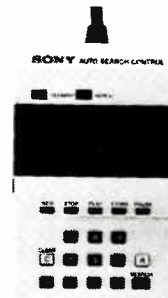


RM-440

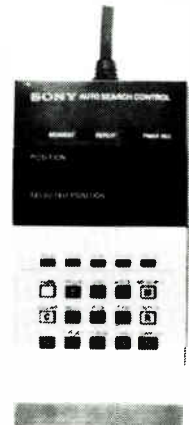
RX-353 Programmable Auto Search Control

- Hand-held remote keyboard
- Memorizes locations of up to 63 programs and commands automatic playback of any 8 segments in any sequence
- Compatible with most Betamax and U-matic units
- Functions include automatic repeat plus skip and return
- Segment data recording capability for automatic playback retrieval
- Timer-activated programmable operating capability with Betamax and U-matic units
- Weight: 1 lb. 5 oz.
- Dimensions: 1-1/2"H x 3-5/8"W x 7-1/8"D

\$400.00



RX-303



RX-353

RX-303 Programmable Auto Search Control

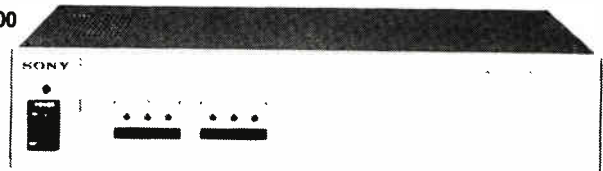
- Hand-held remote keyboard
- Memorizes locations of up to 63 programs and commands automatic playback of any 8 segments in any sequence
- Compatible with most Betamax and U-matic units
- Functions include automatic repeat plus skip and return
- Weight: 1 lb. 2 oz.
- Dimensions: 1-1/2"H x 3-5/8"W x 7-1/8"D

\$350.00

IF-500 Multiple Interface Box

- Institutional and broadcast equipment combination capability allows institutional VCRs to be controlled from broadcast equipment and institutional editing or remote controllers to be used with broadcast VCRs
- Preroll Time Selection from 0 to 15 seconds in convenient 1 second increments
- REF Video In signal for greater editing accuracy
- Rack mountable in EIA standard 19" racks
- A separate IF-500 is required for each combination of broadcast and institutional units
- Weight: approx. 15.5 lbs.
- Dimensions: 3-3/4"H x 19"W x 11-7/8"D

IF-500



Accessories Supplied

- AC power cord
- Rack mount kit (2 brackets, 4 screws, 4 washers)
- Operation/service maintenance manual

Audio Cables

- RK-5XLRf (16', XLR female-phono)
- RK-5XLRm (16', XLR male-phono)

Note: Separate connections are required for each combination of broadcast and institutional units.

Note: Equipment functions are restricted by the connecting equipment. **\$1150.00**

Videocassette Cables

RCC-5C	16' remote control extension cable for RM-410, RM-300, RM-430, RX-303, RX-353, IF-500; Shipping Weight 2 lbs. 4 oz.	\$105.00
RCC-5E	20 Pin to 33 pin cable for VO-2860A, VP-2260 to RM-440, IF-500; Shipping Weight 2 lbs. 4 oz.	110.00
RCC-5F	33 pin cable for SLO-383 or VO-5850, RM-440 or IF-500; Shipping Weight 2 lbs. 4 oz.	110.00
RCC-05ET	33 pin to 20 pin conversion cable for 20 pin VTR to RM-500/580, 1.5', IF-500; Shipping Weight 2 lbs. 4 oz.	58.00
RCC-15FT	Extension Cable for RCC-5F, 50'; Shipping Weight 4 lbs. 2 oz.	175.00
SGC-5	BNC-UHF coaxial cable, 15'; Shipping Weight 13 oz.	13.00
VDC-5	Video dubbing cable for VO-5850, SLO-383, 15'; Shipping Weight 14 oz.	50.00
VMC-220A	Adaptor cable for SL-2000, multi-connector w/ video in/out (pin plug), audio in/out (mini plug); Shipping Weight 7 oz.	35.00

Videocassette Accessories

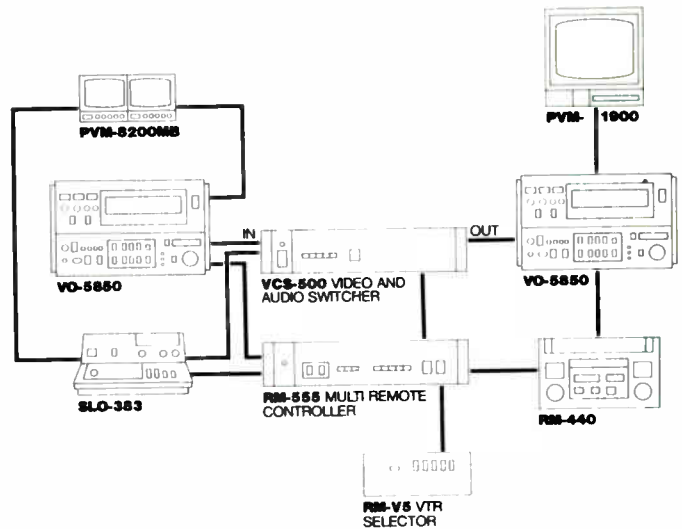
AH-220	SL-2000 Hard handle; Shipping Weight 8 oz. ...	\$ 20.00
DA-500	Video/Audio distributor 1 input/5 outputs. Shipping Weight 13 lbs. 7 oz.	700.00
LC-230	SL-2000 soft carrying case; Shipping Weight 2 lbs. 3 oz.	60.00
FA-20	Timer recording/playback adaptor for U-Matics; Shipping Weight 4 oz.	6.00
RFK-634	Switchable CH3/CH4 RF modulator for Type V U-Matics; Shipping Weight 1 lb. 8 oz.	100.00
VCS-500	Video/Audio switcher w/5 inputs; Shipping Weight 15 lbs. 3 oz.	1250.00

U-MATIC EDITING SYSTEM

UNITS SHOWN

- 2 VO-5850 U-matic Editing Recorder/Players
- RM-440 Automatic Editing Control Unit

FOR COMPLETE DETAILS, SEE INDIVIDUAL PRODUCT DESCRIPTIONS.

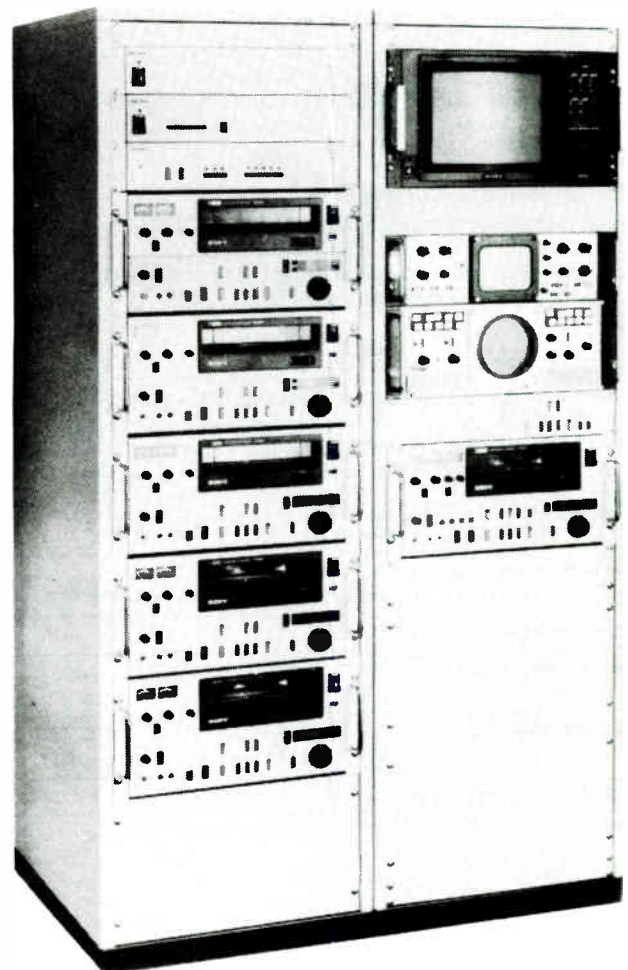
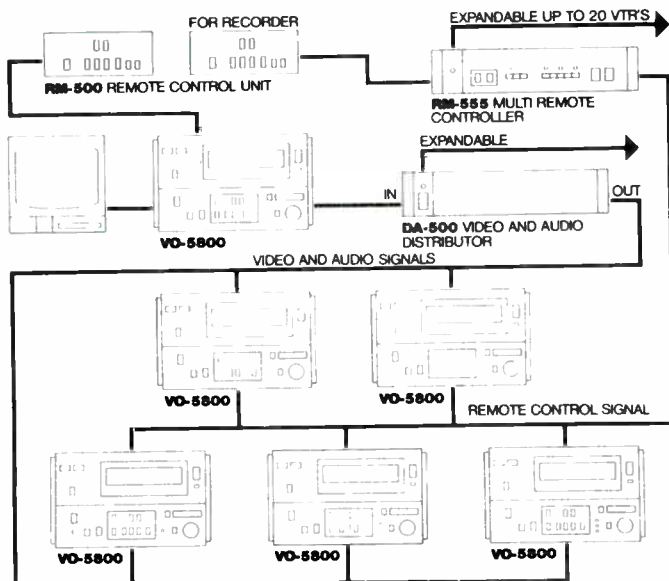


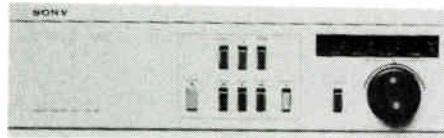
U-MATIC DUPLICATION SYSTEM

UNITS SHOWN

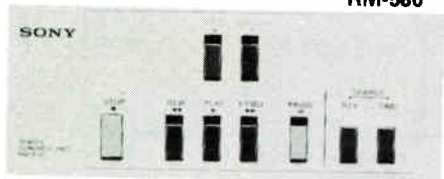
- 1 VO-5850 U-matic Editing Recorder/Player
- 5 VO-5800 U-matic Recorder/Players
- DA-500, VCS-500, RM-555, RM-500
- Waveform Monitor/Vectorscope
- 12" Color Monitor

FOR COMPLETE DETAILS, SEE INDIVIDUAL PRODUCT DESCRIPTIONS.

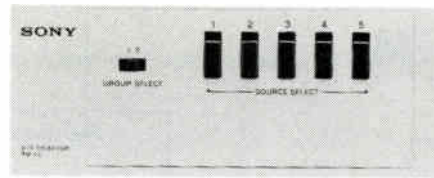




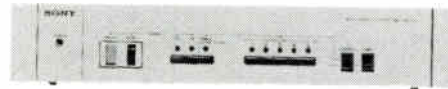
RM-580



RM-500



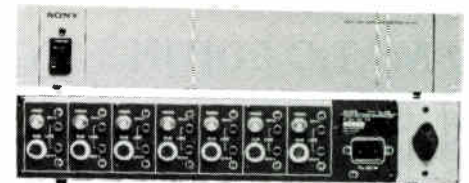
RM-V5



RM-555



VCS-500



DA-500



Type 5 Accessories

A whole family, six in number, of system accessories especially designed to enhance the flexibility and versatility of the new Type 5 U-matic equipment. These highly compatible units can also be teamed in a variety of different combinations to further expand their capabilities.

RM-580 Remote Control Unit

• Full function remote control with Bidirex search dial • Functions: STOP, F.F., PLAY, REW, PAUSE, SEARCH (Bidirex Dial), REC, EDIT, PRE-ROLL • LED tape timer, includes frame counts • DC operation (power supplied from VTR) • Pre-roll start jack for remote start • Cable length 3m (10 ft) can be extended to 18m (60 ft)

\$650.00

RM-555 Multi-Unit Remote Controller

• Simultaneous control with RM-500 or RM-580: Up to 5 VTR's controlled simultaneously; Up to 4 RM-555's can be connected in series for control of up to 20 VTR's • Sequential record/playback with DA-500 or VCS-500: Up to 5 VTR's can be controlled to record or playback in one sequence or in continuous sequences; Timer operation capability enables unattended operation • Individual control with VCS-500 and RM-V5: Any 1 of up to 5 VTR's can be selected with the RM-V5 for control by an RM-500, RM-580 or RM-440. VCS-500 will select appropriate video and audio outputs. RM-300 or RX-303/RX-353 can be used for random access multi-VTR operation

\$1890.00

RM-500 Remote Control Unit

• Basic function remote control • Functions: STOP, F.F., PLAY, REW, PAUSE, REC, DUB, X5 SEARCH, FORWARD, X5 SEARCH REVERSE • DC operation (power supplied from VTR) • Cable length: 3m (10 ft) can be extended to 18m (60 ft)

\$197.00

DA-500 Video and Audio Distributor

• 1 video input (BNC), 2 channel audio input RCA and 1 dub input (7 pin) • 5 outputs of each input • Individual direct outputs of each input permit branching to additional distributors • Single input can be expanded to a maximum of 20 outputs with up to 4 DA-500's • Power requirements: 120 V AC +/-10%, 20W

\$700.00

VCS-500 Video and Audio Switcher

• 5 video inputs (BNC), 2 channel audio (RCA) and 2 dub-in inputs (7 pin) • 1 video output (BNC), 2 channel audio output (RCA) and dub-out (7 pin) • 1 sync input (BNC) and 5 sync outputs (BNC) for external sync-lock operation • Vertical interval switching • Interface with RM-V5 or RM-555 • Dual VCS-500's can be used for control of up to 9 inputs • Power consumption: 20 W

\$1250.00

RM-V5 VTR Selector

• Up to 5 VTR's can be selected with RM-555 • 1 out of 5 selection with VCS-500 • Selection can be expanded to 1 out of 1-4 or 1 out of 5-9 using VCS-500 group selector switch • Remote cable length 3m (10 ft) with 20 pin connector can be extended up to 50m (160 ft)

\$230.00

SPECIFICATIONS	RM-580	RM-500	RM-V5	RM-555	DA-500	VCS-500
Power Requirements:	6.8 V DC (supplied from VTR)	6.8 V DC (supplied from VTR)	5.0 V DC (supplied from VTR)	6.8 V DC (supplied from VTR)	120 V AC ±10%, 60 Hz	120 V AC ±10%, 60 Hz
Power Consumption:	2.0 W	1.2 W	0.5 W	6.0 W	20.0 W	20.0 W
Storage Temperature:	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)
Operating Temperature:	0°C to +40°C (+32°F to +104°F)	0°C to +40°C (+32°F to +104°F)	0°C to +40°C (+32°F to +104°F)	0°C to +40°C (+32°F to +104°F)	0°C to +40°C (+32°F to +104°F)	0°C to +40°C (+32°F to +104°F)
Operating Position:	Free	Free	Free	Horizontal	Horizontal	Horizontal
Dimensions:	2½" x 17" x 5¼" (HWD) 62mm x 424mm x 131mm (HWD)	3½" x 8½" x 1½" (HWD) 87mm x 212mm x 38mm (HWD)	3½" x 8½" x 1½" (HWD) 87mm x 212mm x 38mm (HWD)	3½" x 19" x 11" (HWD) 87mm x 480mm x 280mm (HWD)	3½" x 19" x 11" (HWD) 87mm x 480mm x 280mm (HWD)	3½" x 19" x 11" (HWD) 87mm x 480mm x 280mm (HWD)
Weight:	3.5 lb. (1.6 kg) including cable	2.0 lb. (0.9 kg) including cable	1.7 lb. (0.7 kg) including cable	12.8 lb. (5.8 kg)	13.4 lb. (6.1 kg)	15.2 lb. (6.9 kg)
Cable Length:	3m (can be extended up to 18m with optional cables)	3m (can be extended up to 18m with optional cables)	3m (can be extended up to 50m with optional cables)	3m (can be extended up to 18m with optional cables)		

LDP-180 VIDEODISC PLAYER

FEATURES

Semiconductor Diode Laser Pick-Up
LDP-180 employs a semiconductor diode laser to ensure dependability, long life, and compact construction.

Non-Contact Read System

Laser scanning system permits unlimited use of still frame and repeat functions because signals are picked up without physical disc contact, thereby eliminating chance of disc deterioration.

Picture Clarity

LDP-180 VideoDisc System produces clear, sharp and super-stable picture with the use of direct frequency modulation.

Front-Loading Design

Front-loading design for space saving and easy disc loading.

Superb Sound

High fidelity sound reproduction adopting CX noise reduction system.

Highly Reliable Design

Special LSIs are incorporated to provide operation and quality you can rely on.

External Control

LDP-180 can be controlled externally through the I/O port on the back of the unit.

LDP-180 \$1100.00

Optional Accessories

**RMT-180 Remote Control Unit
..... \$70.00**

IF-180 Interface Box

IF-180 provides interactive capability between LDP-180 & a microcomputer having RS-232C interface.



LDP-180

RMT-180 Multi-Function Remote Control Unit (optional)

All the functions of LDP-180 can be controlled using remote control unit either in a wired or wireless mode.

- Chapter number search
- Frame number search (CAV discs only)
- Time number search (CLV discs only)
- Chapter stop
- Swing search (CAV discs only)
- Memory review play
- Headphone can be used in a wired mode



RMT-180

SPECIFICATIONS

General	
Disc format:	Laser vision
Pickup method:	Laser beam (reflective)
Laser:	Semiconductor diode laser
Maximum playing time	
12-inch standard play disc (CAV)*2	30 min/side
12-inch extended play disc (CLV)*3	60 min/side
8-inch standard play disc (CAV)	14 min/side
8-inch extended play disc (CLV)	20 min/side
Spindle revolution	
CAV:	1800 rpm
CLV:	1800 rpm (inner circumference) to 600 rpm (outer circumference)
Power requirements:	AC 120 V, 50/60 Hz
Power consumption:	33 W
Dimensions:	16 5/8" x 4 3/4" x 16 3/8" (W x H x D) 420 x 120 x 415 mm (W x H x D)
Weight:	12.4 kg (27 lb 5 oz)
Operating temperature:	41° to 95°F (5° to 35°C)
Operating humidity:	25% to 90%
Storage temperature:	-4° to 140°F (-20° to 60°C)

*1 IF-180 WILL BE RELEASED IN Jan. '85
*2 CAV Constant Angular Velocity
*3 CLV Constant Linear Velocity

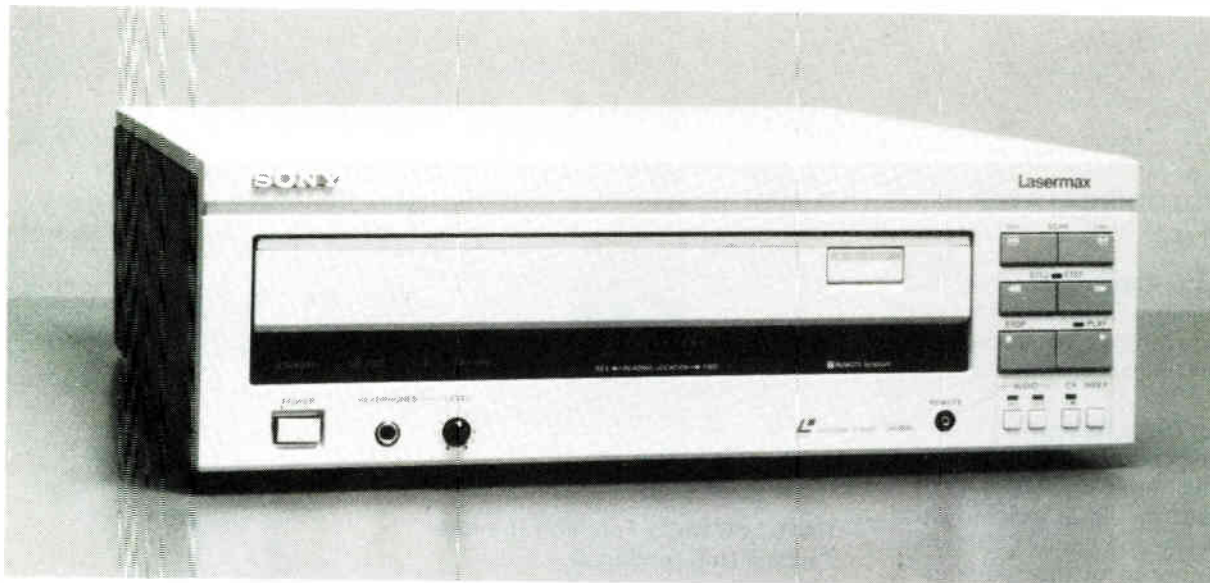
Remote control system:	Wireless (infrared) or wired
Power requirements	
Battery Size	AAA x 2 (IEC battery designation R03) included
Dimensions:	3 3/8" x 1 3/16" x 7 3/8" (W x H x D) 84 x 29 x 187 mm (W x H x D)
Weight:	250 g (9 oz) including batteries
Operating temperature:	41° to 95°F (5° to 35°C)
Operating humidity:	5 to 90%
Storage temperature:	-4° to 140°F (-20° to 60°C)

VIDEO	
Signal:	EIA standards, NTSC color
Output:	1.0 Vp-p ±0.1 Vp-p, 75 ohms unbalanced, sync negative
Resolution:	350 lines (color)
Signal-to-noise ratio:	42 dB
VHF output:	Channel 3 or 4 (switchable), 75 ohms, unbalanced

AUDIO	
Output	
Line out:	Less than 3.3 k ohms 650 mV nominal (1 kHz 100% MOD 50 k ohms terminated)
Signal-to-noise ratio:	Better than 70 dB (with CX noise reduction system on)
Frequency response:	20 Hz to 20 kHz

CONNECTIONS	
Video Out:	(BNC type)
VHF In:	(F type)
VHF Out:	(F type)
Audio Line Out:	(CH1 and CH2 separately)
External control:	(24 pins, amphenol type)
Remote control jack:	(DIN 8 pins)

SUPPLIED ACCESSORIES	
75 ohm antenna cable with F-type connectors (2 m)	



LDP-2000 SERIES

LDP-2000 SERIES VIDEODISC PLAYERS

The new Sony LDP-2000 Series of fast, internally expandable videodisc players combines random access video, analog and digitally compressed audio and external computer control for unprecedented multimedia and communications capabilities.

The LDP-2000 Series is the result of Sony's new, integrated systems approach to videodisc player design. This is manifested, on the one hand, by significant improvements of individual functions. The players, for instance, are extremely fast: capable of accessing any frame in 1.5 seconds or less. On the other hand, with the LDP-2000 Series Sony is introducing the concept of planned internal expandability for videodisc players.

To enable users to select the level of player capability best suited to their needs, the LDP-2000 players are available in five different configurations. Upgrading from one configuration to another is achieved by the simple addition of boards making additional wiring or add-ons unnecessary.

LDP-2000/1

In its most basic form, the LDP-2000 is a linear (Level 1) player controlled by an external computer. It features built-in, industry standard RS-232C computer interface port and switchable baud rates of 9600, 4800, 2400 and 1200.

LDP-2000/1 \$1,690.00

LDP-2000/2

LDP-2000/1 + Control Expansion Board (DB-2010)

The addition of DB-2010 board permits the playback of (Level II) videodiscs with audio track control programs, including those designed for Sony LDP-1000 and LDP-1000A disc players. In this configuration, the player reads the command codes on the disc and stores them in the expansion board's random access memory (RAM).

LDP-2000/2 \$1,895.00

LDP-2000/3

LDP-2000/2 + Parallel Interface Board (DB-2020)

The LDP-2000/3 is designed for applications that require the basic features of the LDP-2000/2 with a parallel interface. The DB-2020 is the IEEE-488 standard interface board for fast data communication between the player and an external computer. The IEEE-488 bus also

permits computer control of up to 15 videodisc players via just one IEEE-488 port on an external computer.

LDP-2000/3 \$2,305.00

LDP-2000/4

LDP-2000/2 + Computer Data/SFA Board (DB-2040)

The LDP-2000/4 expands the capabilities of LDP-2000/2 with the added dimension of Still Frame Audio (SFA). SFA is an audio signal digitally compressed to take up considerably less space on the videodisc, enabling the extension of audio playback while still pictures are displayed on the monitor. The SFA data are recorded in blocks. One block consists of 2 to 32 frames or 2 to 40 seconds of audio. In conventional systems, 300 frames are required to record 10 seconds of audio, and only 30 minutes of playback is possible on one side of a disc. With the DB-2040 SFA board, however, only 15 frames are needed for 10 seconds of audio. This permits 15 hours of audio playback. In this configuration, SFA can be used either in a standalone mode or controlled by an external computer via the RS-232C port.

LDP-2000/4 \$3,235.00

LDP-2000/5

LDP-2000/1 + DB-2010 + DB-2020 + DB-2040

The fully-configured LDP-2000/5 allows an external computer to read computer data recorded on a videodisc with the same reliability as a micro floppydisc. Digital data access is achieved via the DB-2010 and DB-2040 boards. The DB-2020/IEEE-488 bus permits high speed transfer of digital data.

LDP-2000/5 \$3,535.00

All of the LDP-2000 configurations utilize a newly-developed Sony semi-conductor laser. In contrast to the conventional helium-neon gas laser, the new optical block with the diode laser is both smaller and designed for higher reliability. An automatic optical block locking mechanism, which is activated when the power is turned off, obviates the need for manual lockdown screws during transportation.

The LDP-2000 players are also mountable on 19" racks with the optional RMM-201 Rack Mount Kit. The motor-driven, front-load videodisc tray on the players is activated manually, by external computer. The players also incorporate CX™ noise reduction system for improved signal-to-noise ratio.

CX™ is a trademark of CBS, INC.



LDP-1000A

LDP-1000A Laser Videodisc Player

An extremely versatile high density video system utilizing the compact, convenient videodisc. An expanded RAM and the option of Still Frame Audio make this system perfectly suited for interactive video uses, including a vast number of training, storage, educational and informational applications for business and industry. A wide range of connectors for external video and computer systems further expand the system's potential and it is compatible with its predecessor, the LDP-1000.

FEATURES

- Internal microcomputer expands versatility into interactive video applications with programming options that include pre-encoding, user-entered coding, prompts and indicators
- Maximum side-to-side access time of five seconds allows even single frames to be viewed smoothly in any sequence desired
- Storage capacity of 54,000 frames per 12" disc provides densest storage medium in existence
- Laser scanning system permits unlimited use of still frame or segment repeat because signals are "read" without physical disc contact, thereby avoiding disc erosion and signal deterioration
- Durable discs retain "like new" playback quality that is unaffected by normal handling or minor surface scratches
- Sony Laser Videodisc system produces clear, sharp, super-stable pictures of excellent color quality
- Dual audio channels permit separate track audio recording/playback for bilingual or multiple specialized audiences
- Built-in, system-oriented connections provide future flexibility by anticipating links with external video equipment and computers
- Detachable remote control provides both wireless or wired control of all functions
- On-screen video index display confirms function selected, current disc location and address requested plus prompting the writer during control instruction input. The index location on the screen can be moved as the viewer desires, left or right and up or down
- Variable playback modes include SCAN, FAST, SLOW, STILL, REPEAT and STOP in both forward and reverse plus INTERRUPT, SKIP and REVIEW
- Semi-automatic functions include frame search, segment search, and memory search plus segment and frame repeats of 1 to 15 times each, or infinitely
- Playback of CAV and CLV discs with automatic sensing of proper operating mode
- Compact size requires less space and reduced weight cuts shipping costs
- Swing-out circuit boards simplify servicing and reduce downtime
- Addition of the SFA-1000 Still-Frame Audio Adaptor provides up to 40 seconds of audio to accompany a single still frame of video. Over 15 hours of audio can accompany nearly 1400 video still frames on a single disc side. Use any mix of voice, music and sound with any combination of still and full-motion video. Operable in either stand-alone mode or under computer control, the SFA-1000 is completely compatible with LDP-1000 and LDP-1000A videodisc players and SMC-70 microcomputer systems. Standard connections allow easy upgrading of existing systems.

Specifications

General

- Pick-up method: Laser beam (reflective)
- Laser: He-Ne ($\lambda = 6328\text{\AA}$)
- Maximum playing time: CAV: 30 min/side; CLV: 60 min/side
- Spindle revolution: CAV: 1800 rpm; CLV: 1800 rpm (inner circumference) to 700 rpm (outer circumference)
- Power requirements: 120 V AC $\pm 10\%$, 60 Hz
- AC out: Unswitched 120 V AC, max. 400W
- Power consumption: 110 W
- Dimensions: 21-3/8" x 6-1/4" x 16-3/8" (WHD) 542 x 160 x 415 mm (WHD)
- Weight: 43 lb 3 oz (19.6 kg)

Video

- Signal: EIA standards, NTSC color
- Output: 1.0 V (p-p) ± 0.1 V (p-p), 75 Ohms unbalanced, sync negative
- Resolution: Color: 360 lines
- Signal-to-noise ratio: 42 dB
- VHF output: Channel 3 or 4 (selectable) 75 Ohms, unbalanced
- Input signals: SYNC 4 V (p-p) ± 1 V (p-p), 75 Ohms; SC 2 V (p-p) ± 0.5 V (p-p), 75 Ohms

Audio

- Output: LINE OUT: Less than 2 K Ohms; 0 ± 2 dB[V] (100% MOD, 47 K Ohm load), unbalanced; PHONES: 8 Ohms, -19 ± 2 dB [V]
- Signal-to-noise ratio: More than 50 dB
- Frequency response: 40 Hz to 20 kHz (± 3 dB)

Connections

- RS-232C communication connector for EXT CPU (25 pin)
- TV connector (8 pin)
- Video Out
- Audio Line Out (CH 1, Ch 2 separately)
- VHF In
- VHF Out
- SYNC In
- SC In
- AC Out
- Headphone Jack
- Remote Control Jack

Data Capacity

- Frame numbers: From 1 to 54,000
- Segment numbers: From 1 to 63
- Program line numbers: From 000 to 511 (program 000 to 255 are stored on page 0 and 256 to 511 are stored on page 1). Multiple programs possible on single disc side
- Memory capacity: 5 K Bytes (Up to 5 program segments may be downloaded to memory at one time.)
- Inputs: From 1 to 9
- Registers: 4 (Registers 0, 2 and 3 accessible with pre-encoded discs)
- Register value: From 1 to 255 (if 0 is entered, the register does not function)
- Repeat times: Up to 15 (if 0 is entered, playback will continue until the command to stop is entered)
- Step speed: 1/1 to 1/255 of normal speed

Remote Control Unit RM-1002

- Remote control system: Infrared control
- Power requirements: 4.5 DC Battery size AA x 3 (IEC battery designation R6)
- Dimensions: 3-5/8" x 1-1/4" x 6-1/4" (WHD) 91 x 31 x 157 mm (WHD)
- Weight: 10 oz (280 g) including batteries
- Supplied accessories: 75 Ohm coaxial cable with F-type connectors (1.5m) Remote cable (2m)
- Optional accessory: SFA-1000 Still-Frame Audio Adaptor

LDP-1000A Laser Videodisc Player
RM-1002 Remote Control

\$2500.00
129.00

SONY^(R)

SONY TAPE SALES COMPANY
A DIVISION OF SONY CORP. OF AMERICA

Sony Drive
Park Ridge, NJ 07656
(201) 930-1000

VIDEO TAPE AND ACCESSORIES

KCA K SERIES

KCS K SERIES

KCA-60K

KCA-30K

KCA-20K

KCA-10K

KCS-20K

KCS-10K



1/2" BETA DYNAMICRON

Model	Recording Time (minutes)			Suggested End User Unit Price
	BI	BI I	BI III	
L-125	15	30	45	\$ 8.50
L-250	30	60	90	9.70
L-500	60	120	180	12.65
L-750	90	180	270	14.95
L-830	N/A**	200	300	17.80
L-125UHG	15	30	45	9.20
L-250UHG	30	60	90	10.55
L-500UHG	60	120	180	13.75
L-750UHG	90	180	270	16.70
L-830UHG	N/A**	200	300	23.30

** For use only with recorders having B III mode.

1/2" VHS DYNAMICRON

Model	Recording Time (minutes)			Suggested End User Unit Price
	SP	LP	EP	
T-60	60	120	180	\$11.89
T-90	90	180	270	14.25
T-120	120	240	360	14.95
T-160	160	320	480	23.69
T-60UHG	60	120	180	12.69
T-90UHG	90	180	270	14.99
T-120UHG	120	240	360	16.70

1/2" REEL TO REEL

Model	Reel Size	Recording Time (minutes)	Suggested End User Unit Price
V-32	7"	60	31.00
V-35	5"	20	15.15

1" HIGH BAND

Model	Reel Size	Recording Time (minutes)	Suggested End User Unit Price
V-16-34B	8"	34	84.35
V-16-66B	9"	66	123.15
V-16-96B	10 1/2"	96	169.70
V-16-126	11 3/4"	126	237.00
V-16-188	14"	188	337.85
V-16-18SP*	8"	18	61.95
V-16-34SP*	8"	34	95.50
V-16-66SP*	9"	66	138.20
V-16-96SP*	10 1/2"	96	193.45

* SP — Shipper Case

3/4" U-MATIC K-SERIES

Model	Recording (minutes)	Suggested End User Unit Price
KCS-10K	10	\$18.18
KCS-20K	20	20.86
KCA-10K	10	18.82

KCA-20K	20	21.40
KCA-30K	30	24.05
KCA-60K	60	35.18
KCA-30KSP*	30	26.32
KCA-60KSP*	60	37.44

* SP — Shipper Case

3/4" U-MATIC BRK-SERIES

Model	Recording (minutes)	Suggested End User Unit Price
KCS-10BRK	10	\$22.25
KCS-20BRK	20	23.54
KCA-10BRK	10	22.60
KCA-20BRK	20	24.00
KCA-30BRK	30	28.17
KCA-60BRK	60	39.60
KCA-30BRKSP*	30	30.49
KCA-60BRKSP*	60	41.92

* SP — Shipper Case

1/2" BETACAM

Model	Recording (minutes)	Suggested End User Unit Price
HG-10	10	\$15.95
HG-20	20	21.20

TAPE ACCESSORIES

Model	Description	Suggested End User Unit Price
CL-16SP	Flame retardant 1" shipper case	\$23.35
CL-25	Hard U-Matic Cassette Case	2.00
CL-25SP	Flame retardant U-Matic shipper	5.55
CL-30	Betamax vinyl mailer/shipper. Approved by U.S. Postal Service. Reusable.	1.70
CL-35	Betamax vinyl library storage container	1.00
KCS-1C	3/4" cleaning cassette (small)	20.45
HG-5CL	Betacam cleaning cassette	12.20
L-25CL	Betamax cleaning cassette	16.00
KA-1	Cassette adaptor - KCS to KCA	3.45
RI-9V	9" empty reel for 1" high band	40.50
RI-10V	10.5" empty reel for 1" high band	43.45
RI-11V	11.75" empty reel for 1" high band	68.90
RI-14V	14" empty reel for 1" high band	93.10
RH-5V	1/2" empty reel 4 7/8" diameter	4.85



1/2" VIDEOCASSETTE RECORDER

A DIVISION OF THE AUDISCAN CORP.

1410 130th St. NE
 Bellevue, WA 98009
 (206) 454-0694 (800) 426-0852



VIDEOMASTER

FEATURES

- 5-1/4" color monitor
- Full size 1/2" VHS format
- Four head deck
- Only 22 lbs.
- Fits under an airplane seat
- Complete accessory line

Videomaster is geared for the sales, marketing or training professional. It can be operated with both AC and DC (using an accessory battery pack), has a built-in battery charger, retains a ten-pin connector for easy camera hook-up and boasts rotary 4-head helical scan, azimuth recording for superior playback, pause and slow motion (with the use of remote control).

The unit utilizes full size 1/2" VHS cassettes, has top-mounted loading and function controls, has a fold down arm which acts as both a carrying handle and an elevation device and comes equipped to accept a full range of accessories. Videomaster is constructed to withstand rugged use, and comes in a matte industrial black finish to complement its business-like design.

ACCESSORIES

- A nickel-cadmium battery pack
- R/F modulator
- VHF color tuner
- Wireless remote control
- Dust cover
- Soft carrying cover
- Attache-style carrying case
- A heavy duty shipping case

SPECIFICATIONS

Format:	1/2" VHS Portable Recorder/Player with monitor built-in. Rotary 4 head Helical Scan, Azimuth Recording.
Speed:	SP, LP & EP (Records and Plays up to 8 hours).
Monitor:	5" Diagonal. Tint, Color, Contrast and Brightness Control Knobs.
Speaker:	0.5W, 8 ohm.
Loading:	Top Loading (Cassette).
Features:	(Front Panel or Top) Play, Stop, Record, Cassette Ejection, Pause, Counter, Rewind/Fast Forward (high speed and viewable), Counter Reset, Audio Volume, Power Switch, After Recording, Insert, Tracking, Sensor for Wireless Remote Control and Auto-Rewind. (Slow motion available with use of Remote Control only).
Indicator Lamp:	Play, Stop, Pause, Record, After Recording, Battery Warning, Dew Light.
Earphone Jack:	Included (Disengages internal speaker when in use).
Video In/Out:	Included.
Video Input:	0.5-2.0Vp-p (75 ohm RCA Connector).
Video Output:	1.0Vp-p (75 ohm RCA Connector).
Video S/N:	45dB Over.
Ten Pin Connector:	Included.
Audio Input:	Microphone - -67dB (mini jack). Line - -20dB (RCA Connector).
Audio Output:	Line - -6dB (RCA Connector).
Audio Hertz:	70Hz - 8kHz Audio Output: Line (Standard)
Resolution:	Over 240 Lines (Standard)
Measurements:	15"W x 5.5"H x 16"D.
Weight:	22 lbs.
Power:	AC 117V, DC 12V (Battery Pack Extra Option).
VIDEOMASTER	..... \$995.00

TABER MFG. & ENGINEERING CO.

1880 Embarcadero Rd.
Palo Alto, CA 94303
(415) 493-3811

TAPE ERASER

TABERASER MODEL 409

Method Of Operation:

Tape is placed on the spindle and rotated manually several times at slow speed. Erasure is accomplished by exposing tape to a strong magnetic field. To avoid high-energy pops and thumps being recorded on the tape due to turn-off transients, the field is gradually reduced automatically. Tapes over one inch wide should be turned over and the above process repeated.

Types Of Tape:

Taberaser completely erases all audio, video, instrumentation tapes and magnetic films (widths over one inch must be turned over). Audio and video cartridges, as well as tapes on reels or in boxes, can be efficiently degaussed. Reel sizes up to 16 inches can be accommodated.

Erasure:

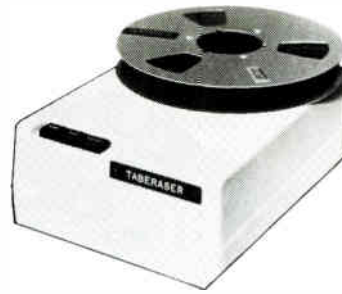
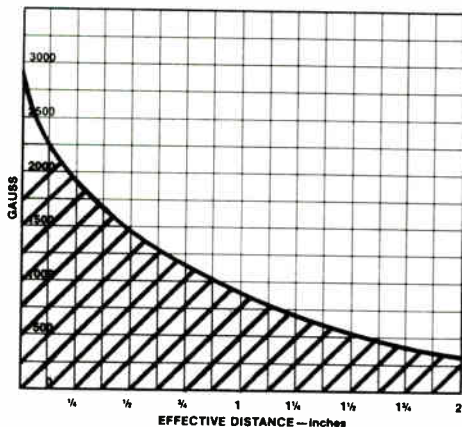
30Hz to 15kHz the depth of erasure is 76dB below saturation (from reference control tape).

Thermal Protection:

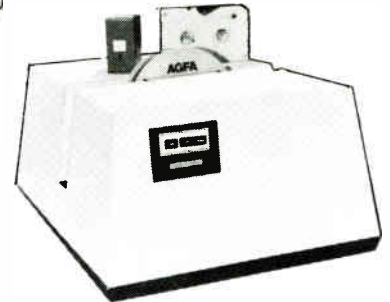
At 150° to 170°F coil surface temperature, the automatic heat overload circuit activates internal blower circuit indicated by front panel red light.

Cycle Time To Erase:	20 seconds
Power:	95-135 VAC, 60Hz, 1 phase 210-230 VAC, 50Hz, 1 phase (both 3 wire)
Maximum Current:	Up to 10 amps
Nominal Current:	2-1/2 amps
Size:	5"H x 10"W x 13-1/2"D
Weight:	409110-60: 46-1/2 lbs. (21kg) 409220-50: 49-1/2 lbs. (22-1/2kg)

Model Number:		
409-117V 60Hz		\$1295.00
409-117V 50Hz		1347.00
409-220V 60Hz		1360.00
409-220V 50Hz		1360.00



MODEL 409
TABERASER



MODEL 1500H
AUTOMATIC TAPE DEGAUSSER

AUTOMATIC TAPE DEGAUSSER MODEL 1500H

Precision Controlled Erasure:

Eraser automatically erases all tapes by moving the tape through a strong field while electronically diminishing the field over a precisely controlled decay of the erase field.

Easy Operation:

Operation is accomplished by inserting reels of tape or film stock in the top, or U-Matic; VHS; RCA video cassettes or audio cassettes in the side. The tape control mechanism either rotates the reels or conveys cassettes through the field while the electronics decay the field, thus providing the smoothest and deepest erasure yet accomplished in the state-of-the-art.

Degaussing Efficiency:

Tape with coercivity from 150 oersteds to 1500 oersteds (contact dealer or factory for details) will be erased to a depth of 80dB or greater (as measured from a reference control tape).

Reel Size:

Up to a 19 inch reel of 2 inch video tape, audio tape, 1 inch instrumentation tape, or film stock.

Cassette Video or Audio:

Erases any size video cassette, VHS, U-Matic, 2 inch quad cartridge, audio cartridge or cassette.

Erase Time:

20 to 45 seconds depending on tape format and power configuration.

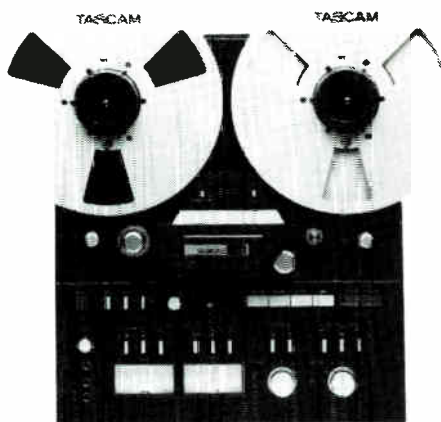
Thermal Overload:

At 150° to 170°F coil surface temperature, the automatic heat overload circuit activates internal blower circuit indicated by front panel red light.

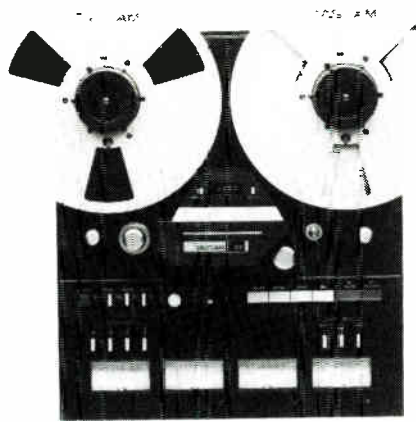
Power Requirements: AC Voltage 115 VAC, 60Hz, +/-10% at 20 Amps.
Optional 115 VAC, 50Hz, +/-10% at 20 Amps.

Size: 25-1/2"W x 30-1/2"L x 15"H
Weight: 320 lbs.

Model 1500H \$6495.00



32



34B



38

Tascam Recorders/Reproducers Series 30

If you need a cost-effective, high quality tape recorder/reproducer for production of jingles, demo tapes, or soundtracks for AV and industrial use, the Tascam Series 30 may be just what you need. They have been engineered specifically for multi-channel audio production. We build significantly better tape machines for less money by combining close contact with the field of audio production, manufacturing experience, and economies of large scale assembly. This is not to say the Series 30 is mass produced. For example, the Series 30 heads are hand lapped to precise tolerances. By making our heads and all critical parts "in house", we retain the strict quality controls needed to achieve uncompromising performance...not only when the machines are new, but after months and years of regular use.

Superior Heads for Superior Recording and Reproduction

- 25% narrow gaps for 40 Hz to 22 kHz (+/-3 dB) response...same for repro head and sync playback off record head • Hand lapping significantly reduces head bumps for more accurate response and more track-to-track transfers without degradation • Built to precision tolerances for minimum "gap scatter", which improves alignment and "mixability" between tracks • New high-density permalloy material is 30% harder and lasts 20% to 50% longer than previous permalloy compounds • Staggered gap erase heads on 8-track for less fringing effect avoids partial erasure of adjacent tracks • All erase heads made of high beta material with 25% higher flux density at saturation mean complete erasure (over 65 dB down at 1 kHz) and quieter tapes

Series 30 Chassis Are Exceptionally Strong, Yet Light

- Folded, braced box-type chassis with steel boxes around reel motors provides rigidity by means of the same principles that give steel "I-beams" their high strength • Lighter than solid castings, Series 30 is easy to take on the road (38 weighs 59.6 lbs., 34B and 32 each weigh 44 lbs.) • Tape path remains absolutely level for easier initial alignment, and long-term stability

Slotless DC Reel Motors for High Torque and Smooth Winding

- Get up to speed faster than AC motors, with no hum • Achieve very high torque for faster start-up and faster high speed winding—saves time and avoids missing cues • Large, trapped ball bearings for low friction and long life • Even less "cogging" than brushless DC motors for low wow and flutter—less than 0.05% RMS (NAB, Wtd., 15 ips) • Combination of dynamic and mechanical braking to stop tape quickly and reliably without any appreciable wear or tendency—uniform tension avoids stretching tape

Frequency Generator DC Servo Capstan Motors With Vari-Pitch

- Motor circuit includes +/-12% variable speed control for returning or "tightening chops" without accessory VSO • Belt driven capstan acts as further filter to keep even the smallest motor shaft vibrations

- from affecting the capstan • FG Servo Motor operates at precise speed of 15 ips on all 3 models, switchable to 7.5 ips on 32 and 34B
- Special polyurethane pinch roller firmly grips tape and resists wear, avoiding flat spots and the wow they cause

Fast, Gentle Tape Handling Under Microprocessor Control

- Micro-touch pushbuttons command transport modes via custom programmed microprocessor which also incorporates motion sensing
- Tape motion sensed by LED photosensor tachometer on Reel Motor (5 times more accurate than mechanical counter) • No appreciable step between fast winding and record/play

Exceptional Audio Electronics for Exceptional Performance

- +/-15 V DC supply for wide dynamic range without distortion (minimum 25 dB headroom, with +/-18 dBV maximum output) • Major circuits rated at +/-18 Volts, so they are not "straining" and thereby last longer • Only selected "DD" low-noise type ICs are used for record, playback, and EQ amps for 68 dB S/N (A wtd., 15 ips no NR)
- Bipolar power supply means less susceptibility to hum and RFI • All components are mounted on a single PC board per channel for easier service and less costly "spares" kit • The 32 has mic inputs and controls to permit simple 2-track location recording without a mixer

Built To Operate in Any Position and For Easy Alignment

- Dynamically balanced tension arms means transport operates equally well vertically (in rack or on table) or horizontally, for editing and alignment • Rubber stand-off feet on back panel, plus angled, recessed input/output connector panel, provides equally good cable accesses in horizontal or vertical position • All bias, record/repro level and EQ controls are readily accessible behind the bottom panel • By laying the machine on its back, it's easy to adjust the alignment trimmers while simultaneously observing the results on the front-panel meters • 32 and 34B come with NAB EQ, easily switched to IEC by moving a jumper wire and replacing a single part; the 38 has IEC EQ, the industry standard for 1/2" 8-tracks

The Features You Need For Professional Recording and Editing

- Three OUTPUT SELECT buttons set the source of the line output signal: INPUT is for setup, SYNC for recording initial tracks and overdubbing, and REPRO for mixdown or alignment • With SYNC button engaged, each track's output source depends on its individual FUNCTION SELECT switch (Record Ready/Safe) and on the machine's record/play status • Flip-up head cover and flip-down record head gate make it easier to mark edit point • Single-point search-to-cue, where tape fast winds, slows and then "parks" at previously indicated zero point • Output normally muted during fast wind, but tape lifters and mute can be defeated by CUE lever; EDIT modes for manual "reel rocking" or dump edits • Industry standard 250 nWb/m nominal tape flux level at 0 VU (machines include large VU meters with peak LEDs)



440B

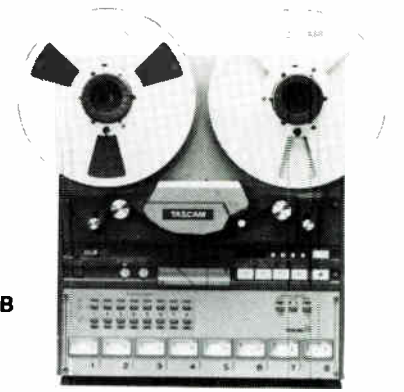
440B 4-TRACK COMPACT RECORDER/REPRODUCER

The TASCAM 440B is a high quality 4-track 1/4" recorder/reproducer designed for audio and video production work where flexibility, reliability and synchronized operation are primary requirements. We have improved the audio electronics, added a total servo system under microprocessor control, packed in many new features, and provided single plug compatibility with popular SMPTE controller/synchronizer systems. The 440B operates at 15 ips and 7-1/2 ips with industry standard NAB equalization, and can be set for flux reference levels of 250 or 320 nanoWebers per meter. Nominal +4 standard, and -10dBV RCA jacks are also provided for the broadest possible compatibility. To avoid distortion and make your mixing less critical, we allowed plenty of headroom: 24dB of it at the XLRs (+28dBm maximum output level) and 28dB headroom at the RCAs (+18dBV maximum output level).

All 3 motors in the 440B's heavy duty transport are under servo control, not just the capstan, so tape comes up to speed fast — a clear benefit in any application, and a "must" to avoid excessive "chasing" for lock-up under SMPTE control. A rapid "spooling" mode permits forward or reverse winding at 8 times normal play/record speed for tight, uniform tape packs. Normal play/record speed can be fixed via an internal crystal, externally controlled, or adjusted over a full ±12% range with the Pitch control.

Tape motion is fast and accurate. The 440B's precision is obvious when Search-to-Zero actually parks tape at zero; a second search function, Search-to-Cue remembers the actual tape position so resetting counter zero doesn't blow the cue. The tape counter displays positive or negative "real time" (a major convenience for back-timing cues). These benefits are made possible by advanced microprocessor control of all transport functions. Each track has its own Function selector (Ready/Safe) and pre-load selector (Input/Sync) that help you rehearse overdubs or make inserts with exactly the right signal in the monitors. Because sync response is equal to repro response, your mixing and performance values remain consistent throughout all phases of production. And if you're working alone, you can punch in or out of record mode with an optional foot switch. Peak LEDs in the meter faces detect brief, high level transients, helping you to avoid overdriving the tape. A precision splicing block is mounted immediately in front of the head stack where tape naturally lays in place. Simple installation and single operator controllability. A consideration for musicians working alone or producers working through the night. LEDs signal the status of all selected transport and electronic functions. With such features as a braced, box type chassis and separate circuit cards for each channels electronics.

440B \$2995.00



480B

480B RECORDER/REPRODUCER

The Tascam 480B is a high quality 8-track 1/2" recorder/reproducer designed for audio and video production work where flexibility, reliability and synchronized operation are primary requirements. This compact, solidly built machine is the natural successor to our famous 80-8. We have improved the audio electronics, added a total servo system under microprocessor control, packed in many new features, and provided single plug compatibility with popular SMPTE controller/synchronizer systems. The 480B operates at 15 ips with industry standard IEC equalization, and can be set for flux reference levels of 250 or 320 nanoWebers per meter. Nominal +4dBm balanced inputs and outputs are standard, and -10dBV RCA jacks are also provided for the broadest possible compatibility. To avoid distortion and make your mixing less critical, we allowed plenty of headroom: 24dB of it at the XLRs (+28dBm maximum output level) and 28dB headroom at the RCSs (+18dBV maximum output level).

All 3 motors in the 480B's heavy duty transport are under servo control, not just the capstan, so tape comes up to speed fast — a clear benefit in any application, and a "must" to avoid excessive "chasing" for lock-up under SMPTE control. A rapid "spooling" mode permits forward or reverse winding at 8 times normal play/record speed for tight, uniform tape packs. Normal play/record speed can be fixed via an internal crystal, externally controlled, or adjusted over a full ±12% range with the Pitch control.

480B \$4495.00

480B SPECIFICATIONS

MECHANICAL CHARACTERISTICS

Tape:	1/2 inch, 1.5 mil.
Track Format:	8-Track, 8-channel
Reel Size:	10-1/2" NAB Hub
Tape Speed:	15 ips (38 cm/sec.)
Speed Accuracy (1):	· 0.2% deviation
Pitch Control:	· 12%
Wow and Flutter:	0.5% RMS (JIS/NAB, Weighted) 0.07% RMS (JIS/NAB, Unweighted) · 0.08% peak (DIN/IEC/ANSI Weighted) · 0.12% peak (DIN/IEC/ANSI Unweighted)
Fast Wind Time:	120 seconds, 2400 feet
Spooling Wind Time:	400 seconds, 2400 feet
Start Time:	Less than 0.8 sec. to reach standard Wow and Flutter
Tape Drive System:	PLL (phase-lock-loop) DC, Direct Drive
Capstan Motor:	Slotless, DC x 2
Reel Motors:	Slotless, DC x 2
Head Configuration:	3-heads; erase, record/reproduce x 2
Tape Cue:	Manual and automatic (RTZ and STC)
Motion Sensing:	0.5 sec., + 0.15 sec., delay time-stop to next motion: tension servo system
Mounting:	Standard 19-inch rack with optional RM-501
Remote Control:	Basic functions available with optional RC-71
Connectors	
Line Inputs and Outputs:	RCA, XLR
Remote Control Unit:	Multi-pin type
Accessory:	Multi-pin type
dbx unit (control signal):	Multi-pin type
Punch In/Out Remote (RC-30P):	Phone jack (Tip-Sleeve)
Dimensions:	17"W x 19"H x 12-7/16"D (432 x 505 x 315.5mm)
Weight:	89.6 lbs. (37kg)

TASCAM

TEAC Professional Division

7733 Telegraph Road
Montebello, CA 90604
(213) 726-0303



MODEL 58

TASCAM Model 58 compact recorder/reproducer is designed for demanding production applications, including SMPTE control. The 8-track 58 records 1/2" tape at 15 ips with IEC equalization.

It also incorporates a unique concept in tape path configuration. We call it OMEGA DRIVE™. This balanced drive system delivers tight consistent tape wrap. Tape tension arms never pop so you always maintain maximum tape to head contact. Precise interface between tape and heads provides optimum edge track contact.

All tape motion is under microprocessor control. There are five different, non-contacting, photo-interrupter sensors that continuously update the status of the tape. The microprocessor then feeds the servo motor drivers necessary commands to ensure accurate and gentle tape handling.

Play, Rewind, Record, Fast Forward, Stop, Rewind...after 10,000 takes our machines will pull tape as steadily as the day they were first installed. The 58 is built to exacting tolerances with industrial construction techniques. The transports employ high strength 5052-S aluminum alloy base plates, plus the three strongest motors ever put into a compact deck.

This advanced recorder/reproducer has the sound quality that matches its construction, with features like custom designed, hand lapped permalloy heads that eliminate head bumps, narrow gaps for extended high frequency response, and FET differential playback preamps for sync response equal to repro response. Because we engineer the record amps and the sync and repro preamps to match the Q and impedance of the record heads, the noise and distortion is near zero.

BUILT FOR FAST, EFFICIENT EDITING

- Built-in auto-locator functions for search-to-cue in either direction, plus return-to-zero; speeds overdubs, looping, and editing
- Choice of remote controls: RC-50 Transport Function Remote or RC-51 Full Function Remote
- Tach driven fluorescent display with precise positive and negative real time readout for logging cues in Rewind or Fast Forward
- Servos track when you finger-turn the tach roller for effortless manual cueing
- Flip-up head assembly, and push-down head gate for rapid mark/splice tape access; precision splicing block included



122/122B

RECORDER/REPRODUCERS

- For tight, uniform pack in minimum time, forward and reverse "spooling modes" wind off tape at eight times the play speed
- Output normally muted during fast wind, but tape lifters and mute can be deleted by CUE lever; dump edit mode, too

RUGGED TRANSPORT AND SERVO-CONTROLLED MOTORS

- Rigid aluminum alloy base plate always keeps transport in perfect alignment
- High-torque slotless DC reel motors emit no hum, and bring tape to play speed under a second. They easily keep up with video tape transports when fast winding under SMPTE control
- 9600 Hz referenced rec/play speed can be switched to variable mode; dual pitch controls for coarse ($\pm 15\%$) and fine ($\pm 0.7\%$) adjustments
- Ball bearings minimize friction and maintain close tolerances in the tension arms, tension arm guides, and pinch roller

BETTER HEAD + BETTER ELECTRONICS = BETTER RECORDINGS

- 25% narrower record and repro head gaps for increased high frequency response
- Direct-coupled amplifiers for lowest distortion and optimum low frequency response
- Record/sync head and repro head yield identical performance (typical 30 Hz to 26 kHz ± 2 dB)
- Separate low frequency compensation adjustments for record/sync and repro heads
- VU meter plus peak LEDs to detect brief, high-level transients

SIMPLE ALIGNMENT AND FAST ACCESS FOR ELECTRONIC MAINTENANCE

- Each channel has a plug-in, glass-epoxy circuit board with metal glazed trimmers for mechanical durability
- Meter panel swings out and down for front panel access to all EQ, bias and level trimmers
- All servo system trimmers are accessible on front by removing one cover plate

SOPHISTICATED "BRUTE FORCE" POWER SUPPLY

- Transformers available for 100V to 240V AC lines, 50 or 60 Hz, with low flux leakage to minimize hum
- Eight different supplies including noise-cancelling bipolar 15 volt for all audio amps, which optimizes performance while eliminating interaction between logic, audio and motor circuits

COMPATIBLE WITH LEADING SMPTE EDITOR/SYNCHRONIZERS

- Rear panel SMPTE connector has TTL logic needed for interface to equipment made by Adam Smith, Audio Kinetic, BTX, Convergence, EECO, Fernseh, Video Media, and others
- Two tach rates: 12 Hz provides slow tach, and 60 Hz allows certain SMPTE equipment to exercise control in tracking and parking
- With microprocessor servo control, SMPTE lockup is easily maintained in modes, including high speed winding

Model 58 OB Input/Output + 4-10 RCA \$5995.00

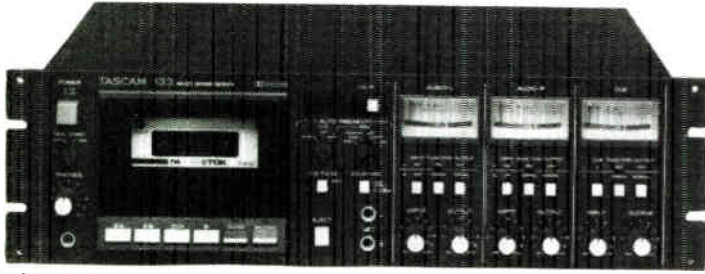
122/122B STUDIO CASSETTE RECORDER/REPRODUCER

- 3 Heads: Erase, Record, Play • 2-Speed 1-7/8—3-3/4 ips • Dolby* Hx-Headroom Extension Circuits and Dolby* B • Adjustable Bias and EQ Select • Front Panel Line Inputs • Optional dBx-II** Interface • 122B + 4 XLR/-10 RCA

RECOMMENDED ACCESSORIES

- AH-50 Rack Mount Handles • RC-90 Remote Control • RX-8P Optional dBx-II** • TO-122A Test Tone Oscillator

122/122B \$725.00/\$825.00



133/133B

133/133B Stereo-Plus Cue Cassette Recorder/Reproducer

Fully compatible with the TASCAM 144. Stereo program on Channels 1 and 2 with cue on channel 4 allowing for total separation from program. With extensive auto present features, the TASCAM 133 is the definitive tool for stereo production and presentation using cassette tapes.

Recorder Features:

- Two position cue select for compatibility with all analog or digital programming units
- 2-motor, soft-touch logic control transport
- 2-speeds: 1-7/8—3-3/4 ips
- Double-action pinch roller for reel time pause
- Switchable mic/line inputs
- Dolby* noise reduction system
- Input and output level controls for each channel
- "Simul-Sync" recording for multitrack recording
- Independent headphone gain
- 4-digit LED counter
- 2 output levels: normal and high to deliver the extra output needed to drive self-powered speakers

Auto Present Features:

- Cue pulse: generates a 25 Hz tone on the cue channel which does not affect projector operations, but which triggers the auto present functions
- Automatic shutoff or rewind at cue tone
- Following automatic rewind TASCAM 133 can be programmed to: a) Return to 0000 and restart program b) Return to 0000 and stop awaiting manual start c) Return to beginning of tape and restart program d) Return to beginning of tape and await manual start

Recommended Accessories:

- RC-133 Remote Control
- AH-50 Rack Mount Handles
- RX-8P Optional dbx-II**
- FC-133 Flight Case

MECHANICAL CHARACTERISTICS

Tape	Philips Type Cassette C-60 and C-90, 70 μ s, Hi-Bias Tape, Type II
Head Configuration	2 Heads: Erase and Record/Playback
Track Format	4-Track, 3-Channel
Tape Speed	1-7/8 ips (4.76 cm/s); 3-3/4 ips (9.5 cm/s)
Dimensions	19"W x 5-13/16"H x 13-1/2"D (482 x 147 x 345 mm)
Weight	19.8 lbs. (9 kg) Net
133	\$1200.00
133B	1300.00

225 Syncaset® Multi-track Recorder

For mixing inputs, overdubbing, ("ping-pong") tracks on standard compact cassettes. Produce demo cassettes, work out musical arrangements, create narration/music tracks for AV presentations, and play back standard audio cassettes in high fidelity as well.

Recorder Features:

- Produce professionally on standard 4-track, 2-channel format (stereo or dual mono, 4.8 cm/s tape speed)
- Insert new sound in perfect synchronization with a pre-recorded track
- Route your inputs to feed one or both tracks, from mono or stereo sources
- Ping-pong tracks as you add new sounds
- Punch-in/out with a single touch of the optional footswitch
- Dolby B noise reduction
- Headphone jack with level control
- Zero return switch

225



MECHANICAL CHARACTERISTICS

Tape	Compact Cassette, C-30 to C-90
Track Format	4-track, 2-channel
Heads	4-track 2-channel erase, 4-track 2-channel rec/play
Tape Speed	4.8cm/s (1-7/8 ips) \pm 1.5%
Dimensions	17"W x 4-3/8"H x 11-3/16"D (432 x 111 x 284 mm)
Weight	11 lbs. (5.0 kg) Net
225	\$425.00
RM-225 Rack Mount Kit	40.00



234

234 Syncaset® Multi-track Recorder

If you want the production power of a 4-track open reel machine plus the convenience and portability of a compact cassette, then our Model 234 Syncaset® is for you. It's the perfect tool for production of demo tapes, working out complex musical arrangements, in fact, any application needing high quality, 4-channel sync recording and playback.

The 234 is an extension of advanced cassette technology. It's perfect for AV, or non-sync film and video soundtracks that are compatible with the latest 133 and 244 machines. You can even use the 234 in conjunction with the 133 or 244 to make realtime copies.

MECHANICAL CHARACTERISTICS

Tape	Compact Cassette C-30 to C-90, 70 μ s, Hi-Bias Tape, Type II
Track Format	4-Track, 4-Channel
Head Configuration	2 Heads, Erase and Record/Reproduce
Tape Speed	3-3/4 ips (9.5 cm/s)
Dimensions	19"W x 5-13/16"H x 14-1/16"D (482 x 147 x 357 mm)
Weight	21.6 lbs. (9.8 kg)
234	\$900.00

TDK ELECTRONICS CORP.

12 Harbor Park Dr.
Port Washington, NY 11050
(516) 625-0100 (800) 645-6571

AUDIO/VIDEO CASSETTE TAPE



PT Professional Video Cassettes

Special Features

- Higher resolution for increased clarity and sensitivity
- Super precision mechanism to eliminate skew and jitters
- Four convenient lengths; packaged in individual boxes

Model	Playing Time (Minutes)	Model	Playing Time (Minutes)
PT-30	30	PT-90	90
PT-60	60	PT-120	120

ZT* (VHS) and ZL* (Beta) Video Cassettes

Special Features

- Greater magnetic energy for consistently higher video and chroma output
- Higher resolution for increased clarity and sensitivity
- Super precision tape transport mechanism for reliable operation under all duplicating conditions

Model	Playing Time (Minutes)
VHS ZT-30Y	30
ZT-60Y	60
ZT-90Y	90
ZT-105Y	105
ZT-120Y	120
ZT-127Y	127
ZT-150Y	150
BETA ZL-370	90
ZL-430	105
ZL-500	120

AV-D Audio-Visual Cassettes

Special Features

- Can be used with any cassette recorder
- Excellent frequency response; low distortion
- Wide dynamic range; high MOL
- Low noise; normal bias setting
- Precision cassette mechanism and five-screw construction

Model	Total Running Time both sides @ 1 7/8 ips	Bias/EQ
AV-D C30	30 Min (2x15)	Normal/120μs
AV-D C46	46 Min (2x23)	Normal/120μs
AV-D C60	60 Min (2x30)	Normal/120μs
AV-D C90	90 Min (2x45)	Normal/120μs
AV-D C120	120 Min (2x60)	Normal/120μs

EC-F Endless Cassettes w/Sensing Foil

Special Features

- Backcoated for quality sound, low noise, and minimum wow and flutter
- Smooth, reliable tape transport for jam-proof performance
- Precision mechanism with five-screw construction

Model	Playing Time	Model	Playing Time
EC-20SF	20 Sec	EC-3MF	3 Min
EC-30SF	30 Sec	EC-6MF	6 Min
EC-1MF	1 Min	EC-12MF	12 Min.

ZD Duplication Cassettes

Special Features

- Excellent frequency response with low distortion
- Wide dynamic range; high MOL
- Low noise; excellent signal-to-noise ratio
- Precision cassette mechanism with five-screw assembly
- Optional accessories include index cards, labels and boxes

Model	Total Running Time both sides @ 1 7/8 ips	Bias/EQ
ZD-C30TYD	30 Min (2x15)	Normal/120μs
ZD-C46TYD	46 Min (2x23)	Normal/120μs
ZD-C60TYD	60 Min (2x30)	Normal/120μs
ZD-C90TYD	90 Min (2x45)	Normal/120μs
ZD-C120TYC	120 Min (2x60)	Normal/120μs

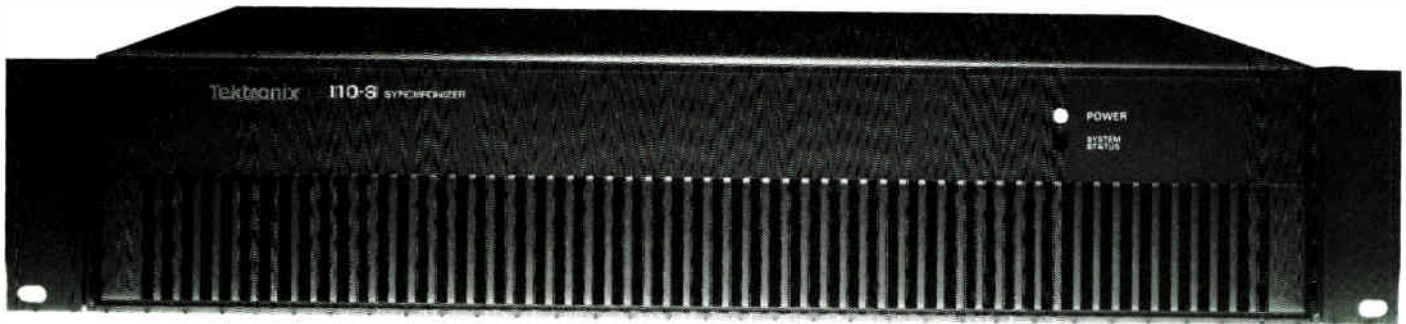
D-L Leaderless Cassettes

Special Features

- Excellent frequency response with low distortion
- Wide dynamic range, high MOL
- Precision cassette mechanism and five-screw construction for optimum reliability

Model	Total Running Time both sides @ 1 7/8 ips	Bias/EQ
D-C30L	30 Min (2x15)	Normal/120μs
D-C60L	60 Min (2x30)	Normal/120μs





110-S

110-S

True 10-Bit Accuracy and Resolution

Tracks Signals into the Noise

Optional Four-Field Memory for the Highest Picture Quality

Adaptive Decoding-Minimizes Picture Shifts while Preserving Horizontal and Vertical Detail, Provides Exceptionally High Quality Picture Freeze

Adaptive Clamping-Minimizes Streaking on Noisy Signals

Digitally Precise RS-170A Sync and Burst Insertion

Passes the Vertical Interval

Processing Amplifier

Precalibrated Boards in Modular Design

Audio Delay

An Audio Delay control port allows automatic audio-video delay correction when used with a Tektronix 118-AS Audio Synchronizer.

Quantizing Error Included in Specifications

The industry has neglected the effects of quantizing error on synchronizer product specifications. The following 110-S specifications, however, include quantizing error for a modulated ramp with 40 IRE subcarrier.

CHARACTERISTICS

Digital Sampling — 10 bits at 14.3 MHz (1024 levels at 4 times NTSC Subcarrier).

ELECTRICAL

PROGRAM CHANNEL

Gain — Program Output Unity $\pm 1\%$.
Frequency Response — $\pm 1\%$ to 4.2 MHz.
Signal to Noise Ratio — -60 dB unweighted.
Chrominance/Luminance Gain Error — $\pm 1\%$.
Chrominance/Luminance Delay Error — ± 10 ns.
Differential Gain — $\pm 1\%$.
Differential Phase — $\pm 1^\circ$.
2T Pulse K Factor — 0.5%.
2T Pulse to Bar Ratio Error — $\pm 1\%$.
Short Time Distortion — $\pm 1\%$.
Line Time Distortion — 0.5%.
Field Time Distortion — $\pm 0.5\%$.

PROCESSING AMPLIFIER

Input Gain Range — ± 3 dB.
Output Gain Range — ± 3 dB.
Setup Range — ± 10 IRE.
Hue Adjustment Range — $\pm 20^\circ$.
Chrominance Gain Range — ± 3 dB.
Signal Correction Timing — Horizontal Blanking: 10.2 μ s, 10.7 μ s or 10.9 μ s (selectable). Vertical Blanking: Start of field through line 21.
Sync and Burst Insertion Timing — Horizontal Insertion: 10.2, 10.7 or 10.9 μ s (selectable). Vertical Insertion: Start of field through line 9.
Sync and Burst Insertion Amplitude Accuracy — ± 1 IRE.
VITS Deletion Timing — Vertical Timing Line 10 through line 14 (selectable).

ADAPTIVE CLAMP

The adaptive clamp has 32 dB hum rejection in the absence of noise other than hum, and reduces hum rejection in the presence of other noise in order to minimize clamp streaking.

Clamp Speed — Slow: (± 20 dB S/N)^{**}. Settling Time: Within 5 IRE in 30 lines or more. Medium (± 35 dB S/N)^{**}. Settling Time: Within 5 IRE in 10 lines to 30 lines. Fast: (± 35 dB S/N)^{**}. Settling Time: Within 5 IRE in 2 lines to 3 lines.

^{**} Approximate signal to noise ratio.

CHROMINANCE DECODER

Video Signal Filtering Modes — Pass: Signal unaltered. Comb: Chrominance inverted using 3-line comb filter. Burst is comb decoded. Notch: Chrominance inverted using 9-point transversal notch filter. VITS are notch decoded. Adaptive: Chrominance inverted using combination of notch and comb filters.

SYNCHRONIZER TIMING

Output Timing Range — Horizontal: 13.41 μ s advance to 4.40 μ s delay. Vertical: Two lines advance to one line delay.

POWER SUPPLY

Line Voltage Range — 90 V ac to 132 V ac; 180 V ac to 250 V ac.
Peak Input Power — 300 W maximum.
Typical Power — 240 W.

ENVIRONMENTAL CHARACTERISTICS

Temperature — Operating: 0°C to +50°C. Nonoperating: -55°C to +75°C.

PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Width	480	19.0
Height	89	3.5
Depth	510	20.1
Depth (Rackmount)	491	19.4
Weight	kg	lb
Net	32.7	14.8

Remote Control Interface Functions — Remote Bypass, Manual Freeze, Freeze Field or Frame, Freeze Four Field, Enable Auto Freeze, Inhibit Decode, Inhibit Sync and Burst Insertion, External Test Data Enable, (Digital Input Port), Status Indicator, Power LED, System Status LED, Proc Amp Active LED, Bypass LED, Hue Control, Setup Level, Chroma Level, Input Gain (ADC), Output Gain (DAC).

INCLUDED ACCESSORIES

Power Cord (161-0066-00); remote plug 36-pin unwired connector with shell (131-0293-00); one set of rack slides (351-0636-00); circuit board extender (670-7754-00); operators manual; service manual.

ORDERING INFORMATION

110-S Synchronizer **\$14,975**
Option 10 — Four-Field Memory Adaptive Decoder . . . +\$4,200
110-RC Remote Control Unit **\$500**

OPTIONAL ACCESSORY

Spare Parts Kit — Order 020-0990-00 **\$1,255**

WRE

2119 Schuetz Road
St. Louis, MO 63146
(314) 567-5366

DEGAUSSERS



MODEL 9205A

A Professional Heavy-Duty Unit

- Erase reels up to 17" diameter, 2" thick
- Rugged and reliable
- Two powerful electromagnets
- Portable

WRE Model 9205A Degausser is recommended for complete erasure of program and residual noise on audio, video, and data recording tape and magnetic film — in reels, cartridges and cassettes. For use with plastic, aluminum or other non-magnetic reels with any type hub and any diameter up to 17 inches. If used with care, 19 inch reels may be degaussed. May also be used to demagnetize tools or components having residual magnetism imparted into the material being worked.

The Degausser contains two powerful electromagnets which generate the erasing field, each having its individual fuse and pilot lamp located on the front panel. The top of the unit is a heavy duty black bakelite plate with a 5/16 inch spindle emerging from it. It is equipped with high temperature rated coils for extended life under heavy use.

Degaussing is accomplished by rotating the reel slowly around the spindle three (or more) times. Continue to rotate and at the same time lift the reel slowly off and away from the degausser. For 2 inch tape, turn the reel over and repeat the procedure.

The 9205 is manufactured with heavy-duty, double pole switches, double-fused with dual pilot lights for individual protection and monitoring of each coil, six-foot three conductor cord with two-prong plug and ground connector, heavy steel gray baked enamel case complete with rubber feet. This rugged Degausser is built for years of efficient and dependable service.

Model 9205A-110

Reel Size:	Will handle any size reel up to 17 inches in diameter and 2 inches thick
Erase Level:	60 to 90 dB minimum erasure below recorded level
Switch:	Heavy-duty, double pole
Fuses:	Two 15 amp, fuses; one for each coil
Pilot Lights:	Two; one for each coil
Power Requirements:	115 VAC, 50-60 Hz
Power Consumption:	2000 watts
Dimensions:	4-1/8" x 12" x 14"
Net Weight:	32 pounds
Shipping Weight:	35 pounds
Model 9205A-110	.....\$342.20

Model 9205A-230

Identical to Model 9205A-110 except the Model 9205A-230 is designed to operate at 230 VAC, 50-60 Hz.

Net Weight:	33 pounds
Shipping Weight:	36 pounds
Model 9205A-230	.....\$370.49

Optional Accessories

Model 11-267-1 Hub Adaptor:	Permits easy degaussing of NAB reels with 3 inch hub diameters. Fits on existing 5/16 inch spindle.	\$12.80
Model 22-323-1 Foot Switch:	A companion accessory to the bulk degaussers that allows convenient, "hands free" operation and provides a positive means of turning the degausser off immediately after use. This is a momentary acting switch and can help extend the life of the degausser.	\$43.84

WRE

2119 Schuetz Road
St. Louis, MO 63146
(314) 567-5366

DEGAUSSERS

Model 642-21 Degausser

- Professional bulk eraser
- Erase reels up to 10-1/2" diameter, 2" thick
- Portable
- Two locating spindles
- Simple and efficient operation

WRE Model 642-21 Degausser is designed for the same applications and usage as the Model 9205A except that it is equipped with a single powerful electromagnet (same type as in the 9205A) and is limited to erasure of 10 1/2 inch reels. This unit is recommended where size and cost are primary considerations.

Construction is of heavy duty steel, finished in gray baked enamel with a brown phenolic top panel and two locating reel spindles. A sturdy handle is located on the front panel of the unit.

Degaussing is accomplished by rotating the reel by hand on the top surface of the degausser. Cartridges and cassettes can be passed slowly across the field area for a clean erasure. The unit provides an audible indication when in operation. It is equipped with a high temperature rated coil for extended life under heavy use.

SPECIFICATIONS

Model 642-21/110

- Reel Size: Will handle any size reel up to 10 1/2 inches in diameter and 2 inches thick. Any size cartridges and cassettes that fit within the field area outlined on the top panel
- Erasure Level: 60 to 90 dB minimum erasure below recorded level
- Switch: Heavy-duty, single pole
- Fuse: One 15 amp, line fuse
- Power Requirements: 115 VAC, 50-60 Hz
- Power Consumption: 1000 watts
- Dimensions: 4-1/8" x 6" x 8"
- Net Weight: 15 pounds
- Shipping Weight: 18 pounds

Model 642-21/110 \$200.13



Model 642-21/230

Identical to Model 642-21/110 except the Model 642-21/230 is designed to operate at 230 VAC, 50-60 Hz.

- Net Weight: 16 pounds
- Shipping Weight: 19 pounds

Model 642-21/230 \$214.27

Model 8905 Magnetic Erasing Pencil

WRE Model 8905 Magnetic Erasing Pencil is an excellent tool for erasing limited, small areas of sound tracks and splices on tape and film. In program material, words, complete sentences, and even syllables may be erased. The 8905 is equally useful for demagnetizing record and play heads. A press to operate switch is located on the handle.

SPECIFICATIONS

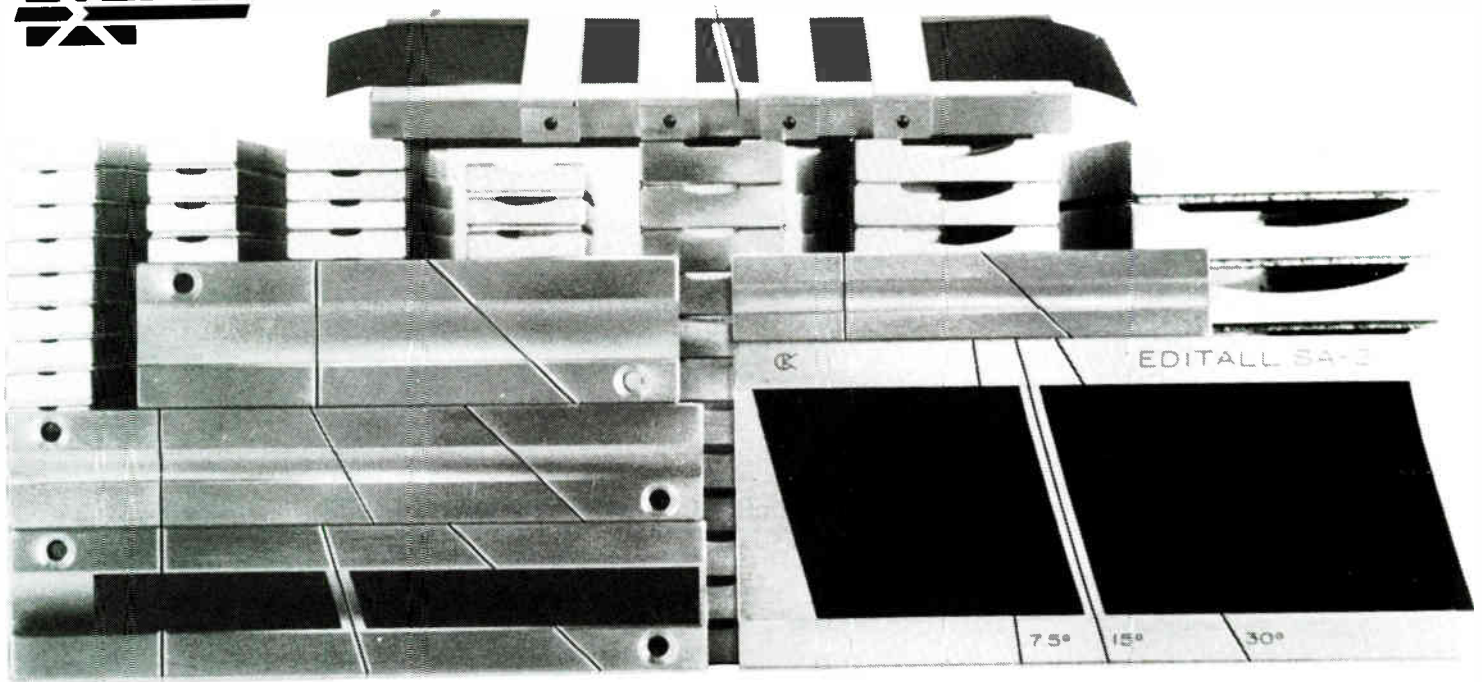
- Active Tip Area: 0.250" diameter
- Switch: Single pole, press to operate
- Enclosure: Heavy phenolic case, complete with six foot rubber cord
- Finish: Matte black
- Power Requirements: 115 VAC, 50-60 Hz
- Power Consumption: 10 watts
- Dimensions: 5/8" diameter by 8" long
- Net Weight: 6 ounces
- Shipping Weight: 12 ounces

Model 8905 \$54.34





Professional Editing/Splicing System



BLOCKS AND KITS

* Kit	Block Model	Tape Size	(Block Length) Cut Config./Mounting	Block Price
(K)	S-1	CAS.	(5.75") 90°/45° H	29.00
(K)	S-1S	CAS.	(4") 90°/45° T	22.00
(K)	P-2	1/4"	(4") 90°/45° H	8.50
(K)	S-2-90	1/4"	(4") 90°/45° T	22.00
(K)	S-2	1/4"	(4") MTK/45° T	22.00
(K)	S-3D	1/4"	(5.75") 90°/MTK/45° H	36.00
(K)	S-3	1/4"	(5.75") MTK/45° H	29.00
(K)	S-3-90	1/4"	(5.75") 90°/45° H	29.00
(K)	S-3L	1/4"	(5.75") 165°1"L H	36.00
(K)	S-3X	1/4"	(5.75") 60°X/45° H	36.00
(K)	S-3.5D	1/2"	(5.75") 90°/MTK/45° H	40.00
(K)	S-3.5S	1/2"	(4.5") 90°/45° H	36.00
(K)	S-3.5E	1/2"	(5.75") MTK/45° T	32.00
(K)	S-3.5X	1/2"	(5.75") 73°X/MTK H	50.00
(K)	S-3.75	3/4"	(5.75") MTK/45° H	45.00
(K)	S-4	1"	(5.75") MTK/45° H	50.00
(K)	SA-2	2"	(6") 7.5°/15°/30° C	110.00
(K)	A-2	2"	(6") 7.5°w/clamps H	125.00
(K)	V-3.5	1/2"	(4.5") VIDEO H	40.00
(K)	V-3.75	3/4"	(5") VIDEO H	50.00
(K)	V-4	1"	(5.75") VIDEO H	60.00

* For the complete KIT, add prefix "K" to block model No., and add \$2 for Audio KIT and \$7 for Video KIT to Basic Block Price.

MOUNTING:

H - Countersunk Holes
T - Adhesive Tape backing
C - Cork backing

EDITABS

Tab Model	Tape Size	Tab Material Tabs Per Sheet	-List Prices- Box/100 1000
CX-1	1/4"	MYLAR 10/SHEET	4.15 32.00
CX-2	1/4"	FOIL 10/SHEET	4.65 37.50
CX-3	CAS.	MYLAR 15/SHEET	4.15 32.00
CX-4	1/2"	FOIL 10/SHEET	5.35 39.50
CX-5	3/4"	FOIL 7 SHEET	6.00 50.00
CX-6	1/2"	MYLAR 10/SHEET	6.25 52.00
CX-7	3/4"	MYLAR 7/SHEET	7.00 57.50
CX-8	1"	MYLAR 6/SHEET	7.75 68.00

Model

Accessory Description

-List Prices-

RB-1	RAZOR BLADES (.012")	7.50/100
WP-1	WHITE GREASE PENCIL	5.00/DOZ.
MTD	MAGNETIC TAPE DEVELOPER	8.00/CAN
TB-2	32 PAGE TEXT ON ALL ASPECTS OF TAPE EDITING. BY JOEL TALL.	3.00/BOOK
20-P	DRIFT & FLUTTER METER	550.00*
AV-3	IEEE (DIN) & (JIS) RMS MEAS. UNIVERSAL AV PULSER	1,400.00*

MTK: Multi Track Cutting Angle; calculated for a time interval of less than 1/100th of a second between the top and bottom tracks. This short interval is not normally perceivable.

BLOCKS: All are individually precision machined from hard aluminum alloy; P-2 is reinforced plastic.
KITS: Audio "KS" — Contain: Block, 30 pre-cut self adhesive Editabs, razor blade and grease pencil.
Video "KV" — In addition to above, also includes a can of KYREAD, Magnetic Tape Developer.

For Orders and Information Call Toll Free 800-431-8900

Prices and Specifications Subject to Change Without Notice.

VR-115

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ABEKAS VIDEO SYSTEMS, INC.

319 Lincoln Centre Drive
Foster City, CA 94404
(415) 571-1711

SPECIAL EFFECTS SYSTEM

A52 DIGITAL SPECIAL EFFECTS SYSTEM

FEATURES

- Picture positioning
- Compression to zero
- Expansion to 99 times
- Variable compression axis
- Border of any color and width
- Background of any color
- Cropping from any or all sides
- Full manipulation of cropped pictures
- Flips and tumbles
- Mosaics
- Multi-freeze
- Variable aspect ratio
- Solarization
- Variable duration for each keyframe
- Variable time for entire effect
- Programmable break or pause
- Soft edge key signal
- Contact closures for remote operation
- A/B video switching

Transparent Picture Quality

The A52's transparent picture quality is the direct result of advanced digital signal processing. The incoming composite signal is immediately digitized to eliminate the usual analog decoding problems such as drift and complex adjustments. Digitally decoded into 4:2:2 components, it is then processed to ensure signal transparency and long-term stability.

Smooth Picture Movement

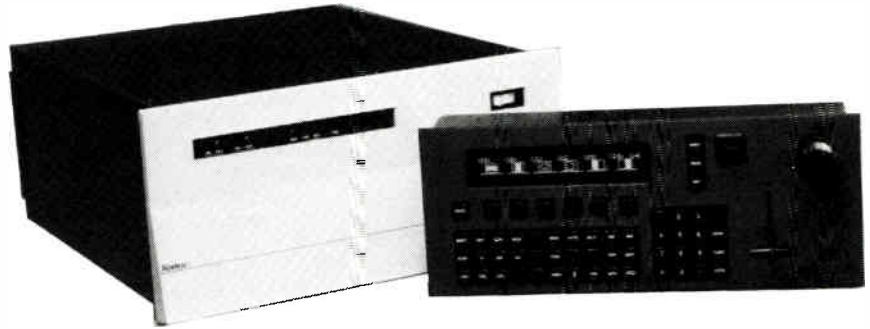
The A52 completely eliminates the stepping usually associated with moving a picture slowly across the screen. For flawless motion while keying the A52 over another source, the key output moves as smoothly as the picture.

The A52 Control System

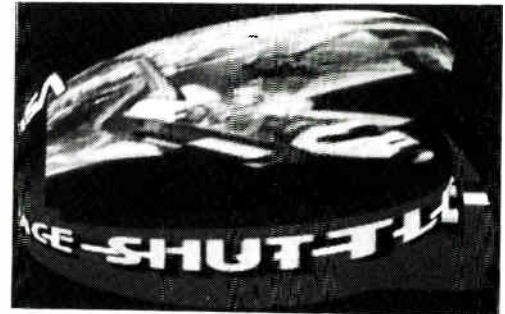
Never before has there been a control system so ideal for the speed required by on-air effects and the accuracy needed for post-production. By providing instantaneous access to a large number of effects, it makes on-air operation extremely simple. The power and sophistication are reflected in the ease with which complex effects can be created. Precise control over all parameters is provided to satisfy the most demanding requirements.

The A52 Control Panel

The control panel consists of a high-resolution graphics display, a professional 3-axis joystick, numeric keypad, optically encoded fader bar, dedicated keys and the DataKey. The heart of the control panel is the graphics display and associated "softkeys". Because information is clearly displayed above the softkeys, operation is easy. Instead of searching for buttons all over the control panel, simply press the softkey below the function desired. The joystick is used for specifying parameters during programming. For instance, the joystick is used to choose the hue, saturation, and luminance of a background color. The numeric keypad allows precise entry of parameters. Duplicating the exact size, position, or other parameters of a previous effect is easy. The fader bar manually runs effects forward or reverse. With one full throw of the fader bar,



COMPLEX MANIPULATIONS PERFORMED BY THE A-52 ON STILL IMAGES



an effect can be run in its entirety. The position of the fader bar directly corresponds to a given point on the time-line of the effect, thus enabling precise control when manually rehearsing any part of an effect.

Mini Control Panel

The A52MP mini control panel, one of the smallest ever designed, retains the majority of the A52CP functions. It also consists of a 3-axis joystick, display and the DataKey. Operation of the A52MP is similar to the A52CP, allowing them to be used interchangeably.

On-Air Operation

For fast on-air operation the A52 provides the user with 36 on-line effects. Twelve frequently used effects are pre-programmed and presented in picture form on the graphics display. These include flips, tumbles and a variety of compressions. As an added advantage, the user can modify the pre-programmed effects to meet specific needs. The remaining 24 locations can accommodate simple to very complex effects created by the user. The 12 pre-programmed and 18 user-programmable effects are stored in non-volatile memory and are therefore protected from power down.

External Control

RS232 and RS422 serial ports are standard on the A52. Through these ports, all of the functions of the control panel can be emulated by a computer. For a simple interface to switchers and editors, four contact closure inputs are provided. These can trigger the A52 to run an effect forward or reverse, pause an effect already in progress, or freeze the incoming video. Contact closure outputs can be used to trigger an external device such as a video switcher for A/B switching.

Digital Interface

The A52 provides composite digital input and output ports. These digital ports make it

possible to interface the A52 to the Abekas A42 digital still store system.

Key Softness

The A52 produces a variable soft edge key signal, to obtain hard or soft edges when keying the output of the A52 over another source.

Unmatched Dual Channel Operation

The A52 Digital Effects Combiner provides a truly flexible multi-channel system. It accommodates up to four control panels and two channels. A remote assignment panel allows the system to be configured either as a dual channel, or as two completely independent single channel systems. As a dual channel system, operation can be from any one of the four control panels. When operated as two single channel systems, one control panel is assigned to each channel. True dual channel operation is achieved by allowing each channel to be programmed independently to its fullest extent along a common time-line. In this way, different effects can be programmed on each channel and run simultaneously. For time critical applications such as live newscasts, there are also pre-programmed, complementary effects. As with the single channel A52, custom effects can be created and stored in non-volatile memory. Off-line storage is provided on the standard Data-Key.

Variable Priority

In dual channel operation, a channel can be defined as the foreground or background, depending on its priority. Unlike other systems, the effects combiner offers variable priority, allowing programmable dissolves between the two channels.

Internal Keyer

An extremely versatile luminance keyer is also part of the effects combiner, which makes keying titles over a picture and manipulating them separately very easy.

VP-2

Prices and Specifications Subject to Change Without Notice.

ADAMS-SMITH, INC.

34 Tower Street
Hudson, MA 01749
(617) 562-3801 TWX 710-347-0096

TIME CODE TAPE SYNC & TRANSPORT CONTROL PRODUCTS



SYSTEM 2600

SYSTEM 2600

A family of Modules for LTC and VITC Generation and Reading, Video Tape Editing, Audio/Video Tape Synchronizing, TV Sound Editing, Transport Control, and Computer Interfacing.

TECHNICAL FEATURES

- **Time Code:**
 - Formats: SMPTE/EBU standard
 - Reading Speeds: LTC: 1/20 to 100 x play speed
VITC: still-frame to 45 x play speed
Control Track/Tack Pulse: 0 to 100 x play speed
 - Translating Speed (VITC to LTC): 0 to 60 x play speed
 - Standards: 24-frame film
25-frame PAL and SECAM
25-frame PAL and SECAM
30-frame NTSC, full or drop-frame and PAL-M
- **Tape Synchronizing:**
 - Accuracy and Resolution: $\pm 1/1000$ TV frame
 - Offset Capability: ± 24 hours
 - Offset Adjustment: $\pm 1/100$ TV frame
- **Power:** 115/230 VAC $\pm 15\%$, 50/60 Hz.
- **Mechanical:**
 - Modules:
 - Size: 5-1/4" (133mm) (3 RU) high
1" (25mm) or 2" (50mm) wide
15" (381mm) deep
 - Weight: approx. 1 lb. (0.5kg), 1" width modules
approx. 2 lbs. (1.0kg), 2" width modules
approx. 4 lbs. (2.0kg), Power Supply module
 - LED Size: 1/8" (3mm) high characters
 - Mounting: table-top, panel, or relay rack (chassis slides optional)
 - Controllers:
 - Size: 5-1/4" (133mm) (3 RU) high
4-1/4" (108mm) wide
3" (76mm) deep
 - Weight: approx. 1 lb. (0.5kg)
 - Mounting: SYSTEM 2600 modular consoles, mix console or relay rack (in 19" wide frames)
 - Controller Displays:
 - Size: 1-3/4" (44mm) (1 RU) high
8-1/2" (216mm) wide
3" (76mm) deep
 - Weight: approx. 1 lb. (0.5kg)
 - LED Size: 9/16" (14mm) high characters
 - Mounting: SYSTEM 2600 modular consoles, mix console or relay rack (in 19" wide frames)
- **RF Emission:**
 - complies with FCC requirements for class A computing equipment

A New Generation of time code, machine control and studio automation products of proprietary design. They're modular — and each module is a complete, stand-alone product. They're system-oriented — tied together by a uniquely efficient data bus. And the systems you make with them are expandable — without obsoleting prior purchases.

SYSTEM 2600 modules are designed to save time, reduce costs, improve quality and unlock creativity in audio and video production, post-production, and program distribution. Operations such as identifying the location of picture and sound material on recording media, linking multi-track ATRs, making frame-accurate video edit decisions, editing video tapes, building television audio tracks, controlling studio equipment by computer, and many more — all can be enhanced by SYSTEM 2600's new techniques. All-in-all, SYSTEM 2600 modules are your best bet, whether you're modernizing existing facilities or building new ones. Each module is an independent product, yet when incorporated into a system, each can talk to the others over the data bus. And the data bus design is so efficient that modules don't have to wait in line to hand-shake and talk. Instead, they "broadcast" their data as they generate it, for use by all the others. This new computer technique, combined with distributed data processing (there's an advanced-design micro-processor in every module that processes data), gives each module the computing time to really do its job right.

SYSTEM 2600 gives you the modules you need for Longitudinal and Vertical Interval Time Code generating, reading and display, transport control, audio and video tape synchronizing, and LTC restoration. SYSTEM 2600 modules incorporate the very latest in state-of-the-art features, such as color framing, jam-syncing user bits, field-rate code generation, automatic drop-frame handling, bi-phase mark phase correction, and binary group (user bits code) decoding identification.

Our VITC Reader can read Vertical Interval Time Code at high wind speeds* — even when your one-inch VTRs are really rolling. And because reading VITC at high speed doesn't mean much if you can't feed it into your video tape editing system, we make a module which will do that, too, by translating VITC into Longitudinal Time Code. This not only lets you make edit decisions in still-frame and slo-mo, but also lets you edit with VITC alone — without modifying your existing editing system.

When you're ready to synchronize audio tapes to audio or video tapes in your video tape editing or television sound sweetening facility, SYSTEM 2600 can help you there, too. Our tape synchronizing modules will precisely fit your requirements, from basic recording and layback, through multi-slave chase operations for mixing, right up to television sound editing features such as "Smart-Lock®" fast re-synchronizing and "Splice-Trap®" handling of physically spliced tapes are Adams-Smith exclusives.

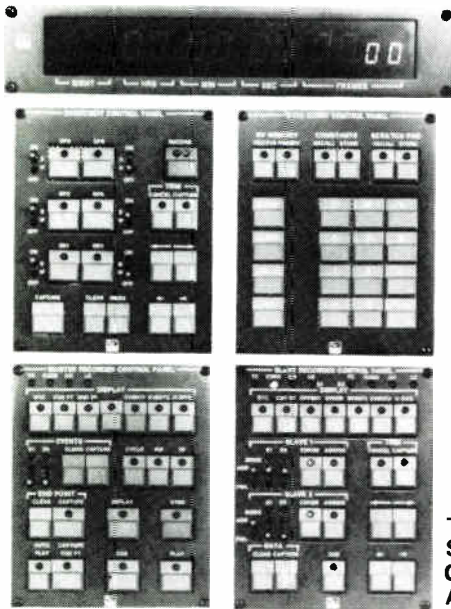
*Patent applied for

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ADAMS-SMITH, INC.

34 Tower Street
Hudson, MA 01749
(617) 562-3801 TWX 710-347-0096

SYSTEM 2600 (Cont'd)



TAPE SYNCHRONIZER CONTROLLERS AND DISPLAYS

Tape Synchronizer Controllers and Displays

To put together a complete television sound editing room, you can use SYSTEM 2600's controllers and displays. These user-friendly, advanced-design units let you implement all of the Tape Synchronizer module's control capabilities with single keystroke operations. You can choose only the controllers you need to fit your particular requirements, because they also are fully modular, able to stand alone or in combinations, as suits you needs.

The controllers and controller displays in a system talk to other SYSTEM 2600 modules over a single coax cable through a special Remote Control Processor module. This technique lets you locate the controllers and displays in your mixing console and the modules near your recorders. A Serial Interface module lets any computer or terminal communicate with SYSTEM 2600 modules using an RS-232 format. Our Serial Interface module has all the hardware in it to implement SMPTE/RS-422 communication when it becomes an industry standard — just by plugging in a PROM.

The ChassiRod® System*

This design allows you to incorporate SYSTEM 2600 technology into your studios and remote vans easily, flexibly and cost-effectively. ChassisRod construction permits modules to be rearranged or added whenever required by system changes or expansion. The design also insures the system compatibility of new modules, and there's no expensive "mainframe" to buy with your first SYSTEM 2600 purchase.

The modules of SYSTEM 2600 are all physically separate units, including their front panel controls and rear panel input and output connectors. All modules are of the same height and depth, and either one or two inches wide, depending on whether they contain one or two printed circuit boards. Any number of modules of the same or different kinds can be grouped together, side-by-side, in any arrangement, to form a specific system. Very little rack space is required, even for an extensive system.

An important feature of the module design is that it permits video signals to be handled with "broadcast" quality.

The chassis is made up of two side panels tied together by four ChassiRods. The two bottom rods are permanently connected, while the two top rods are easily removable. The individual modules fit down over the bottom rods, and are captured by the top rods to form a rigid assembly. Individual modules can easily be removed when changing system configuration or for service. The ChassiRods are available in various lengths, allowing the chassis to be of standard rack width, or wider or narrower to accommodate the modules used.

TIME CODE TAPE SYNC & TRANSPORT CONTROL PRODUCTS

Snap-on top and bottom covers protect the modules and contain slots for ventilation and adjustment of set-up controls. When fully assembled, the chassis is completely shielded electrically, and all exposed parts are grounded. Rack mounting angles, chassis slides and rubber feet are all available, permitting the chassis to be mounted in a rack, in a panel, or on a table-top.

For Production

In studios and remote vans, you can use SYSTEM 2600 LTC and VITC generators to record synchronous time codes — either elapsed time or time-of-day, or even calendar data — simultaneously on all VTRs and ATRs. In addition, you can use time code readers and character inserters to locate and identify program material right away during playback and review. And when you use Vertical Interval Time Code, you can display time during slow motion replay — with right-to-the-frame accuracy.

You can use the user bits of the time codes to log production identification information, such as reel, scene and take numbers. And for those who may wish to use a small computer for logging, the possibilities for recording production information become almost limitless.

You can use SYSTEM 2600 Tape Synchronizer modules to cue VTRs to captured tape addresses for immediate replay, and eliminate the need for additional storage devices. In addition, you can use these same Tape Synchronizer modules to link multi-track ATRs to each other, to video sync, or to VTRs, greatly simplifying later post-production timing problems.

For Post-Production

You can group the modules of SYSTEM 2600 into many configurations to enhance both audio and video editing. You can combine high speed VITC Reader* and Translator Interface modules with other modules to add a VITC capability to your present video tape editing system. SYSTEM 2600 VITC modules permit both edit decision-making in still-frame and slow-motion, and actual editing (winding, cueing, parking, syncing and locking). The modules will handle tapes with either or both codes. Both manual and automatic change-over between codes allow the system to adapt to changing session-to-session requirements without lots of re-setup.

In audio recording operations, you can use SYSTEM 2600 Tape Synchronizer modules to link multi-track ATRs together — for instance, to make two eight-track recorders act like a 16-track recorder. You can also use the Tape Synchronizer modules to sync an ATR to video sync or to a VTR. These techniques can be particularly useful during recording and playback, and when laying back a mixed-down audio track onto a video tape in synchronism with the picture material.

Importantly, interfacing SYSTEM 2600 Tape Synchronizer modules to your audio and video recorders is easy and straightforward. No internal or external special interface circuitry is needed. All you need to do is make up the interconnecting cable. We supply the mates to any special connectors used on our modules.

An important use for a combination of SYSTEM 2600's Tape Synchronizer and time code reader modules is to implement chase synchronizing during audio mixing. One or more slave ATRs chase a master VTR at all times. They run in exact synchronism when in play, so lip-sync is maintained. The VTR is normally controlled by the video tape editing system or by its own remote controls. This technique is extensively used in both video editing suites and in audio studios which do television sound editing.

You can also assemble complete television sound editing systems by combining Tape Synchronizer modules with other SYSTEM 2600 modules and our modular controllers. The system permits creative sound professionals to enhance the quality of television audio, especially stereo, while at the same time reducing the cost of sound editing by removing it from the video tape editing suite. Phasing the audio to the video with a resolution of 1/100 of a TV frame, rehearsing and recording with a repeatability of better than 1 ms, measuring elapsed time from any selected tape location, starting and stopping other devices with frame accuracy, re-locking audio to video after cueing in one or two seconds, and, of course, cueing, looping and re-playing, are all possible, using SYSTEM 2600 modules.

*Patent applied for

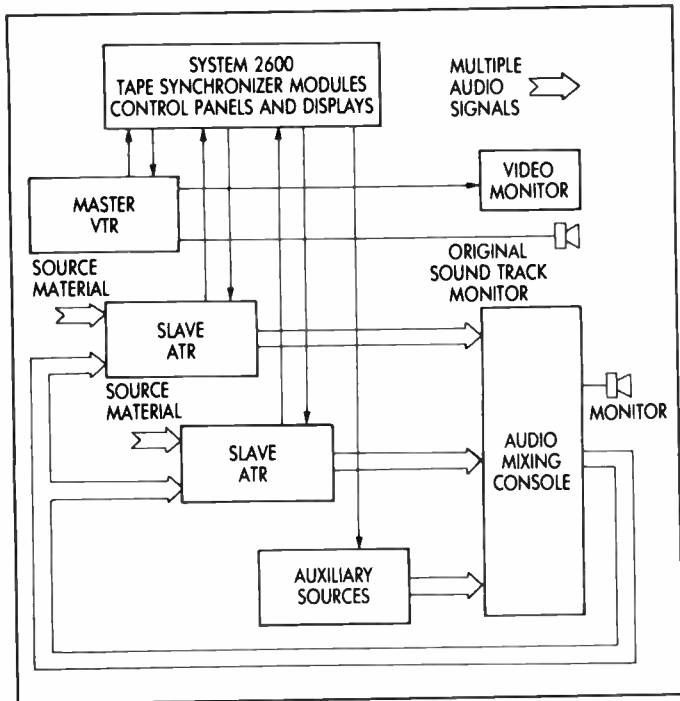
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34 Tower Street
Hudson, MA 01749
(617) 562-3801 TWX 710-347-0096

TIME CODE TAPE SYNC & TRANSPORT CONTROL PRODUCTS

SYSTEM 2600 (Cont'd)



SYSTEM 2600 TELEVISION SOUND EDITING SYSTEM

SYSTEM 2600 PRICES

(Includes top and bottom covers)

Part No.	Width		Price
2600 PS	2	Power Supply	\$ 595.00
2600 LG	2	Longitudinal Time Code Generator	1990.00
2600 LR	2	Longitudinal Time Code Reader	1695.00
2600 VG	1	Vertical Interval Time Code Generator**	950.00
2600 VR	2	Vertical Interval Time Code Reader	1925.00
2600 TI	2	Translator Interface	1510.00
2600 CI	1	Character Inserter	1090.00
2600 CR	2	Code Restorer	915.00
2600 SI	1	Serial Interface	1060.00
2600 PI	2	Parallel Interface	1425.00
2600 SY	2	Tape Synchronizer	2195.00
2600 SRO	—	Tape Synchronizer Relay Option PCB	315.00
2600 LRO	—	Lock Relay Option PCB	125.00
2600 BPO	—	Bi-Phase Option PCB	255.00
2600 RCP	1	Remote Control Processor	995.00
2600 EE	2	Event Executive	2450.00
2600 SS	1	Sync Stripper	525.00
2600 RG	1	Reference Generator	945.00

2600 RMCA — Rack Mount Chassis Assembly 225.00
(Includes 1 pair of Side Panels, 1 pair of Rack Mounting Angles, 1 set of 17" ChassiRods, and 1 Rack Width Module Data Bus)

CONTROLLERS AND DISPLAYS

Part No.		Price
2600 RSG	Remote Starter Group (Includes 1 RCP, 1 RT and 1 RPS)	\$1495.00
2600 MTC	Master Transport Controller	950.00
2600 STC	Slave Transport Controller	950.00
2600 DEC	Data Entry Controller	950.00
2600 EEC	Event/Edit Controller	950.00
2600 CD	Controller Display	595.00
2600 RT	Remote Transceiver	325.00
2600 RPS	Remote Power Supply	175.00

Prices include 1 data bus with each Controller and 1 data bus and 1 extension with each CD.

CHASSIS COMPONENTS AND ACCESSORIES

	Price
Side Panels (LH and RH)	\$ 45.00/pr.
ChassiRods, set of 4 (Specify length)	5.00/in.
Rack Mounting Angles	20.00/pr.
Module Data Bus (Rack Width or shorter)	75.00/ea.
Floater Panel Assembly	65.00/ea.
Filler Panel Assembly (2" - 13" — any length)	40.00/ea.
Chassis Slide Kit	60.00/ea.
Controller Data Bus	35.00/ea.
CD Data Bus	25.00/ea.
CD Data Bus Extension	25.00/ea.
Controller Rackframe (holds up to 4 Controllers)	85.00/ea.
Display Rackframe (holds up to 2 Displays)	75.00/ea.
Controller Console (holds 1 Controller)	95.00/ea.
CD Console (holds 1 CD)	90.00/ea.
Dual CD Console (holds 2 stacked CDs)	150.00/ea.

**Must be used with 2600LG Module

*Estimated Prices
FOB - Hudson, MA.

SYSTEM 2600 TELEVISION SOUND EDITING SYSTEM

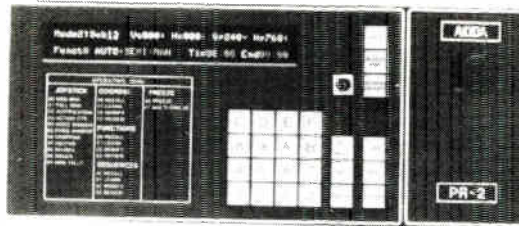
For Studio Automation

You can combine SYSTEM 2600 time code and Tape Synchronizer modules with either Serial or Parallel Interface modules to implement automatic operation of VTRs and ATRs. Operations such as cueing, playing and rewinding, verification of correct tape content, and monitoring of the play function, can all be implemented by studio computers, large or small.

The Serial Interface modules permit serial data interchange, using the RS-232 format, at data rates from 50 to 19,200 baud. Normally, you can connect up to eight devices to each Serial Interface module. And you don't need to be a professional computer programmer — the unique design of SYSTEM 2600's data bus lets our Serial Interface use very fast, efficient and simple protocols. Programming is thus straight-forward and uncomplicated.

You can implement parallel data interchange, using either BCD or ASCII codes, by means of the Parallel Interface. This module is particularly useful for interfacing to special control panels which you may want to design and build yourself, to fit your specific studio requirements.

130 Knowles Drive
Los Gatos, CA 95030
(408) 379-1500



The basic ADDA VIP-C system can be upgraded to interactive multifunction operation with PR-2 remote panel, featuring menu-driven effects and off-line sequence control.

VIP-C Video Compressor

The ADDA VIP-C is a modular, single-channel image compressor and positioner with exceptional signal processing transparency and straight-forward approach to image manipulation.

The difference between the basic unit with the PR-1 and the VIP-C with PR-2 remote unit is the degree of image control sophistication.

PR-1 has 6 preset effects positions that can be remembered, while the VIP-C with PR-2 intelligent remote panel can commit over 224 events and sequences to memory for either manual or automated recall. The optional off-line "sequence memory module" expands the storage capacity of routine effects setups and sequences.

The VIP-C is a versatile digital effects system. Frame synchronization and time base correction for heterodyne VTRs are included for extended versatility in utilizing freeze frame and multi-freeze effects. Engineering control is provided on a separate remote panel.

With these features, the VIP will serve the everyday needs of most stations and production houses, and even many in-house video operations in industry, business, medicine and education.

Basic Control Panel (PR-1)

Simplicity is the key for news and mobile installations. The basic PR-1 control panel can be rack or desk-top mounted. Push button clusters control image size and position. Unit includes six size & position presets, variable or locked image size, and border controls.

Engineering Remote and Proc Amp Control Panel (ER-1)

The engineering remote provides processor control of video, chroma and setup as well as hue, system subcarrier and horizontal phase. ER-1 assigns up to four production remotes and selects TBC or synchronizer modes.

Both production and engineering remote modules connect to the mainframe chassis with a single 75 ohm coax, eliminating the need for multi-conductor cables.

Interactive Control Panel (PR-2)

Optional multifunction programmer. 3-axis joystick provides infinite video compression size and position, locked or variable aspect ratio, border generator plus programmable sequence control and extended event memory. Prompter panel informs operator of position, move trajectory and image size in addition to sequence order.

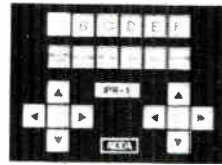
VIP-C with PR-2 control can learn up to 16 effects events which can be executed in real time from the working memory. Over 224 events — including move time and move ballistics — can be stored in the protected memory, as separate effects or linked together to form sequences which may be run manually or automatically.

Sequence Memory Programmer (SM-1)

An optional off-line effects sequence memory system, featuring a removable plug-in archive module, can be added to the PR-2 to off-load selected sequences for individualized effects control by different operators.



VIP-C PR-2 3-axis joystick provides infinite compression size and position. Optional off-line effects sequence memory module may be included to off load sequences for individualized operation. Joystick unit may mount on either end of remote control panel.



Standard PR-1 remote unit is engineered for simplicity. Adaptable for rack or console mount, the panel's small size is ideal for mobile application. Push-button clusters control size and position; up to six different effects (size, position and border) may be preset.

System Description:

- 1 MF-1 Main Frame
- 1 ER-1 Engineering Remote
- 1 PR-2 Remote Control

Price

VIP-C \$42,000.00

FEATURES

- Single channel system
- 0-7 10 of full screen size compression when synchronizing and or time base correcting
- 0-full screen size when feeds are synchronous
- Picture may be positioned anywhere
- Improved horizontal and vertical interpolation
- Remotes utilize a single 75 ohm coax cable

Options:

PR-1 PRODUCTION REMOTE

FEATURES

- Pushbutton operation
- 4 x 3 aspect ratio lock/unlock during zoom
- Horizontal and vertical justification (one side of picture locks to edge of screen, then it compresses off screen)
- Color border or mat generator
- Unity size and center position switches (will return either to center or full size)

PR-1 \$3700.00

PR-2 REMOTE CONTROL

FEATURES

- Joystick control of positions, size, borders
- Hex key pad entry with menu
- Software defined and multimode
- Inversions and reversions
- Multiuser and RS 232 port
- Color border or mat generator
- Electronic freeze frame
- Programmable presets
- Dynamic moves
- Programmable sequences
- SM-1 cassette storage of pre-programmed effects

PR-2 \$7600.00

Cassette pricing

1/4 user cassette pack of 3 \$550.00
Full user cassette, pack of 3 645.00
Pre-programmed cassette 490.00



ADDA CORPORATION

130 Knowles Drive
Los Gatos, CA 95030
(408) 379-1500

ELECTRONIC GRAPHICS SYSTEM

ESP II Electronic Graphics System

The easy entry to professional broadcast quality, still store and electronic graphics generation.

ADDA's ESP II offers a unique opportunity to move up to truly professional video graphics production and presentation. Transfer your current slides, still photos, art cards, titles and other graphics to digital frames in the ADDA ESP II for video production or special display.

You can even "grab" stills from live camera or tape productions with the ESP II freeze frame feature. Stills may be stored as random frames, each with a numerical address for instant recall, or assembled in sequences. ESP II high resolution stills are always perfect, always right side up, always available.

Create your own graphics without costly art work, paste up or photography. Multi-layer video graphics may be assembled in the frame buffer for storage as completed stills. Because the ESP II uses the same 8-bit, 4-times subcarrier sampling scheme, multi-generation graphics can be created without picture degradation. Up to 2 of the most popular drive units may be used with the ESP II, each with a capacity of up to 400 stills. Drives may be fixed or removable for additional off-line storage flexibility. The ESP II's modular architecture permits expansion to dual-channel operation at any time to add additional production capability plus digital transitional effects between channels.

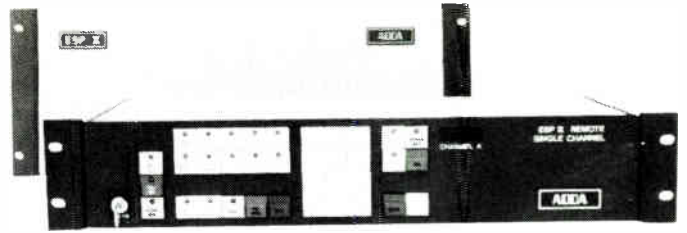
Add new dimensions to video productions and display presentations with broadcast quality electronic graphics...always at hand in the ESP II. Save on slide production and graphics cost as well as maintenance.

VIDEO

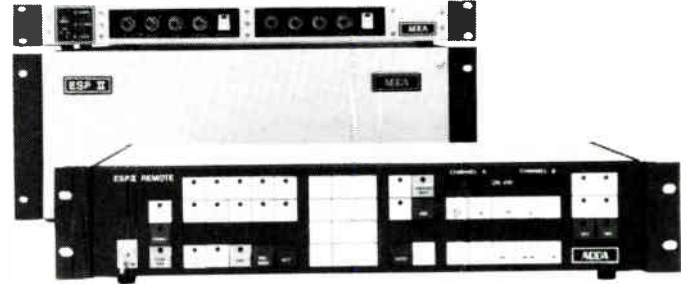
Television Standard:	Accepts NTSC or NTSC type 525 line, 60Hz signal.
Input Signals:	Requires stable color signal. Also requires gen lock reference signal with composite sync, blanking, and burst.
Input Impedance:	75 ohms, A and B Channel Inputs. (Gen Lock is high impedance looping)
Output Signals: (A, B, C Outputs)	Composite video with burst, composite sync, and blanking meeting RS-170A requirements.
Range of Synchronization:	One frame (2 fields).
Bandwidth:	± 0.5dB to 5MHz.
K Factor:	1% (2T pulse).
Differential Phase:	Less than 2° at 40 IRE, using linearity ramp and subcarrier test signal.
Differential Gain:	Less than 2%.
Signal-to-Noise:	+ 56dB (p-p signal to rms noise).
Sampling Rate:	4 x Fsc (14.3MHz).
Line Rate Tilt:	Less than 1%.
Field Rate Tilt:	Less than 1%.
Output Sync Jitter:	± 1 nsec.

POWER REQUIREMENTS

Voltage:	120 ± 10%.
Frequency:	50 or 60Hz.
Power Consumption (single):	Less than 300 watts (mainframe); less than 50 watts. (remote control unit at 120V AC).
Power Consumption (dual):	Less than 350 watts (mainframe); less than 50 watts (remote control unit at 120V AC).



ESP II REMOTE (Single Channel)



ESP II REMOTE (Dual Channel)

DIMENSIONS AND WEIGHT

	MAIN FRAME	REMOTE
Height:	7 inches	3-3/4 inches
Width:	19 inches	19 inches
Depth:	21-3/8 inches	8 inches
Weight:	35 lbs. (46 lbs. for dual)	6 lbs.

Cat. No.	Description	Price
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SINGLE CHANNEL		
ESP II	Analog/Digital Processor with Proc Amp Control Master Control Panel	\$19,500.00

ESP II 2 Channel Upgrade		
DC-II	ESP II Single Channel Upgrade to Dual Channel	9990.00

Remotes		
RM-II	Remote Control Panel	3200.00
ACR-II	Engineering Remote	1200.00

DUAL CHANNEL		
ESP II	Analog/Digital Processor with Proc Amp Control Master Control Panel	\$27,590.00

Remotes		
RM-II	Remote Control Panel	3500.00
ACR-II	Engineering Remote	1200.00

ACCESSORIES

Drives		
DD-80-F	80 Megabyte Fixed Disk Drive (200 Frames)	\$ 5500.00
DD-80-R	80 Megabyte Removable Storage Disk Drive (200 Frames)	10,500.00
DD-160	160 Megabyte Fixed Disk Drive (400 Frames)	10,500.00
Cables		
CB-II-20	Processor-to-drive Cable B 20'	390.00
CA-II-20	Processor-to-drive Cable A 20'	390.00
CA-II-06	Drive-to-drive Cable A 6'	150.00

Circuit Board Repair		
	Circuit board repair on "exchange" basis	350.00*

*ADDA Corporation reserves the right to refuse to repair any board out of warranty.

130 Knowles Drive
Los Gatos, CA 95030
(408) 379-1500

ESP C SERIES

Digital Still Storage and Retrieval

On-line previewing and editing; automatic sequencing; the instant creation of multi-layer graphics.

The electronic storage and retrieval of video images for graphic production and preprogrammed on-air use, is becoming an industry standard for the technological leaders in television and video production.

Now there is a new generation of still store systems. And from the 200C to the large, multiple drive 750C, our microprocessor-controlled, expandable systems have a production versatility that can't be beat.

The Basic System

The ESP 750C Digital Graphics System consists of an Analog/Digital Processor, a Master Control Panel, and standard computer industry disk drives. But the built in flexibility of our system makes it easy to expand. Each Analog/Digital Processor can accommodate up to four drives. You can add up to a total of fifteen remote production panels. And more off-line storage with up to 99 separately identified disk packs.

Our dual channel output and front end synchronization allow you a choice of inputs and a wider range of capabilities.

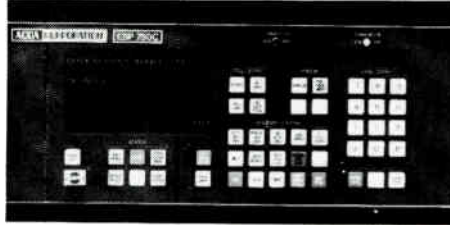
And the 750's second generation digital electronics give you a production-oriented sequence and memory system that lets you perform last minute editing. Add or delete within a sequence. Create multiple generation graphics with virtually no degradation in the quality of your original image.

ESP's intelligent controls make the C Series a production tool that goes easy on everyone in your operation.

FEATURES

- A built-in operator prompter.
- Single function keys.
- A rapid-access sequence and memory system.
- Built-in safety features.

ESP-750 C Series Electronic Graphics System



CAT. #	DESCRIPTION	PRICE
ESP-750C	Analog/Digital Processor; Master Control Panel; Disk Drives (2); Acoustic Cabinet. Cables CB-750C-20 (2) CA-750C-20 (1) CA-750C-06 (1) Disk Packs (2) Multipix	\$119,500.00

ACCESSORIES

RM-750C	Remote Control Panel	6500.00
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CABLES

CB-750C-20	Processor-to-drive Cable B (20')	390.00
CA-750C-20	Processor-to-drive Cable A (20')	390.00
CA-750C-06	Drive-to-drive Cable A (6')	150.00

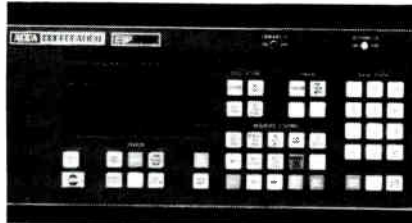
DISK PACKS

DP-750	Record and playback packs, 750 frames/pack.	
	Quantity	
	1-4	1075.00
	5-10	1000.00
	11 +	940.00

OPTIONS

Digital I/O	5200.00
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ESP-400 C Series Electronic Graphics System



CAT. #	DESCRIPTION	PRICE
ESP-400C	Analog/Digital Processor; Master Control Panel; Disk Drives: (1) 160MB. Cables CB-400C-20 (1) CA-400C-20 (1) CA-400C-06 (1)	\$52,700.00

ACCESSORIES

RM-400C	Remote Control Panel	6500.00
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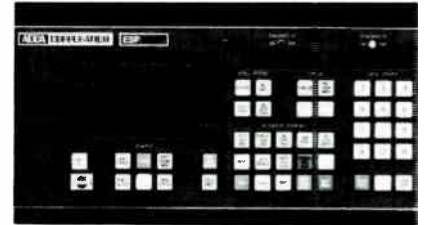
CABLES

CB-400C-20	Processor-to-drive Cable B (20')	390.00
CA-400C-20	Processor-to-drive Cable A (20')	390.00
CA-400C-06	Drive-to-drive Cable A (6')	150.00

OPTIONS

Digital I/O	5200.00
ACI	5200.00
Multipix	3500.00

ESP-200 C Series Electronic Graphics System



CAT. #	DESCRIPTION	PRICE
ESP-200C	Analog/Digital Processor; Master Control Panel; Disk Drive (1) 80MB. Cables CB-200C-20 (1) CA-200C-20 (1) CA-200C-06 (1)	\$52,700.00

ACCESSORIES

RM-200C	Remote Control Panel	6500.00
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CABLES

CB-200C-20	Processor-to-drive Cable B (20')	390.00
CA-200C-20	Processor-to-drive Cable A (20')	390.00
CA-200C-06	Drive-to-drive Cable A (6')	150.00

CARTRIDGE

DP-200	Record and playback cartridges 200 frames/cartridge	420.00
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OPTIONS

Digital I/O	5200.00
ACI	5200.00
Multipix	3500.00

LIBRARY CONTROL SYSTEM

The ADDA Library Control System (LCS) is an option to the ESP-C series digital video still store. Utilizing the LCS, an operator may identify a still with an alpha descriptor and then may conduct searches for descriptors, build sequences of stills, transfer sequences to and from the ESP main frames, and print copies of sequence lists or disk packs.

FEATURES

- One to eight users.
- One-half second typical search time.
- Dedicated engraved key functions.
- Multiple search categories.
- Single or quantitative searches.
- Up to 15,000 still descriptors storable.

Basic System Description

- 1 - Computer Operating Software
- 1 - Terminal/CRT
- 1 - Library Control Software
- 1 - Library Interface Card \$14,750.00

Options

Printer	\$1,200.00
Terminal/CRT	1,350.00
Interface Card	600.00

CALL HARVEY



AVC SERIES

AVC SERIES VIDEO PRODUCTION SWITCHER

FEATURES

- Simplified Controls: pushbuttons, instead of knobs, assure controls never get out of sync with internal memories
- Expanded Memory System: Key Memory System allows storage and recall of up to four separate and distinct key setups for each key source
- Unparalleled Switcher Flexibility: three keyers per M/E so operator can introduce any type or combination of keys in any sequence with any background
- Extensive Preview Capability: preview monitoring system allows previewing of not only any M/E output, but also individual buses feeding the M/E as well as the Quad Split, Program, and Preset Buses (or program bus A and B)
- Independent M/E Pattern Systems: with the AVC Series, 90 patterns are keypad selectable, and each M/E has its own independent pattern system
- Bordering Flexibility: half-halo borders allow wipe transitions to be hard on one side, tapering to full soft on the other for unique images and effects
- Choice of Auto-Transitions: automatic transitions from 0.1 to 9.9 seconds can be sinusoidal, exponential or logarithmic, as well as linear
- Positive Tally Indication: actual tally with positive "On Air" indications are provided for extra operating ease and reliability
- Wider Matte Color Choice: totally independent matte generators let the operator choose any color wanted on every matte function
- Downstream Mixer/Keyer: downstream mixer/keyer allows user to choose either PGM/PST or A/B operation

The uncluttered beauty of the AVC Series panel is striking. In creating the AVC Series switcher, Ampex engineers achieved many industry firsts, including the elimination of all panel control knobs. Instead, there are two centrally located "adjust panels" containing Up/Down and On/Off pushbuttons as well as the Pattern Positioner. All major switcher adjustments are made from this convenient focal point.

Advanced design concepts are used to enhance reliability and to improve signal performance. For example, dual current sharing power supplies are standard. Independent microprocessors in both the control console and the electronics bay may have an optional backup CPU installed. A battery backup for the AVC system is standard.

One dual-twisted-pair audio cable is the only connection required between the console and the electronics bay.

The large, backlit M/E display panels contribute to the easy operation of the AVC Series. These panels display the key sources selected on all three keyers in each M/E. In addition, the wipe pattern numbers and auto-transition duration times are also displayed in large, easy-to-read numerals.

Also on this display are "active bus" and keyer tally indicators that always show which video bus or buses including keyers are contributing to the output of the M/E. To further simplify the operator's job, these tally indicators change colors from yellow to bright red to indicate when any of those sections of the switcher are "On Air."

One of the greatest advantages of the AVC Series switcher is its ease of operation. AVC Series switchers are among the most powerful and capable production switchers available on the market today. Yet, for all their creative power and capability, AVC switchers operate in the logical and familiar cascaded re-entry, A/B format. The operator's perceived "video flow" is always left-to-right and top-to-bottom and, except for Mix Key, Wipe Key and Auto-Transitions, the fader position always corresponds to the active video bus.

The AVC switchers use 12-button keypads on each M/E for the selection of key sources for all three keyers, wipe patterns and auto-transition rates. Use of the keypad makes control of the M/E fast and efficient, and its compactness allows the overall physical size of these extremely powerful switchers to be kept to human proportions.

AVC Series switchers are designed to significantly increase creative capabilities while actually reducing operational tasks. Simple controls, easy-to-read and understand visual displays and tallies and compact size add up to a more useful production system. With an AVC Series switcher's simple-to-operate console and logical, familiar A-B operation providing truly useable power, you'll be assured of better final production results every time.

AVC SERIES OPTIONS

There are numerous options available for use with AVC Series switchers that can extend their unique and powerful production capabilities. AVC switcher options include:

- Analog Key Border Generators
- Encoded Chroma Keyers (with shadows)
- RGB Shadow Chroma Keyers
- Pattern Modifiers
- Rotating and Matrix Patterns
- Status Displays, Timer/Counters
- SMPTE Serial Interface
- Auxiliary Buses

While some of these options, such as the highly advanced Pattern Modifier system, offer exciting new visual effects and abilities unavailable on any other switcher, others (such as the Panel Memory system) make the already easy-to-use AVC's operation even simpler and more powerful.

The wide range of options available for use with the Ampex AVC Series switcher means you can better configure your switcher to meet all of your specific needs at a cost within the limits of your budget. And with AVC's modularity and microprocessor control, future expansion is easy to accomplish.



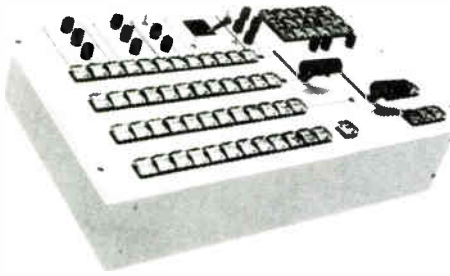
Beaveronics, Inc.

8 Haven Ave.
Port Washington, NY 11050
(516) 883-4414

STUDIO PRODUCTION VIDEO SWITCHING SYSTEMS

MODEL 712

For Remote and Small Production Facilities
\$8300.00



(Also available in PAL and PAL-M versions)

STANDARD FEATURES

- 12 inputs including Black-burst and Color Background
 - Built-in Black-burst Generator
 - Built-in Colorizer
 - Built-in RGB Chroma keyer
 - Four Switching Buses
 - Downstream Preset and Program Buses with cut bar
 - Rack-mounted electronics
 - Adjustable Soft Wipe
 - Adjustable Border edges
 - Color Matte
 - Vertical Interval switching thru-out
 - Illuminated Momentary Contact pushbuttons
 - Internal, external, Chroma-key, and matte inputs to keyer
 - Built-in pattern modulator with frequency and amplitude controls
 - Full Tally
 - Pattern symmetry control
 - Illuminated Momentary contact pushbuttons for effects selection
 - Normal/Reverse/Normal-Reverse wipe transitions
 - Pattern limit controls for presetting size of patterns or varying vertical and horizontal aspect ratio
 - Loop-through inputs
 - Input amplifiers with clamping
 - Synchronous/Non-synchronous inhibit
 - Modular construction with front access plug-in modules
- PAL/PAL-M Versions, per Switcher.....\$1250.00

12-input, 4-output mix-effects amp with downstream mixer, includes downstream preset and program buses with cut bar, RGB chroma key

OPTIONS

Downstream Keyer
\$2250.00

CHECK BEAVERONICS FOR:

- Master control switchers AFV with audio breakaway
- Specialized custom switchers
- Keyers

MODEL DSK-4-DLB

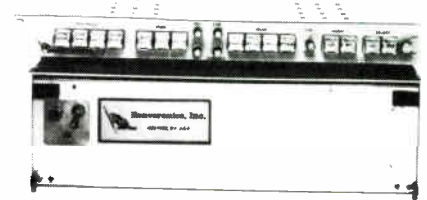
Stand-alone Downstream Keyers To Upgrade Your Total System
\$9500.00

This Keyer is specifically designed for Character Generators and accepts both Video and Key signal outputs from up to four Char. Gens. (or other video sources). The key signals may, if desired, be keyed simultaneously, assuming different portions of the picture area are involved, to produce multiple inserts.

The unit is packaged with its electronics on plug-in cards in a 5-1/4" rack mounted frame together with a compact 1-3/4" remote control panel.

FEATURES

- Independent stand-alone keyer
- Built-in Edge Border, Shadow, and Outline, variable from black to white
- Built-in Matte Generator
- Key can be inserted or removed by cut or automatic mix at any of four rates
- "Cut" or automatic Fade to Black at any of four rates
- Edge Border variable from black to white
- Key may be filled with either key video or matte
- Can select up to four key sources either individually or simultaneously

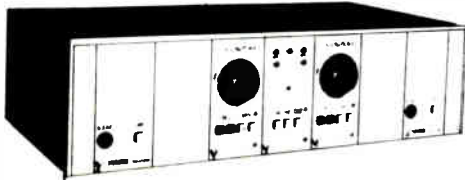


ALL BEAVERONICS SWITCHING EQUIPMENT CARRIES A TWO YEAR WARRANTY

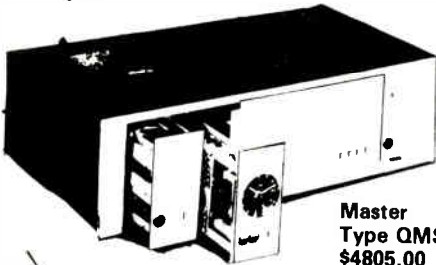
FAVAG MASTER CLOCK SYSTEMS

 Available with accuracy better than 1 second/yr. or tied to Rubidium stdn.

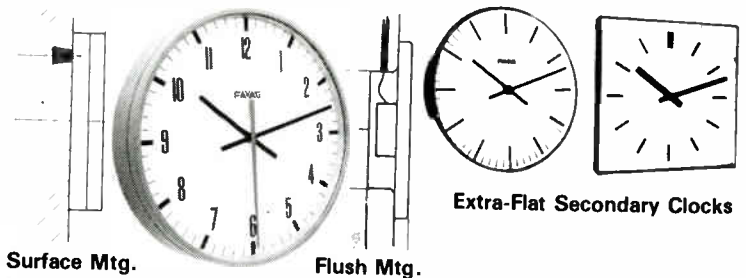
NUMEROUS SECONDARY CLOCKS ARE AVAILABLE INCLUDING THOSE WITH SILENT OIL-BATH MOVEMENTS.



Dual Master
Type 2QMS-2
w/Auto Changeover
\$8060.00



Master
Type QMS-1
\$4805.00



Surface Mtg.

Flush Mtg.

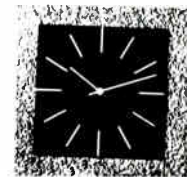
Extra-Flat Secondary Clocks



Table Top
\$395.00

6 Digit Digital
Displays Available

Minute or Second Impulse



Decorative Secondary Clocks

MASTER CLOCK SYSTEMS MODULAR
DESIGN FACILITATES FUTURE EXPANSION

Write or phone for details.

Beaveronics, Inc.

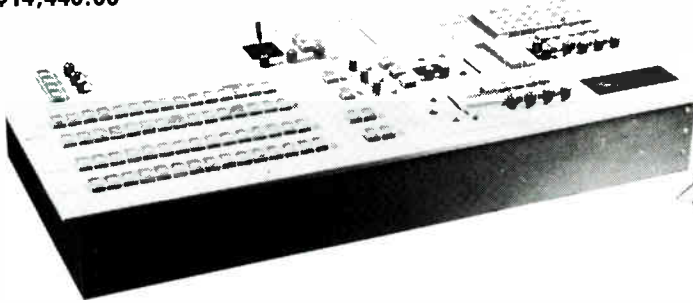
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STUDIO PRODUCTION VIDEO SWITCHING SYSTEMS

**For Moderate Size Facilities
 Model B1-154**

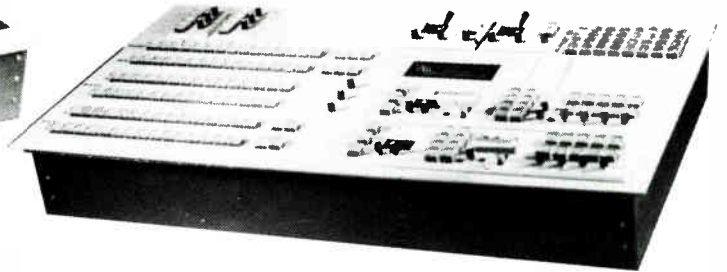
\$14,440.00



15-input, 4-bus mix/eff/key amp with downstream mix/key amp. Many optional features including DSK and quad-split, etc.

**For Sophisticated Facilities
 Model B1-156**

\$23,975.00



15-input, 6-bus with two full mix/eff/key systems and dir. pgm and pre busses: many options available, DSK, quad, etc.

**Models 154 and 156
 (Also Available in PAL and PAL-M Versions)**

STANDARD FEATURES

- Switcher Models 154 and 156** are of the same basic design and utilize the same electronic sub assemblies. These switchers have the same standard basic features, differing only in the number of busses and in the number of mix/effects units. The basic standard features include 32-pattern mix/effects, color black and color matte background generator, and a mix/key unit in the case of the model 154.
- Input Amplifiers** • loop through high impedance input • gain equalization for 1000' cable • 22° sub carrier phase control • clamped inputs (10% to 90% APL) sync addition on non composite signals if desired.
- Tallies** • isolated dry contact relay closure on all inputs (2 amps at 50v.)
- Mix-Effects Units [Includes Keying Function]** • One (1) used in model B1-154 • Two (2) used in model B1-156 • Fades (or Supers), Wipes, Keys may be produced • Positioner Joystick for each M/E positions patterns. • Pattern Modulation may be accomplished by an internal waveform generator. Modulating sources may be either (1) sine wave, (2) square wave, (3) saw tooth, or (4) an external customer generated source. • Mix Key and Wipe Key available. • Soft Wipe and Soft Key available with adjustable variations. • Push to Preview obtained by depressing knob on clip potentiometers (provides for M/E monitor output). • Wipe Mode — 3 interlocked buttons select "NOR", "REV" or "N/R". • Hard Wipe, Soft Wipe or Border can be selected with degree of softness made by "Edge" control adjustment. Border may be Colorized by adjustment of "Hue" and "Luminance" control. • Symmetry of Pattern may be adjusted by "SYM" knob. • Preset Wipe Limits are set by potentiometers. "H" and "V" vertical preset limits activated by Pattern Limit button. • Spotlight alternate action push button produces a 6 db. level difference between "A" and "B" input channels in the "Wipe" mode. (Operates on all patterns.) • Pattern Assignment is made by depressing "ASSIGN" button. Pattern select feature may be "locked" to pattern matrix by depressing the "ASSIGN" button a second time on the same pattern. Patterns assigned appear on LED display on

M/E control panel. • Non-Synchronous Inputs. An "NS" indicator is provided. Tearing is prevented by not allowing a non-synchronous signal to be switched except at extreme position of fader handle where a "cut" transition occurs. • Key Input Sources may be either (1) "A" bus video for self keying, (2) preview Key bus, (3) chroma key, or (4) an external key source. • Key Invert selector provided to accommodate either positive or negative video as a keying source. • Key Fill may be either "A" video for self keying or a colorized matte. • Mix/Key provided a lieu of second Mix/effects system for Model B1-154 switching system. Provides for all mix and keying functions of mix/effects system (as previously described) except for the pattern effects.

OPTIONAL FEATURES

May be added at any time (required control panel wiring already installed) except those indicated with an asterisk.

- Chroma Keyer [C.K.]** **\$1100.00**
 • Hue — selects hue of keying color • Gain — adjusts the amplitude • Clip — adjusts the clip level for keying • Camera (4 x 1) input switcher — selects RGB output of any one of 4 cameras to feed C.K.
- Down Stream Keyer [DSK]** **\$2250.00**
 • Keys in titles, inserts, or fades to black with or without insert • Color matte background • Key sources: (1) Mix/Effect, (2) Chroma Key, (3) External • Push to Preview (Monitor)
- DSK Border** **\$2200.00**
 • Border — black edge around insert • Shadow — black edge on right side and bottom of insert.
- Quad Split** **\$2500.00**
 Provides four (4) variable size quadrants from eight possible sources with variable width border.
- Aux Busses** — (Model 156 only) **\$2300.00**
 Two remote outputs are available — remote control panel and amps required.
- 2nd Mix/Effect Unit** in lieu of Mix/Key amp in 154 **\$2990.00***
 Mix/Key amp fed by preview and program busses in 156 .. **3850.00***
PAL/PAL-M Versions, per Switcher **1250.00***

ALL BEAVERONICS SWITCHING EQUIPMENT CARRIES A TWO YEAR WARRANTY



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Write or phone for details.

Prices and Specifications Subject to Change Without Notice.



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Salt Lake City, UT 84119
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VIDEO GRAPHIC SYSTEM

FGS-4000

Video Graphic System

FEATURES

- Polygon based system • NTSC, PAL, SECAM and film compatible
- Scene Synthesis of 2D and 3D shaded objects in 3-space • Real time animation • Area selectable display mode: raster fill or vector outlined
- Unlimited area overlap • Variable perspective • Multiple light sourcing: variable direction, color, intensity and ambience • Infinite curve resolution • Hidden surface processing • Keyboard, knob, tablet, stylus and joystick controls • Interactive editing from work station • Simultaneously displayable colors: 16,384 real time, 16,777,216 nonreal time • Real time, full-color frame capture • User diagnostics • High quality images • 2D and 3D image entry • Single frame VTR control • Software expandability • 16 levels of transparency • Texture mapping • Film Effects: glows, streaks, and script-on • Paint capabilities • Viewports of variable size and position

High Quality Animation System (HQAS)

The High Quality Animation System (HQAS) software gives the operator a tool for enhancing previously created animations by adding glows, script-on effects and streaking capabilities along with texture mappings. Each of these "high-quality" effects can be applied to produce exceptional animation sequences and still pictures. By generating single-frame animation sequences the FGS-4000 can produce effects previously available only with film.

Texture Mapping enables the artist to create special effects with video images "captured" by a camera. These effects can include images of metallic surfaces, textures, landscapes and personalities applied to a previously created object or shape. 3D box can now have different video inputs on each of the six sides. Logos assigned with a picture of chrome can be transformed into metal.

Real Time Text Editor

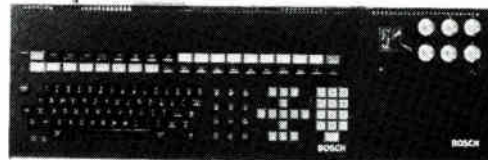
Using the Real Time Text Editor, displays can be created and pages composed of both 2D and 3D objects. Fonts can be selected, sized, colored, italicized or condensed either by turning a knob or by menu selection. All objects can then be positioned, rotated or rearranged prior to the animation being created. The operator is not limited to the virtual image area of the monitor, but can also type or position characters off-screen.

Typing is not limited to a horizontal line. By rotating the cursor, keyboard characters can be entered at an angle, into the distance (Z-axis) or even upside down and backwards, all in real time. There are no limits to composition with the Real Time Text Editor.

2D Editor

The 2D Editor allows the operator to input arbitrary flat objects by rapid digitization from artwork placed on the tablet. Overlapping of different colorable areas is possible, along with duplicating objects for repositioning, coloring, etc.

The 2D Editor puts real time entry and editing at the operator's fingertips. All operations are viewed in real time and display can be zoomed up and back or moved left-to-right for close-up scrutinizing. Character entry does not require preprocessing time prior to page composition and animation. This feature allows rapid creation time while maintaining interactive editing capabilities for the operator.



FGS-4000

3D Editor

The 3D Editor provides four different techniques for generation of three dimensional objects. With the Extruder, the operator can create a two dimensional character and make a three dimensional object. The object can also be extruded to a "ribbon" edge effect, without front or back faces. Options include variable curve tolerance to allow the operator to gauge the overall character smoothness and the capability of making a three dimensional font suitable for page composition from any 2D alphanumeric font.

Speed-Framing

This option is available for use with the Paint Editor, Animation Editor, and High Quality Animation System. It interfaces with a variety of 1" VTRs to provide automatic single frame control to allow mastering of nonreal time effects.

Animation Editor

The objects composed on a page in the Real Time Text Editor are animated by the Animation Editor. Each object, or group of objects, can be moved independently in 3D space. Controls including menus, knobs and a joystick are provided. Animations are Keyframe-based with automatic interpolation between Keyframes. Sizing, position and rotation can be animated, along with eye position, viewport size, and perspective. The FGS-4000 provides a single light source which can animate on the X, Y or Z axis. The intensity of the light source and ambient light levels also can be controlled.

By animating color, the operator has access to 16,000 real time and 16,000,000 nonreal time colors. There are 16 levels of transparency and two vector (or wire frame) character widths. When using vectors, the character maintains the assigned color, level of shading and high quality edges, a trademark of the FGS-4000.

Paint Editor

The Paint Editor extends the use of the FGS-4000 by transforming the operator's painting skills into artistic expressions of video imagery. "Paintings" are created by moving the stylus on the tablet in the same manner as moving a paint brush on a canvas. Instead of working directly on the painting, the artist watches the color monitor while moving his hand on the tablet.

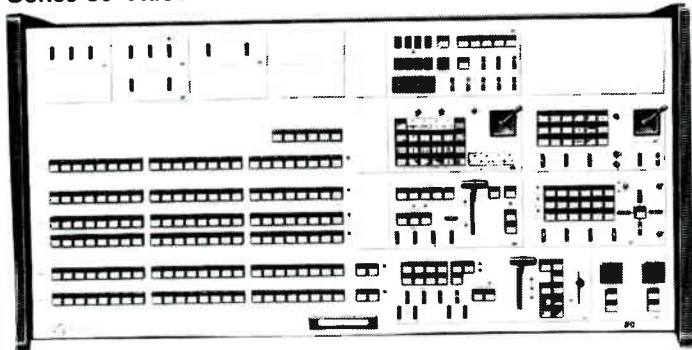
Other features of the Paint Editor include: airbrushing effects, painting with 16,000 colors and 16 levels of transparency. All features are accomplished by a pressure-sensitive stylus that fits firmly in the artist's hand.

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VIDEO PRODUCTION SWITCHERS

Series 80 Video Production Switchers



The Central Dynamics Series 80 range represents a great advance in the field of video production switchers. Based on the new SFX (Sequential Effects) group, the range offers unprecedented flexibility and ease of operation.

The Series 80 and its SFX group were made possible by the development of radically new systems of processing and control, resulting from a complete reappraisal of the uses of video switchers and the needs of operators in the light of present day production techniques.

Conventional video switchers suffer from severe limitations when used in complex production sequences, and frequently the whole sequence must be planned in advance to ascertain the correct point of entry into the sequence. Even with the pre-planning, some simple sequences are impossible on conventional switchers, because a 'lock-out' situation is reached. A single SFX group can perform sequences impossible on even a triple Mix/Effects conventional switcher. Pre-planning is generally unnecessary, and 'lock-outs' are impossible.

Three models of the Series 80 are offered, but modular construction of both electronics and control panels permits a high degree of flexibility in the choice of each system. This arrangement also enables plug-in installation by customers of additional facilities as required.

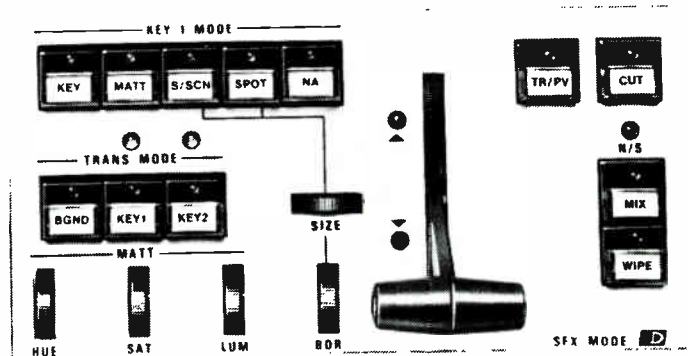
The Series 80 employs the latest techniques of circuitry and construction to ensure the highest standards of performance, stability and reliability. Each unit of the electronics is internally timed, so there are no heavy and bulky delay cables - a particular asset for mobile van installations.

Features

- Unique sequential effects (SFX) processing
- Greater flexibility plus simpler operation
- Modular construction
- Full range of options
- High performance, high stability
- Available for PAL, PAL-M, NTSC.

SFX Mode Module

(Part of each SFX group)



This module, shown above, provides selection of the operating mode of the SFX group.

The following controls are provided:

Key 1 Mode controls: a set of five momentary action pushbuttons to select the mode of operation on Key 1. Key, Matt Key, Non-Additive Insert, Spotlight, Split Screen.

Transition Mode controls: three pushbuttons to select Background, Key 1 and Key 2 Transitions. These controls may be either momentary or alternative action. (Selection is made in the electronics unit). Above the Key 1 and Key 2 buttons are LED indicators to show when these key levels are on air.

Matte controls: three potentiometers to provide control of Hue, Saturation and Luminance of the internally generated matte signal. (An optional dual matte generator allows two separate matte signals, matte 1, matte 2, to be used simultaneously in key 1 and key 2. When this option is fitted, the matte controls on the SFX module are not installed).

Split Screen controls: these controls adjust the size of the split screen and the width of a border around the split screen. The Size control also adjusts the size of the pattern when spot is selected.

Fader handle: used to effect dissolve or wipe transitions. Indicators are provided to show the current direction of travel.

Mix/Wipe controls: two momentary controls to select the type of transition controlled by the fader.

Cut: provides an immediate cut to the effect(s) selected on preview.

TR/PV: operation of the TR/PV button allows previewing of a transition without affecting on air signal.

Series 80 Standard Modules

Key Mode Module

(Part of each SFX group)

This module provides selection of key sources, masking, level and softness controls for the two key processors of the SFX group. Controls are also provided for the Dual Key Border Generator, which is a plug-in option to the SFX group.

The following control groups are provided:

Key 1 Source Controls

Note: In all of the modes of Key 1, except Matt Key and Spotlight, the key is filled with the video from the Foreground bus.

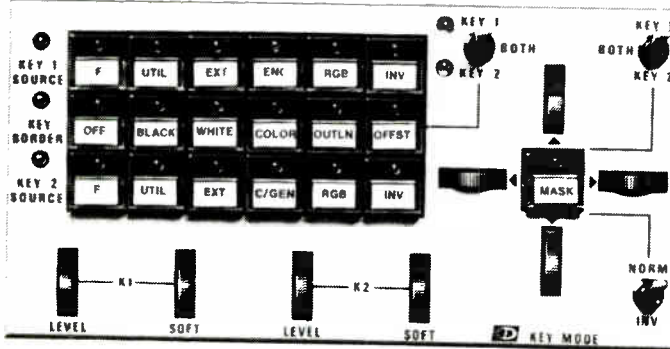
- | | |
|------|-------------------------------------------------------------------------------------------------------------------------------------------|
| F | Momentary action switches select the signal to be used for keying from either the Foreground or Utility buses, or from an external input. |
| UTIL | |
| EXT | |
| RGB | Momentary action switch select the key signal from the optional RGB Chroma Keyer. |

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VIDEO PRODUCTION SWITCHERS

Series 80 Key Mode Module (Cont'd)



ENC An alternate action switch. When enabled, the keying signal is derived from the encoded chroma keyer incorporated in the SFX group. The signal video input to the keyer is selected by the F, UTIL, EXT buttons. ENC is cancelled by depressing the button a second time, or by selection of RGB.

INV An alternate action switch which causes the selected key signal to be inverted.

Key 2 Source Controls

F Momentary action switches select the signal to be used for keying from the foreground or Utility busses, or from the external input. In all of these modes, the key is filled with the output of the color matte generator. With the optional Dual Matte Generator Key 2 may be filled with video from the Utility bus.

RGB Momentary action switch select the key signal from the optional RGB chroma keyer. In this mode the key is filled with the video from the Utility bus.

C/GEN Momentary action switch. Separate key and video fill signals are accepted from an external character generator

INV An alternate action switch which causes the selected key signal to be inverted.

Level and Softness Controls

Two pairs of potentiometers provide control of the key Level (clipping level) and Softness for Key 1 and Key 2.

Key 1/Key 2 Mask

An alternate action pushbutton enables a rectangular mask for Key 1 and Key 2 processing. A toggle switch assigns the rectangular mask to Key 1, Both, or Key 2. Four potentiometers provide full independent control of position for the four sides of the rectangle. When the mask is enabled, a brightness change on the preview output displays the masking area to permit accurate adjustment. Keying is inhibited outside the preset rectangle. A toggle switch inverts the mask i.e. —keying is inhibited outside the rectangle.

Masking of Key 1 may also be independently performed by patterns derived from the Wipe Mode Module. This function is enabled by the simultaneous operation of the KEY and S/SCN switches or MATT and S/SCN switches on the SFX mode module (page 3). When this function is enabled, a brightness change also displays the masking area in the preview output. Key 1 may be simultaneously masked by the S/SCN-KEY or S/SCN-MATT selection and by the Key Mode module rectangular MASK selection.

Key Border Controls (Optional)

Note: These controls are operational only when the Optional Dual Key Border Generator is fitted to the SFX group. This option also includes 1 or 2 line key borders.

A toggle switch assigns border selection to Key 1, or 2, or both, and all borders may be single or double width.

Note 1: Different color and key border modes can be assigned to Key 1 and Key 2.

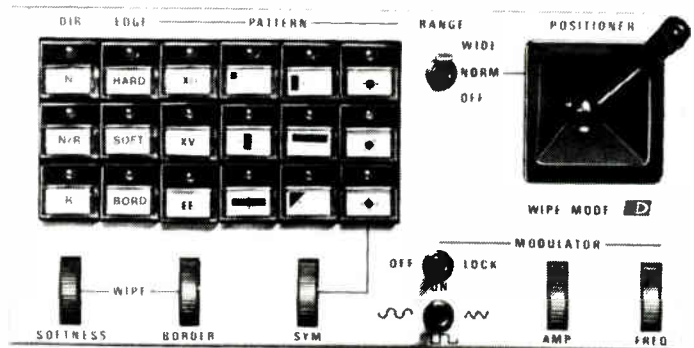
Note 2: 1 or 2 line borders are selected by successive depressing of the BLACK, WHITE or COLOR pushbuttons.

BLACK Black all around borders.
WHITE White all around borders.
COLOUR All around borders, filled with the output of the matte generator, phase shifted by 180 degrees. This facility permits colored borders around a color matte title with minimum chroma crawl effect.

OFFSET An alternate action switch which displaces the border to the right and down, giving a 'drop shadow' effect.
OUTLINE The border only is displayed (black, white or colored, as selected).
OFF No border.

Wipe Mode Module

(Part of each SFX group)



This module provides basic pattern selection and multiplication, wipe direction and edge controls, pattern modulation and positioning. The controls are also used for the SPLIT SCREEN mode of Key 1.

Wipe Direction

Three pushbuttons provide selection of N (normal) N/R (normal/reverse) and R (reverse) direction.

Wipe Edge Controls

Two pushbuttons provide selection of hard or soft edge wipe. A potentiometer controls the degree of softness. This button also enables the border for the SPLIT SCREEN mode of Key 1.

An alternate action pushbutton selects a wipe border, which may be used in conjunction with hard or soft wipes. The border is filled by the matte generator and a potentiometer controls the width of the border.

Pattern Selection

A group of nine pushbuttons select the basic patterns. A symmetry control is provided for the box, diamond and circle patterns.

Pattern Multipliers

Two pushbuttons 'X H' and 'X V' allow multiplication of the selected pattern by four horizontally, or vertically, or both. When the positioner is turned On (NORM), the multiplication ratios (horizontal and vertical) may be varied by moving the positioner.

EE

This pushbutton selects the output of the optional Extended Effects Generator in place of the standard patterns.

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VIDEO PRODUCTION SWITCHERS

Series 80 Wipe Mode Module (Cont'd)

(Part of each SFX group)

Pattern Modulator

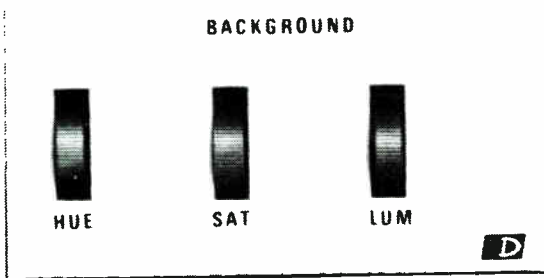
Amplitude and frequency controls operate in the conventional manner, except that modulation is normally of both horizontal and vertical edges. (Vertical or horizontal modulation may be inhibited in the rack electronics if required.) A three-position toggle switch selects sine wave, square wave or triangular modulating waveforms and another three-position switch selects OFF (no modulation), ON (modulation pattern "runs through" according to the setting of the frequency control) and LOCK (modulating frequency is locked to the vertical and horizontal picture frequencies. Various multiples can be obtained by appropriate setting of the frequency control). External modulation signals can also be accepted.

Pattern Positioner

A three-position toggle switch selects OFF (positioner not operating), NORM (normal "On" positioner operation with non-repeating patterns), and WIDE (the available wipe range is doubled permitting a full wipe across the picture from or to any pattern in any position).

Black and Background Generator

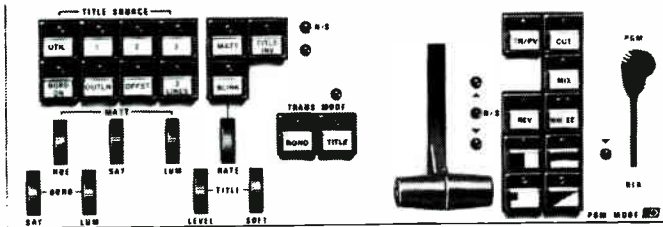
(Standard on every Series 80 switcher)



This unit provides black and color background signals for the primary inputs to the switcher, and separate black signals for use in the secondary stages of the switcher. Hue, Saturation and Luminance controls are provided for the color background. An additional output of color black is provided at the same timing as the switcher inputs for feeding to cameras, pulse assignment systems, etc.

A 2nd Background Generator can optionally be fitted to the switcher.

Program Processor Module



The Program Processor Module used in Models 680 and 1080 permits a wide range of Mix, Wipe, Title and Fade effects to be performed.

The module is fed by the Mix A and Mix B busses, each with re-entry facilities of the SFX Amplifier, and these two busses may be used as either A/B Mix, or a Preset to Program Take.

The Module operates similarly to the SFX Module; i.e., a transition may be performed by changing only the background or title or changing both the background and title simultaneously. A separate control permits fading a synchronous or non-synchronous source, or composite source to black.

The following control groups are provided:

Transition Mode controls: Two pushbuttons to select Background transition and/or Title Transition. A LED indicator, above the Title button, indicates when the Title is on-air.

Title Mode controls: Four buttons to select individual title sources. Any of these may be strapped for self keying or for accepting separate video and key (gate) signals as from a character generator. With pushbuttons, the key may be normal or inverted. Matte filled or video filled, and may be Blinked at a variable rate. Key Level and Softness controls are provided.

Key border controls: Border On/Off, Outline (only the border is displayed) and Offset. The border width may be 1 or 2 Lines.

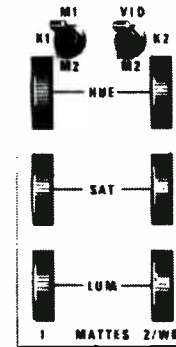
Matte controls: Hue, Saturation and Luminance. Border matte is always the complimentary hue of the Matte filled key. Independent border Saturation and Luminance controls are provided.

Dual Matte Generator

The dual matte generator option allows different matte signals (Matte 1, Matte 2) to be used in the Key 1 and Key 2 levels of each SFX group. Two switches, Key 1 M1/M2, Key 2 VID/M2, allows Key 1 matte to match Key 2 matte, and Key 2 to be filled with Video from the Utility bus or Matte 2.

Wipe border matte is derived from Matte 2.

NOTE: When this option is fitted to an SFX group, the matte controls on the SFX module are not installed.



Series 80 Optional Modules Extended Effects Generator

This module provides a wide range of rotary, matrix, spin and other wipes, and a pointer. There are five control groups.

Exclusive patterns (Black buttons)

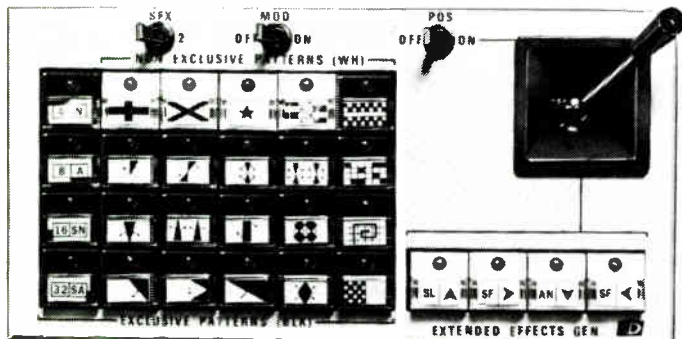
Rotary wipes and matrix wipes can only be controlled by one fader handle and must always wipe over the full picture field. If an exclusive pattern is selected, a switch assigns control to SFX1 or SFX2. In this mode, the basic SFX pattern generator is still available for split screen, so it is possible for example, to perform a rotary wipe to a corner insert split screen. (By appropriate selection of SFX transitions, the foreground or background or both may be wiped.)

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VIDEO PRODUCTION SWITCHERS

Series 80 Extended Effects Generator (Cont'd)



Orientation controls:

Four pushbuttons select the orientation of start point of the selected rotary wipe. The same controls may be used to determine the resolution of the matrix wipe patterns (4x3, 8x6, 16x12, or 32x24), and to select Normal or Alternate pattern, and Spin facilities on the non-exclusive patterns.

Non-Exclusive (White buttons)

These patterns are used in exactly the same way as those of the SFX pattern generator. They can be controlled independently by both SFX faders and can be used as split screen patterns.

Normal and Alternate pattern selections are available from each button, and these patterns may be used as Spin wipes.

Pointer:

Four pushbuttons control the direction of the pointer. This effect is available as a key input to each SFX group and is totally independent of all wipe functions.

These same controls are also employed to select the operational mode of spin wipes. Wipes may spin at a constant rate (free), or may rotate according to the fader arm motion (lock), or may not spin, but have their orientation changed (angle).

(A similar generator is available as a free standing model for use with any production switcher)

Positioner:

The positioner always controls the position of the pointer. The positioner on/off switch enables positioner control of the star and rotary patterns.

Modulation:

Modulation from the selected SFX group is available for all wipes (except matrix) and is controlled by the modulation on/off switch. When using an exclusive pattern it is possible to perform an unmodulated wipe to a modulated split screen.

Note: A second Extended Effects Module may be installed on Model 1080, so that each SFX has exclusive use of Extended Effects.

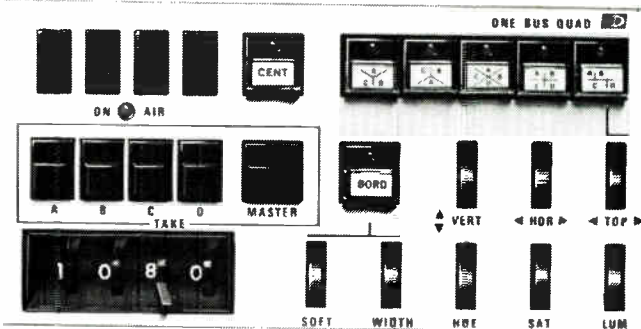
Digital Video Effects Interface

Each SFX provides, as a standard feature, outputs for key and wipe signals used by digital effects units. A video input for the Digital Effects unit may be provided by either the Utility bus, an Auxiliary bus of the Series 80 Model 1080, or by an optional auxiliary bus.

The DVE Key output is usually made available to the switcher as one of the inputs of an RGB output switching system (in place of one of the chroma keys).

Consult CDL's Marketing Services office for application information and details for interfacing to particular Digital Effects units.

One Bus Quad



This module provides quadplexer effects for all series 80 switchers. There are 5 selectable patterns which produce a composite picture derived from either 3 or 4 sources selected from 10 available video input signals.

The 5 patterns include 2 rectangular quad splits, 1 diagonal quad split, and 2 "Y" splits.

Patterns can be positioned horizontally and vertically, and edges may be soft bordered and colorized.

Other Features

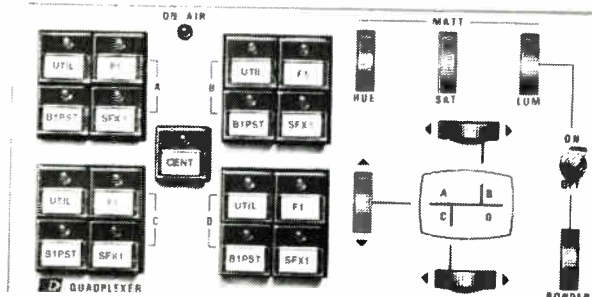
Quadrant preselections can be aired simultaneously or in any sequence.

Quad output can be fed to another switcher input not used for Quad inputs.

Quad color border matt can be fed directly to the 10th input and used as a quadrant fill. It is 180° out of phase with the border matt and can therefore be used when colorizing pattern borders.

(Also available as a free standing VQ2170 model for use with any production switcher.)

Quadplexer



This module provides 'Quad Split' facilities, with SFX re-entry, and can be fitted to Models 680 and 1080.

A 4 x 4 input switcher allows selection of sources to the four corners of the split. The four sources provided are normally the Utility bus, the SFX1 Foreground and Preset Background Busses and the Output SFX1 (Utility 2 replaces Preset Background on Model 1080).

Three potentiometers provide control of the horizontal split position, and independent control for the two vertical splits. These controls are disabled if the alternate action 'CENTer' control is operated. In this mode, the Quadplexer provides a conventional quartering of the picture area.

A border of variable width is enabled by a toggle switch, and the integral Border Colorizer provides a color matte output to fill the border.

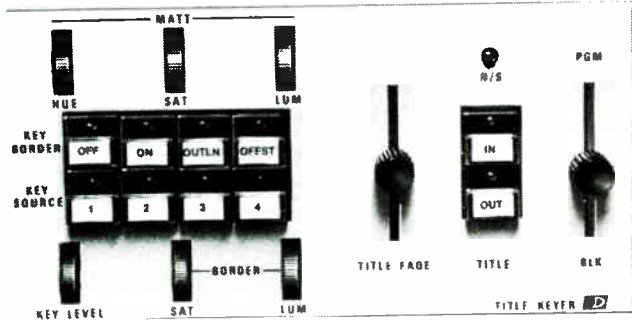
Special configurations using auxiliary busses allow a greater range of effects to be entered into the QUAD. Contact CDL Marketing Service for details and recommendations.

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VIDEO PRODUCTION SWITCHERS

Series 80 Title Keyer



This unit is designed to key color matte titles in program video. A Key Border module is fitted to provide a variety of edging effects. One or 2 line key borders are standard.

The unit accepts the following inputs:

Input video

Color black

For Key signal inputs. (One input may be strapped to accept separate feeds of key and video from a character generator.)

The internal color matte generator is locked to the incoming video, and no pulse feeds are required. An output of separated syncs is provided, and if this feed is used to drive a caption camera or character generator, this unit may be used to title over non-synchronous sources. Keying is inhibited if the selected key signal is not synchronous with the video.

Controls:

Matte controls: Hue, Saturation, Luminance

Key Border controls:

Border On/Off.

Outline (the border only is displayed).

Offset (the border is displaced to the right and down to give a drop shadow effect).

1 or 2 line borders are selected by successive depressing of the ON, OUTLN or OFFST pushbuttons.

Key source controls: 1, 2, 3, 4. Key input 1 is normally fed from the Utility bus of the switcher for maximum flexibility. Input 4 may be strapped to accept separate key and video from a character generator.

Title fader: allows the title to be faded into or out of the program video.

Title In/Out: allows the title to be cut into or out of the program video.

Master fade: fades the output of the keyer to black, and can be used with synchronous or non-synchronous video. A cut to local color black will occur at the end of the fader travel.

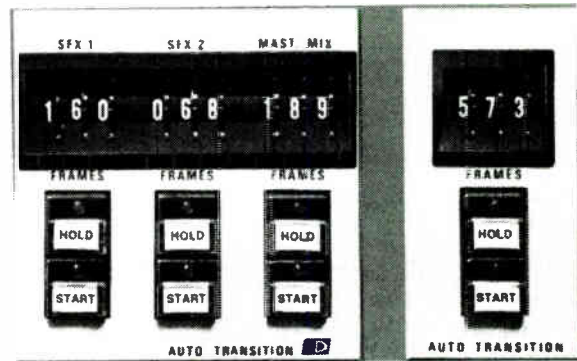
Key level: adjusts the "clipping level" of the keying circuits. Softness is preset to minimize edge crawl effects.

Border fill controls: The border is filled with the output of the matte generator, phase shifted by 180°. This permits color edges to colored titles with minimum crawl and differential saturation effects. Separate Saturation and Luminance controls are provided for the border signal, and permit black, white, grey or colored edges to be selected.

Preview: Three outputs of the preview signal are provided. This always displays the title keyed into the video, irrespective of the settings of the faders and In/Out controls.

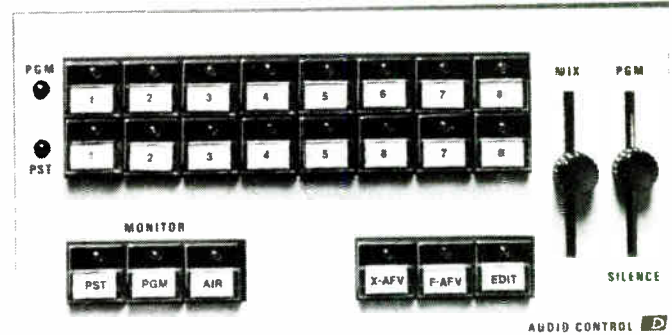
(Also available as a free standing DK 2160 model for use with any production switcher)

Auto Transitions



Smooth, accurate transitions can be made for each SFX and the Program Processor Amplifier. Rates from one frame up to 999 frames can be selected. A transition can be stopped and restarted at any time.

Audio Follow Switcher



Either Mono or Stereo systems may be installed in any Series 80 switcher.

The system includes an 8 x 2 audio switching matrix for dissolve, fade-to-silence and A/B/output switching. The two audio busses follow the Program Background and Preset Background busses of an SFX.

There are 3 control modes: Manual, Editor and Follow Switcher.

In the Follow Switcher mode, independent selection is provided for Follow Crosspoints and Follow Faders. When Follow Fader is selected, the dissolve will follow the SFX fader when a background transition is performed. The fade-to-silence follows the fade-to-black of the Title Keyer (when this option is installed). Note: Title Keyer facilities are standard on Model 680 and 1080.

The system includes a 4" x 8" control panel (standard Series 80 Switcher control panel module) and rack electronics (6 RU).

Utility and Auxiliary Busses, and Re-entry

A variety of options are available for installing busses to a Series 80 Switcher.

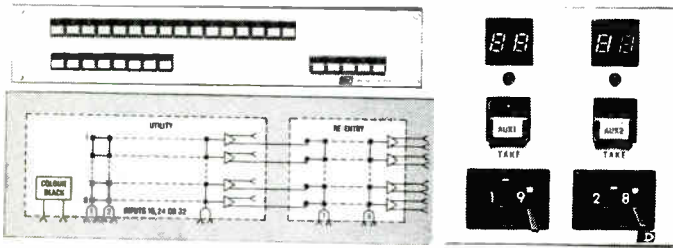
4800 Series Busses may be added to the basic switcher electronics; i.e., additional rack space is not required. Models are available with primary only inputs, primary and secondary inputs, and timed to the switcher output or untimed. The following number of busses may be added to Series 80 Switcher in increments of 1 bus: 4 to 480, 2 to 680, and versions of the 1080 may have up to 6.

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VIDEO PRODUCTION SWITCHERS

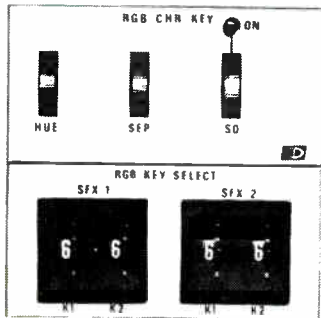
Utility and Auxiliary Busses, and Re-Entry (Cont'd)



UM8 and AM2, 8 and 2 Series Bus Expansion Systems may be added to Series 80 switchers to provide timed (UM Series), or untimed (AM Series) busses. They may also be used for general purpose vertical interval switching. The UM Series includes primary and secondary inputs. The AM Series has only primary inputs. These systems require additional rack space.

Contact CDL Marketing Services for full details and recommendations.

RGB Chroma Key Systems



The new RGB chroma keyer developed for the Series 80 Switchers is designed for optimum performance under a wide range of keying conditions. Controls are provided for Hue selection and "Separation" of the keying signal, and Shadow level. The shadow output is used to modulate the background signal, to obtain realistic shadows in the key composite. (Note: the shadow facility is only available on Key 1 of the SFX group).

Selection facilities can be provided for input or output of the chroma keyers.

1) For a single chroma keyer, a 6 x RGB input selector is available. For two chroma keyers a dual 6 x RGB input selector is available (See Figure 1).

2) For greatest flexibility, one chroma keyer per RGB source (up to a maximum of six) may be fitted, together with 6 x 2 output selectors. A 6 x 1 or 6 x 2 shadow output selector may also be provided, as appropriate (See Figure 2).

Both of these systems are controlled by the RGB Key Select panel, fitted with the correct number of switches. Each selector may be switched to any of the RGB sources (1-6) or to follow the selection of the appropriate foreground video.

For models 480 and 680, a special 4 x RGB Follow Only INPUT Selector is available as an option. Either a Single or Dual version can be installed in the switcher rack electronics. (No additional rack space is required.)

Figure 1. Input Switching System

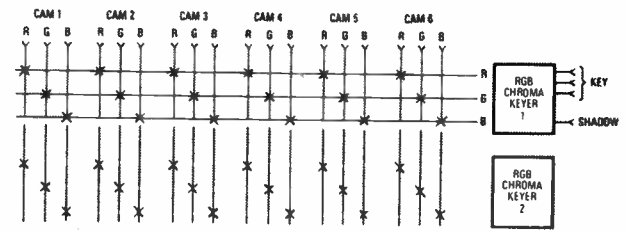
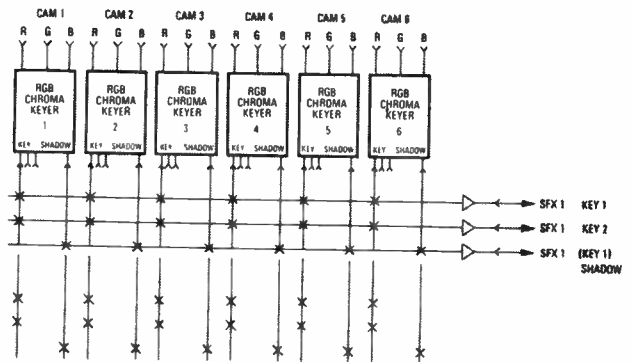


Figure 2. Output Switching System

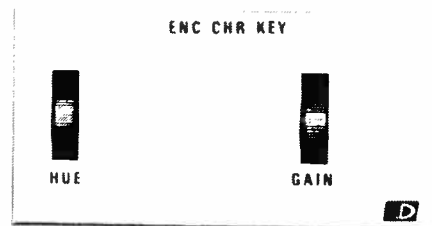


Special Chroma Keying Systems

Two systems are available for cameras which produce preprocessed single line key signals, rather than RGB, and can also be used to select key signals from digital video effects units. The systems provide manual/follow switching of the key signals.

Consult CDL Marketing Services for details.

Encoded Chroma Keyers



Encoded chroma keyers may be fitted to each SFX amplifier.

The standard option is a one line delay type keyer and does not affect systems timing.

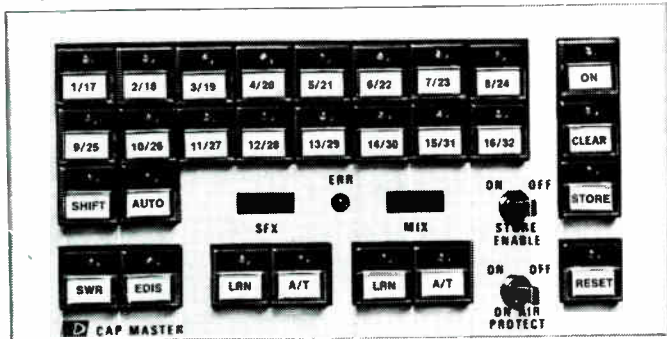
"Zero delay" encoded chroma keyers are also available for the most critical application. Details available from CDL Marketing Services upon request.

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VIDEO PRODUCTION SWITCHERS

Computer Assisted Production—CAP



CAP is the advanced technology Computer Assisted Production option designed specifically for Central Dynamics' Series 80 video production switchers.

The Series 80 lends itself to Computer Assisted Production due to the unique design of its SFX amplifier which permits extremely complex production sequences to be performed with one fader handle.

CAP is an invaluable aid to fast moving production sequences.

Complex scenes involving multiple sources, keys, SFX amplifier mode, etc. can be preloaded into CAP's memory, and recalled randomly or sequentially, and accurately executed during real-time production.

This gives the operator full control of the dynamic transitions necessary for artistic expression and the desired effect.

Full manual control of all functions is maintained to allow last minute manual overrides of any CAP selection.

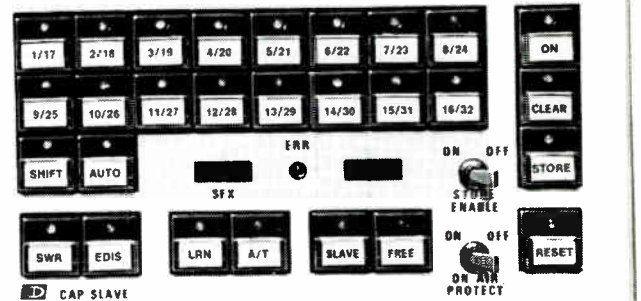
CAP FEATURES

- Can be added to any Series 80 production switcher.
- Memorizes all crosspoint selections, mode selections and potentiometer settings for a complete Series 80 SFX processor systems.
- Effects Dissolve dynamically transfers static analogue potentiometer settings from the setup of one event to a second event, over a period of time defined by the Auto Transition Module.
- Integral memory for 32 or 64 switcher set-ups.
- Ten-minute memory for all Learn events; 120-second Learn duration for any single event.
- Memorizes auto transition rates.
- Instantaneous random access to any event.
- Event editing permits changing contents of any event, such as a transition, without affecting the switcher set-up.
- Permanent storage of memory contents on optional floppy disk (not available on Model CAP-1).

CAP MODELS

CAP-1	CAP-1XL	CAP-2XL	MEMORY/LEARN CAPABILITY
●	●	●	SFX-1 System static switcher setups
	●	●	*SFX-1 fader Learn
	●	●	Master Mix crosspoints
	●	●	Master Mix fader Learn
		●	SFX-2 System static switcher setups
		●	*SFX-2 fader Learn
	●	●	*Effects Dissolve
	●	●	*Auto Transitions
	●	●	Extended Effects
	●	●	Quadplexer
	●	●	Title Keyer
	●	●	RGB Chroma Keys. Does not control RGB Key Select *Module.
	●	●	Background

*A/T module required on switcher



CAP MODELS

The CAP-1 Series (CAP-1 and 1XL) can be used with any Series 80 Model switcher. CAP-2XL can only be used with Model 1080.

Switchers with one SFX System require only the CAP MASTER Module.

Switchers equipped with two SFX Systems normally use both MASTER and SLAVE Modules. If only CAP MASTER is supplied, then selection of CAP control for either SFX-1 or SFX-2 must be specified on order.

When CAP-2XL Model is supplied, the MASTER Module controls SFX-2 and the SLAVE Module controls SFX-1.

Floppy Diskette Option

The Diskette and its Control Module permit the stored events in CAP to be transferred off-line to a diskette. The diskette can be filed for later use, or sent to another production center equipped with a Series 80 CAP.

Data from CAP MASTER and CAP SLAVE Modules can be quickly stored on the diskette, and retrieved, with the operation of two pushbuttons. This option is not available for CAP-1 Model.

The SLAVE panel is identical to the MASTER except for two keys. Because the SLAVE Module is used only for the SFX-1 Processor System, the MIX-LRN and A/T functions are replaced with SLAVE and FREE. The SLAVE key either 'ties the SLAVE Module to the MASTER or permits it to operate independently.

When the two modules are used independently, CAP has capacity of 64 events with information for different sections of the switcher. When 'tied', the capacity is 32 events, with each module containing information for the entire switcher.

Operation

The two basic operation modes are storing and recalling events manually or automatically.

To use CAP the following simple steps are performed.

1. Setup the switcher for an event's sources, keys, effects, etc.
2. Store the event information in the CAP memory.
3. Repeat steps 1 and 2 for each new event, or recall an event to reset the switcher to that previous event setup.

The following types of events are easily handled by CAP.

- Switcher status. (SWR)
- Auto transition rates. (A/T)
- Fader Learn. (LRN)
- Simultaneous auto transition from one set of analog values to another, excluding fader values. (EDIS)
- A combination of the above.

Each CAP control panel has two 4-character information displays and control keys with status indicators. The keys are used for:

1. Event selection for the current production sequence (Numeric keys with/without shift).
2. Select switcher sections that are to be memorized: SWR, E DIS (Effects Dissolves), SFX-LRN (Learn), MIX-LRN (Master Mix Learn), and Auto Transitions (A/T).
3. Mode Controls: Auto, Reset, Store Enable, On-Air Protect.

INSTALLATION

CAP Control Modules are mounted on panels which can be installed into spare 4" x 8" switcher panel slots, or in a matching switcher extension tub. Control panel extension is always required if the floppy diskette option is to be fitted. All CAP models can be added to any installed Series 80 switcher.

Prices and Specifications Subject to Change Without Notice.

VP-19

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VIDEO PRODUCTION SWITCHERS

Edit Controller Interfaces

All Series 80 Switchers are designed to be controlled by video tape edit controllers.

In some cases, the edit controller manufacturer supplies the interface; in others, CDL supplies the interface.

CDL's 480 EIF Interface for the Sony BVE 5000 is representative of the functions controlled by the editor.

A two way dialogue between the editor and a Series 80 Switcher permits:

- (1) Control of Preset, Program and Foreground buses.
- (2) Control of transitions of one SFX amplifier.
- (3) Automatically selects Cut, Mix, Key and Wipe modes.
- (4) Selects the wipe pattern.
- (5) Selects Normal or Reverse wipes.
- (6) Controls optional 8 x 2 audio switching systems; mono or stereo (480 AFM or 480 AFS).
- (7) Controls audio dissolves between the two audio buses of the 8 x 2 matrix.

Consult CLD's Marketing Services for application information and details for interfacing to a particular editing system.

Series 80 Rack space and Mechanical dimensions

Series 80	Rack Electronics (Note 1)	Control Panel		
		16 inputs W H	24 inputs W H	32 inputs W H
CD-480	15	25" x 16" (634 x 406 mm)	30" x 16" (762 x 406 mm)	N/A
CD-680	18	34 5/8" x 19 1/4" (879 x 489 mm)	39 1/8" x 19 1/4" (994 x 489 mm)	N/A
CD1080	36	47 5/8" x 22 3/4" (1209 x 578 mm)	53 1/8" x 22 3/4" (1349 x 578 mm)	59 1/8" x 22 3/4" (1501 x 578 mm)

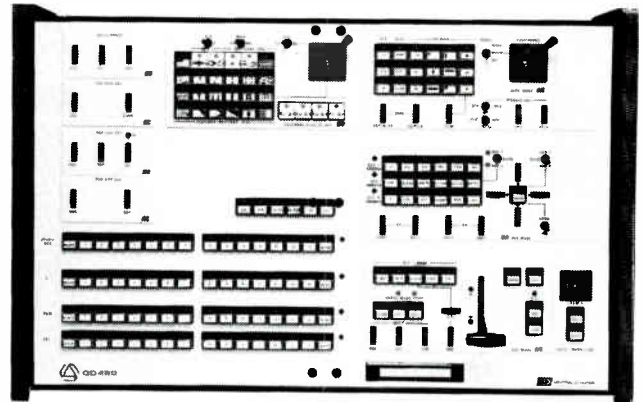
	Extension tub	Cut Out 15° Mounting with wooded end	Cut Out Flush Mount
CD-480	11 5/8" x 16" (295 x 406 mm)	Add 1/8" (3 mm) to panel width and 7/8" (22 mm) to panel height	Add 1/8" (3 mm) to panel width and 1/8" (3 mm) to panel height
CD-680	11 5/8" x 19 1/4" (295 x 489 mm)		
CD-1080	11 5/8" x 22 3/4" (295 x 578 mm)		

Note 1)

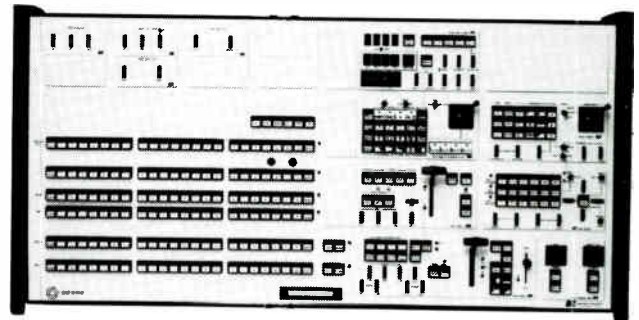
The rack space shown includes a 2 RU Power Distribution Frame with an integral forced air convection fan, and a 1 RU Air Filter Frame. The Filter should be located on bottom of the switcher electronics, and the Power Distribution Frame mounted on the top.

Note 2)

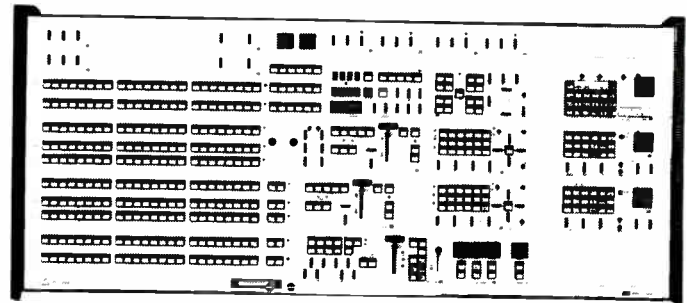
When an ExtensionTub is supplied with a switcher it is normally mounted to one side; therefore, the console cutout width = control panel width + Ext. tub width of 11-5/8" + 1/4".



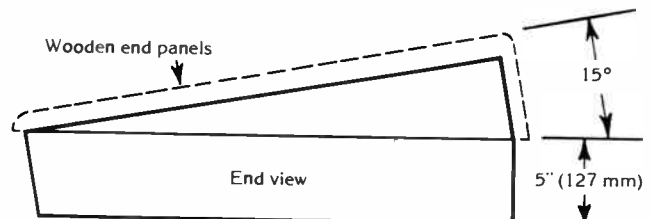
CD-480



CD-680



CD-1080



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VIDEO PRODUCTION SWITCHERS

TYPICAL SPECIFICATIONS

Video Inputs:

16, 24 or 32 inputs, 1 V p-p synchronous or non-synchronous.
 75 ohm loop thru: return loss better than 40 dB to 5 MHz

Video Outputs:

2 Program outputs.
 2 Preview outputs (Utility/Preview)
 1 Auto preview output for each SFX group.
 All outputs are 1 V p-p composite; return loss better than 34 dB to 5MHz

Pulse Inputs:

All are 75 ohm loop thru, 2V or 4V p-p
 Sync
 Blanking
 Burst Gate (PAL only)

Subcarrier Input:

75 ohm loop thru: 1 V or 2 V p-p

Frequency Response:

1.5 MHz \pm 0.1 dB
 5-7 MHz \pm 0.2 dB - 0.5 dB
 Steady roll off above 7 MHz.

K Rating:

Kp 1/4% K Kp-b 1/4% K Kb 1/2% K

Linearity:

Better than 1% 10-90% APL.

Tilt:

Line and field (standard window)
 Less than 1%.

Chrominance/Luminance Inequalities:

Gain: Less than 1%.
 Delay: Less than 10 nS.

Non-Linear Distortion:

(10-90% APL)
 Dynamic Gain: Less than 1%.
 Diff. Gain: Less than 1%.
 Diff. Phase: Less than 1°

Crosstalk:

One adjacent input hostile.
 All paths energized except path under test better than -56 dB.

Path Delay, typical:

CD480: 200nS
 CD680: 350nS
 CD1080: 600nS

Path Length Inequality:

Less than 1° at subcarrier frequency.

Signal to Noise Ratio:

Better than 60 dB unweighted relative to 0.7 V.

Power Input:

(50-60Hz) 117V \pm 10% 234V \pm 10%

Power Requirements, typical:

CD680: 550VA CD480: 400VA
 CD1080: 900VA

Tally Outputs:

Two independent tally outputs are provided, each providing one 'make' contact to a common for each input. Contact rating 2 A, 40 VA resistive.

Permissible ambient temperature range:

0-50°C.

Within this range the performance specification will be maintained for changes of \pm 10°C, about the ambient temperature at which the equipment was set up.

Standards:

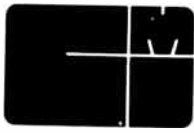
Switchers can be supplied for NTSC, PAL, PAL-M operation. Please specify at time of order.

Series 80 Optional Modules and Systems	Model 480	Model 680	Model 1080	Add'l Rack Space
16 Input Switcher	480-16	680-16	1080-16	STD.
24 Input Switcher	480-24	680-24	1080-24	0
32 Input Switcher	N/A	N/A	1080-32	0
Single Key Border (SFX)	SKB	SKB	SKB	0
Dual Key Border (SFX)	DKB	DKB	DKB	0
Fade to Black	FB	N/A Note 1	N/A Note 1	1
Title Key Border (Program Processor)	N/A	TKB	TKB	0
2nd Background Generator	N/A	BG-2	BG-2	0
Dual Matte Generator (SFX)	DMG	DMG	DMG	0
Digital Video Effects Interface	DI	DI	DI	0
Extended Effects (Spin, Matrix, Rotary, Star)	EE	EE	N/A	0
Extended Effects (Spin, Matrix, Rotary, Star)	N/A	N/A	EE Note 2	3
ONE Bus Quad	OBQ	OBQ	OBQ	2
Quadplexer	N/A	N/A	Q	0
Title Keyer	DK2160	N/A Note 1	N/A Note 1	3
Auto Transition (SFX1)	AT-1	N/A	N/A	0
Auto Transition (SFX1, Mix)	N/A	AT-2	N/A	0
Auto Transitions (SFX1, SFX2, Mix)	N/A	N/A	AT-3	0
Auto Transition (PGM Fade to Black)	N/A	N/A	AT-4	0
Audio Follow Switcher (8 x 2 Mono)	AFM	AFM	AFM	6
Audio Follow Switcher (8 x 2 Stereo)	AFS	AFS	AFS	6
1 RGB with 4 x RGB Input Switcher	SRK	SRK	N/A	0
2 RGB with Dual 4 x RGB Input Switcher	DRK	DRK	N/A	0
1 RGB with 6 x RGB Follow/Manual Input Switcher	N/A	RKS-1	N/A	3
2 RGB with Dual 6 x RGB Follow/Manual Input Switcher	N/A	RKS-2	N/A	3
6 x RGB with 6 x 3 Follow/Manual Output Selector	N/A	RKS-3	N/A	3
6 x RGB with 6 x 6 Follow/Manual Output Selector	N/A	RKS-6	RKS-6	3
4 RGB with Quad 6 x RGB Follow/Manual Input Switcher	N/A	N/A	RKS-4	3
Encoded Chroma Keyer	EK-0	EK-0	N/A	2
Encoded Chroma Keyer	N/A	N/A	EK-0	4
Encoded Chroma Keyer	EK-1	EK-1	EK-1	0
Cap Basic	CAP1	CAP1	N/A	13
Cap Master + Fader Learn	CAP1XL	CAP1XL	CAP1XL	13
Cap Master/Slave + Fader Learn	N/A	N/A	CAP2XL	13
Edit Controller Interface	EIF	EIF	EIF	3

Note

- 1) Title Keyer and Fade-to-Black facilities are standard on models 680 and 1080 and are integral to the Program Processor Module.
- 2) Two Extended Effects Generators may be installed on model CD1080. (One assigned to each SFX).

Prices and Specifications Subject to Change Without Notice.



CHANNELMATIC

821 Tavern Road
Alpine, CA 92001
(619) 445-2691

CUSTOM SYSTEMS MESSAGE GENERATORS/ CLOCK SYSTEMS AND VIDEO CASSETTE SEQUENCERS

SERIES 3000 CUSTOM SYSTEMS

The Channelmatic 3000 Series "Building Blocks" provide the system designer with a diversified group of standard pre-packaged and pre-tested, plug-in modules which can be easily combined to satisfy a large variety of requirements. Over 50 modules, each with different functions, are available.

Developed by Channelmatic, Inc. through many years of providing custom designed switching and control systems for Cable and Industrial Television users, these modules represent the most reliable and economical solution to many specialized system requirements.

CMG-3008A 8-Page Color Message Generator Module

The messages are contained on a factory-programmed EPROM. Eight customer-composed messages are supplied with the module.

The CMG-3008A requires external video sync from a CSG-3000A Color Sync Generator module. One sync generator will drive up to thirty CMG-3008A modules.

The CMG-3008A is a very low cost 8-page color message generator module which displays an 8-line fixed message on a color background.

Up to eight different message pages can be stored in its non-volatile memory. The page to be displayed is selected with either a remote switch, a DIP switch mounted on the module, or by applying a 3-bit binary code to the page select inputs on the module.

Characters are displayed in a custom-designed uppercase font which includes numbers and all common symbols. The bold, white characters are 18 TV lines high for maximum legibility. Up to 32 characters may be placed on each message line; yielding a total message length of 256 characters per 8-line page. **\$1,605.00**

PCM-3000A SUPERCLOCK™ Programmable Controller Module

The PCM-3000A Programmable Controller is a microprocessor-based 7-day clock module for the Channelmatic Series 3000 frame. It has a 1-minute resolution and a large memory for storage of program events. The system is bus-oriented and provisions are included for input-output capability and addition of a multitude of special control interfaces. The basic system has eight programmable closure-type outputs which can be pre-programmed to open or close on any desired weekly time schedule.

The PCM-3000A is designed to be used in any application where local or remote control of equipment is required on a 7-day schedule. By adding appropriate modules, it can be used to control almost any electrical or electronic device, including satellite receivers, video cassette machines, audio-video switchers, relays, IF switching, message generators, solenoids, motors, etc.

A UAD-3000A Unattended Telephone Answering Device module and related CTD-3001A DTMF Decoder module can be added to a clock-controller subsystem enabling it to be operated over standard telephone lines.

Vertical-Interval Video Cassette Sequencers VCR-3005A-5

Automatic vertical-interval video cassette sequencer system for playback of locally generated programming. Frame is wired to handle up to five VCR's and provisions are included for cascading two or more main frames for the sequential control of any number of machines. Front panel Sequence Selector Switches allow each VCR to: 1) continue sequence normally, 2) bypass to the next VCR in sequence, or 3) terminate the sequence. For broadcast quality performance, all switching occurs in the vertical blanking interval of program video. This allows glitch-free transitions if the VCR's in the sequence are sync-locked using an accessory such as the HANDIMOD I. System includes ATG-202A Tone Generator/Verifier for videotape encoding. Sequence may be initialized using manual pushbutton, relay closure, or automatically on a real-time basis by the PCM-3000A Clock Controller. **\$5005.00**

Typical Superclock Programmable Clock Systems PCM-3000A-1

Programmable 7-day, 1683-event clock with eight outputs. Assembled in Series 3000 frame with blank filler panel. Outputs are open collector transistor type, which will sink 40 MA at 30 VDC. **\$2380.00**

PCM-3000A-2

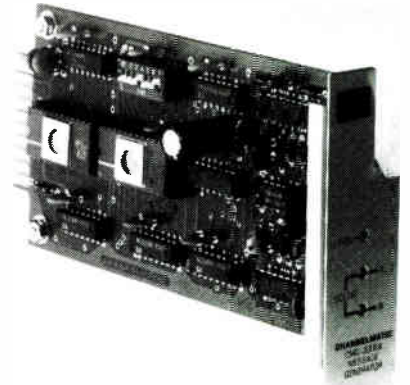
Same as -1, except outputs are eight form A (SPST) relay closures. **\$2480.00**

PCM-3000A-3

Same as -1, except also has UAD-3000A Automatic Telephone Answering Device module and CTD-3001A Tone Decoder for telephone override capability. **\$2980.00**

PCM-3000A-4

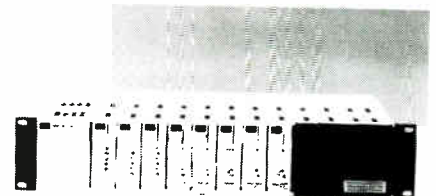
Same as -3, except outputs are eight form A (SPST) relay closures. **\$3080.00**



CMG-3008A



PCM-3000A SUPERCLOCK



VCR-3005A-5

PCM-3000A-13

Remotely programmable 7-day, 1683-event clock having both transmit and receive subsystems. Transmit subsystem is provided with an answering device and telephone override. Receive subsystem has decoding for twenty independently programmable decimal outputs, each of which are provided with a form A (SPST) relay. Receive system can be expanded to control hundreds of devices, including satellite receivers, audio/video switches, etcetera. Transmit and receive subsystems can be connected by any voice-grade audio path. Multiple hubs can be controlled by a single transmit subsystem (PCM) by adding receive subsystems for each. Includes modems, card extenders and blank panels. **\$7860.00**
(Additional receive subsystems are \$3555 ea.)

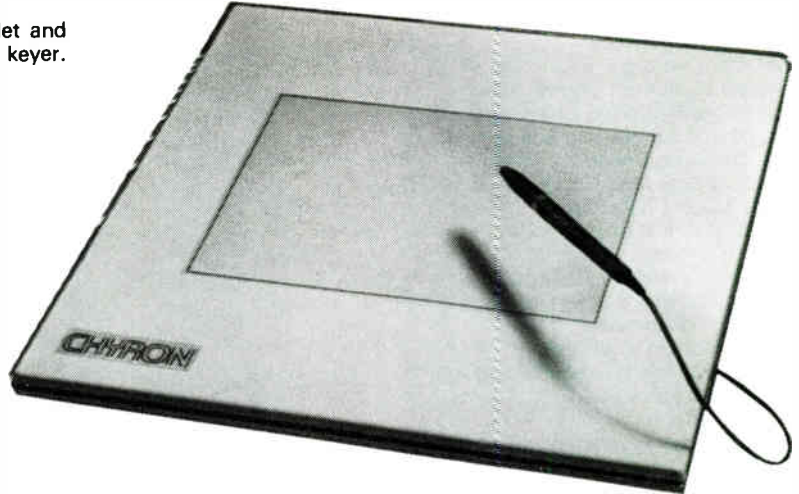
CHAMELEON PAINT SYSTEM

Chameleon:

High resolution stand-alone paint system with digitizing tablet and pen, 10 megabyte removable hard disk, internal genlock with keyer.

FEATURES

- Easy to use icon-oriented Human interface
- Full set of drawing tools (plus free-hand drawing)
 - Line
 - Circle (outline or filled)
 - Rectangle (outline or filled)
 - Closed figure
- Area fill
- Multiple brushes
- User-definable brushes
- Cut and paste, with resizing
- Layout grid and drawing aid
- 16-Level zoom with pan
- Flexible color selection and modification
- 768 x 482 Resolution (582 lines for PAL)
- 256 Colors displayable out of 4,096 possible
- Digitizing tablet with pen
- 10 MegaByte removable hard disk
- Internal keyer configurable for downstream or upstream
- Simultaneous RGB and NTSC or PAL available with optional RGB board
- 256 Levels-of-Gray camera capture (option)



Chameleon\$11,900.00

**DIGIFEX™ — SPECIAL EFFECTS
 GENERATOR, MODEL RG-DFX-1
 FOR CHYRON® RGU-2, MODEL
 DFX-1 FOR CHYRON® IV**

FEATURES

- Multiple effects including spin, flip, rotate, zoom, compress, and image splitting can be created instantaneously
- Position and time duration of effect are operator selectable
- Key manipulation can be background or foreground relative to CHYRON characters
- 100 Matrix Wipe Patterns
- Standard broadcast rack mounted
- All trigonometric computations are implemented in hardware with pipeline processing under direction of a micro-processor controller
- NTSC and PAL compatible
- Special effect sequences can be stored within CHYRON messages and recalled at will
- A manual operation is available for effect formatting and testing
- Provides an external key signal for integration into your system

The DIGIFEX Special Effects Generator provides the CHYRON IV and the RGU-2 with a powerful new low-cost modular option. The DIGIFEX will provide exciting

special visual effects through digital video manipulation of CHYRON generated graphics.

Titles, logos, and shapes can be manipulated and positioned anywhere on the screen. The functions of spin, flip, rotate, zoom, compress, position, and image splitting can be requested from the CHYRON keyboard. Combinations of these effects may be individually customized. The speed of performance along with number repetitions can also be controlled from the CHYRON keyboard. All functions operate in real time and provide smooth transitions between steps. DIGIFEX will support up to 15 colors at one time from the palette provided by the CHYRON system. The DIGIFEX image may be keyed as a background effect behind CHYRON characters or as a foreground effect over the characters. It can also be manipulated as a background to foreground, or reverse transaction, to produce a three dimensional effect. A Channel Control Module is required on a CHYRON IV and a Digifex Control Module is required on an RGU-2 System.

Digifex\$19,500.00



CHYRON CORP.

VIDEO PRODUCTS DIVISION

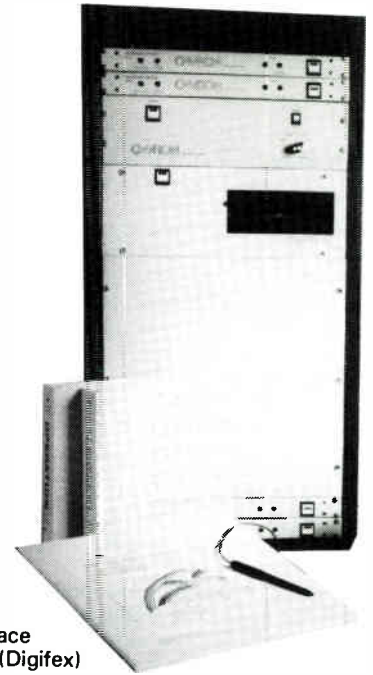
265 Spagnoli Road
Melville, NY 11747
(516) 249-3018

THE EXPANDED CHYRON IV® CHARACTER/GRAPHICS GENERATOR

FEATURES

- 27 Nanosecond Resolution
- Automatic Character Kerning
- Software Controlled
- RS232 Computer Interface
- Software Diagnostics
- 512 Color Choices
- Versatile Multi-Font Library
- Proportionally-Spaced Characters
- Background Stripes and Solids
- True Character Overlay
- Choice of Character Edging (Style and Color)
- See-Through Characters
- Auto-Color/Font Change
- Diagonal Typing
- Multi-Color Character/Logo Display
- Six Font Loading Positions
- Programmed Animation (PSC)
- Multiple Roll & Crawl Speeds
- Adjustable Video Window During Roll
- Slow Reveal
- Automatic Centering
- Mini-Computer Programming
- Automatic Instruction Displays (AID)
- Flexible VIDIDISC Magnetic Storage System
- Disc Duplication
- Flash
- Automatic Lower Third Display
- Visibly-Bordered Safe Title Area
- Operator Controlled Margin Release of Safe Title Area
- Left & Right Justification
- Insert and Delete Controls
- 256 Tab Positions
- Auto Pause and Rolls and Crawls
- Modular Design
- Clock/Event Timer
- Automatic Kerning
- Word or Row Squeeze, or Stretch
- Row Swap

BACKGROUND GRAPHICS/ PAINT SYSTEM



OPTIONS

- International Fonts
- Right-to-Left Writing
- Subtitling Interface
- SMPTE Time Code Interface
- Real Time Digital Effects (Digifex)
- Advanced Camera Font Compose
- Multimode Graphics Module (MGM)
- Full-Function Second Channel
- Color Encoder
- Down Stream Keyer
- Multiple Keyboards
- Multiple VIDIDISC Transport
- Large Capacity Winchester Hard Disc
- Drawing Tablet (Electronic Painting System)
- Channel Control Module CCM (Mixes, Wipes, Fades)
- Sports Scoreboard
- Weather Service Interface
- Custom Font/Logo Compose Service

Chyron IV® Priced from \$54,000.00 to \$87,000.00 depending on configuration.

MULTIMODE GRAPHICS MODULE (MGM) (Option)

The Multimode Graphics Module (MGM) provides a multitude of graphic abilities never before associated with a character generator. In addition to Standard Camera Font Compose, traditionally a feature of Chyron systems, the MGM offers an Advanced Camera Font Compose that is unparalleled in the industry today. Combined with the MGM's Background Graphics/Paint System, it provides a graphics machine of awesome versatility.

FEATURES

- Standard RS170 Input
- 512 Color Palette
- Full Screen Display Capability
- Accepts Drawing Tablet Input
- Resizing of Graphics
- Cut & Paste
- Standard Geometric Library
- Infinite Montaging of Multiple Graphics
- Montaging of Text Channels
- Area Fill
- Custom Brush Compose
- Palette Animation
- Satellite Weather Service Interface

An important extra dimension is added to Chyron IV by the MGM's background graphics abilities. High resolution background graphics (1024 x 512 pixels) can be created either from standard black-and-white camera input or hand drawn with Chyron's optional drawing

tablet. Up to 16 colors may be selected from a 512 color palette, as well as a wide variety of brush sizes and styles, color fill, color pick-up, etc. Circles, rectangles and other graphic primitives are automatically drawn at the touch of a key. Completed portions of the background graphic can be cut and pasted and varied in size. Backgrounds can also be montaged over other backgrounds for an unlimited layered effect. Palette animation is an important function of the MGM. The colors of the background graphics can be animated for exciting effects such as Glow Glitter, Neon and Color Trails.

Weather Service Interface of the MGM can accept and display high resolution weather graphics from Weather Service International (WSI) or Environmental Satellite Data, Inc. (ESD). The weather graphics are transmitted over telephone line* to the Chyron IV and stored on Chyron's Winchester disc for subsequent display on command.

*Data terminal and modem are required.

In foreground mode, the MGM provides an extremely advanced form of camera font compose that will quickly and easily create standard and multicolor graphics. Fonts can be automatically modified and added to your font library.

When background graphics are created with the MGM, they can be displayed as a single graphic or combined with text and other graphics on Chyron IV's channel one or two and stored as a single message on Winchester Disc.

MGM.....\$8,000.00

CHYRON CORP.

VIDEO PRODUCTS DIVISION

265 Spagnoli Road
Melville, NY 11747
(516) 249-3018

RGU-2

High quality graphics & titling system for studio and mobile production. Incorporates many features of the Chyron IV.

Character Resolution of the Chyron RGU-2 is unsurpassed in television production. It is defined in 27 nanosecond increments to produce characters and graphics with sharp edges, smooth curves and distinctive detail similar to live camera video.

Font Library contains styles and sizes designed for high quality video presentations and a full range of programming applications. Character width and spacing is proportional for each character. Fonts contain upper and lower case alphas, numerics, punctuation, symbols, circumflexes, and diacritical marks. New fonts are constantly being added.

Font Storage can hold 4 complete fonts at once, allowing intermixing of styles and sizes in any word, row, or full page of text. The standard Chyron RGU-2 memory has a capacity of over 32,000 16 bit words.

Color For Characters/Background is available when using the optional CHYRON Color Encoder. Color can be produced on a character-by-character or complete message basis, with a choice of 8 colors at a time, selectable from a 64-color palette. Background colors can range in size from full screen height to as small as 8 TV lines. Because the height of background color is independent of character height, characters may be positioned over a background of two or more colors at any location on the screen. Character and background colors are recordable on VIDIDISC.

The Logo Compose Feature permits composition of custom graphics and fonts from artwork via keyboard entry.

The Character Display Area is defined by a visible safe title area on the Edit monitor. It will accommodate up to 62 characters per row, depending on their width and up to 20 rows per page, depending on their height. Maximum width of characters can encompass full screen width. Maximum height of characters can be 420 TV lines. Large graphics, such as station or sponsor logos can be displayed in conjunction with text.

Vertical Interval Change allows next messages to be displayed without black areas between messages.

Edging allows characters and graphics to be displayed with symmetrical "surround" edging, non-symmetrical "dropshadow" edging, or no edging. All edge types, including see-through characters, may be displayed with black or white edging.

Vertical Roll is selectable in five speeds, including pause. Roll may be used in two modes: roll from full screen, and roll from erased screen. Up to 2000 rows of standard text may be rolled continuously. An end-of-roll vertical tab—recorded at composition time—automatically pauses the roll at the desired screen location. Roll speeds may be changed at any time.

Horizontal Crawl is selectable in five speeds, including pause. Messages are crawled from right to left on any row within the display area. An automatic end-of-crawl pause may be recorded at composition time, and crawl speeds may be changed at any time.

Slow Reveal allows titling and graphics to be displayed character-by-character with a staccato typewriter-like effect in a choice of 5 rhythms.

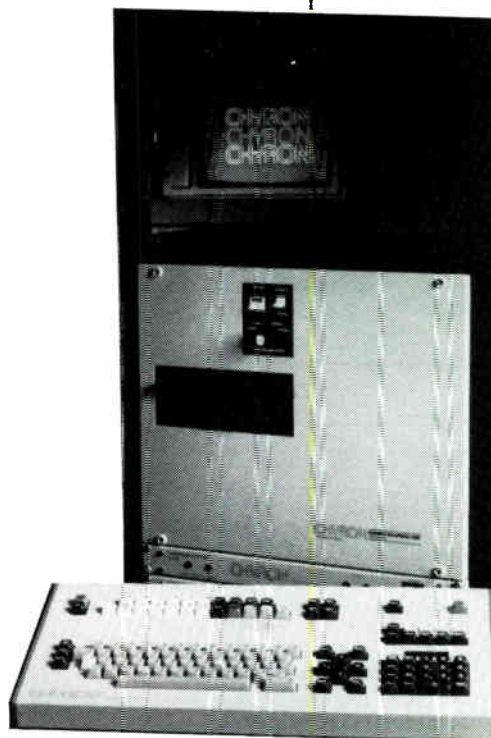
Centering a single row of text or an entire page of text horizontally is easily achieved at a keystroke.

Flashing is provided on a character basis to dramatize titling and graphics, and is recordable on VIDIDISC.

Horizontal and Vertical Shift allows individual characters or rows to be moved under control of the cursor, in both the horizontal and vertical direction. Horizontal movement is in 112 nanosecond increments allowing adjacent character tuck. Vertical movement is in increments of one scan line pair. These features allow precise placement of text with a minimum of effort.

The Font Compose Unit (optional) enables RGU users to create high quality custom fonts, logos, and other graphics according to their

GRAPHICS & TITLING SYSTEM



RGU-2

own requirements. In addition, fonts may be italicized and re-sized. Any standard video input such as black-and-white camera or character generator may be used as the video source, or characters may be created manually.

Program Animation is achieved with the Program Sequence Controller (PSC), a standard feature that transforms the CHYRON RGU-2 into a graphics animation machine. A series of function keystrokes—recorded at composition time—establishes the appearance, sequence, and dwell time of displays. Subsequent high-speed playback produces smooth, professional image movement. All system functions can be captured by PSC, including color, flash, roll, and crawl to further enhance the effect animation. In addition to action graphics displays, PSC can provide automatic recall of non-sequential messages, instant interchange of fonts for the same message compositions, automated keyboard operations for recall sequences, and easy programming of repetitive operations.

Auto Color/Font Change allows fonts and/or colors of entire text or parts to be changed automatically without re-typing.

Tabs can be selected from 256 possible locations. Eight may be selected in a single page display.

Lower Third allows messages to be keyed into the lower third display area without pre-programming.

Insert and Delete are keystroke functions. Messages may be rapidly edited by use of character and row insert and delete keys, with automatic spreading or closing of remaining text.

RGU-2 . . . from \$19,950.00 to \$36,000.00 depending on configuration.

OPTIONS	
Full-function Second Channel	\$4,800.00
Color Encoder	3,000.00
Down Stream Keyer	500.00
Multiple Keyboards	each 2,500.00
Multiple VIDIDISC Transports	each 2,100.00
Diagnostic Panel	590.00
Factory Font Compose Service (already created)	each 100.00
Factory Font Compose Service (custom created)	each 750.00
Channel Control Module (CCM) (Mixes, Wipes, Fades)	2,900.00
Sports Scoreboard	950.00
Camera Font Compose	4,400.00
Digifex	19,500.00

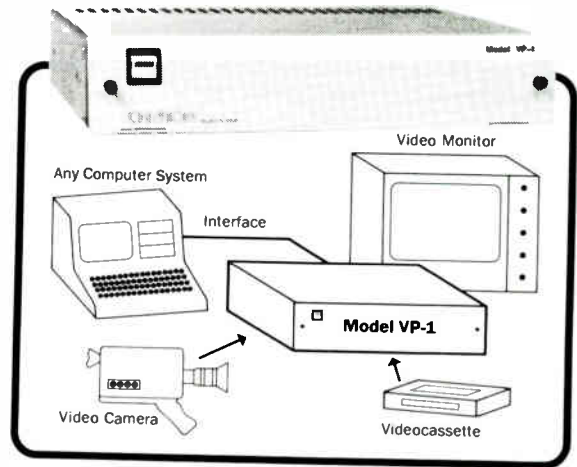
VP-25

Prices and Specifications Subject to Change Without Notice.

CHYRON CORP. VIDEO PRODUCTS DIVISION

265 Spagnoli Road
Melville, NY 11747
(516) 249-3018

CHARACTER AND GRAPHICS GENERATOR/ VIDEO PRINTER



VP-2 Character and Graphics Generator

The VP-2 is a low-cost, high-resolution character and graphics generator with features and capabilities found only on costly, more elaborate studio character generators. With complete keyboard and micro floppy disk drive, this stand-alone system offers 512 colors, 35 nanosecond resolution, 6-font capacity, multiple graphic planes, and many more features. The VP-2 has cursors and prompting menus for very easy graphics composition and display. This combination of operational ease, superior composition capabilities, and high quality image, makes Chyron's VP-2 the ultimate low-cost character and graphics generator.

FEATURES

- Character Resolution: 35 nanosecond resolution, equivalent to 1510 pixel elements
- Colors: 512 color choices available 8 per page for characters, edges, and backgrounds
- Fonts: Six full fonts (upper and lower case) on line selectable from a library of 45 Chyron fonts with international fonts available. Custom font and logo compose service is also available. (two fonts standard)
- Character Planes: Full horizontal and vertical overlap of characters, symbols, and logos to any depth.
- Background Graphics: Color every two raster lines if desired.
- Auto Display (Read from Disk): Display selected graphics pages from disk memory in any sequence at variable rates.
- Palette Animation: Cycle color in graphic images at selected multiples of video frame rate.
- Edge Types: The three edge types for any font—full drop shadow, character offset, and bordered edge—can be varied in extent, direction, and color.
- Menus: Complete menus and prompting displays to guide you through graphics composition.
- Composition and Control Features: Cursor commands: up, down, right, left, backspace, return, home. Insert, delete, or move characters, words, lines. Select fonts, character colors, palette, edge types, edge colors, key color. Set tab, clear tab, right justify, center page, line or column. Italicize a font (left or right), and display menu. Change character, word, line, color, font, edge, or edge color.

SPECIFICATIONS

- Power Requirements: 115 VAC at +/- 10%, 60 Hz and less than 100 watts (230 VAC, 50 Hz available)
 - Packaging: PC board design with switching power supply, enclosed in a metal case with lighted power switch and all connections on rear of unit.
 - Physical Characteristics:
 - Keyboard: 7-5/8"D x 7/16"-1-3/8"H (front-back) x 17-3/4"W. 3 lbs.
 - Chassis: 20" x 3-15/32" x 17"
 - 30 lbs.
- \$8250.00**

VP-26

VP-1SG Video Printer

VP-1SG is a low cost Video Printer that provides character generation and graphics capabilities with a resolution previously available only with costly and elaborate studio character generators.

The VP-1SG accepts serial data from an RS232C communications interface. Imbedded format commands within the data will be detected and executed and will cause the generation of a high resolution video picture (35 NSEC increments). The video memory is organized as a dual frame buffer which allows one page to be displayed while the next page is being created.

FEATURES

This unit can be driven by any computer system with text processing capability and a serial communication port. This includes most personal as well as larger computer systems.

- Font Storage: ROM based minimum of two fonts, each with full upper and lower case. Optional expansion to six fonts. (Font library of 44 fonts.)
- Hardware: Microprocessor controlled — dual 32K Byte frame store memory — ROM Program — 4000 bytes of message memory — internal sync generator with genlock and NTSC video generation.
- Color Select: Any one of eight colors may be assigned to backgrounds, characters or edge.
- Color Table: Any eight of 512 colors.
- Sync: Genlock to external sync or composite video from a stable source. VCR may not be a stable source.
- Keying: Full down stream keying included.
- Output: NTSC composite video.
- Commands: Select background color, character color, edge type, edge color, font type. Skip scan lines (push down), center line, center page, roll display, page delay, repeat message, end of page, horizontal and vertical margin control. Adjust character spacing, italicize, set color table.
- Edit functions: New line. Character shift left, right, up, down. Repeat message. End of message.

SPECIFICATIONS

- System: Microprocessor based with ROM program
- Interface: Multibaud rate serial RS232 interface. Max 9600 BAUD
- Frame Store: 32K bytes of run length encoding. Two frame stores to provide sequential picture generation. (35 nsec resolution)
- Packaging: Single PC board designs for computer and video with switching power supply. Enclosed in a metal case with power switch and video connectors on rear of unit
- Power: 115 VAC, at +/- 10%, 60 Hz, and less than 100 Watts
- Compliance: FCC

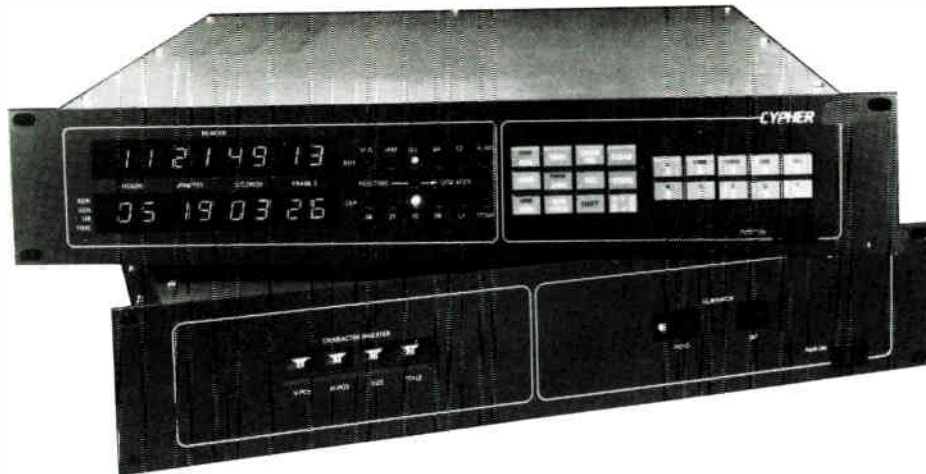
VP-1SG Video Printer	From \$4395.00
Additional Fonts	From 100.00
Logo Compose	From 100.00

Prices and Specifications Subject to Change Without Notice.

CIPHER DIGITAL, INC.

10 Kearney Road
Needham, MA 02194
(617) 449-7546

MODULAR TIME CODE SYSTEM



MODEL 6100 MODULAR TIME CODE SYSTEM

Model 6100 is an intelligent, modular time code system which provides all SMPTE time code functions, including the ability to simultaneously generate, read, display, and character insert—SMPTE and EBU code, both longitudinal and vertical interval.

The modular design allows the user to select only those features required today. Future requirements may be easily and economically added, as needed, to a single, efficient, lightweight 3-1/2" by 19" stand-alone or rackmountable chassis.

The system's powerful microprocessor and firmware offer unparalleled performance and functionality, while additional features such as a built-in time-of-day clock and RS-232/422 computer interface insure total system flexibility and versatility.

MODEL 6100 SMPTE TIME CODE GENERATOR

Model 6100 generates the entire SMPTE code, including time data, user data, status bits, drop frame, or color frame and displays this data on a large 8-digit LED display.

It accepts the color field definition pulse required for high quality color video editing and generates code consistent with present as well as proposed SMPTE standards. The time base is selectable between external video sync or internal crystal reference. Application flexibility is provided by the choice of standard 30 frame, drop frame as well as 24/25 frame formats.

Model 6100 offers both automatic and manual jam sync capability with look-ahead circuitry. In jam sync mode, the generator is automatically locked to a pre-recorded or externally generated code source, such that the original code may be continuously generated, even when the originating source is removed.

MODEL 6100 SMPTE TIME CODE READER

Model 6100 decodes and displays the entire SMPTE time code, including time data, user data, status bits, drop frame, or color frame and displays this data on a large 8-digit LED display. Reliable code reading at levels as low as -25 dBm from 1/50 play speed up to 80 times play speed is facilitated. The extremely high sensitivity allows users to write code tracks at levels well below 0 dBm to minimize bleed through to adjacent program tracks.

Its ability to read deteriorated or poorly written code and reconstitute code with properly squared edges, restored rise times and amplitude without altering the time base is a powerful feature of the Model 6100.

CHARACTER INSERTER

In-video display feature provides up to three times code/user bits video displays. The character format of display is an alpha numeric 9 x 7 dot matrix. The size, position and window are completely user definable and variable.

VERTICAL INTERVAL TIME CODE READER/GENERATOR

May be originally ordered with VITC capability, or this capability may be easily added on site, as required. Vertical interval time code is reliably read from still frame to full wind-with-picture speeds. VITC to longitudinal conversion is also facilitated. The ability to add this capability to an existing unit saves the user both space and money.

PROGRAMMABLE TIME CODE RELAYS

A plug-in relay option to the Model 6100 provides 16 programmable, time-code-driven contact closures. The ability to turn ON and OFF various studio equipment or trigger a special effects cart machine or other studio equipment is facilitated.

MODEL 6100 AND RELATED PRODUCTS

6100 System-with Control Panel	\$4900.00
6110 Tach Pulse to Time Code Synthesizer	795.00
6240 Event Controller (option)	1295.00

ADDITIONAL FEATURES

- SMPTE/EBU Reader
- Video Character Inserter
- True re-clocked time code output available in jam mode allows code copying without degradation
- Unique forced-jam feature provides frame-accurate, glitch-free change over from reading to generating. Sync is maintained. Drop-outs or offsets are not introduced.
- Reverse jam-sync ability allows recovery of lost audio pre-rolls.
- VITC to longitudinal conversion upgrade of older video editors to VITC capability.
- Ten time code memories are available for later use in cueing and editing.
- Tachometer pulse driven time code generation allows use of film projectors, film dubbers and editing tables.
- Generates tach pulses from time code for use with tach pulse based auto locators.
- Reader to generator transfer of time code and/or user bits for specialized editing applications.
- Built-in time-of-day clock for master time or user bit insertion is a standard feature. Time code display, status, character size, and position are all accessed from both the optional front panel keypad and standard RS-232C/422 computer interface.

CIPHER DIGITAL, INC.

10 Kearney Road
Needham, MA 02194
(617) 449-7546

SYNCHRONIZER AND CONTROLLER

SHADOW II PLUS™ SMPTE/EBU EDIT CODE SYNCHRONIZER/CONTROLLER

The Shadow II Plus System, Model 4700, is a fully intelligent SMPTE/EBU Edit code synchronizer and controller for audio, video and film transports. The system utilizes sophisticated adaptive control loop techniques to insure superior synchronization and interlock of virtually any combination of audio, video or film transports.

Shadow II Plus is a complete, stand-alone system which provides control of the slave transport's capstan until phase error is adjusted to less than 1/100th of a TV frame; 1/3000 of a second to the audio engineer.

The System is further enhanced by an RS-232/422 computer interface, a standard feature of the Shadow II Plus. This interface allows studios to connect the Shadow II Plus to virtually any commercially available micro or mini computer as well as most video/audio editing systems. The Shadow II Plus, when interfaced to computer control, provides the ultimate in production flexibility. Users are free to control a virtually unlimited number of transports and perform complex edits in conjunction with ATR's, VTR's, mixing consoles, and other studio equipment.

The Shadow II Plus Synchronizer is completely compatible with, and may be interfaced to, the Softouch audio editing system for control of multiple ATR's, VTR's and sprocketed film transports for applications such as automatic dialogue replacement (ADR), sound effects assemble and sweetening.

Application Areas

The Shadow II Plus Synchronizer is currently satisfying customers in these and many other application areas: synchronization and control of multiple ATR's for audio post-production; synchronization and control of multiple ATR's and VTR's for audio for video post-production; synchronization of sprocketed film transports for audio for film post-production, and synchronization and control of film projectors and ATR's for corporate and institutional presentation requiring high fidelity sound.

ADDITIONAL FEATURES

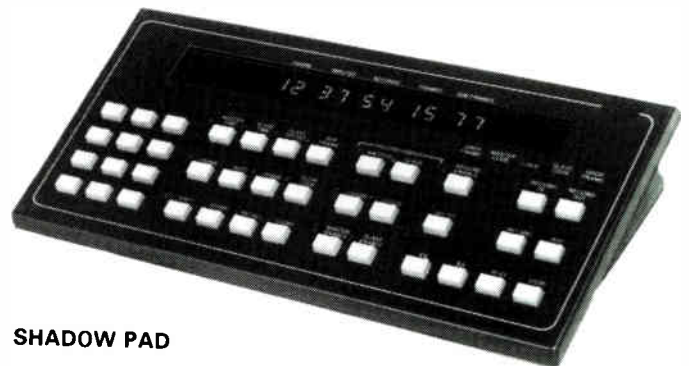
- SHADOW locks to SMPTE/EBU Time Code, drop or non-drop frame, video sync, 24-frame film code, and 60Hz tone, interchangeable.
- SHADOW reverts to tachometer pulses when auto locating, eliminating the need for high-speed reading of time code.
- 24-hour offset in 1/100th frame increments facilitated.
- Typical interlock times between two to five seconds.
- Time code read accurately between 1/50 play speed to 80 times play speed.
- Unique selectable Slow Lock feature.
- Wow and flutter suppression circuitry assures stablest lock possible.
- Battery back up

SHADOW PAD

The Shadow Pad Console, Model 4735, facilitates the remote control of a master and slave transport. Multi-track audio, video or sprocketed film transports may be configured in any desired combination. The console's dedicated function keys and 10-digit LED display allow the user to select the speed and type of desired interlock as well as initiate GO TO and FOLLOW commands. Pre-programmed, subframe-accurate record-in and record-out of both master and slave transports are easily accessed. The console's LED display provides instant recognition of master and slave time code. The presence of drop frame code on any transport is displayed as are stored locations and offsets in hours, minutes, seconds, frames, and 1/100th frame.



SHADOW II PLUS



SHADOW PAD

4700 — SHADOW II System	\$5595.00
4725 — Master Transport Selector (Three Machine)	1850.00
4750 — Tally Test Board	150.00
4760 — Wide Band Reader	695.00
4770 — Universal Film Dubber Interface	2500.00
4735 — SHADOW PAD Controller (remote control for two transports)	2495.00
7000 — Packaged System, includes Model 4700 and Model 4735	6995.00

CIPHER DIGITAL, INC.

10 Kearney Road
Needham, MA 02194
(617) 449-7546

SMPTE TIME CODE READERS/GENERATORS/ VIDEO INSERTERS



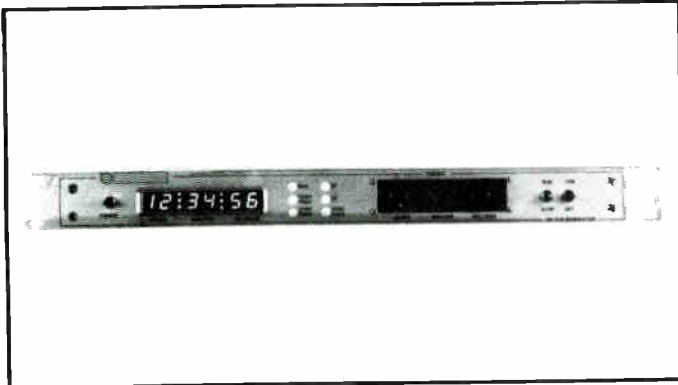
SMPTE Time Code Reader Model 710A

710A Features: • Low Cost • Wide Dynamic Input and Bandwidth
• Integral Video Character Generator • Low Profile 1-3/4" x 19" Package **\$2650.00**



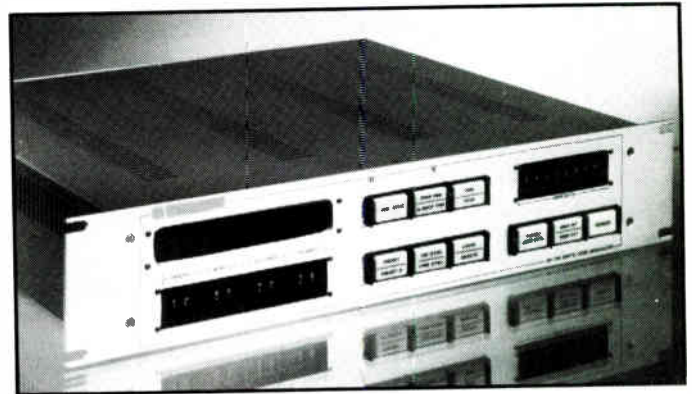
Reader/Generator/Character Generator with Video Model 722A

722A Features: • Designed to provide complete generate, read and video display capabilities in one cost-effective package • Drop Frame or Non Drop Frame mode, plus the insertion of User data • A wide dynamic input and bandwidth allows it to read and display code from 1/20 to 100x VTR play speed • Selectable parallel data outputs, for Time or User data **\$4950.00**



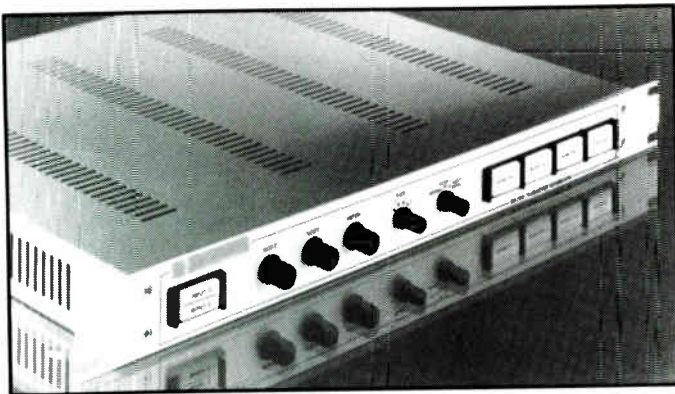
Time Code Generator Model 716A

716A Features: • Designed specifically for Television Studio and Production Environments • Display and output of SMPTE time codes
• Internal Reader • Reference Sync inputs for video or film tach pulse
• Drop Frame Mode • Jam Sync • Sync lock **\$2650.00**



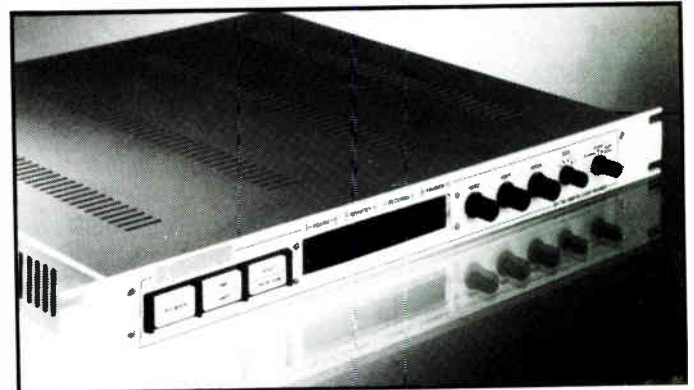
SMPTE Code Generator Model 766

766 Features: • Generator Time and User Code • Internal or external Sync • Integral User Data Preset Switches • Fully Remote Controllable • Drop Frame Mode • Jam Sync Option • Real Time Clock Option **\$3650.00**



SMPTE Character Generator Model 700A

700A Features: • BCD Parallel Input • Keys Hexadecimal Characters on to Video Signal (O-F) • Low Cost **\$2450.00**



SMPTE Time Code Reader Model 760

760 Features: • Wide Input Bandwidth • Reads Simultaneous Time and User Data • Integral Video Character Generator • Dot-Matrix, Hexadecimal Display • Low Profile 1-3/4" x 19" Package **\$3650.00**

CMX CORPORATION

3303 Scott Blvd.
Santa Clara, CA 95050
(408) 988-2000 Telex 910-338-0554

EDITING SYSTEM



Model 340XL Videotape Editing System

Today CMX systems are used in every possible television application from a three-hour network special, to a ten-second spot, to industrial training tapes. Most Emmy Award winning television programs have been edited using CMX. Agencies and producers have come to expect their programming to be edited on CMX.

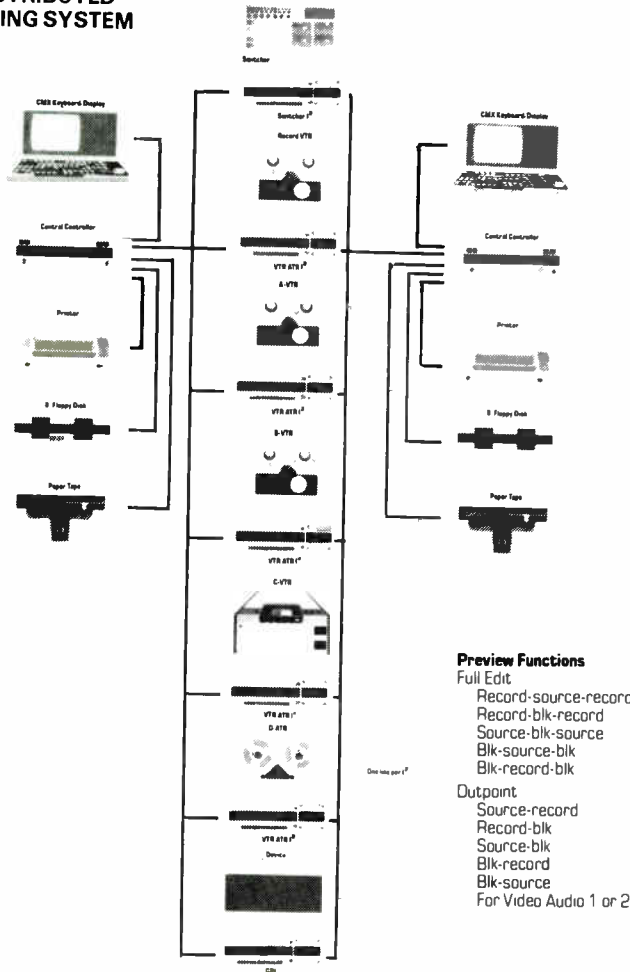
APPLICATIONS

- Delayed transition gives you the advantage of simple and efficient single event scene-transition-scene edits.
- Time code trim allows you to think in minutes, seconds and frames, not just frames.
- Nine preview modes allow you to see all important scene information for precise edits.
- Master/Slave operation gives you automatic synchronization of separate audio and video sources.

LIST MANAGEMENT

The CMX Decision List is the computer's copy of your Master Program Tape. True speed and flexibility in editing requires the capability to develop scene sequences in any order, i.e., matching incoming and outgoing takes, then processing the list for minimum auto assembly time. 340XL systems have the unique ability to move blocks of events, renumber events in groups or the entire list, and sort in several ways allowing you to get maximum efficiency from automatic assembly.

340X DISTRIBUTED PROCESSING SYSTEM



340XL SYSTEM SPECIFICATIONS

System Configuration	..... Distributed Processing
Central Controller	..... DEC Minicomputer
Device Interfaces	..... 16 Bit Microprocessor Controllers
Device Interface Memory	..... EPROM
Communication Format	..... Serial/9600 BD/RS 232
Communication Protocol	..... CMX 8 Bit Binary
Edit Decision List Format	..... Industry Standard
Edit Decision List I/O	..... Most DEC compatible Floppy Disk/ Papertape/High Speed Printer Devices
CRT Display Format	..... 80 Characters per line/25 lines/50-60 Hz Refresh Rate/Noninterlaced
Display Monitor	..... High Resolution CMX Terminal or any Broadcast Video Monitor
No. of Devices Assignable	..... 24
No. of Devices Controllable	..... 8
Edit Accuracy	..... Frame Accurate, Color Framed, PAL-pair self-correcting
Time Code Standards	..... SMPTE Drop/NonDrop Frame, EBU
Television Standards	..... NTSC/PAL/SECAM
Operator's Keyboard	..... Expandable/Alphanumeric/Color Coded
Motion Control Device	..... Rotary Control for search/Slow Motion/ Frame Jogging (memorized recall in process)

Time Code Functions

Set in time/Set multiple in times	Mark out time/Mark multiple out times
Set out time/Set multiple out times	Auto trim of record and source devices
Set duration/Set multiple durations	Clear (all) marks
Trim in time/Trim multiple in times	Reset (all) marks
Trim out time/Trim multiple out times	Recall marks (of specific event)
Mark in time/Mark multiple in times	Restore last mark

Edit Transition Selections

Cut	Key out (background/foreground/duration)
Dissolve from/to	Delayed key
Dissolve duration	Key delay time
Wipe from/to	Fade up from black
Wipe code	Fade to black
Wipe duration	Key in (background/foreground/duration) (14 different types of key edits possible)

Machine Control Functions

Rewind	Slow motion	Jog backward
Fast forward	Cue	Retard Jog rate
Play	Still frame	Advance Jog rate
Stop	Jog forward	All stop

System Parameter Selection

Event number	Print out time
Reel number (specific)	Print duration
All reel numbers	Interface channel assignment
Preroll time	Show start
Drop/nondrop frame	Title
	Switcher crosspoint assignment

Edit Mode Selection

Video only	Split edit delay audio
Audio only	Split edit delay video
Audio follow video	Any combination of Audio 1, Audio 2, and Video can be selected

Automatic Edit Assembly Functions

Sequential Assembly	Disable for Assembly (By Event #)
Reel-by-Reel Assembly	Resume Assembly
Enable for Assembly (By Event #)	List Enabled Events
	List Disabled Events

Device Selection

R—VTR/ATR	
A—VTR/ATR	
B—VTR/ATR	
C—VTR/ATR	
D—VTR/ATR	
E—VTR/ATR	
F—VTR/ATR	
AUX SOURCE	
BLK SOURCE	

List Management

Sort by event number
Sort by record time
Renumber events
Move events
New record start time
Delete events
Pull up events

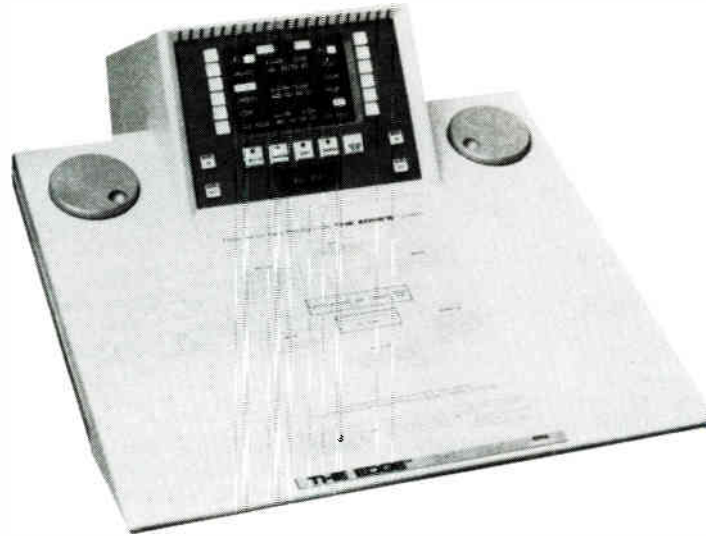
List Input/Output

Load list
Display list
Punch list
Read List
Scroll list up
Scroll list down

CMX CORPORATION

3303 Scott Blvd.
Santa Clara, CA 95050
(408) 988-2000 Telex 910-338-0554

EDITING SYSTEM



The Edge™ Computer-Assisted Editing System

FEATURES

- Compact Design/Fingertip Controls
- Smart Keys
- Internal Memory/Re-edit and List Rippling
- Auto Assembly
- VTR Mix
- Machine Control
- Time Code/Pulse Count Editing
- Built-in Dissolver
- Six Preview Functions
- 340XL Edit Decision List Input/Output
- Competitively Priced

The Edge from CMX is a two-source, one-record, computer-assisted editing system designed for broadcast, teleproduction, industrial, educational and government television applications.

Using The Edge, editors can perform dissolves, and produce a CMX-standard Edit Decision List with wipes and keys and delayed transition events. They can produce lists with new record start times as well as assemble automatically.

Two General Purpose Interfaces (GPI's) are included to control auto-transition switchers, digital video effects, character generators, and a variety of peripheral equipment. These GPI events, as well as splits (audio or video delays) and dissolve/wipe points, can be entered on the fly. Locating any point in a scene is smoothly and easily accomplished by a simple turn of the Reel Motion Controls.

The internal memory permits list manipulation which includes re-editing, list rippling, list scrolling, and event deletion.

Compact Design/Fingertip Controls

The Edge is lightweight and compact. All controls are conveniently grouped together around the CRT and can be quickly manipulated.

Smart Keys

The operating console combined with the CRT screen and the six Smart Keys on each side of the screen provide you with an ongoing dialog with The Edge as you move through the editing process. The dynamic labeling of the multi-layered screens will change to identify each of the keys by the function being requested. The screens virtually "talk" to you at each editing level, giving you an unusually high degree of control and flexibility. They will work with you, even instruct you if necessary, but always keep pace with your train and speed of thought.

Auto Assembly

The Auto Assembly function will assemble and deliver a polished, finished video tape in final form for screening from the scenes you have preselected. The assembly source can come from either a paper tape or an 8-inch floppy disk; output options available for The Edge.

VTR Mix

The Edge will interface with 1-inch, 3/4-inch and 1/2-inch formats including VTRs from Ampex, Bosch, Sony, and RCA.

Six Preview Functions

There is a full complement of Preview capabilities, including both In-Point and Out-Point, designed to provide flexibility, productivity, and give you, the editor, more time to concentrate on creativity without having to review unnecessary material. In-Point previews are: Video, Black, Video; Black, Video, Black; and Video, Video, Video only. Out-Points are Black, Video; Video, Black; Video Video.

Four Operating Mode Buttons

The Edge has four operating mode buttons: Setup, Motion, Edit, and Marks. The Setup mode allows you to set up your edit sessions parameters, and provides for maintenance.

Time Code/Pulse Count Editing

The Edge is Time Code-based and is switchable to Pulse Count when it is required. Using SMPTE Time Code, drop frame and non-drop frame may be mixed. The Edge is available in both PAL and NTSC standards.

Optional Audio/Visual

The Edge will perform actual dissolves in the machine. (External time base correctors are required.) Stereo audio can be added to this function.

Internal Memory/Re-edit, List Ripple

With the internal event memory, which features re-editing, list rippling, event deletion and list scrolling, you can essentially do your off-line editing with The Edge and build a CMX Edit Decision List. And this can all be done on a cuts-only system, if desired. Through the availability of a variety of optional techniques, such as using The Edge audio/video dissolver or auto-transition control of a production switcher, you can complete your final auto-assembly on The Edge. If it's a highly sophisticated production that requires numerous special effects, you may wish to complete it from The Edge EDL on a 340XL system.

THE EDGE. Priced from **\$9,200.00** to **\$18,400.00** depending on configuration.

CMX CORPORATION

3303 Scott Blvd.
Santa Clara, CA 95050
(408) 988-2000 Telex 910-338-0554

EDITING SYSTEM



CMX 3400 Editing Control System APPLICATIONS

- Edit in the most efficient sequence, not necessarily chronologically
- Make changes to individual edits or groups of edits without the necessity of constant re-recording
- Facilitate efficient on-line conforming of a work print

These tools can be used to:

- Rearrange events (move a single event or a block of events)
- Change program content by adding or deleting edits (insert, delete)
- Change the master time positioning of an individual edit and/or subsequent edits
- Edit Decision List text editing without altering edit time relationships (re-number, change mode, change transition rates, change reel numbers, change transitions, repeat event blocks)
- Easier list management through Auto Clean, which reviews the EDL for anomalies, eliminating unwanted duplicate events and cleaning over-records
- Multiple EDLs on one disk eliminates changing floppies everytime you change lists
- Text editing allows you to change elements of events other than playback and record in and out times without having to re-edit each event one at a time
- The CMX3400 EDL has been expanded to increase flexibility and to store more information in the list. Switcher memory registers contents, as well as triggers and master slave offsets, are among the additional information stored in the EDL. In addition, the editor now has the flexibility to assign four characters in alphanumeric nomenclature to reels such as DUB1, EFX2, as well as 001A through 999Z
- The CMX 3400 also gives you Motion Memory (M²). M² lets you program a VTR over its range of stable tape speeds: you can stop motion, reverse, and allow variable tape motion for any event. Eight sequences can be rehearsed and recalled by the system at edit time. Total memory is eight minutes

SPECIAL FEATURES

Multi-Function Keys Each of these multi-function response keys is capable of executing an extensive series of editing functions with a single keystroke.

Precue Equipment controlled by I²'s are automatically recued in preparation for the next event.

Transition Preview Provides dissolve or effect preview preceded by five seconds of the segment.

VTR Channel Assignment Simplified assignment of individual VTRs.

Mark File Allows you to remember the frame, and the system to remember the time code, for later use.

Duplication Function Use the system to control playback and record VTRs for making duplicates.

VP-32

Centerpoint Dissolve With the midpoint selected, the system will back up half the assigned transition rate and perform the dissolve.

Go To Sends the VTR to the edit point rather than to the preroll point.

All Simultaneous command and control of all assigned sources.

Selective Switcher Control Several levels of effects switcher control are available permitting freedom to work directly with the switcher to make audio or video crosspoint selections and fades.

- **Look Ahead Auto Assembly** that uses the full advantages of the minicomputer and Distributed Processing to minimize assembly time

- **Delayed transition** gives the advantage of simple and efficient single event scene-transition-scene events

System Configuration	Distributed Processing
Central Controller	DEC Minicomputer
Device Interfaces	16-Bit Microprocessor Controllers
Device Interface Memory	EPROM
Communication Format	Serial 9600 8D RS-232
Communication Protocol	CMX 8-Bit Binary
Edit Decision List Format	CMX 3400 CMX 3400 CMX 50 SMPTE (when available)
Edit Decision List I D	Most DEC-compatible Floppy Disk Paper Tape High Speed Printer Devices
CRT Display Format	80 Characters per Line 25 Lines 50-60 Hz Refresh Rate Noninterlaced
Display Monitor	High Resolution CMX Terminal or any Broadcast Video Monitor
No. of Devices Assignable	24
No. of Devices Controllable	8
Edit Accuracy	Frame Accurate Color Framed PAL Pair Self-Correcting
Time Code Standards	SMPTE Drop NonDrop Frame EBU
Television Standards	NTSC PAL SECAM
Operator's Keyboard	Expandable Alphanumeric Color Coded
Motion Control Device	Rotary Control for Search Slow Motion Frame Jogging (memorized recall in process)

Edit Transition Selections

Cut
Dissolve from to
Dissolve duration
Wipe from to
Wipe code
Wipe duration
Key in (background foreground duration)
Key out (background foreground duration)
Delayed key
Key delay time
Key delay time
Fade up from black
Fade to black
(14 different types of key edits possible)

Machine Control Functions

Scan
Reverse Scan
Rewind
Fast forward
Play
Stop
Slow motion
Cue
Still frame
Jog forward
Jog backward
Reland jog rate
Advance jog rate
All stop

System Parameter Selection

Event numbers to 9999
Reel nomenclature
4 character alphanumeric
Preroll time
Drop non-drop frame
Print-out time
Print duration
Interface channel assignment
Show start
Title
Switcher crosspoint assignment

Time Code Functions

Time code calculator
Set in time Set multiple in times
Set out time Set multiple out times
Set duration Set multiple durations
Trim in time Trim multiple in times
Trim out time Trim multiple out times
Mark in time Mark multiple in times
Mark out time Mark multiple out times
Auto trim of record and source devices
Clear (all) marks
Reset (all) marks
Recall marks (of specific event)
Restore last mark
Transfer of any menu displayed time code

List Input/Output

Load list
Display list
Punch list
Read list
Scroll list up
Scroll list down

List Management

Sort by event number
Sort by record name
Move events
Dfset record start time
Delete events
Pull up events
EDL Text Editing
Renummer events
Change modes
Change transition types
Change transition rate
Change reel numbers
Repeat event block

- Time code trim allows thinking in minutes, seconds and frames, not just frames
- Nine preview modes allow you to see all important scene information to precise edits
- Master/slave operation gives you automatic synchronization of separate audio and video sources
- Reel-by-Reel Auto Assembly tells you which videotape to put on and in what order
- Frame Bump allows synchronizing of out of sync tapes while machines are rolling
- Sync Roll locks isolation reels and separate audio sources together for real-time edits that are recorded in the CMX list
- General Purpose Interface allows up to eight peripheral devices to be activated from keyboard with up to sixteen commands per event

Edit Mode Selection

Video
Audio 1
Audio 2
Audio follow video
Split edit-delay audio
Split edit-delay video
Any combination of Audio 1 Audio 2 and Video can be selected

Automatic Edit Assembly Functions

Sequential Assembly
Reel-by-Reel Assembly
Look Ahead Sequential Assembly
Enable for Assembly (by event #)
Disable for Assembly (by event #)
Resume Assembly
List Enabled Events
List Disabled Events

Device Selection

Master 1
A: source (audio video)
B: source (audio video)
C: source (audio video)
D: source (audio video)
E: source (audio video)
F: source (audio video)
Auxiliary source
Blank source

Preview Functions

Full Edit
Record-source-record
Record-blk-record
Source-blk-source
Blk-source-blk
Blk-record-blk
Look Ahead record-source-record
Transition Preview
Outpoint
Source record
Record-blk
Source blk
Blk record
Blk source
For Video Audio 1 or 2

CMX 3400 \$40,000.00

Prices and Specifications Subject to Change Without Notice.

1641 McGaw
Irvine, CA 92714-5661
(714) 250-1641

200 SERIES VIDEO EDITING SYSTEM

In a world where ideas are manipulated by the medium in which they are expressed; where soaring creativity can be grounded by technology; there comes a tool so sophisticated in design that once again the pure creative urge is set free...the 200 Series Video Editing Systems.

Each system in the 200 Series includes as standard the following features:

ActionMatch

ActionMatch calculates edit points to match action and sound anywhere within an edit segment. Audio-only or video-only inserts can be precisely matched to corresponding action or sound with joystick control and a single keystroke.

Amber Status Monitor

An amber status monitor is included with each 200 System. The amber display was chosen after extensive testing which showed that it produced minimum eye strain while causing the least distortion of an operator's color perception.

Auto Duration

Utilizes the trim register to set the edit duration relative to either an in or an out point. This simplifies back-timing, critical inserts and animation style sequences.

Auto/Manual Assembly

Auto Assembly provides for automatic editing of a sequence or an entire program following the instructions in the edit list. Any 200 Series editor will sequentially (in numeric order) auto assemble. Manual Assembly calls up the next edit automatically but actual performance of the edit relies on the operator. The 204 includes Checker-board as well as Sequential Auto/Manual Assembly.

AutoMatch

AutoMatch allows the operator to create matching source and record in edit points at any location within the previous edit. This automatically provides match frame edits for A/B rolls and effect transitions.

Auto Scene Store

In this mode a single keystroke snapshots scene location by time code and reel number. Up to ninety-nine locations can be stored or listed. When recalled the time code address is readily available for high speed search or loading as an edit point.

Automatic Dialogue Replacement

ADR provides cue tones and a continuous audio record cycle for "looping" or post-dubbing of sound. It also can be used to replace video material.

CleanIt

CleanIt automatically cleans overlapped edits in the EDL one edit at a time during the off-line edit process. This program constantly checks the preceding edit to see if an overlap has occurred.

Color Framing

A Color Framing routine allows the edit system to monitor the color frame relationship for one-inch VTRs based on time code.

Control Track or SMPTE/EBU Time Code

The editing system has the capability to operate in either control track or industry standard SMPTE/EBU drop frame or non-drop frame time code. The system also operates with any combination of control track or SMPTE/EBU time coded tapes.

High Speed Search

High speed search allows the operator to program any tape time location (control track or SMPTE/EBU time code), and have the selected VTR search to that tape location.

List Scroll

List Scroll gives you joystick control to shuttle forward and backward through the edit list, including "cruise" for no-hands scrolling of EDL.

Manual Bump

Manual Bump allows for small



adjustments to rolling VTRs from the keyboard to achieve precise synchronization of multiple machines for syncroll.

Programmable Personality

Each model of VTR has an individual "personality" with regard to speed and response characteristics. In the 200 Series, personality switches tell the system what specific VTRs are connected, providing greater control in cueing and searching.

Smart Start

Smart Start learns the characteristics of the VTRs in the system and makes adjustments in the synchronization routines to accommodate variations in performance.

Split Audio/Video Edits

Split audio/video edits can be programmed with independent selection of audio and video in edit points.

200 SERIES

LIST

All 200 Series edit systems include keyboard console, status display monitor and electronic control unit. All systems include edit storage, auto assembly and basic list management.

202 Sync Roll System stores 250 edit lines, includes three interfaces.	\$13,500.00
202T Time Code/Sync Roll System same as 202 but includes TCR Time Code Reader.	\$17,000.00
203 A/B Roll System interfaces with effects switchers; stores 250 edit lines; VTR sync roll capability, includes three interfaces.	\$19,000.00
203T Time Code / A/B Roll System same as 203 but includes TCR Time Code Reader.	\$22,000.00
204 Advanced List Management System stores 800 edit lines, VTR sync roll, 409, block move and comments; includes three interfaces.	\$25,000.00

CONVERSION KITS

CK-202/203 Conversion Kit upgrades 202 to 203; includes memory board.	\$ 6,500.00
CK-202/204 Conversion Kit upgrades 202 to 204; includes memory board and keycaps.	\$14,000.00
CK-203/204 Conversion Kit upgrades 203 to 204; includes memory board and keycaps.	\$ 7,000.00

ACCESSORIES AND OPTIONS

AVS-100 Audio Video Switcher cuts-only (required for multi-source cuts-only systems)	\$ 2,200.00
CG-100 Command Generator (Option for 104/204 only) Remotely commands peripheral devices.	\$ 1,500.00
CI-90 Character Inserter inserts time code digits into video being recorded, providing "Window Dubs".	\$ 1,500.00
DD-200 Dual Disk Drive	\$ 4,000.00
ICC-100/5' Interconnect Cable for parallel I/O	\$ 175.00
ICC-100/20' Interconnect Cable for parallel I/O	\$ 300.00
IFP-100 Interface Package specify VTR manufacturer and model number (1", ¾", & ½").	\$ 1,000.00
JB-100 Junction Box required for multiple connections to parallel I/O e.g., TCR and switcher.	\$ 200.00
LL-100 Liplock Audio Pitch Corrector.	\$ 1,500.00
PIO-100 Parallel Input/Output provides parallel data to switcher, switcher interfaces, time code readers and CG-100. Must be purchased with switcher or switcher interface if no TCR in system.	\$ 500.00
RC-100 Reader Card provides one time code channel capability to TCR	\$ 800.00
RMK-200E rack mount kit for Electronic Control Unit.	\$ 250.00
RMK-200D rack mount kit for Disk Drive.	\$ 250.00
SE-100 Switcher Effects Unit audio follow video switcher with 23 wipe patterns.	\$ 7,000.00
SWI-100/110 Switcher Interfaces includes JB-100 and appropriate cables; specify model/manufacturer of switcher to be interfaced.	\$ 2,000.00
SWI-120 Switcher Interface includes JB-100 and appropriate cables; specify model/manufacturer of switcher to be interfaced.	\$ 3,000.00
TCR Time Code Reader (formerly TCR-100) includes three reader cards, PIO-100. Can be expanded for four channel capability.	\$ 4,500.00
200 Series Operators Manual	\$ 50.00
200 Series Operators and Maintenance Manual	\$ 125.00

Prices and Specifications Subject to Change Without Notice.

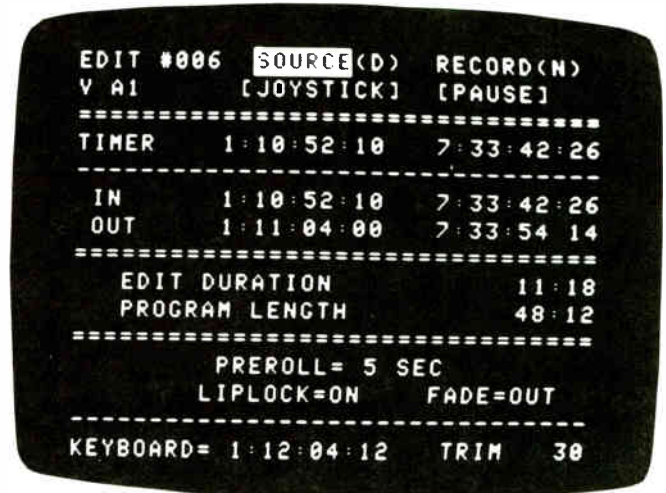
CONVERGENCE CORP.

1641 McGaw
Irvine, CA 92714-5661
(714) 250-1641

EDIT CONTROLLERS



ECS-90



ECS-90 SERIES

The ECS-90 is a low cost microprocessor-based editing system designed to bring sophisticated joystick editing within the budget of every videotape producer. It is a plug-in system that provides variable speed tape motion control with most 3/4" and 1/2" editing VTRs.

The multi-format ECS-90 is particularly suitable for high speed ENG (electronic news gathering), EJ (electronic journalism), remote production vans, educational and industrial productions, broadcast productions requiring a single source, and as an off-line system for commercial post production.

The ECS-90 can be used for single or dual monitor editing, remote VTR rolls, back-timed edits, animation and manual edit listing. The ECS-90 operates on control track or industry standard SMPTE/EBU time code, and is available in NTSC or PAL versions.

The ECS-90 is human-engineered for ease of operation and is the fastest editor available in the industry. The dedicated twelve-button keyboard permits quick initiation of edit functions and communication with the editor and its options, Liplock® audio pitch control, and BLADE™ black/fade module.

The ECS-90 standard package includes a status display generator for quick and convenient video monitor display of edit data, two CCA control cable assemblies (3/4" or 1/2" VTRs of customer's choice), one Operator's Manual and one Installation and Maintenance Manual.

FEATURES

- Plugs into most 3/4" and 1/2" VTRs
- Joystick control of tape speed
- Pulse Scan
- Interchangeable VTR formats
- High speed search
- Cruise
- Full VTR remote control
- Auto-tag
- Recall feature
- Built-in sync generator
- On-board computer
- Dynamic Edits
- Mark, set and trim in/out edit points
- Programmable pre- and post-rolls
- Insert or assemble edits
- Independent control of audio and video channels
- Control track or SMPTE/EBU time code
- Abort capability
- Status display generator
- Fastest edit controller available

ECS-90 Edit Control System

Price includes two CCA-90 Control Cable Assemblies, one Operator's Manual, and one Installation and Maintenance Manual. **\$4500.00**

ECS-90S "Super 90" Edit Control System

Includes two CCA-90 Control Cable Assemblies, Time Code Reader/Generator/Lister, one Operator's Manual, and one Installation and Maintenance Manual. **\$6500.00**

ACCESSORY

CI-90 Character Inserter

Inserts time code digits into video being recorded, providing "Window Dubs". **\$1500.00**

PLUG-IN OPTIONS

LL-90 Liplock™ Audio Pitch Corrector

Corrects audio pitch to provide intelligible audio dialog monitoring when tape is shuttled at fast or slow speeds. **\$1,200.00**

BL-90 Blade™ Black Generator And Fade Module

Fades up from and/or down to black at in or out edit points. Includes internal black burst generator for prerecording color black on video tapes. (Fades NTSC and PAL, Black Burst Generator NTSC only.) **\$925.00**

CCA-90 Control Cable Assembly

Interfaces ECS-90 to VTR. **\$650.00**

RGL-90 Time Code Reader/Generator/Lister

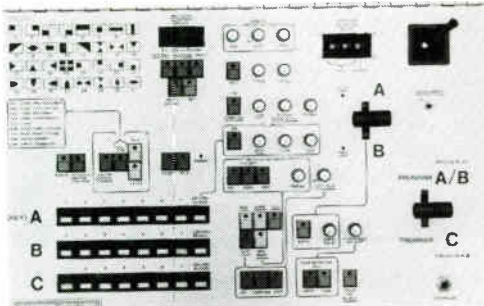
Can generate drop or non-drop frame SMPTE/EBU Time Code on Record VTR. Reads both Source and Record time code simultaneously. Lists edit decisions to RS-232C storage devices such as printers or disk drives. Includes everything necessary to upgrade an ECS-90 to a Super 90. **\$3250.00**

SPARE PARTS

ECS-90 or ECS-90S Operator's Manual **\$25.00**
ECS-90 or ECS-90S Installation and Maintenance Manual **50.00**
RMK-90C Rack Mount Kit **250.00**

CROSSPOINT LATCH CORP.

95 PROGRESS STREET • UNION, NJ 07083
(201) 688-1510 • TELEX 9104901990



6109/7209

400 EVENT REGISTERS, 100 PROGRAMMABLE SEQUENCES is available with the 6109/7209 combination. The switcher can store and run sequences varying analog functions smoothly and simultaneously. Sequences can be stored on disc or in editors. Sequences can be recalled by editors and triggered to run. Each Event can be programmed for smooth transitions of up to 999 frames, and in addition to that a delay of up to an additional 999 frames before the start of each smooth transition. Event registers can be recalled as static displays (switcher control panel status); 400 such registers are available. Or, the Editor can recall the registers and "run" them on the switcher from the status of one Event register to the next. Individual functions on the Stored Events can be altered with the unique "Edit" mode. The 7209 can be controlled fully by most editors by means of RS232 or RS422 serial ports, or with parallel interface.

This is a three bus switcher with a 32 pattern generator with automatic or manual operation. It has a built in RGB chroma keyer, and a second optional chroma keyer. It has a downstream keyer with edge, master fade to black, can dissolve from a bordered split wipe (or from a chroma keyer over a split wipe) to a third signal. It has a blanking processor with a unique test mode for system timing.

Available in PAL
6109 \$6,995.00
7209 3,000.00
99 SEQUENCE OPTION 995.00
6112, 6112BH and 6112AK

The 6112AK is a microprocessor controlled switcher with two mix effects systems each with 12 individually positionable patterns. The two fader arms can be programmed to control not only the pattern size (as with conventional switchers) but also positioner, border width etc. between two limits. When so programmed, when the fader arm is moved from one of its mechanical limits to the other, the pattern moves from one of its programmed electrical limits to the other. The programmed transition can be produced automatically by the microprocessor with duration times up to 999 frames. In addition to that the start of the transitions can be delayed up to 999 frames each. The two mix effects systems can be programmed with different duration and delay times and can be triggered simultaneously or independently. The 6112AK has a downstream matte key with invert and blink. The optional chroma keyer is available either in RGB or Encoded. The switcher has nine inputs including colorizer, pattern modulator, Mix-Wipe which is a combination of mix and wipe independently controllable, dual back porch clamps, and blanking processor. The 6112 can produce a wipe over a wipe, a wipe inside a wipe, a wipe over or behind a chroma key. The blanking processor completely removes color shifts at the end of a transition. The 6112AK is equivalent to the 6112 combined with the 6403.

The 6112 has the same production features without the programmable features of the 6112AK.

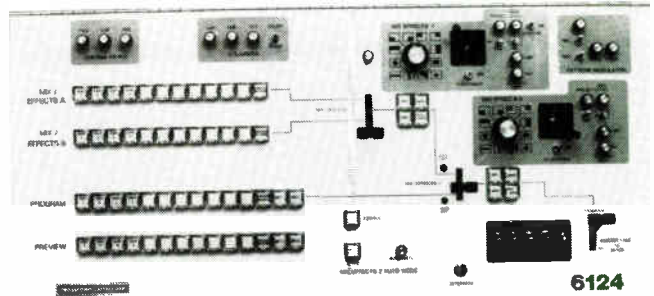
The 6112BH is similar to the 6112 except for the incandescent lamp buttons.

All version of the 6112 can be used with the 6403 Editor interface. In addition the 6112 can also be used with the 7239 AUTO DRIVE TM and the 7203 Programmable Editor switcher interface. All versions operate with the 6800 Audio mixer.

Available in PAL
6112 \$7,950.00
6112BH 10,500.00
6112AK 10,900.00
Chroma Keyers (RGB or Encoded) 1,050.00

Prices and Specifications Subject to Change Without Notice.

SWITCHERS/CONTROLLERS



6124

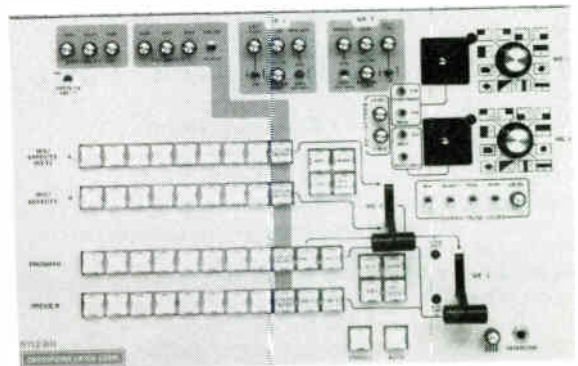
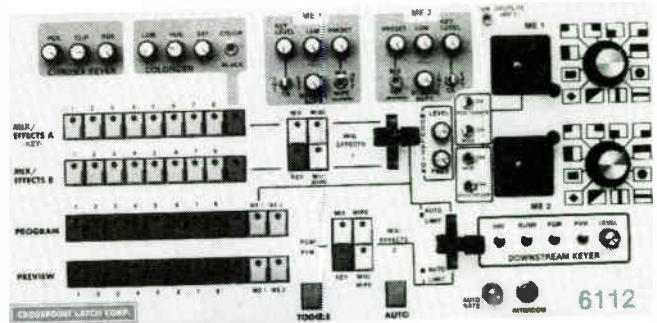
A four bus 12 input switcher with illuminated push-buttons. A chroma keyer is standard (either RGB or encoded).

There are two independent mix effects systems, each with its own pattern generator and positioner, border generator (with individual luminance controls), keyer (with internal, external, and chroma key modes), hard or soft edge.

The downstream keyer mattes the incoming signal, and has blink and invert. The pattern modulator with adjustable amplitude and frequency, can be switched into either ME system. The colorizer has hue luminance and saturation controls, and drives both border generators with complimentary colors. The chroma keyer has a variable delay line which is adjustable from the front panel for optimum keying. It can be switched into either ME, allowing wipes and dissolves behind as well as over a chroma key.

The 6124 can be controlled by most editors by means of the 6403 Editor Switcher Interface. 6124A is available in 19" wide control panel with wide LED type buttons.

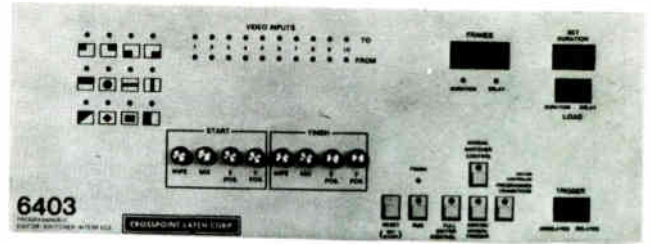
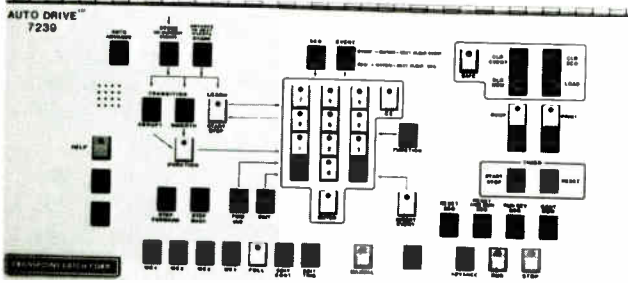
Available in PAL
6124 \$13,700.00



CROSSPOINT LATCH CORP.

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(201) 688-1510 • TELEX 9104901990

SWITCHERS/CONTROLLERS/ AUDIO & SYNC GENERATORS



7239 Auto Drive TM

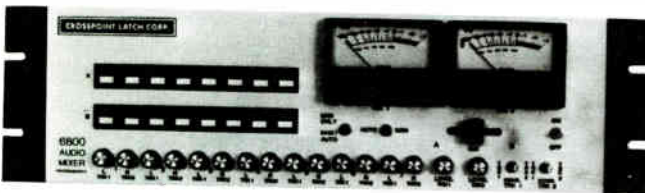
Auto Drive is an extremely versatile programmable controller for the Crosspoint Latch "K" switchers. Its computer is capable of storing the configuration of the entire control panel and then making smooth or abrupt transitions from one configuration of the panel to the next. Each configuration is stored as an "event". Events can be grouped into sequences.

As a production tool, it enables artistic combinations of effects which could not possibly be achieved manually, to be generated with great precision and ease. Before editing, sequences can be programmed and then rehearsed live. Minor adjustments and trims (or major ones for that matter) can be made to the program. Events may be added, deleted or changed. Sequences of events may be called up and reviewed at random. Sequences may be stored one way and played back in reverse. Elaborate sequences may be set up slowly, at the convenience of the operator, then by programming a short duration for each event, the sequence can be run through rapidly and without mistakes. Programming 7239 Auto Drive is much faster than editing because no time is lost waiting for tapes to rewind and roll. By performing most of the effects before editing, a great deal of post production time is saved.

As an editing tool, the 7239 Auto Drive can be programmed to perform effects and switching for multiple roll edits. Since the programming is done with its own computer, interface with editors is very simple, via an RS232 serial port. The cost of a complex switcher to editor interface is eliminated.

AUTO DRIVE TM. is the most sophisticated controller in the industry. It has 256 Events each of which consists of the entire control panel of the switcher and any number of which can be grouped into sequences which can be run in either direction. Manual fader arm movements can be stored, then "run" with all analog functions being controlled smoothly from one switcher panel configuration to the next. Stored Events can be very easily modified, with the unique Crosspoint Latch "Edit" mode.

Interfaces with most Editors \$12,500.00



6800 Programmable VTR Audio Mixer

The 6800 has been designed primarily for use with VTR editing controllers. It can perform automatic cuts and mixes, with durations accurately programmable up to 999 frames. It has five stereo inputs with individual gain controls for each channel. The two channels (tracks) may be reversed at the output, or combined into either output channel. This allows the use of the SMPTE time code on the free audio channel of the recording VTR. The input selection may be manually overridden by switches on the front panel. Mixing may also be performed manually from the front panel, if required. Each output channel has a gain control with a center detent. A separate LED type VU meter is provided for each set of stereo inputs. Both mixers are simultaneously controlled by a single slider or by the automatic ramp generator \$3,500.00

6403 Editor/Switcher Interface

The 6403 is an active interface unit which allows most Crosspoint Latch switchers to communicate directly with VTR editing controllers. It greatly enhances the versatility of the more sophisticated editors by increasing the capability of their effects and mix functions. It adds the capability of effects and mix to simple editors. It has programmable start to finish points, for effects and mixes, along with an internal duration counter which may be set from one to 999 frames.

The 6403 is very flexible. It has several modes of operations. In one mode it accepts and stores commands such as duration time, pattern selection, input selection, etc., directly from an editor; and then executes the commands at the required instant. In another mode, where greater capability than that afforded by the editor is required, the start and finish points may be set manually from the 6403 control panel. The editor then merely issues the run command at the appropriate time. This function is especially useful, since most editors, even those capable of A-B rolls can only produce complete wipes. The 6403 enables an edit to be performed with a pattern or a mix starting from any point and ending at any level (for instance a horizontal wipe which stops in the middle). This enables even the simplest editors, which are only capable of performing cuts, to execute partial wipes during the edit.

One of the problems inherent in most editor-switcher combinations, is that when duration time is defined, the effect or mix almost always starts late and finishes early. This results in a shorter duration than that specified. This problem is especially apparent on wipe patterns, because of the overrun necessary for positioners. The 6403 completely eliminates the problem. The start and finish points can be precisely defined even with an offset positioner.

Interfaces with most Editors \$2,750.00
Editor Module 995.00

6006B Sync Generator

This is a complete sync distribution system, with a full set of distribution amplifiers included in the package.

There are four (independently) phase adjustable pulse amplifiers, switchable to either sync or horizontal drive. There are also five subcarrier distribution amplifiers, four of which are independently adjustable through a full 360 degrees.

Four black burst outputs are provided for genlock type cameras which are independently phase-adjustable for both horizontal and subcarrier from the front panel. 3-1/2" rack.

This unit is extremely compact, occupying only 1-3/4" of rack space. It is ideal for small studios, where in most cases, no additional drive distribution amplifiers are required \$1,990.00

6006C Sync Generator

This unit features two black burst outputs, with the addition of NTSC full field color bars. 3-1/2" rack \$1,990.00

6803 Audio Follow Mixer

This is an audio follow mixer for the 6112 and 6124 video switchers. It is similar to the 6800, but has no input selector button for break-away audio and no tone generator \$2,500.00

CROSSPOINT LATCH CORP.

95 PROGRESS STREET • UNION, NJ 07083
(201) 688-1510 • TELEX 9104901990

SWITCHERS/CONTROLLERS/ AUDIO & SYNC GENERATORS

6119

The 6119 is a 3 bus, 6 input switcher. This unit features 12 wipe patterns with positioner, soft edge and bordered wipes. There is a full spectrum colorizer. Includes blanking processor and test mode for system timing. The 6119 has a unique EFFECTS DOWNSTREAM KEYER, which replaces the colored border with a matte key, (thus producing a matte key over an Effect, and this entire combination can be dissolved to black. The 6119 can dissolve from a bordered wipe to a third input.

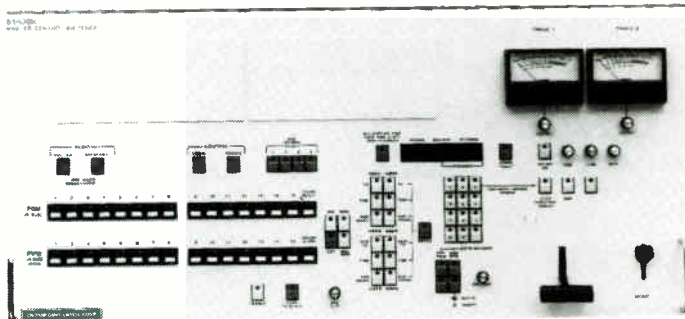
The 6119 also offers both manual and automatic transitions which can be external GPI interface. The standard switcher has genlock, four black burst outputs (to lock four other devices), and provision for expansion pattern generator.

Not available in PAL

6119 \$ 2,400.00

OPTIONS

- *RS107A Sync Generator \$ 100.00
- *Microprocessor Board for full RS232 or 422 Control 1,850.00
- *Extended Pattern Generator TBA



6150BK Master Control Switcher

Programmable microprocessor controlled switcher. Two events memory directly selectable on the control panel. Real time clock. Serial communication between control panel and electronics. Automatic or manual fader operation. With the addition of the SMART INTERFACE BOARD the 6150BK can be accessed serially from external programmer or computer. Single or dual channel audio. Sixteen inputs, with four input downstream keyer. Voice over with automatic 4 db "duck". Options for machine control, printer driver. Includes blanking processor and test mode for system timing.

6150BK \$15,900.00
Dual Audio 3,300.00

6026

Encoded Chroma Keyer and Video mixer. 1-3/4" rack mountable, horizontal positioner, dual outputs for midstream and downstream chroma keying.

6026 \$ 3,500.00

6700 Matrix Switcher

This is an 8 input RGB Matrix switcher for selecting RGB inputs used for multiple camera chroma keying. Outputs of switcher goes into RGB chroma key inputs on switchers. Can be controlled from 6112, 6124 and 6139 switchers.

6700 \$ 1,990.00

Model 8000 TIBEC™

NEW

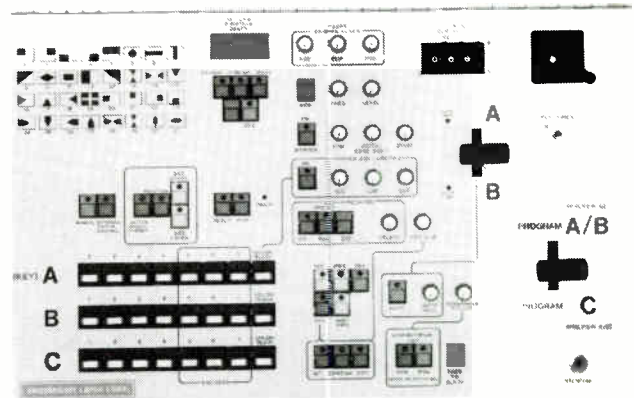
Time Base Corrector which can lock two VTR'S.

The 8000 makes it possible for the first time to have a full bandwidth, high quality A-B roll system with a single PBC.

The 8000 produces clearly recognizable pictures even when one VTR is in fast forward while the other is in rewind. It has a virtual "infinite window".

The 8000 can also be used in the conventional manner (one PBC for each VTR). Used in this way it is just a high quality PBC.

8000 \$6,995.00



6116/7209 Microprocessor controlled COMPONENT SWITCHER

Basic unit has four EVENTS which can be simply programmed and run automatically under internal computer control. Each EVENT consists of the entire configuration of the control panel. The 7209 can run smooth transitions controlling all functions on the panel simultaneously. The 7209 interfaces with most editors, with the SMART INTERFACE BOARD.

The 6116 handles four component inputs (any format) and three encoded signals. The switcher will not perform effects between encoded and component formats without an external transcoder. The Y channel can handle both 7 encoded inputs (when not used for component signals). The switcher has an optional chroma keyer, 32 pattern generator, bordered wipes, a matte downstream keyer, fade to black, and three video buses permitting a dissolve from a split wipe to a third input. Includes blanking processor and test mode for system timing.

6116 \$16,000.00
7209 3,000.00
SMART INTERFACE BOARD 1,000.00

6029 Genlock Unit

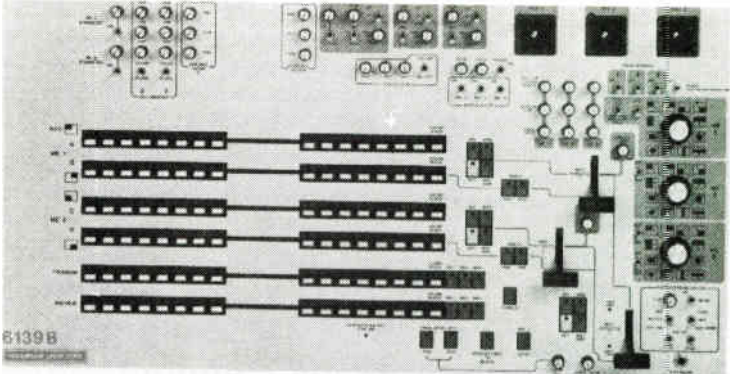
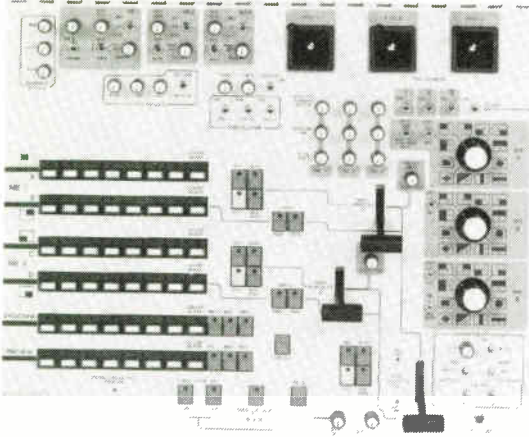
Generates sync and subcarrier from black burst or composite video. Locks to VTR. Automatic change over switch to external sync and subcarrier inputs on loss of video. Requires DC supplies derived from 6112, 6124, or 6139 switchers.

6029 \$ 407.00

CROSSPOINT LATCH CORP.

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(201) 688-1510 • TELEX 9104901990

SWITCHERS/CONTROLLERS



6139 Series

8, 16, or 24 Inputs

LED or Illuminated Push Buttons

The illuminated push button versions have 32 patterns for each ME system, (instead of 12 each for the other version) and the pattern selection is by means of momentary illuminated push buttons.

This series of switchers has tremendous production power. Available in three sizes, 8, 16, and 24 inputs with either the illuminated, or the more cost effective LED type push buttons. A unique feature of the 8 input version (with LED buttons) is that it can be expanded in the field to a 16 input switcher.

All versions of the 6139 have six buses and three mix-effects systems; colorizer; pattern modulator with freeze; downstream keyer with edge and external border; quad split; master fade to black; spot-lite; mix pattern mode between ME1 and ME2; an effects unit which can either key or mix the program bus over the other three ME's or over quad split. A unique test mode (the simplest one ever conceived) for system timing and a blanking processor which completely eliminates color shifts on mixes and wipes are also standard on all units.

The 6139 "K" switchers can be controlled with AUTO DRIVE™, by far the most powerful controller in the industry, which stores the entire control panel status 256 times, learns manual fader movements, has unique "EDIT" Mode, and interfaces with most editors. **\$12,500.00**

Rotary and Matrix Wipe Option is available for the 16 and 24 input switchers. With this option it is possible to select a total of 96 patterns, which include matrix wipes (8x8) squares, rotary wipes and multiple patterns.

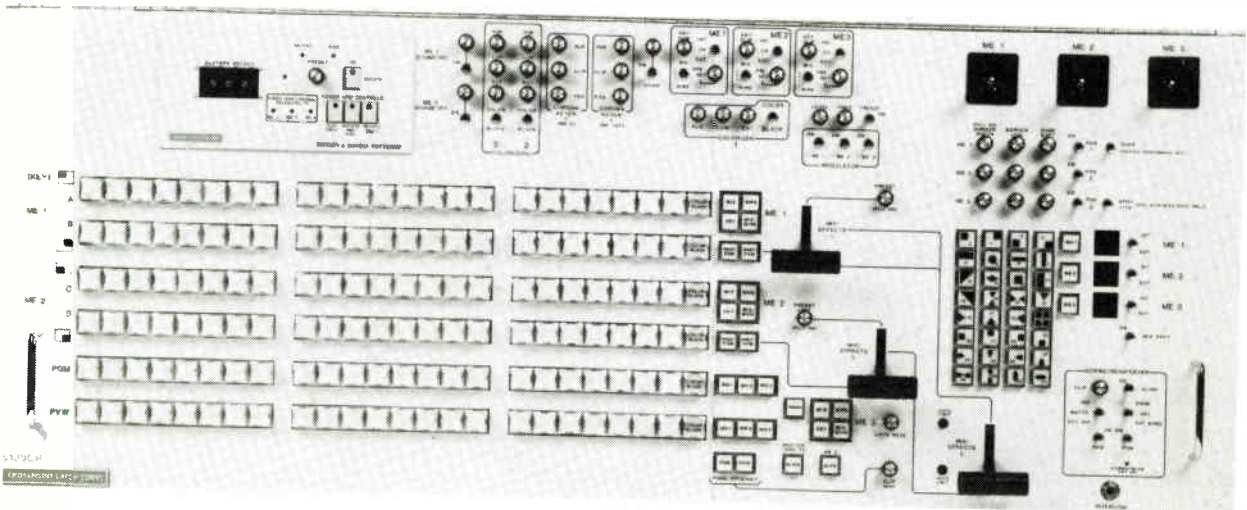
All switchers interface with most editing systems by means of the 6403 or 7200 interface unit.

Additional options include two chroma keyers, RGB or encoded and dual colorizers.

6139	\$14,500.00	6139B	\$21,799.00
6139AK	16,000.00	6139BH	37,299.00
6139AH	22,500.00	6139BK	23,299.00
6139AHK	24,000.00	6139BHK	38,299.00
		6139C	28,299.00
		6139CK	29,799.00
		6139CHK	50,299.00

OPTIONS

Chroma Keyer (RGB or Encoded)	\$1050.00
Additional colorizer	500.00
6035 External Pattern Generator	3000.00
with rotary wipes	
6032 Remote control panel for	600.00
dual colorizer	



5300 INTELLIGENT TIME PROCESSOR

With an optimum blend of state-of-the-art LSI and VLSI circuitry including a microcomputer, Datum has introduced the Model 5300 Intelligent Time Processor (ITP). This economical and flexible time processing package allows the user to make full use of his video resources in today's demanding broadcasting, post production, and industrial environments.

The Intelligent Time Processor can produce SMPTE/EBU time code simultaneously with user bits, vertical interval time code and video characters. The 5300 will operate in NTSC to the RS-170A specifications or in PAL to the EBU 3079-E specification.

A numeric key pad for data entry and high efficiency LED readouts combine to achieve an exceptionally attractive and highly functional front panel assembly. The slimline design occupies a minimum of standard rack cabinet space. All input and output signal connections are mounted on the rear panel.

The ITP reads standard serial code at speeds ranging from 1/3 to 90 times normal play speed in both directions without experiencing any frame decoding delay.

In addition, the system will automatically revert to reading vertical interval time code when reading down to still frame to insure complete code reading reliability.

STANDARD TIME CODE: MODEL 5300

The Intelligent Time Processor generates time code from data which is either preset through the front panel keyboard or dubbed from an external source. Special modes have been created which allow the 'user bits' portion of the code to update as an independent time generator or to be jam sync'd to serial time code from an external source. The ITP also produces color frame correct time code.

**VERTICAL INTERVAL TIME CODE:
MODEL 5301**

This is an optional feature that provides the ITP with the capability to both generate & read VITC in the proposed industry standard. Any two lines in the vertical interval from line 10 through & including line 20 can be selected. In the read mode, the ITP decodes VITC independently of its recorded position in the vertical blanking interval.

**TIME CODE CHARACTER GENERATOR:
MODEL 5302**

The optional time code character generator makes use of a black mask background for either recording or displaying characters in the video picture. The vertical and horizontal positioning of the characters is controllable from the front panel together with character height and width.

CONFIGURATION SUMMARY

5300 Standard T/C Reader/Generator	\$4150.00
5301 Vertical Interval Time Code	4550.00
5302 Character Generator	4550.00
5303 Includes all features	4950.00
Field Upgrade Kit VITC	500.00
Field Upgrade Kit CG	500.00

The ITP, a unique combination of demanding features for professional time processing, allows the user to make use of such features as time code dubbing, 'user bits' manipulation and synchronization, standard SMPTE/EBU and VITC generation and decoding, and clear, crisp video character display.

The TTL compatible input signals into the rear panel parallel connector permitting the ITP to be remotely controlled. A rear panel mounted toggle switch is used for selection of EIA RS170A/NTSC or PAL compatible video signals.



5350 SMPTE TIME CODE GENERATOR

The Datum Model 5350 generates industry standard time code in the SMPTE/EBU specified format. Front panel thumb wheel switches allow for user-definable setting of hours, minutes and seconds. Additional user accessible front panel switches allow for such useful functions as drop frame/non-drop frame format and generator start and stop.

The current time count is clearly displayed through the use of high efficiency red LED indicators located on the front panel.

Time code serial output is at the rear chassis through standard balanced XLR connectors. In addition, buffered parallel BCD code is also available for use with other Datum peripherals such as the Model 5370 time code character generator.

Code synchronization is achieved through a standard BNC connector requiring composite sync or video input reference to achieve properly locked time code. PAL ident connectors are also available.

A front panel indicator displays the presence of sync failure when it occurs. The Model 5350 and all of its features are combined in a standard 19" rack mount package requiring minimum panel space.



5350 SMPTE Time Code Generator\$1850.00

5360 SMPTE TIME CODE READER

The Model 5360 Time Code Reader processes SMPTE/EBU time code ranging in speed from 1/5 to 60 times normal play speed from any compatible source. The translated information is displayed in hours, minutes, seconds and frames by highly efficient LED readouts mounted on the front panel.

The hold feature of the 5360 allows the user to 'freeze' the display for data logging purposes.

A front panel lamp indicates the presence of drop frame/non-drop frame code.

To prevent the unit from translating invalid data (due to occasionally poor input signal quality), the Model 5360 allows for the bypassing of one, two, four, or eight frames of code before the internal displays are updated. The time code reader rear panel has input facilities for balanced or non-balanced XLR video input. Buffered paralleled BCD output at TTL compatible levels is available from a rear panel connector for use by Datum's Model 5370 Time Code Character Generator and other external devices.



5360 SMPTE Time Code Reader\$1550.00

5370 TIME CODE CHARACTER GENERATOR

Incorporating numerous user-defined functions in a compact 19" rack mountable package, the Datum Model 5370 is able to superimpose up to eight SMPTE/EBU time code characters and three alpha characters on a standard video signal.

The numeric characters reflect the SMPTE/EBU time code in hours, minutes, seconds and frames as translated through input sources such as the Datum Model 5360 Reader or the Model 5350 Time Code Generator. Additional rear connectors facilitate input for video background, composite sync and mixed output or characters only.

Front panel switches and controls facilitate character positioning vertically and horizontally in addition to character height and width selection.

As an added enhancement, the user may select either characters with mask, characters alone or remote control operation at the touch of a switch.

Three additional alpha characters can be superimposed by user selectable internal jumpers.

The Model 5370 Character Generator is fully compatible for use with Datum products and represents the state-of-the-art design in SMPTE/EBU time code equipment.



5370 Time Code Character Generator\$1680.00

ECHOLAB, INC.

175 Bedford Road
Burlington, MA 01803
(617) 273-1512

PRODUCTION SWITCHER/ PULSE CROSS



SE-1G

SE-1G

4 Input S.E.G. for use with up to 5 video sources, one of which may be a VCR playback. 4 blackburst outputs simplify system connections with the new genlockable B-411 cameras. Rack mount or desk top.

SE-1G\$1695.00

SE-2 VIDEO PRODUCTION SWITCHER

- Direct plug compatibility with many cameras • Revolutionary Soft Take • Built-in phase shifter and sync DA's
- Single box, only 3-1/2" depth

The SE-2 is the ideal switcher/special effects generator for medium sized color studios. Designed for ease of installation, the SE-2 includes many features which are normally purchased in separate boxes. A sub-carrier phase shifter and a complete set of five standard sync pulses are built-in at no extra cost. Another important feature is a 400-hs window of acceptable sync timing; this means that a slight mis-phasing of camera inputs has no effect instead of causing a lateral shift during effects.

SE-2\$3195.00

SE-3 PRODUCTION SWITCHER

- Computer control of all switching and effects • Contact closure editing interface (standard) will initiate any pre-programmed event • 12 inputs, including black and background • 3 mix-effects circuits, 2 border generators
- 1 color background, 2 color matte generators • Front-panel programmable with up to 5000 steps • Remote control panel with coax or 5-wire cable, or clamps together for single-box 19" x 12" x 7-1/4" • Quad splits • Re-entrant effects • ECHOLab's patented soft take • 1-3/4" front panel depth

ECHOLab's revolutionary switcher/special effects generator, the SE-3, makes available exceptional performance for a low price. A powerful built-in Z-80 microcomputer replaces most of the digital logic found in other switchers and also allows user programming.

SE-3 with contact closure interface\$16,000.00

Options

Full Remote Control Interface\$2225.00
Chroma Keyer1650.00

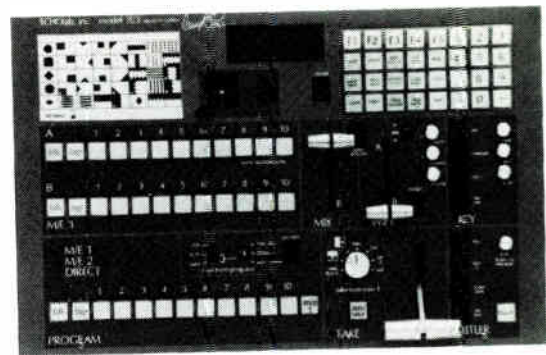
SG-4A Full genlock color sync generator with automatic sync and sub-carrier switches and vertical ratelock . \$945.00
CBB Full field color bars generator\$365.00

TIM Tally-Intercom Master, built-in\$400.00
SE/2-SG4/CBB 'A' Combo\$3995.00

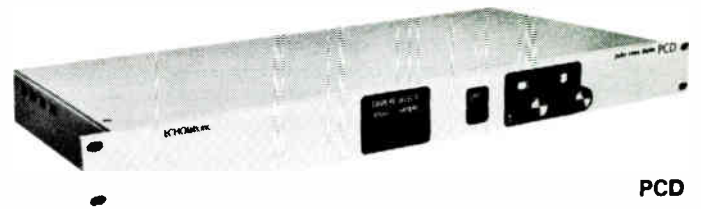
SE/2-SG4A 'B' Combo\$3695.00

SE/2-CBB 'C' Combo\$3560.00

Prices and Specifications Subject to Change Without Notice.



SE-3



PCD

PCD PULSE CROSS DISPLAY

- Waveform Sampler • Pulse Cross Display • Distribution Amplifier

The PCD is the most effective and economical tool for monitoring video quality for small applications. The input to be monitored is a 1V p-p composite video signal. Six SO-239 connectors provide two different types of output signals: display and distribution.

The Display outputs carry unmodified input video until Display Select switch is pushed. Pulse cross or waveform sample displays may be selected separately or in combination. Four isolated distribution amplifier outputs are also available: these outputs are not affected by the display select switch. The Waveform Sample Display acts as an oscilloscope for monitoring video functions such as amplitude, pedestal level, excessive white peak clipping and 60 cycle noise. Instantaneous video level is sampled once per horizontal line and displayed as the horizontal displacement of a vertical white stripe which is added to the Display video outputs. Two additional vertical stripes act as a calibrated graticule, representing pedestal level and peak white level. These are factory-set for a 1V p-p signal but may be recalibrated with internal trim pots. Pulse Cross Display repositions the monitor picture to make sync and blanking pulses visible. Serration, equalizing, and blanking pulse timing can be quickly verified. Vertical interval test signals (VITS) and VTR head switching transients can be monitored. Editing VTRs can be tested for tape tension, servo lock and proper sync. Since the color burst is displaced in pulse cross operation, color sync will be lost on the display outputs only. In all other modes, broadcast color specifications are met.

PCD\$495.00

VP-41

EECO Incorporated

COMPUTER CONTROLS FOR VIDEO PRODUCTION

MTG-550 LONGITUDINAL TIME CODE GENERATOR



A compact and versatile longitudinal time code generator packed with useful features. Outputs continuous serial SMPTE/EBU standard drop frame or non-drop frame time code with or without user bits for use in laying down longitudinally recorded time code tracks on video and audio tapes and magnetic film. Front panel thumbwheel switches for presetting starting time values and for manually entering user bit data. Front panel selectable slave mode allows starting count to be picked-up from a pre-existing time code track, an invaluable feature for generating continuous time code tracks in assembly editing applications and for reconstructing damaged sections of time code tracks. Accommodates a wide variety of sync references: AC line; NTSC, PAL or SECAM composite video. Additional features which make the MTG-550 an outstanding value include:

- Easily understood control panel with visual and audible status alarms/displays.
- Manual user bit entry with full hexadecimal capability.
- HOLD pushbutton that allows time code count to be frozen and resumed from front panel.
- Binary word and hexadecimal display modes.
- Selectable time code frame rate: 25 fps or 30 fps.
- Parallel BCD time and binary word output lines capable of driving TTL loads.
- Parallel binary word input lines.
- Compact, low power, high reliability design utilizing CMOS logic and EECO's exclusive custom LSI time code generator I.C.

MODEL NO.	DESCRIPTION	PART NO.	PRICE
MTG-551	NTSC	260182-01	\$2,995
MTG-552	PAL-B	260182-02	3,230
MTG-553	SECAM	260182-03	3,350

PTG-560 PORTABLE TIME CODE GENERATOR



A precision battery operated longitudinal time code generator expressly designed for portable use in ENG/EFP applications. Synchronized either to an internal crystal oscillator or to the video signal, the unit supplies continuous serial SMPTE/EBU standard time code with or without numerical user bits for use in laying down longitudinally recorded time code track simultaneous with recording of video/audio material under field production conditions. Dual function thumbwheel switches preset starting time values and also specify numerical user bit values. Two

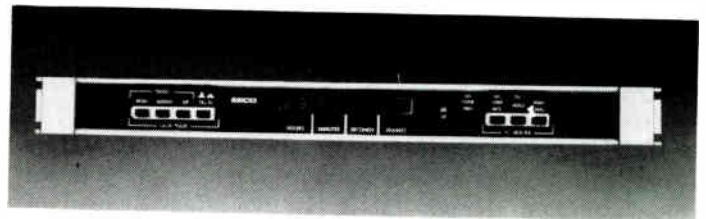
TIME CODE READERS/ GENERATORS

switch selectable time code update modes are provided: time-of-day, in which time code updates continuously as long as power is on; and elapsed time, in which time code updates only when recording. Other design features and operating capabilities which uniquely qualify the PTG-560 for ENG/EFP include:

- Compact, lightweight and rugged packaging with mounting hardware designed for quick, secure piggyback installation on most popular portable VTRs.
- Operating temperature range of 32 to 104 degrees Fahrenheit for all-weather performance.
- Low power consumption design utilizing CMOS logic, EECO's exclusive custom LSI time code generator I.C., and an LCD time code display. 1000 hours typical operation from standard 9.0 volt battery.
- RESET pushbutton that clears time code value to zero.
- HOLD position on operating mode switch that allows time code count to be frozen and resumed manually.
- Bright electroluminescent backlight on LCD time code display that provides excellent readability at night and under low ambient light conditions.

MODEL NO.	PART NO.	PRICE
PTG-560	260236-01	\$1,495

TCR-650 TIME CODE READER



A full-feature time code reader capable of reading serial SMPTE/EBU standard drop frame or non-drop frame time code with or without user bits from video and audio tapes and magnetic film at forward or reverse speeds of 1/16th to 60 times normal play. The decoded time code is displayed on a front panel readout that is switchable between SMPTE/EBU time format and user bit format. Decoded time code is also output via serial and parallel interface ports for use by computer controlled editing systems and studio automation computer systems. At play speed, squared and buffered restored serial time code is output for use in time code dubbing. For added versatility, transport tachometer pulses can be used alone or in conjunction with SMPTE/EBU time code inputs to update the time code outputs and display. This capability allows time code synthesis from sprocketed equipment lacking provisions for a time code track, and also allows automatic switchover from time code input to tach pulse updating whenever invalid time code is detected. Additional features which make the TCR-650 a versatile performer include:

- Automatic frame rate detection circuit that automatically compensates for incoming time code rates of 24, 25 and 30 fps and for drop frame/non-drop frame format.
- Locally or remotely selectable frame blanking that suppresses frame display on front panel time code readout.
- Locally or remotely commandable HOLD that freezes time code/user bit display and outputs; terminating HOLD allows display and outputs to resume updating from current time code input value.
- Microprocessor technology and CMOS logic are employed to achieve compact size, low power consumption and operational flexibility.

MODEL NO.	DESCRIPTION	PART NO.	PRICE
TCR-651	Basic Unit	260202-03	\$2,995
TCR-652	With time code synthesis from tach pulses	260202-04	3,240

EECO Incorporated, 1601 E. Chestnut Ave., Santa Ana, CA 92701
Phone: (714) 835-6000, TWX 910-595-1550, Telex 67-8420
Prices and Specifications Subject to Change Without Notice.

VCG-750 VIDEO CHARACTER GENERATOR



A versatile microprocessor based reader/character generator that reads SMPTE/EBU standard time code from any source at speeds from zero to 60 times normal play. From this input, the unit extracts tape time and user bit data and outputs this data as video characters which may be "burned" into or superimposed over source video on a monitor. Reads longitudinal and vertical interval time code, with automatic switchover to VITC if longitudinal code becomes invalid. Features include:

- Compatible with 24, 25 and 30 fps drop frame and non-drop frame SMPTE/EBU time code inputs; frame rate and drop frame status are automatically detected and compensated for.
- All current video standards accepted as source video inputs (NTSC, PAL, and SECAM).
- Tape time and user bits may be displayed on monitor alone or together, and are independently positionable vertically and horizontally; "smart" positioning controls prevent displays from overlapping.
- Tape time display includes video field readout at play speed and below. Frame blanking command allows frame and field characters to be suppressed.
- Selectable character heights of 28 or 42 raster lines; variable density black background mask may be added for increased legibility.
- Remote HOLD command freezes displayed tape time/user bits; display updating resumes from current time code input value when HOLD is released.
- Parallel interface outputs decoded time code/user bit data for use by computer controlled editing systems, synchronizers or studio automation computers. All front panel enable/disable functions remote controllable via TTL interface.

MODEL NO.	DESCRIPTION	PART NO.	PRICE
VCG-751	Basic Unit	260225-01	\$3,660
VCG-752	With VITC Reader	260225-02	4,560

VIG-850 INTELLIGENT TIME CODE GENERATOR/READER



The do-everything time code instrument! Reads and decodes vertical interval time code (VITC) with user bits from input video at speeds from freeze frame to ± 45 times play. Generates continuous longitudinal time code and/or VITC, with or without user bits, from manually preset values, from external sources, slaved to decoded VITC from the reader or slaved to longitudinal time code input. Virtually any VITC/longitudinal time code conversion can be accomplished. A broadcast quality video inserter provides the means to insert generated VITC into source video. Display of generated and read time code and user bits, and a variety of informational and error messages is via a multi-function 8-digit front panel readout.

The VIG-850's primary application is generating, reading, converting and slaving vertical interval and longitudinal time code for indexing and syn-

TIME CODE READERS/GENERATORS

chronizing videotaped programming. The unit's video inserter can suppress VITC present in incoming source video and re-insert slaved VITC into the outgoing source video, making the VIG-850 ideal for laying down continuous VITC on edited master tapes produced on VITC-only or mixed VITC/longitudinal time code video tape editing systems. A sampling of the VIG-850's many features includes the following:

- Flat membrane switch control panel with audible actuation feedback.
- Microprocessor control with sophisticated firmware that allows simultaneous reader/generator operation, guards against improper time code entries, prevents conflicting commands, inhibits operation in modes requiring signal inputs not available, and automatically switches certain signal inputs to backup sources if prime sources are not present.
- Front panel time code readout assignable between reader and generator, time-of-day or user bit display. Full hexadecimal capability and commandable frame blanking.
- HOLD command that freezes reader time-of-day/user bit display without affecting generator output updating.
- Time code output available via SMPTE bus for interface to computer-controlled editors, synchronizers and studio automation equipment.
- Compatible with NTSC and PAL/SECAM video standards.

MODEL NO.	PART NO.	PRICE
VIG-850	260234-01	\$5,490

VIR-950 VITC READER



An advanced time code reader capable of recovering and decoding SMPTE/EBU time code and user bits recorded in the video vertical blanking interval at tape speeds from freeze-frame to 45 times normal play, forward and reverse. Front panel time code readout is switchable from time code to user bits display. An additional readout element indicates the video field, providing indexing resolution to one half frame. Recovered time code is also output via a serial SMPTE bus for use by external equipment such as computer controlled editing systems and synchronizers. An automatic tach pulse update mode is provided, in which time code count is derived from transport tachometer pulses in the absence of readable VITC. Additional operating capabilities and design features which make the VIR-950 a versatile production tool include:

- Frame blanking function that suppresses display of frame and field digits in time code readout at high tape wind speeds or in response to local or remote blanking command.
- Local/remote HOLD command that freezes displayed tape time/user bits; display updating resumes from current time code input value when HOLD is released.
- Selectable VITC frame rate of 25 or 30 fps; selectable tach pulse rate ranging from 1 to 30 pulses/frame.
- Compatible with NTSC and PAL/SECAM video standards.
- SMPTE bus interface over which all front panel controls are remoted and decoded time code/user bit data and unit status are output.
- Microprocessor control with powerful firmware that prevents conflicting operator commands, checks and processes VITC in real time, automatically executes a complete self-test sequence at power-up and performs maintenance diagnostics on command.
- Compact, rack-mountable packaging. Flat membrane switch front panel.

MODEL NO.	PART NO.	PRICE
VIR-950	260235-01	\$2,770

EECO Incorporated, 1601 E. Chestnut Ave., Santa Ana, CA 92701
Phone: (714) 835-6000, TWX 910-595-1550, Telex 67-8420

Prices and Specifications Subject to Change Without Notice.

EECO Incorporated

EDITING SYSTEM

COMPUTER CONTROLS FOR VIDEO PRODUCTION

IVES™ VIDEO TAPE EDITING SYSTEM

Definable System Parameters: Preroll time, postroll time, reel numbers, edit event numbers and control track editing starting time count are all user definable from the keyboard.

Printer Output: Print commands enable automatic hardcopy printer output of edit data as each edit is completed. Printout can be specified in CRT display format or CMX-compatible edit list format.

Recall Command: Lets you keep track of changes you make to existing edit data by allowing recall of the old value of the last data item changed.

Non-volatile Memory: When IVES is turned off during breaks or at the end of the day, all the information pertaining to the current edit is retained, and is immediately accessible when power is turned back on.

Auto Retry: If an edit is aborted due to VTR syncing problems, the IVES system automatically attempts the edit again, extending the preroll time to allow the VTRs a longer sync-up period.

PRE- AND POST-EDIT FUNCTIONS THAT MAKE IVES A COMPLETE POST-PRODUCTION SYSTEM:

Copy: Just one button starts an automatic sequence that makes a direct copy from the play VTR to the record VTR, or vice-versa. Both tapes are rewound to their beginnings before the copy starts, and all audio, video and SMPTE/EBU time code routing is accomplished automatically through the internal routing switcher.

Stripe Tape: Another powerful one-button command. Automatically stripes either the record or play tape with continuous SMPTE/EBU time code and/or video color-black and control track pulses. Before striping is begun, the tape(s) are rewound to the beginning and the starting count of the SMPTE/EBU code is preset to an operator designated value. All functions associated with the stripe tape sequence, including an NTSC sync generator, a video color-black generator and a SMPTE/EBU time code reader/generator for each VTR are included in the IVES system. An auxiliary video input jack is also provided for application of an externally generated color bar signal if color bars are desired instead of video color-black.

Record Time Code: Press this button and the designated play and/or record tapes are rewound to the beginning and then striped with continuous SMPTE/EBU time code. Starting count is automatically preset to an operator designated value before striping begins.

Audio Mixer and Monitor: Need to add audio background or voiceover to your edited master—The capability is right on the IVES control panel. The internal audio mixer with front panel level and mix controls allows you to blend audio from a front panel mic input or an auxiliary audio line input with play VTR audio output as it is routed to the record VTR input. A 2-watt audio amplifier with front panel volume control lets you monitor either VTR's audio.



"SMART" INTERFACES INSURE SMOOTH INSTALLATION:

Two self-contained interfaces for popular 3/4" and 1 1/2" VTRs are supplied as standard equipment on IVES. The interfaces are of plug-in design to facilitate fast conversion to different types of VTRs; no VTR modifications are required. The interfaces are capable of serving in both a record or play capacity, as selected at time of installation, and all VTR manual motion controls are remoted to the IVES front panel.

MODEL NO.	PART NO.	PRICE
IVES™ (NTSC)	260237-02	\$7,450
IVES™ (PAL B)	260252-01	7,450

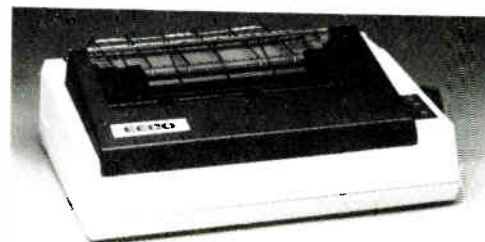
IVES™ SYSTEM ACCESSORIES

The EECO SP-10 Status Printer provides rapid printouts (120 CPS) of complete editing status information, while the EECO SM-9 Video Status Monitor (9" B/W) offers sharp displays of edit status information with 800 lines resolution.

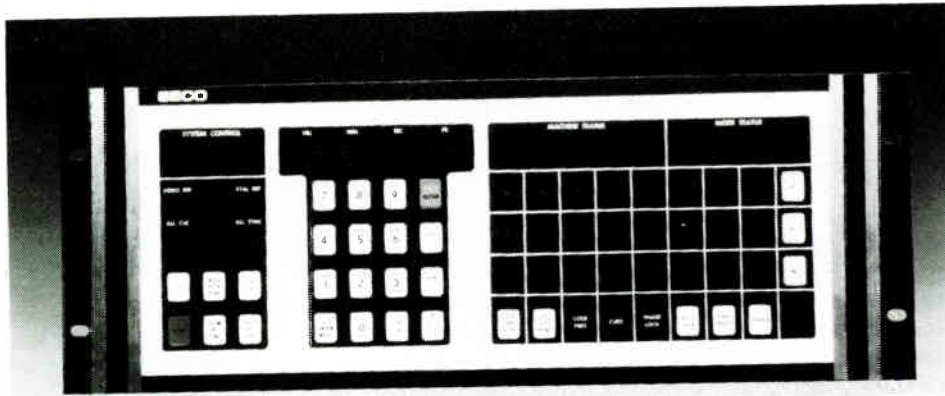


SM-9

MODEL NO.	PART NO.	PRICE
SP-10	260250-01	\$575
SM-9	260249-01	275
Option		
Cable-Interconnect	136455-01	\$150



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MGS-100A

A frame-accurate, microprocessor-based SMPTE/EBU time code instrument that can simultaneously search up to three video/audio tapes to designated program points, cue them at these points and then lock them in phase-locked synchronized play. The MGS-100A offers a broad range of operating modes that can enhance the efficiency, precision and flexibility of virtually any video or audio tape production facility. A sampling of its many applications includes:

Video/Audio Synchronization—

- Matching video to audio for perfect lip sync.
- Audio sweetening.
- Stereo simulcasting.
- Layback of sweetened audio onto final edited video master.

Video/Video Synchronization—

- Simultaneous program presentation.
- Program sequence selection (off-line editing).
- Network program backup.
- On-line program editing.

Audio/Audio Synchronization—

- Expanding total number of synchronous tracks by syncing two or more multi-track decks.
- Maintaining precise synchronization during mixdowns.

THE MGS-100A SYNCHRONIZATION CYCLE:

Time code from up to three transports is read by the MGS-100A. One transport is designated as a master; the others, slaves. At the start of the sync cycle, the MGS-100A commands each transport to cue to a pre-designated point. As the transports roll from their cue points, the MGS-100A issues speed-up/slow-down commands to the slave transports until they are the same distance from their cue points as the master is from its cue point. When this is achieved, the slave transports resume normal play speed. From then on, the time code of all transports is constantly monitored by the MGS-100A to maintain the synchronous relationship. Once lockup is achieved, the frame rates of the slave transports are held to within ± 100 usec of the master. Identical time code need not be recorded on the tapes to be synchronized; the MGS-100A automatically compensates for time code differences and for mixed drop frame/non-drop frame formats.

A HOST OF USEFUL OPERATING FEATURES:

The MGS-100A offers a full complement of operating modes and convenience features to satisfy even the most demanding user. Yet, for all its technical sophistication, the MGS-100A is simple to operate. Some of the features that make the MGS-100A so versatile are outlined below.

Cue Point Selection: Key-in cue point assignments as SMPTE/EBU time values or mark them on-the-fly, on an individual transport basis or for all transports simultaneously.

Cue Search With Preroll: A one-button command searches all transports forward or reverse to pre-designated cue points and parks them at these

points or at a specified preroll distance ahead of these points. Preroll capability is especially useful when the cue point is used as a main entry or event trigger point, as it gives all transports time to sync prior to the cue point.

Sync Play Command: Commands all enabled transports to play forward from their current tape locations, with the slave transports seeking time intervals from their assigned cue points to match the master's current distance from its cue point. When this match-up is achieved, the slave transports remain phase-locked to the master.

Tape-to-Tape Offset Adjustment: Offset commands allow the servo of any transport to be slewed at a high or low rate in any time increment from one frame on up, plus or minus of the current sync point, to allow shifting the program material on one tape with respect to another without breaking sync.

Roll Back: A one-button command that tells all transports to roll backward for a designated distance, then play forward and synchronize to one another.

Chase Mode: The chase mode allows parallel control of one or both slave transports from the master transport's remote control panel. The slaves duplicate every action of the master automatically.

Time Code Triggered "Event" Relay Closures: An internal time code comparator can be programmed to initiate up to two relay contact closures and/or roll the second slave transport when the master transport's time code matches "event" time code values preset by the operator.

Time Code Scratchpad Memories: Three scratchpad memory registers are provided for temporary storage of time code values and to facilitate transfer of time code values from one register to another.

On-the-Run Transport Mode Changes: The operating mode of any transport can be changed while system operations are in progress. With few exceptions, there is no necessity for placing the system in stop mode prior to performing mode changes.

Interface Flexibility: The MGS-100A employs modular hardware organization and custom interface boards to accommodate a wide selection of popular professional video and audio transports. All transport control and status signals are opto-isolated, preventing ground-loop induced system noise or damage resulting from mis-mated interface connectors. There are provisions for remoting the MGS-100A's control panel from its electronics chassis, and for connecting several remote control panels in parallel, providing the versatility to adapt to any studio layout.

UART Interface (RS-232): An optional serial UART interface allows all MGS-100A front panel control and indicator functions to be accessed by computer controlled editing systems and studio automation computers.

MODEL NO.	DESCRIPTION	PART NO.	PRICE
MGS-102A	2-Transport	260176-02	\$15,290
MGS-103A	3-Transport	260176-03	17,930

Price includes transport interfaces.

EECO Incorporated, 1601 E. Chestnut Ave., Santa Ana, CA 92701
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Prices and Specifications Subject to Change Without Notice.

EECO

Incorporated

COMPUTER CONTROLS FOR VIDEO PRODUCTION

ECONOLINE™ TIME CODE GENERATOR AND READER PERIPHERALS

ECONOLINE peripherals are designed for entry level post-production and editing applications and complement the EECO line of full features time code products.

MTG-55 MASTER TIME CODE GENERATOR

The MTG-55 eight-digit SMPTE/EBU longitudinal time code generator outputs serial time code. Time code is formatted in hours, minutes, seconds, and frames. The MTG-55 is an extremely useful instrument for indexing video and audio tapes for subsequent material location and editing. It also offers the following affordable features:

- Drop frame or non-drop frame operation.
- Color frame synchronization through a rear-mounted BNC connector. This feature permits using an external 15Hz color framing pulse.
- Loop-through video input/output connectors (BNC) to assure that time code transmission starts at the beginning of a frame, per ANSI-V98. 12M.
- A video input designed to accept composite video or composite sync.
- An XLR connector that provides for time code output on the rear panel.

The unit is 1-3/4" high and 10" deep. It has a standard 19" wide rack mount front panel. Power required is 117 VAC, 60Hz, 3 watts maximum

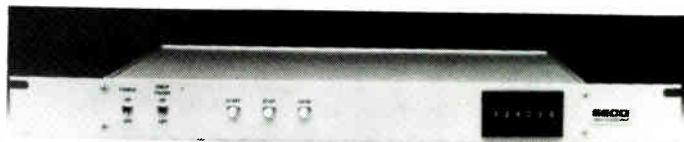
MODEL NO.	PART NO.	PRICE
MTG-55	260246-01	\$1,250

TCR-65 TIME CODE READER

The TCR-65 eight-digit SMPTE/EBU time code reader uses 0.4" red LED's to display time code in hours, minutes, seconds, and frames. You can use the TCR-65 to read and decode longitudinally recorded time code from video tapes, audio tapes, and magnetic film. Other affordable features of the TCR-65 include:

- Reads time code from a SMPTE/EBU time code generator or directly from a tape. The time code is read at 1/20 to 20 times normal playback speed, in either forward or reverse mode.
- Extreme accuracy when the TCR-65 is reading code from a time code generator that is locked to a color sub-carrier frequency.
- A momentary Hold switch that holds the tape time on the display at the point the Hold button is pressed. The data is displayed as long as the button is depressed—even when the input is reading or decoding time code.
- A digital error-detection system. The TCR-65 automatically switches to a frame-counting mode when a bad time code frame is detected. A pulse train, pulsing at the frame rate, then increments an internal counter that is loaded with the last valid data.

TIME CODE EQUIPMENT



MTG-55



TCR-65



VCG-75

The TCR-65 is 1-3/4" high and 10" deep. It has a standard 19" rackmount front panel. Power required is 117 VAC, 60Hz, 4 watts maximum

MODEL NO.	PART NO.	PRICE
TCR-65	260247-01	\$1,250

VCG-75 VIDEO CHARACTER GENERATOR

The VCG-75 eight-digit video character generator reads SMPTE/EBU time code from video tape or other sources and outputs this data as video characters. The output data can be burned into or superimposed over the source video on a monitor. Time code is read at 1/20 to 20 times normal playback speed, in either forward or reverse mode.

Using the VCG-75, you can correlate specific video frames with time code information without looking away from the video monitor. Other affordable features include:

- A front panel designed to put all of the necessary controls at your fingertips.
- Ability to adjust character size from 5% to 30% of screen size. Characters can also be positioned anywhere on the screen.
- Easy-to-read characters via black screen background with white characters. In addition, character brightness can be adjusted from very bright to barely visible.
- A display that includes a drop-frame indicator, in the form of a colon(:).
- Through a rear-mounted connector, remote inputs can be used to control the Hold function and two display blanking inputs. One blanking input blanks frames only and the other blanks the entire time display.

The VCG-75 is 1-3/4" high and 10" deep. It has a standard 19" wide rack mount front panel. The unit is powered by 117 VAC, 60Hz.

MODEL NO.	PART NO.	PRICE
VCG-75	260248-01	\$1,250

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EECO Incorporated

COMPUTER CONTROLS FOR VIDEO PRODUCTION

EMME™

Computer — Assisted Editing System

EMME System brings the most sophisticated editing tools available together with simple, straight forward operation. Combining the speed and creative freedom of an active list editing system with the list management capabilities of large data base systems, the EMME System controls up to nine VTR's and multi-track ATR's and a production switcher.

It features a choice of user interfaces. Called the EMME Creative Workstations, each is tailored to fit a distinctive editing style of today's professional video and film editors. The EMME Creative Workstation is offered in two versatile configurations — the Video Editing Workstation, and the Cinemagraphic Editing Workstation.

Human engineered to minimize button-pushing, the Independent Creative Workstation uses a keyboard with dedicated function keys and an active edit decision list to meet daily editing needs in an easy to learn and logical style.

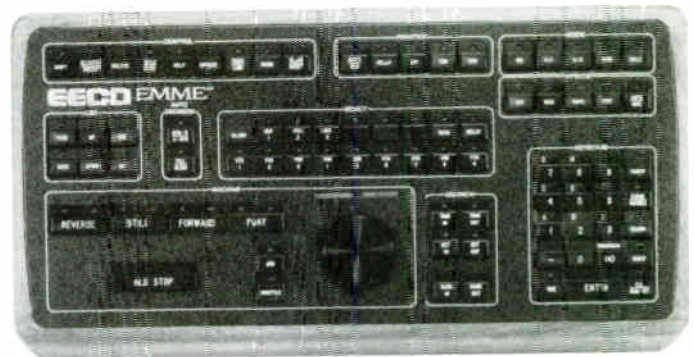
The Cinemagraphic Editing Workstation is designed for the unique needs and creative style of film editors. It displays no time code numbers, and allows the editor to edit totally with pictures and sound using a minimum of keys.

Utilizing state-of-the-art computer hardware and totally new systems software optimized for the videotape editing application, the EMME system provides all the comprehensive editing features required in today's postproduction environment including:

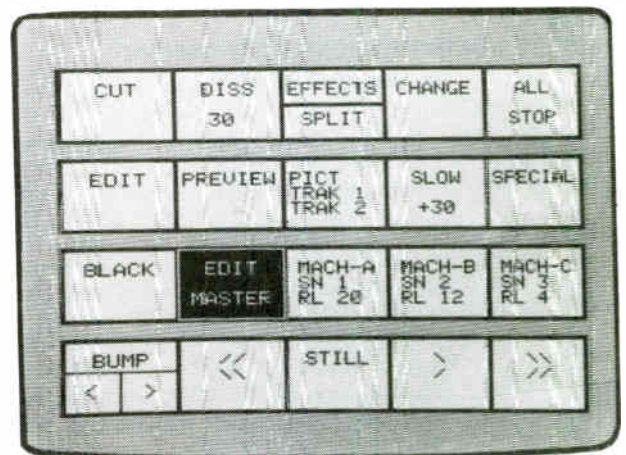
- Sync Roll: Allows the synchronization of multiple machines and creation of an edit decision list "on the fly".
- Cluster: Enables the creation of complex, multiple source events, and allows preview or record of these events in one pass.
- Motion Control: This standard feature provides Jog and Shuttle control of the assigned VTR's/ATR's.
- Auto Assemble: Provides sequential, checker board and dub assembly capabilities, and full "look ahead search" to eliminate waiting on machines.
- Auto Sync: Automatically tags a previously used source onto the edit list — in exact sync.
- Fill: Stretches or shrinks the source material to exactly fit the available space in the edit sequence.
- Slow: Allows manual entry of play speeds in frames per second or automatic entry via the shuttle knob.
- Constants and Macros: Ten Constant registers to store commonly used numbers and ten Macro registers which store up to 80 key strokes each.

Priced at 35,000.00 to 65,000.00

COMPUTERIZED EDITING SYSTEM



EMME™ VIDEO EDITING WORKSTATION with optional monitors and optional ASCII keyboard.



Close-up of EECO Cinemagraphic Editing Workstation's control display. All source material and edit function controls are displayed on-screen and are selected by the editor using the workstation's one-button "mouse" controller.

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VP-47



142 Sierra Street
El Segundo, CA 90245
(213) 322-2136

CLOCKS/TIMERS

70 SERIES CONSOLE MOUNT CLOCKS AND TIMERS

ES 172 Six Digit—12 Hour Clock. Three setting controls: Fast Advance, Slow Advance, and Hold \$174.00

ES 174 Six Digit—24 Hour Clock. Otherwise identical to the ES 172. \$174.00

ES 370 Four Digit, One Hundred Minute Up/Down Timer. Six controls: Count Up, Count Down, Stop, Minutes Advance, Seconds Advance, Reset \$222.00

ES 371 Up/Down Timer. Similar to the ES 370 except with Leverwheel Preset capability for faster setting of the desired time. \$352.00

ES 570 Four Digit, Sixty or 100 Minute Timer. Select 60 or 100 minute mode on rear connector. Start, Stop and Reset controls. Runs continuously unless stopped. Reset will return all displays to zero. Unit will run if reset while running or will stay at zero if reset when stopped. \$174.00

ES 572 Six Digit—12 Hour Clock or Timer. Five controls: Start, Stop, Reset, Fast Advance, Slow Advance. Will run continuously to 12:59:59. Advances to 1:00:00 and continues as clock unless stopped or advanced \$212.00

ES 574 A 24 hour version of ES 572 \$212.00

ES 575 Exactly like ES 570, with the addition of a "freeze" button. When the button is released, the display "catches up" with the correct elapsed time.

Dimensions: 2.16"H x 4.5"W x 4.13"D \$212.00

ES 562E/564E SIX DIGIT CLOCK/TIMER WITH MEMORY

ES 562E/564E is a combination six digit clock and 24 hour timer with memory, allowing the user to set the clock to the correct time of day, switch to timer mode, then switch back to time of day by pushing one button; time of day will be correctly displayed, in hours, minutes and seconds. Six pushbutton controls are mounted on the top of the unit, near the front of the desk-top case. When panel mounting is specified, they will be mounted on the front panel, below the display. The controls may also be removed, through two rear-mounted five pin connectors (Option R or Option D). These controls are Reset, Timer, Fast/Start, Slow/Stop, Hold and Clock.

Display: Six digits of .55" Planar Gas Discharge Display \$345.00

ES 112E/124E DIGITAL CLOCK

ES 112E (12 hr.) and **ES 124E** (24 hr.) are solid state, six digit clocks. Can drive 80 Series and 90 Series slaves. Displays are gas discharge, .55" high.

Dimensions: 2-1/2"H x 8"W x 6"D \$182.00

80 SERIES JUMBO CLOCKS AND TIMERS

Large, bright 1" gas discharge displays provide effortless long distance viewing from 40 feet.

ES 182L Six Digit—12 Hour Clock. Three rear-mounted setting controls: Fast Advance, Slow Advance, and Hold \$300.00

ES 184L Six Digit—24 Hour Clock. Otherwise identical to the ES 182. \$300.00

ES 380 Four Digit, 100 Minute Up/Down Timer Displays minutes and seconds, with rear-mounted connector to allow remote wiring of six momentary SPST Controls: Count up, Count Down, Stop, Minutes Advance, Seconds Advance and Reset. Other features similar to ES 301 \$349.00

ES 381 Up/Down Timer. Similar to ES 380, except that leverwheel preset is used. \$459.00

ES 580L Four Digit, 60 Minute Timer Displays minutes and seconds. Rear connector allows remote wiring of three momentary SPST controls: Start, Stop and Reset. Reset returns all displays to zero, and timer will continue to run from zero if reset while running.

80 Series slaves are also compatible with other ESE clocks and timers: ES 112/124, 301, 302 and 510.

Dimensions: 4.45"H x 10.38"W x 6.58"D \$251.00

ES 510E FOUR DIGIT 60 MINUTE TIMER

ES 510E is a four digit, sixty minute timer (59:59) with Start, Stop and Reset controls. If stopped, display will hold time reading and when restarted will continue with next count from last displayed figure. If reset while running, timer will continue to run. ES 510 can drive 80 Series and 90 Series Slaves.

Dimensions: 2-1/2"H x 6"W x 6"D \$174.00

VP-48



ES 562/564



ES 391



ES 992/994

ES 207 VIDEO DISTRIBUTION AMPLIFIER

ES 207 Video Distribution Amplifier answers the "one more unit" question with a versatile little package that can be tucked anywhere, either temporarily or permanently. Controls are available through the top plate with a miniature screwdriver for video gain, D.C. level and HF equalization. A very wide range of chroma level control can be obtained with the DA. Output video is expected to be set for 0 volts D.C. on the blanking or porch level, with video extending positive and sync negative. Nominal input and output signal level is 1 volt p-p. Typical gain-control range is from 1/2 volt to 1-1/2 volts p-p. . . \$175.00

ES 232 TIME CALCULATOR

ES 232 is an eight digit, 24 hour, Up/Down Timer/Time Calculator displaying Hours, Minutes, Seconds, and Frames (30 frames per second) on bright red .4" LED's. In the Calculator mode, data may be added or subtracted, or stored in memory, or recalled from memory. There are 10 memory locations available. Data may be added or subtracted from the timer value, while the timer is counting either up or down, but not while the timer is stopped. When stopped, data moved from calculator to time serves to preset the timer. In the timer mode, ES 232 counts up or down, and can be reset while running or stopped. It can be preset to any number in the 24 hour range. While timer is running or stopped, it is possible to enter the value into memory without disturbing the operation. It is also possible to recall a value from memory and add or subtract while timer is counting up or down. ES 232 uses 24 keys, mounted on a desktop case, measuring 2"H x 5"W x 6"D. \$250.00

90 SERIES 2-INCH DISPLAYS VIEWABLE AT 60 FEET

ES 391 Presettable Up/Down Timer. 100 Minute Range, Displays Minutes and Seconds, uses Leverwheel Preset. Controls are Count Up, Count Down, Stop, Reset and Preset.

Dimensions: 4.45"H x 10.38"W x 6.58"D \$537.00

ES 590L Sixty Minute Timer Displays Minutes and Seconds. Rear-mounted connector provides for wiring to user's single pole, momentary, push-button controls—Start, Stop and Reset. Reset returns all displays to zero, and timer will continue to run from zero if reset while counting.

Dimensions: 4.45"H x 10.38"W x 6.58"D \$376.00

ES 992E/994E— 6 Digit Clocks. ES 992E (12 hr.) and ES994E (24 hr.) Hours and Minutes on Two Inch Gas Discharge Displays, Seconds on One Inch Gas Discharge Displays. Three top-mounted setting controls—Fast Advance, Slow Advance, and Hold.

Dimensions: 5"H x 12"W x 3-1/2"D \$495.00

ES 301E/302E 100 MINUTE UP/DOWN TIMERS

ES 301E is a four digit, one hundred minute timer (99:59) with six controls: Count Up, Count Down, Stop, Minutes Advance, Seconds Advance, Reset. Counting can be activated up or down or set back to zero. When "Stop" control is pressed, the four digit display is held. Counting direction (up or down) can be changed or time can be reset to zero without stopping the count. The ES 301E can drive 80 Series and 90 Series Slaves. Displays are gas discharge .55" high.

With the ES 302E, the user can preset times much faster than with the ES 301E, because lever-wheel type switches are used for the preset feature. The ES 302E can drive 80 Series and 90 Series Slaves.

Dimensions: ES 301E: 2-1/2"H x 8"W x 6"D \$258.00

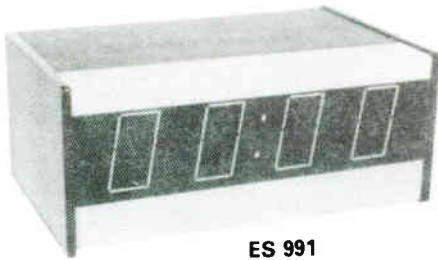
ES 302E: 2-1/2"H x 10"W x 6"D \$333.00

Prices and Specifications Subject to Change Without Notice.

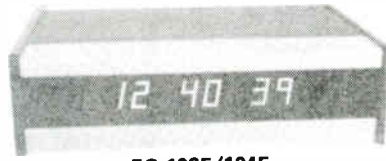


142 Sierra Street
El Segundo, CA 90245
(213) 322-2136

CLOCKS/TIMERS



ES 991



ES 192E/194E



ES 199



ES 160

MASTER CLOCKS

ESE Masters provide a means of keeping all time displays in the system in agreement, through the use of a Serial Time Code. Only one pair of wires is needed to distribute the time code to all remote serial input displays. An ESE Master Clock System can operate digital displays, clocks with sweep second hands, printers, and in addition, tell your computer what time it is. Twelve hours of standby battery operation is standard in ES 160 and 160/1.

ES 160. Mounted in a 5-1/4" relay rack panel & chassis, displays six digits of time information on .4" LED displays, in 12 hour format. The ES 160 has 3 sec. per month accuracy. Its standard output is serial BCD, CMOS compatible, and drives ES 161E, 166E, 171, 991 or 993 Remote Displays w/o buffering. All inputs & outputs are through rear-mounted connectors. Dimensions: 5-1/4" H x 19" W x 15" D. \$1158.00

ES 160/1. One second per month version of ES 160 \$1350.00

ES 199. Our most accurate Master, providing better than .5 seconds per month. It contains a 10 MHz receiver, with audio output, to synchronize with WWV at the push of a button. WWV transmits a 1000 Hz tone at the start of each minute, except for the first minute of each hour, when a 1500 Hz tone occurs. If the button is pushed and held during this time, the seconds' counters of the clock will be reset to zero. The ES 199 is supplied with an antenna, battery and charger. An external sync input connector is provided, to allow introduction of a periodic logic "0" or contact closure at a once per second or slower rate. In order to simplify maintenance, test points are provided on the 1000 Hz decoder board, to allow re-calibration of the oscillator using only an oscilloscope. The serial output will drive 100 ES 161E, 166E, 171, 991 or ES 993E Remote Displays. Dimensions: 5-1/4" H x 19" W x 15" D. Electrical: 117V AC, 50/60 Hz. Options: B (CMOS, 5V) J, One pps Output, Relay Closure on Hour and 1/2 Hour, Impulse Driver (ES 162) \$1575.00

ES 192E/ES 194E. The most economical Masters, ES 192E (12 Hr.) and ES 194E (24 Hr.) are constructed using ES 112 or ES 124 digital clocks and adding the ES 167B Serial Time Code Generator to provide the output needed to drive Remote Serial Displays ES 161E, 166E, 171, 991 and 993E. Displays are 6" incandescent type. Dimensions: 2-1/2" H x 8" W x 6" D. \$358.00

Accessories

ES 161E Remote Digital Display decodes serial time data and displays six digits of time on .55" Gas Discharge Displays, in either 12 or 24 hour format. Dimensions: 8" W x 2-1/2" H x 6" D. \$182.00

ES 162 Impulse Driver plugs into the ES 160 chassis, and can drive 20 Impulse Clocks. Designed so that if power fails, impulse always comes on with the same polarity when power is restored \$221.00

ES 164E Remote Digital Impulse Display is similar to the ES 161E except that the ES 164E derives its count command from the ES 162 Impulse Driver, or any impulse clock drive circuits already installed. Dimensions: 8" W x 2-1/2" H x 6" D \$269.00

ES 165 Impulse Driver was designed to provide synchronized power to the ES 168 Impulse Clocks. It is capable of driving 50 ES 168 clocks, and will keep them running accurately through twelve hours of power failure. The ES 165 derives its synchronizing pulse from any one pulse per second source, such as the ESE Master Clock, and can also accept the once per second, alternating 12 or 24 volt impulses from an existing impulse clock system \$210.00

ES 166E Jumbo 1" Clock Display features six digits of one inch Gas Discharge Displays in 12 or 24 hour format. Receives serial time code input from any ESE Master Clock or ES 167B. Dimensions: 10-1/2" W x 4-1/2" H x 6-1/2" D \$280.00

ES 167B Serial Time Code Generator is an integral part of ES 160, 190, 192E/194E and 196 Master Clocks, this unit can be added to many other ESE products, including ES 112, 124, 182, 184, 992, 994, 750, 751, 753, 754 and all 780 Series Time Programmers. Drives ES 161E, 166E, 171, 991 or 993 Remote Displays \$161.00

ES 168 Impulse Clock operates from the 8 pps output of the ES 165 Impulse Driver. As many as 50 ES 168s can be connected to a single driver, and they will continue to run during a power outage of at least 12 hours \$142.00

ES 171 Console Mount Remote Display receives the serial time code generated by any ESE Master Clock, or any ESE product containing the ES 167B serial time code generator, and displays it on bright red .3" LEDs. Dimensions: 2-1/4" H x 4-1/2" W x 4" D \$174.00

Impulse Clock. When a sweep second hand is desired specify the 3201 .003 "Extra Flat" Impulse Clock. It has a 12 inch dial protected by a glass cover and metal bezel and is approximately one inch thick. As many as twenty impulse clocks can be driven by a Master Clock which has ES 162 as an accessory \$211.00

ES 991 4-Digit Serial Input Slave decodes serial time data and displays four digits of time on large 2" Gas Discharge Displays. Dimensions: 10-1/2" W x 4-1/2" H x 6-1/2" D, Desk Top Case \$358.00

ES 993E 6-Digit Serial Input Slave features four digits of 2" high Gas Discharge Displays, and two digits (Seconds) of 1" Gas Discharge Displays. Receives serial time code input from any ESE Master Clock or ES 167B. Dimensions: 5" H x 12" W x 3" D (Wall Mount) . \$495.00



142 Sierra Street
El Segundo, CA 90245
(213) 322-2136

TIME CODE READERS PROGRAMMERS/LEVEL INDICATOR

TIME CODE READERS

ES 253 SMPTE Time Code Reader is an eight-digit SMPTE Time Code Reader displaying Hours, Minutes, Seconds and Frames \$500.00

ES 254 SMPTE Time Code Reader is a bi-directional, multi-speed eight-digit reader, displaying Hours, Minutes, Seconds and Frames on .4" red LED displays. \$744.00

ES 255 is a bi-directional, multi-speed, eight-digit SMPTE Code Reader, that can add the information to a video stream for recording time code on the video portion of a tape, or for displaying it on a monitor. Reading speed is 1/20 to 20 times playback speed. . . \$1095.00

ES 256 "Smart" SMPTE Time Code Reader. The ES 256 is a bi-directional multi-speed, eight digit SMPTE Time Code Reader which displays Hours, Minutes, Seconds and Frames on .4" red LED's. The ES 256 incorporates a digital error detection system: When a bad frame of time code is detected, the unit will switch to a frame-counting mode. \$1045.00

ES 257 SMPTE Time Code Reader/Comparator is capable of making two comparisons, as established by the two sets of thumbwheels located on the front panel. By specifying option "B" (four-line parallel BCD, 5V CMOS compatible), additional comparisons may be made by connecting one or more ES 258 "expander" units \$875.00

ES 258 SMPTE Time Code Comparator has been designed as an "expander" for the ES 257. Two sets of eight-digit thumbwheels are located on the front panel, to allow comparison of two SMPTE code locations. \$395.00

ES 280 Audio Time Code Generator/Reader is a 10 Digit Audio Time Code Generator/Reader, capable of laying down a serial BCD time code on audio tape in the Generator Mode, and recovering and displaying it in digital form in the Reader Mode. The code has been designed by ESE. It is not a standard code, such as SMPTE or IRIG. The frequencies used to produce the code have been selected to be compatible with cartridge machines as well as other tape recording and playback equipment. Amplitude adjustment assures the right amount of signal for the particular machine being used. \$550.00

VIDEO TIME AND DATE GENERATORS

ES 206 Video Time and Date Generator has been designed to allow the addition of Time and Date information to a video signal. Two rear-mounted video jacks permit "looping" the video information through the 206 to add the data. \$520.00

ES 261 SMPTE Time Code Generator is a pre-settable, eight-digit SMPTE/Time Code Generator, capable of Drop Frame or Non-Drop Frame operation. \$875.00

PROGRAMMERS

780 Series Ram Time Programmers are the most cost-effective way of programming more than eight events. They are flexible, easy to use, and provide 32 events (expandable to 96) in 5-1/4" of rack space.

780 Series units operate from the power line with a backup crystal time base and 72 hour battery/charger as an integral part of the equipment.

STANDARD UNITS

Eight Digits of Programming Capability

ES 780 10 Days, 10 Outputs, Hours, Minutes, Seconds \$1575.00

ES 781 100 Days, Hours, Minutes, Seconds 1433.00

ES 782 16 Outputs, Hours, Minutes, Seconds 1654.00

Six Digits of Programming Capability

ES 783 Hours, Minutes, Seconds 1365.00

ES 784 100 Days, Hours, Minutes 1365.00

ES 786 16 Outputs, Hours, Minutes 1600.00

ES 787 16 Outputs, Minutes, Seconds 1600.00

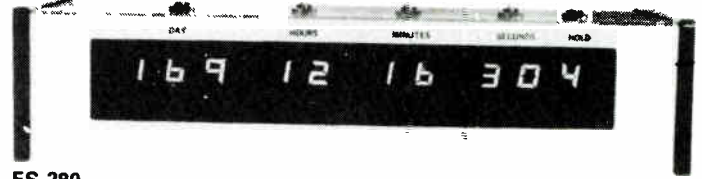
Four Digits of Programming Capability

ES 788 Hours, Minutes 1313.00

ES 789 Minutes, Seconds 1313.00

The size of the unit is 5-1/4"H x 19"W x 10"D — Relay Rack construction, totally enclosed, with a screen top.

ES 255



ES 280



ES 206

ES 790 Microprocessor-Based Programmable Timer is a 1,000 event, 32 channel, microprocessor-based programmable clock. Events occur as reed relay contact closures (single pole, normally open). These closures may be all momentary, all latching, or 16 of each, at the user's option. A simple modification allows the use of 16 double pole relays, instead of 32 single pole relays.

1,000 time events can be programmed into the memory and they can be entered randomly, as opposed to chronologically.

An internal crystal with battery and battery charger is provided for uninterrupted operation.

The size of the unit is 5-1/4"H x 19"W x 10"D.

ES 790 is totally enclosed in a rack mounting chassis with a screen top. \$2300.00

ES 790/1 790 w/1 sec/mo accuracy. Master Clock Option . . . 2888.00

750 Series Thumbwheel Programmer Comparators are recommended when programming up to eight time events. Thumbwheel switches are set to compare the time information from an ESE Clock or Timer.

An output (event) occurs each time the thumbwheel switch setting agrees with the time display.

One set of thumbwheels is required for each event. The standard 750 Series units are enclosed in a 3-1/2" high relay rack panel and chassis.

STANDARD UNITS

ES 750E ES 112 and one 6 Digit Program \$347.00

ES 751E ES 124 and one 6 Digit Program 347.00

ES 753E ES 112 and two 4 Digit Programs (Hrs. & Min.) . . . 414.00

ES 754E ES 124 and two 4 Digit Programs (Hrs. & Min.) . . . 414.00

ES 756E ES 510 and one 4 Digit Program (Min. & Sec.) 341.00

ES 758E ES 510 and two 4 Digit Programs (Min. & Sec.) . . . 430.00

AUDIO LEVEL INDICATOR

ES 214 Dynamic Audio Level Indicator is a highly accurate audio level indicator, which is designed to simulate the action of a conventional VU-Meter but with superior dynamic characteristics. The LED meter is five to one hundred times faster in responding to complex waveforms than the mechanical meter without sacrificing the familiar meter "movement."

SPECIFICATIONS

Number of Indicators: 14 LED Lamps in 3 colors. Scale: +4, +3, +2, +1dB-Red. 0dB-yellow. -1, -2, -3, -5, -7, -10, -15, -20, -25dB-Green.

Input Impedance: 2200 ohms at maximum sensitivity. 6800 ohms at +8dBm "House Level", 10,000 ohms at minimum sensitivity.

Input Circuit: Transformer isolated, balanced bridging.

Frequency Response: 20-20kHz ± 1dB (all modes).

Rise Times: Less than 250 MicroSec (Peak Mode), less than 25 MilliSec (Fast Averaging Mode). Approximately 300 MilliSec (Optional VU Standard).

Fall Time: (All Modes) About 300 MicroSec from full scale.

Modes of Operation: Peak Reading. Fast Averaging (Apparent Loudness). Slow Averaging (USA VU-Standard) \$125.00



3515 Mainway
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"TEACH YOUR EDITOR VITC"

Model 620 VITC/VITS Deleter

Model 621 VITC Generator/Translator

Model 622 VITC Reader/Translator

Powerful VITC/LTC translator modules. Source identification and remote control via video signals.

The 620 series modules are basically stand-alone units, i.e. no provisions are made for direct data transfer between modules, except via external code or video connections. For more complex systems 610 series modules should be used. Their "EV-COM" communications bus permits direct command/data interchange with other modules within a frame.

Model 620 VITC/VITS Deleter

This is a general purpose vertical interval signal deleter. A high quality programmable video keyer substitutes black level for any type of code or test signal present on lines 10 to 21 (6 to 22 for PAL) of the vertical blanking interval. A group of DIP switches is used to select any line or group of lines. Color burst is not affected.

EV-BLOC RACK FRAME COMPONENTS

Backplane Assembly #601

The Backplane circuit board has been developed specifically to meet our design goal of maximum flexibility on the system level with reliability and performance on the module level. Circuit conductors for data, video and audio signal transfers, from each circuit block to its associated I/O module, have been carefully laid out to eliminate any chance of cross-talk between program video and high frequency microprocessor signals.

The assembly comes complete with 21 64-pin euro-card connectors (DIN 41612), one for the power supply regulator module, and 10 pairs for the EV-BLOC modules and their companion I/O modules.

Model 621 VITC Generator

FEATURES AND APPLICATIONS

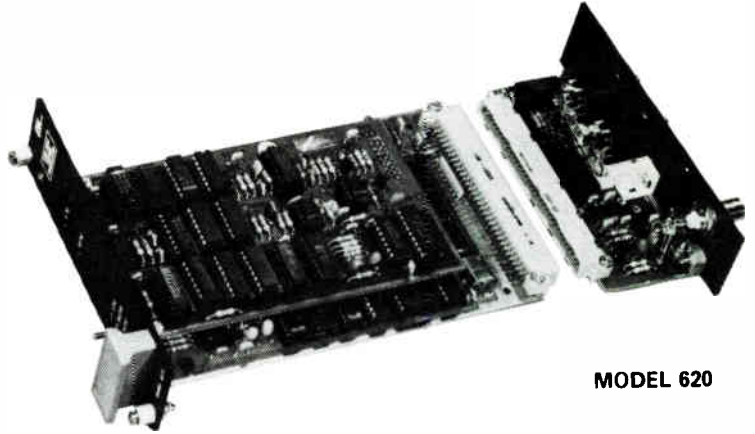
- VITC Generator: 4/8 field color framed, resettable to 00:00:00:00 or jam-synced to longitudinal time code (LTR option) with error bypass (a terrific LTC to VITC translator; teach your editor VITC)
- Multi-source VITC Keyer: Any number of 621's can be synchronized to a common time code generator to accommodate isolated video sources. User bits may be transferred from the common generator or preset locally, using easily accessible DIP switches. This provides an added benefit
- Source Identification: The user bits in each module can be encoded to uniquely identify its video source. The time code bits can be set to zero, for cameras etc., or jam-synced to time-coded sources such as VTR's
- Remote Machine Control: Six control inputs can be utilized to control VTR's etc. via the program video path

Model 622 VITC Reader

FEATURES & APPLICATIONS

- VITC Reader. Reads vertical interval time code from about 20 times play speed down to still frame, providing time and user data out as LTC and multiplexed parallel BCD. An optional video inserter (VCG) keys the data into the picture
- VITC to LTC translator for use with LTC only editing equipment or readers
- Source ID Decoder. User bits encoded with a special code from an EV-BLOC 621 module or Model 4000 are displayed as unique source identification e.g. CAM 3, TC 1, VTR 5 etc., using the optional VCG
- Remote Machine Control. Six grounding output switches respond to specific user bit codes from a 621 encoder to remotely control a variety of devices via the program video path or off tape. Just think of the application potential

TERMINAL EQUIPMENT



MODEL 620

Power Supply Regulator #602

Power Transformer #6025

The power supply consists of two separate assemblies.

The plug-in regulator module provides regulated +5V for micro-processor and logic circuits, and $\pm 8V$ for signal processing elements.

The power transformer module contains all line/mains voltage circuits enclosed in a heavy duty stainless steel shielding case. Appropriate RFI protection is provided by LC filters.

The power supply provides enough DC current to handle a full complement of 10 EV-BLOC modules. Except for special custom applications, the two units are generally supplied together.

Options currently available are:

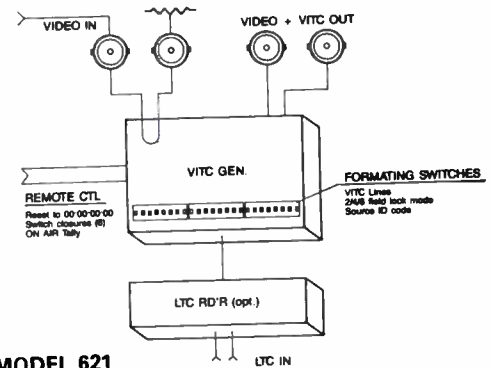
for Model 621: — LTR Longitudinal timecode reader

for Model 622: — VCG Video character generator

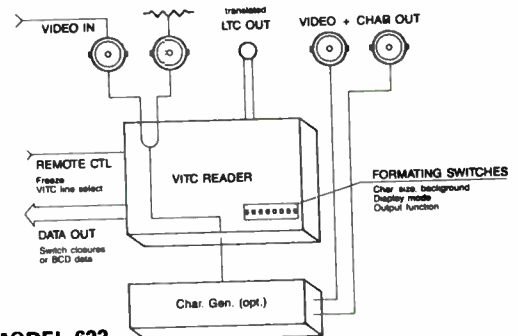
Each EV-BLOC module in this series requires I/O module #603



MODEL 621



MODEL 622



Prices and Specifications Subject to Change Without Notice.



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TERMINAL EQUIPMENT

"THEY WORK ALONE OR TOGETHER"

Model 610 System Controller

All communications within the EV-BLOC system are supervised by a system controller. The function of the system controller is to establish the location and type of each module installed in the system, and to schedule the use of the EV-COM bus by other modules. The model 610 System Controller module is specifically designed to perform this task and provide a gateway to the EV-BLOC system. The standard RS-232-C serial port allows an external computer or computer based editor to control and monitor the status of any of the 610 series modules installed in the system. Fitting the 422 option, changes the serial port to a SMPTE/EBU compatible RS-422 configuration.

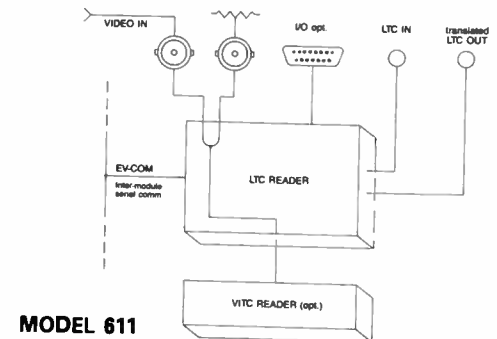


MODEL 610

Model 611 Timecode Reader/Translator

FEATURES & APPLICATIONS

- VITC/LTC Reader. Reads longitudinal time code from 1/30th play speed to 70 times providing time and user bits out as multiplexed parallel BCD (with BCD option fitted) or as serial ASCII (with 232 option fitted). Custom interfaces are available for other OEM applications.
- LTC Jam-sync Generator. Regenerates and re-synchronizes LTC code to eliminate edit aborts due to mis-phased or unreadable time code.
- VITC/LTC to LTC Translator. Permits LTC only editing equipment to read both codes providing frame accuracy at all tape speeds.

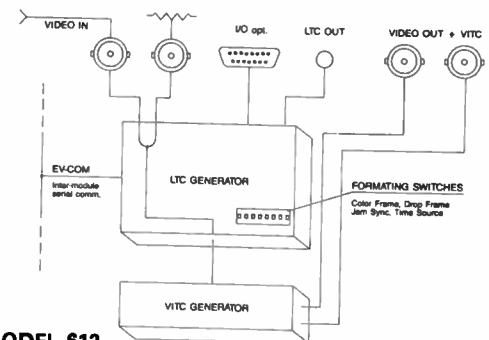


MODEL 611

Model 612 Timecode Generator

FEATURES & APPLICATIONS

- VITC/LTC Generator. 4/8 field color framed, free running or jam-synced to data from a 611 Reader module. When jam-synced to the record VTR reader in VITC only editing, continually ascending code is inserted on the edit master as edits are assembled. VITC coded workprints can be prepared for frame accurate edit decisions without a character burn-in
- Multi-source VITC Keyer. Any number of isolated video sources may be encoded with identical VITC using multiple 612 Generator modules.



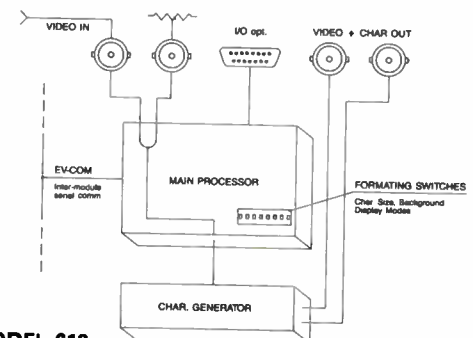
MODEL 612

Model 613 Video Character Generator

FEATURES & APPLICATIONS

- Off-Line Editing. Inserts time/user bit character data from another 610 series module into program video for burning timecode into workprints. Frame accurate edit decisions can also be made directly from VITC without the need of a window dub
- Video Typewriter. Used in conjunction with a computer or keyboard, the 613 module is a low cost alpha-numeric character generator for preparing tape indexes, slate boards, etc.

Each module requires a companion I/O module as outlined below:
 For 610 — #605 Serial I/O Module
 For 611 — #604 Parallel I/O Module
 — #605 Serial I/O Module when 232 option fitted
 For 612 — #603 Parallel I/O Module
 & 613 — #605 Serial I/O Module when 232 option fitted



MODEL 613



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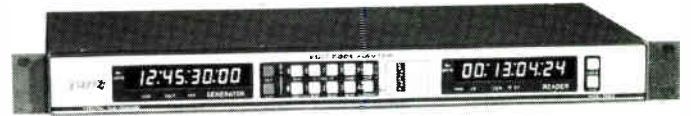
TIME CODE EQUIPMENT

Model 3700D Edit Code Master

Our best longitudinal time code generator and full speed reader (over 2000:1 speed ratio). A video character generator with high resolution characters and alpha-numeric user bit decoding is standard. In addition to the features listed for the 3600D, these functional enhancements give this unit the power and flexibility to meet your most difficult operational requirements.

Features

- Separate generator and reader displays are particularly useful in Jam-Sync modes and when operating reader and generator independently.
- High flexible Jam-Sync modes allow transfer of reader time and user bits into the generator in a variety of configurations.
- Full alpha-numeric user bit functions can be used to record tape index, captions, source identification or other data along with the time code.
- RS-232-C serial port permits interfacing to remote control panels, computers, editors, etc.
- Multiplexed parallel BCD output of reader time and user bits.
- An aural alarm signals genlock problems. This can be disabled if, for example, the generator is locked to a VTR rather than house sync or PGM video.



3700D



3600D



4900



4000

Model ECM4000 Edit Code Master (with VITC)

The top of the line Model 4000 Edit Code Master combines a generator and reader for both VITCode and longitudinal time code with a high resolution character inserter, making it the most comprehensive answer to all time code needs. It reads from still frame to full wind speeds directly from the VTR output. Alpha-numeric user bit capabilities enable the storage of tape indexes, program comments and source identification.

Utilizing one of the most powerful microprocessors available, plus built-in diagnostics, the Model 4000 achieves new levels of functional flexibility and reliability. Particular attention has been paid in its overall design to maintaining operational simplicity. To this end we have introduced a new and unique concept which allows the Model 4000 to be configured to your particular operational environment. The daily operation of the unit is greatly simplified, often being reduced to just a few push button functions.

4000 Edit Code Master (with VITC) \$4995.00

Model 4300 Portable VITC Reader/Character Generator/Translator

Portable VITC reader/character generator. 15 character positions on raster; reads time code, standard and alphanumeric user bits, source ID data; reads VITC code at speeds of 10x play and above depending on VTR format; translates VITC to longitudinal time code.

4300 Portable VITC Reader/Character Generator \$1600.00

Model 3600D Edit Code Generator/Reader

This is an SMPTE/EBU edit code generator, a full speed reader and a video character inserter in a slim one rack unit package.

Features

- True dual standard, NTSC and PAL. Generates time code in accordance with SMPTE RS170 or RS170A, or EBU 4 or 8 field standards (4 switch selectable modes), locked to the PGM video source.
- Front panel format switches, no need to disassemble whenever certain system parameters need to be changed, e.g. field 1 or 2 update of VCG, color framing, drop frame, etc.
- Reads time code from 1/30x to 70x playspeed. New input circuit design permits reliable recovery of even severely distorted code such as can be expected off low end 3/4" machines.
- High resolution character generator in two character sizes, full screen positionable, keys time and user bits into the picture.
- Momentary and continuous Jam-Sync modes. In Cont-Jam, good code is automatically substituted when synchronizing to poorly recorded or disrupted code.

3600D Edit Code Generator/Reader \$3150.00

Model 4900 Edit Code Reader/VCG/Translator

A superb reader, capable of hesitation-free time code display from 70x down to 1/30x play speed, and with VITC option all the way down to still frame. We believe this to be the finest code reader available anywhere.

Features

- Full speed range LTC reader.
- Optional VITC decoder module (Model 49V).
- Easily accessible formatting Dip switches.
- High resolution character inserter; 2 sizes.
- VITC source ID decoder.
- Byte-wide parallel data output for easy Editor interface.
- Play speed LTC translator output incorporating a new soft-lock feature provides continuous time code at all reading speeds from still frame to maximum wind.
- LTC code phase corrector/regenerator for dubbing.

4900 Edit Code Reader/VCG/Translator \$1995.00
 49V VITC Reader Module for 4900 500.00



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CHARACTER GENERATOR/ TEST EQUIPMENT

VCG 1260 CHARACTER GENERATOR

The VCG 1260 Video Character Generator, designed primarily to display time information in video, has limited text and logo capabilities too. It decodes DQS-B6 or SMPTE/EBU time code from your master clock system and displays the time or user bit information. In addition, a built-in elapsed time counter with 0.01 sec resolution and a remote START/STOP control may be used for timing sporting events, etc.

The VCG 1260 may be used as a low cost alphanumeric generator using the optional serial. ASCII port. Limited custom logo capabilities are optionally available.

Eight front panel keys allow user selection of 4 character sizes; horizontal and vertical positioning, inverse video, input code, and display formats to suit individual applications. The configuration parameters are stored in non-volatile memory, eliminating the need to reprogram the setup after a power failure.

CHASER

Chase synchronizer for audio and video transports. As a stand alone unit, **CHASER** can perform a wide variety of tasks such as:

- Synchronizing an ATR to a VTR for audio laybacks
- Synchronizing ATR's to increase the number of available audio tracks
- Slaving an ATR to a VTR for integration of audio editing into the video edit suite
- Synchronizing multitrack ATR's to video during mixdowns of audio for video

CHASER incorporates a highly sophisticated intelligent transport interface which controls most transports with a simple cable change. Interfaces are selected by machine model using the **CHASER** remote control unit. Parallel, serial RS-232 and RS-422 SMPTE control protocols are supported.

Advanced software algorithms permit **CHASER** to learn machine ballistics, providing precise cueing and fast lock-ups. Integrated wideband LTC readers for both master and slave transports read code at slow hand crawl and full wind speeds. An optional VITC reader used with master VTR's, provides frame accurate timecode information even when the master is positioned at extremely slow speeds. Tach pulse backup allows normal tape lifter operation when spooling the ATR.

The only interface required from the master is timecode (LTC or VITC). Tach pulses may be required on some transports that do not provide LTC or VITC in wind modes.

CHASER is constructed using three of our popular EV-BLOC modules, providing distributed intelligence and possible system

PHASER—TIMECODE SYSTEM FOR AUDIO TRANSPORTS

PHASER—a new microprocessor based capstan speed resolver and timecode system for professional audio transports. Primarily intended for the live production environment, **PHASER** incorporates the functions of both a master timecode system and audio transport resolver into one slim rack mountable package.

PHASER controls the audio transport capstan to lock a pilot tone or SMPTE/EBU longitudinal timecode (LTC) to a master video reference. When time code is used, the absolute relationship between the timecode on the ATR and the video can be preserved in the video timecode by transferring the ATR timecode into either the time or user bits of the built-in LTC and VITC timecode generators.

The audio transport may be either frame locked to the video, or color framed such that the ATR timecode follows the SMPTE/EBU color frame sequence. This direct correlation between the video and audio time code facilitates video post production, as color framed edits may



VCG 1260

A broadcast quality keyer and high resolution characters combine to give a high quality presentation for on-air use. A separate preview output is provided for setup to preserve the integrity of the program output on air.

VCG 1260 Video character generator including video keyer to convert master clock, SMPTE, inputs to video output. Sports timer function with remote control stop/start facility—internal clock system, H-V positioning, inverse video-preview output. Optional serial ASCII input for alphanumeric display information and tape leader generator function.

VCG 1260A Video character generator as described above with optional serial I/O port for alphanumeric and tape leader generator displays.

VCG 1260 \$2480.00



CHASER

expansion. A remote control unit displays master and slave timecode, slave offset, machine status, etc., as well as controlling transport functions of the slave manually. The offset between master and slave timecode may be captured on the fly, trimmed up or down, or entered as absolute numbers from 1/100th of a frame up to 24 hours.

Two switch closures may be generated from either master or slave time code. The event outputs may be used to start and stop cart machines, unsynchronized recoders, or to punch in and out the master.

An RS-422 serial remote control port, compatible with the proposed SMPTE standard for digitally controlled equipment communicates with **CHASER's** remote control unit or may be used to permit computerized edit controllers or other studio computers to control **CHASER**.

Chaser w/no display \$3995.00
 Chaser w/built-in display 4495.00
 Chaser w/remote control 5395.00



PHASER

now be performed from the audio timecode numbers present in the video timecode's user bits.

PHASER's intelligent transport interface can be configured to a variety of ATR's. Front panel controls include remote control of transport functions, search, display and entry of timecode information for generator and reader.

PHASER is based on our popular EV-BLOC series, and is expandable to accommodate larger applications including multiple VITC channels, etc. Servicing is facilitated by a drop down front panel, which permits each module to be removed easily from the front.

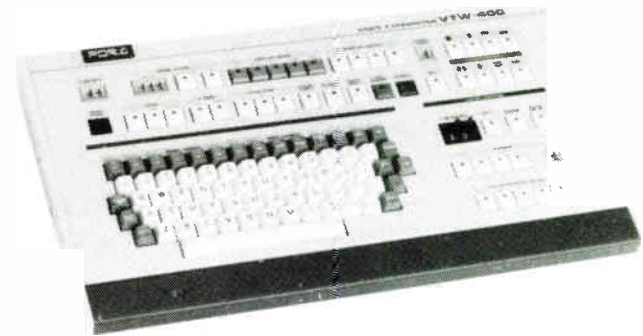
Phaser \$3995.00

VTW-200 Video Typewriter

Features

- Self-contained, compact and low cost video typewriter
- 4-page memory
- Character format: 7 x 9 dot matrix
- Optional CMI-100A is compatible
- Dimensions:
16.92"W x 3.93"H x 11.42"D (430 x 100 x 290 mm)
(19" rack type)

VTW-200 Video Typewriter\$1500.00
VTW-200S With Internal Sync Generator1800.00

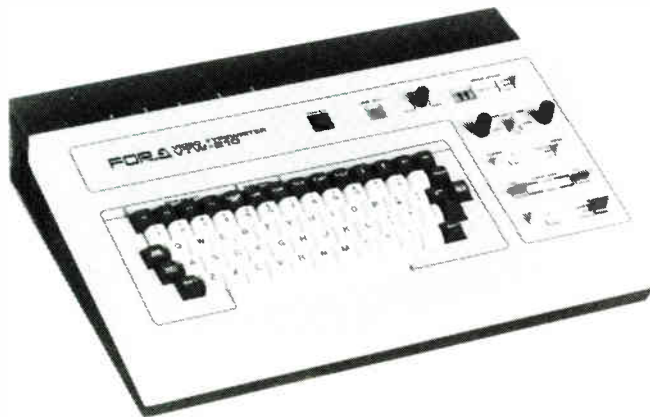


VTW-400 Video Typewriter

Features

- Character generator has clear, extremely high-resolution characters in a choice of 3 sizes and 2 resident font styles
- Includes a 4-step character slant
- Character flash
- Dropshadow and edge
- 8-page memory in standard version
- Displays 8 lines per page with 26 characters per line
- An optional built-in floppy disk adds 300 pages of memory
- 64 colors available for page by page character colorizing
- Displays modes for automatic and manual sequential page switching
- Time interval adjustable between 1-999 seconds
- Word processing characteristics such as line skip, line and page shifts, and line check
- Vertical position control
- Optional extras are also available. The MU-400 floppy disk memory which provides up to 300 pages on one diskette and fits onto the control unit of the VTW-400, and the PU-400 preview unit which allows information to be typed onto a page while another page is being displayed on the line monitor

VTW-400 Video Typewriter\$3950.00
MU-400 Floppy Disk Memory1500.00
PU-400 Preview UnitTBA



VTW-210/210S Video Typewriters

Features

- Self-contained super video typewriter
- 4-page memory
- Optional PU-210 Preview Function is available
- Character format: 16 x 20 dot matrix for both line and preview monitors
- Three display mode: normal, roll and crawl
- Independent speed control for roll and crawl on the keyboard
- One line title display mode function
- Line monitor check function (transition preview)
- Automatic/manual sequential page switching
- Sequential time control
- Display line and quantity control
- Automatic character centering function
- Line/page word correction (horizontal character space shift)
- Line skip function
- Page-to-page line jump function
- Mis-operation detection function
- Optional MU-600, MU-300, MU-250 and PU-210 are compatible
- Dimensions: 18.5"W x 4.13"H x 11.8"D (470 x 105 x 300mm)

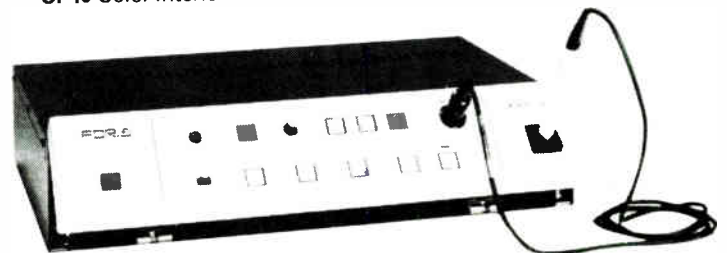
VTW-210 Video Typewriter\$1950.00
VTW-210S Video Typewriter with Internal Sync2200.00
CI-10 Color Interface1650.00
CO-210 Character Out175.00
PU-210 Preview Unit1000.00
MU-250 39 page Memory1450.00
VTW-210/CI-10 Video Typewriter
w/Color Interface3200.00

FVW-300 Video Writer

Features

- Self-contained, extremely low cost free hand writer
- Smooth writing: same picture elements as the FVW-910 (224 x 384 for NTSC, 256 x 384 for PAL) no line intermittence
- Line thickness selection
- Write, partial erase, total deletion functions
- Automatic straight line drawing function
- Cursor can be used as an instructional pointer. (cursor superimposition)
- Remote control capability
- Table top use or 19" rack installation use
- Optional MU-600 and RS-232C Serial Interface Unit are compatible
- Dimensions: 16.92"W x 3.46"H x 11.81"D (430 x 88 x 300mm)

FVW-300 Video Typewriter\$2950.00
FVW-300RS RS-232C InterfaceTBA
CI-10 Color Interface1650.00



FVW-910 VIDEO WRITER

FEATURES

- Idealized free hand writer meets broad applications
- Any information can be smoothly written directly onto the screen by using the lightpen
- Line thickness selection
- Eight different directions roll operation
- Straight line drawing
- Write/erase function
- Optional 3-page memory for the B and W mode (1 page memory for the color mode)
- Tremendous potential in broadcasting, educational, medical, instructional and informational video systems
- Optional CC-910 and AA-910 are compatible
- Dimensions: Control Unit 15.35"W x 6.93"H x 13.98"D (390 x 176 x 355 mm)
- Operation Unit 15.35"W x 4.72"H x 7.87"D (390 x 120 x 200 mm)
- All Units Combined 15.35"W x 18.50"H x 22.44"D (390 x 470 x 570 mm)

(Note: Monitor console not included, any Black & White monitor can be used with both the FVW-910 and the FVW-300.)

VIDEO WRITER

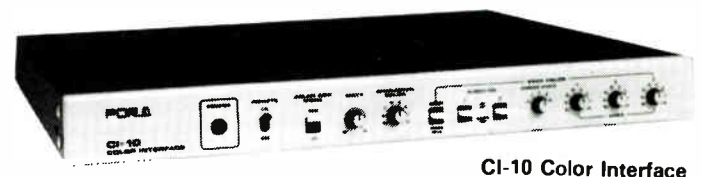
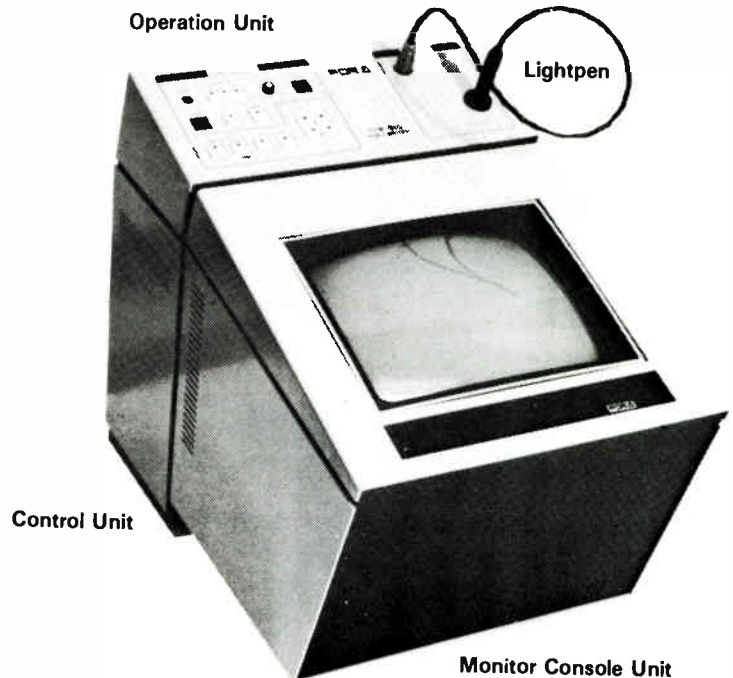
FVW-910	Video Writer with 1 page	\$6300.00
CC-910	Color Control Unit.....	650.00
CI-10	Color Interface/Encoder	1650.00
ENC-110	NTSC Encoder	2500.00
AA-910	Area Address Unit	2600.00

CI-10 COLOR INTERFACE

FEATURES

- Excellent to use with the Video Typewriters especially for information service at the hotel, medical center, etc.
- Character colorizer and color background generator
- 8 different colors can be added to the display characters
- One of single color, two color or three color backgrounds is selectable—selective color is out of 8 different colors
- Display portion of color background can be freely adjusted vertically when two or three color backgrounds are selected
- Width of border line(s) of each color background can be varied in a range of OH 4H lines
- Dimensions: Main Process Unit 16.93"W x 1.73"H x 15.75"D (430 x 44 x 400 mm)
- Control Unit: 18.5"W x 6.3"H x 3.94"D (470 x 160 x 100 mm)

CI-10	Color Interface	\$1650.00
RB-10	Remote Box for CI-10	700.00





TG-160

TG-160 Title Generator

Features

- Fixed character data is generated and superimposed through the built-in P-ROM
- External BCD input data (7 bits ASCII code) such as Time Code is superimposed independently or together with the fixed character data
- Up to 16 alphanumeric characters (7 x 9 dot matrix) are superimposed
- Black/white/off mask display at the back of the characters, for easy view
- Matt control, V and H display position control and display size control facilities
- Excellent device to use with the FOR-A Time Code Generator/Reader series
- Dimensions: 16.92"W x 1.75"H x 11.8"D (430 x 44 x 300mm) (19" rack type)

TG-160 Title Generator \$1550.00



TCG-3100

TCG-3100 Time Code Generator

Features

- Low cost SMPTE standards units for use in precision video tape editing systems
- The TCG-3100 generates SMPTE Time Code and 32 spare bits code. The unit contains 8 digits for hour, minute, second and frame number. Time can be preset at random and also reset to zero. Preset time is confirmed on the front panel. Sync 59.94/external/crystal for NTSC, and PAL/external crystal for PAL, are selectable. Also local/remote modes are selectable
- By combining the TCG-3100 with the TG-160 Title Generator, time and frame number can be superimposed onto a picture resulting in easy visual confirmation
- Dimensions: 16.92"W x 3.90"H x 16.54"D (430 x 99 x 420mm) (19" rack type)

TCG-3100 SMPTE Time Code Generator \$2700.00



TCR-3500

TCR-3500 Time Code Reader

Features

- Low cost SMPTE and EBU standards Time Code reader for use in precision video tape editing systems.
- PAL, NTSC standards
- It reads out SMPTE or EBU Time Code and 32 spare bits code
- Drop-out function
- Time Code display function so it is not necessary to utilize TG-160 Title Generator
- Video time display function with frame numbers of the TG-55B Video Timer is included
- Built-in real time generator: full automatic running-real time can be instantly displayed on the monitor
- Two Time Code memories: retrievable instantly
- Identification number for the VTR tape can be displayed on the monitor
- Dimensions: 16.92"W x 3.90"H x 16.54"D (430 x 88 x 420 mm)

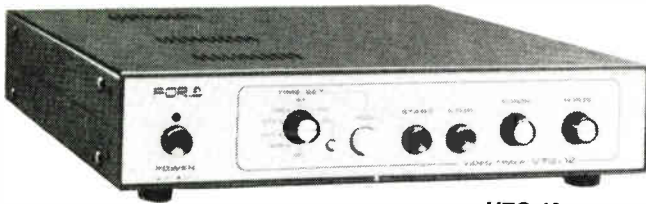
TCR-3500 Time Code Reader w/Video Display \$3450.00



VTG-55



VTG-55B



VTG-12



VTG-33

VTG-12 Video Timer

Features

- Compact size, low cost and high performance
- Battery backup function
- Generates a month-day-year, hour: minute: second display
- Character format is a 7 x 9 dot matrix with a built-in black border for maximum legibility
- Includes a built-in rechargeable battery

VTG-12 12/24 hr. Time Date \$575.00

VTG-22 Video Timer

Features

- Designed for use with a video camera in field photography
- Easily attached to a VTR
- 12V power supply or external DC battery
- Built in rechargeable battery for continual internal counting
- Two time modes available: Calendar Mode is standard and a Stop-Watch adaptor can be added as an accessory.

VTG-22 Portable Timer w/Stopwatch \$740.00
10 Pin Camera Cable 120.00

VTG-33 Video Timer

Features

- Perfect accessory to any television system, compatible with almost any new and existing installation.
- Precision crystal controlled IC circuitry.
- Low cost, accessible to video and VTR equipment users.
- Compact, full-feature generator with wide operational flexibility.

VTG-33 Video Timer \$750.00
VTG-33F Video Timer w/Battery Backup Terminal 850.00
RB-33 Remote Box for VTG-33 and VTG-33F 175.00

VTG-55 Video Timer

Features

- High performance professional unit formats.
- Up-down counting versatility with freeze control.
- Full remote control capability.
- Crystal controlled IC reliability.

VTG-55 Video Timer \$1250.00
RB-55 Remote Box for VTG-55 330.00

VTG-55B Video Timer

Features

- Perfect timer for broadcasting use
- TV frame number display
- Time count-up in the range from -99 to +99 hours
- Independent display on/off for hour, minute, second and frame number
- 4-step display character size control
- Time freeze function
- Optional remote control box is available
- Time Display
Hour: Minute: Second Frame number

VTG-55B Video Timer \$1650.00
RB-55B Remote Box for VTG-55B 600.00

**MODEL 100
PRODUCTION SWITCHER**

FEATURES

With all the production features needed for basic programming, we expect the Model 100 will follow in family footsteps, becoming the industry standard in professional video production.

If you've been waiting for quality, performance and a comfortable drive before buying a compact switcher, call us today. And put the power of our new Model 100 Switcher on your production team.

STANDARD FEATURES

Unique Three Bus Multi-Level Mix/Effects System:

- Eight looping video inputs, plus black and color background.
- DSK Preview, overrides look-ahead preview system.
- Cut or mix key transitions with independent frame rate auto transition.

Master Fade-to-Black and Pulse Processor, Featuring:

- Independent frame rate auto transition for Fade-to-Black.
- Preview system that shows program output when Fade-to-Black is engaged.
- Pulse Processor re-inserts blanking from black burst on program output for stable output and recordings.
- Standard contact closure editor interface (GPI) to each of the three auto transitions or a fourth "select" line which allows selection of any one.
- Program and Preset buses for background transitions.
- Video key bus for luminance keying, chroma keying, and pattern inserts, over the background transition.
- Look-Ahead Preview System that shows the next effect; Wipe transition preview.
- Auto transition, adjustable 0-999 frame, lever arm transition or cut button.
- Ten wipe patterns, with modifiers:
Hard or soft edges
Hard or soft bordered edges
Pattern Reverse
Pattern Aspect
Rate controlled positioner
Preset Pattern size
- Independent Matte Generator for key fill and pattern borders.

Video Keyer, featuring:

- Video or Matte fill
External key input
Optional RGB chroma keyer
Key invert
Key mask using pattern generator
Preset Pattern insert filled from key bus

Standard Downstream Keyer, featuring:

- Key input from the video key bus or an external key input.



- Key fill from an external video source or the independent DSK matte generator.
- BORDERLINE[®] Generator option for black or white title borders, drop shadows, or matte filled outline.
- Key invert.
- Key mask using pattern generator.
- Optional serial interface (RS 232/422) for external computer control.
- Optional pulse regenerator for system timing

MECHANICAL SPECIFICATIONS

- Control panel can sit on desk top (17" wide, 14" deep), or with rack mount adaptor, can be placed in modular rack enclosures (requires eight rack units).
- Electronics frame requires three rack units and 20" depth.
- Single 15 conductor control cable.
- Full tally system.
- Selectable power ranges from 100 to 240 volts, 50 or 60 Hz.

OPTIONS

- 100N NTSC Production Switcher \$10,495.00
- 100-33 RGB Chroma Keyer 850.00
- 100-40 NTSC Digital BORDERLINE Generator 1,500.00
- 100-41 NTSC Pulse Regenerator . . . 1,000.00
- 100-50 Serial Interface Adaptor . . . 1,500.00

MODEL 100CV COMPONENT VIDEO PRODUCTION SWITCHER

The Model 100CV is a compact, flexible, economical component switching system with the traditional family characteristics of its older brother; quality, performance, economy and a comfortable drive. Designed for professional component video production, the Model 100CV has all the qualities expected by the most sophisticated user.

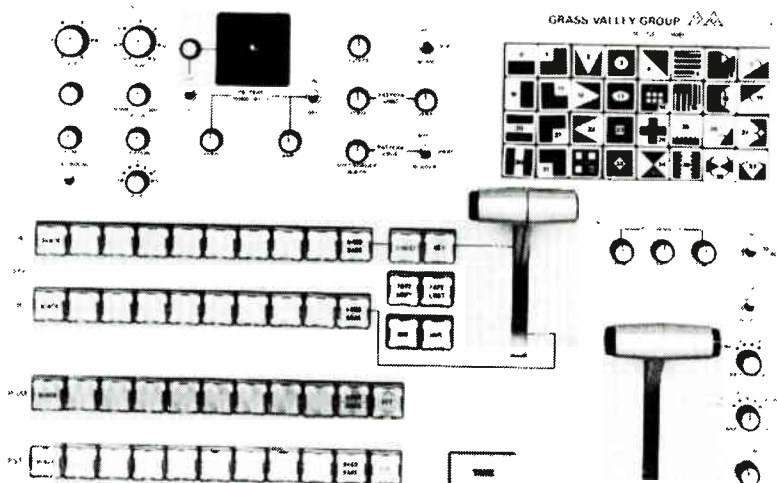
The Model 100CV features non-looping video inputs, 8 in all, and 3 sets of BNC connectors for every input. Utilizing the same control panel as the Model 100 Production Switchers, the Model 100CV Component Video Production Switcher has updated electronics that incorporate as standard equipment many of the features offered as options on the Model 100.

The electronics frame of the Model 100CV requires 6 rack units and 20" depth.

100CV-525 Basic System for 525 Line System \$18,950.00

OPTIONS

- 100CV-40 525 System—Digital BORDERLINE Generator \$1,500.00
- 100-51 Key MEM Effects Memory System \$3,195.00
- AMX-100 Audio Mixer System 5,495.00



**Model 1600-1LCV
 Component Video Switcher**

The 1600-1LCV is a compact, flexible and economical component switching system, functionally very similar to the popular 1600-1L switcher for composite systems. The switcher uses three parallel switching and processing paths, operating on equal (full) bandwidth R, G and B signals. Careful design allows for excellent tracking of the three processors. Most of the system employs standard 1600 Series modules.

FEATURES

- Component video quality
- Ten inputs, four output buses (optional transcoders required for each active input)
- Complete mix/effects system with modulated positioner, color matte generator, and rotary pattern generator
- Flip-flop mixer with cutbar
- Black generator
- Color background generator
- Camera tally system

The primary switching matrix is arranged in a 10-input, 4-output configuration. Buses 1 and 2 supply input signals to the mix/effects system, the output of which is available as an input to buses 3 and 4 — program (PGM) and preset (PST). Sources selected on the PST bus may be transferred to the PGM bus by operation of the cutbar. Alternatively, lap dissolve transitions may be made between the same two buses by means of the lever assembly using the flip-flop technique.

The mixing and special effects system provides mix or wipe transitions between sources, to a keyed insert, or to a preset pattern. Proportional (linear) control elements are used for all modes of operation; mix, wipe, and key. The proportional elements allow soft wipe and vignette effects to be generated; the degree of softness is ad-

justable from the panel. The mix/effects system is complete, in that it contains its own pattern generator, modulated positioner, and color matte generator.

Matte keys can be enhanced by use of an optional BORDERLINE generator, which provides a symmetrical or drop shadow black edge to inserts. The borderline unit also has an outline-only mode.

The shadow key operates in conjunction with the RGB chroma key option. Shadow chroma keying allows lifelike, noise-free shadows to be included in chroma keyed inserts; the shadows cast by the foreground subject can be electronically added to the background scene so as to provide a high degree of realism. Other options for the 1600-1LCV include an audio-follow-video system which operates in conjunction with the PGM and PST buses. Models are available for 525/60 and 625/50 systems.

SPECIFICATIONS

(Basic System)

INPUT CHARACTERISTICS:

Note: Each active input requires an input transcoder. See ordering information.

Video Input: R, G, B or Y, R-Y(V), B-Y(U) or Y.I.Q. (input formats individually selectable.) R, G, B and Y inputs 1Vp-p composite or 0.714Vp-p (0.7Vp-p for 625/50 versions) non-composite. Components input gain adjustable to accommodate "scaled to Y" components (e.g., "Betacam") or unscaled components. All inputs must be synchronous. All inputs 75 ohm terminating. Each transcoder provides a monochrome (Y) signal for input monitoring. 1Vp-p composite.

Pulse Input: Sync & Blanking
 1.8V — 6.0Vp-p, high impedance bridging.

OUTPUT CHARACTERISTICS:

Outputs Available:

PGM: 2xRGB Composite
 2x Y, C₁, C₂ Selectable Standard with optional program output transcoder (R, G, B or Y, R-Y(V), B-Y(U) or Y, I, Q) Composite or non-composite. (Both sets of outputs identical.)

2x Y, C₁, C₂ as above, with optional second output transcoder.

PVW: 2x RGB Composite
 2x Y, C₁, C₂, as above, with optional preview output transcoder.

Impedance: 75 Ω ± 1% source terminated

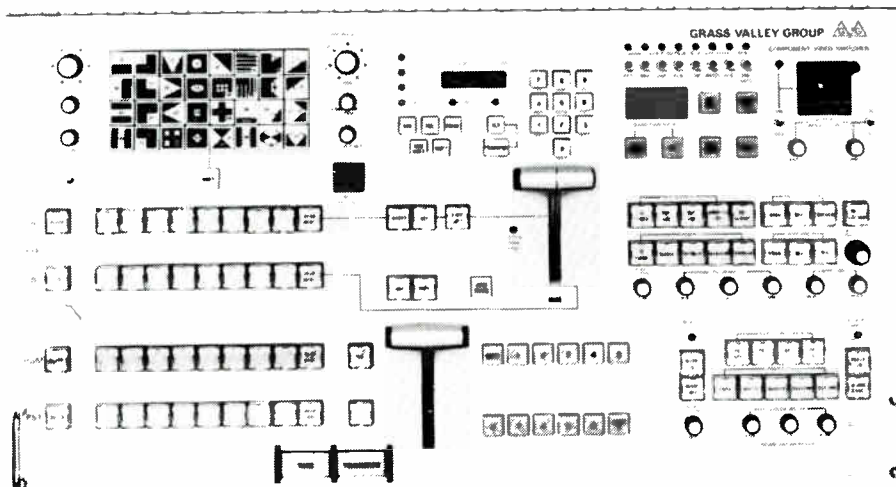
Level: R, G, B and Y outputs 1Vp-p composite or 0.714Vp-p (0.7Vp-p for 625/50 systems) non-composite, w/transcoder.

Components outputs gain adjustable to provide "scaled to Y" or "unscaled" outputs.

1600-1LCV-525	\$37,500.00
1600-1LCV-625	37,500.00

OPTIONS

RGB chroma keyer and switcher for component	\$2750.00
BORDERLINE® generators	2490.00
Flip-flop mixer AFV system	9260.00
Parallel edit interface with 8 x 2 audio mixer	8300.00
Input transcoders for all current standards	975.00
Program output transcoders	900.00
Preview output transcoder	900.00
Test bar generator and differential alignment system	1800.00



**Model 1600-1XCV
 Component Video Switcher**

The 1600-1XCV is a compact, high performance component video switching system intended for use in small studios, remote vehicles, or in post production applications. A fully integrated E-MEM effects memory system provides assistance to the operator through storage of effects, auto transitions, effects dissolves and effects sequence programming. The 1600-1XCV uses standard 1600 Series modules to provide three parallel switching and processing paths, operating on equal (full) bandwidth R, G, and B components. Careful design allows excellent tracking accuracy for accurate and stable performance.

FEATURES

- Component video quality
- Ten inputs (including black and color background)
- 4 output buses: M/E-1 A & B, PGM, and PST
- Complete Mix/Effects (M/E) system with modulated positioner, color matte generator, and pattern generator
- E-MEM™ II system with SE-QUENCER programming system
- Four Auto transitions
- Flip-flop mixer with cut bar
- Downstream keyer
- Black and color background generator
- Camera tally system

STANDARD E-MEM II SYSTEM

An E-MEM II system is standard on every 1600-1XCV. The E-MEM II system provides assistance to the operator through storage of effects (all controls and pushbuttons) in any of twenty registers. The stored effects can be recalled instantly at the touch of a button. This permits rapid effects sequences in live production or precise recalls for iterative post production work.

SPECIFICATIONS

(Basic System)

INPUT CHARACTERISTICS:

Note: Each active input requires an input transcoder. See order information.

Video Input: R, G, B or Y, R-Y(V), B-Y(U) or Y, I, Q.

(Input formats individually selectable.)
 R, G, B and Y inputs 1Vp-p composite or 0.714Vp-p (0.7Vp-p for 625/50 versions) non-composite. Components input gain adjustable to accommodate "scaled to Y" components (e.g., "Betacam") or unscaled components. All inputs must be synchronous. All inputs 75 ohm terminating. Each transcoder provides a monochrome (Y) signal for input monitoring. 1Vp-p composite.

Pulse Input: Sync & Blanking
 1.8V - 6.0Vp-p, high impedance bridging.

OUTPUT CHARACTERISTICS:

Outputs Available:

PGM: 2xRGB Composite
 2x Y, C₁, C₂, Selectable Standard, with optional program output transcoder (R, G, B or Y, R-Y(V), B-Y(U) or Y, I, Q)

Composite or non-composite.
 (Both sets of outputs identical.)

2x Y, C₁, C₂ as above, with optional second output transcoder.

PVV: 2x RGB Composite
 2x Y, C₁, C₂, as above, with optional preview output transcoder.

Impedance: 75 Ω ±1% source terminated

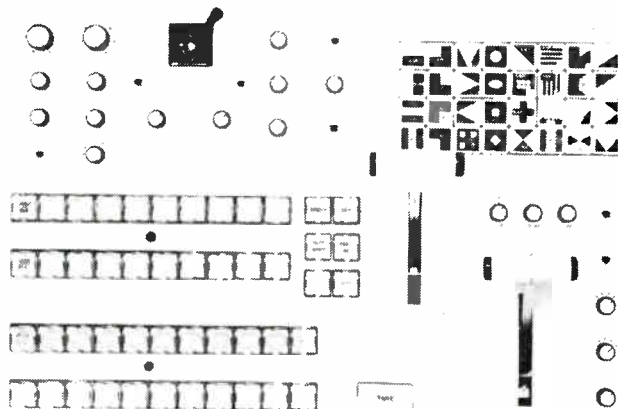
Level: R, G, B and Y outputs 1Vp-p composite or 0.714Vp-p (0.7Vp-p for 625/50 systems non-composite w/transcoder.

Components outputs gain adjustable to provide "scaled to Y" or "unscaled" outputs.

1600-1XCV-525	\$56,500.00
1600-1XCV-625	56,500.00

OPTIONS

RGB chroma keyer and switcher for component	\$2750.00
Borderline® generators	2490.00
Flip-flop mixer AFV system	9260.00
Parallel edit interface with 8 x 2 audio mixer	8300.00
E-MEM serial interface	1565.00
E-DISK floppy disk storage	5950.00
E-MEM audio system	15,500.00
Input transcoders for all current standards	975.00
Program output transcoders	900.00
Preview output transcoder	900.00
Test bar generator and differential alignment system	1800.00



MODEL 1600-1LN

The 1600-1LN is a compact, flexible, and economical video switching system, intended for use in remote vans, small studios, and post production applications. The switcher employs the same high quality components as other 1600 Series models. Many of the circuit modules, including the mix/effects system, are interchangeable with other 1600 Series modules.

Model 1600-1LN Basic System \$23,675.00

- Rotary and standard wipes
- 10 inputs (including color black and color background)
- 4 output busses: M/E-1 A & B, PGM, & PST
- Complete mix/effects system with modulated positioner, color matte generator, and pattern generator
- Flip-flop mixer with cutbar
- Color black generator
- Color background generator
- Non-sync inhibit system
- Camera tally system

Post Production Options

A Parallel Edit Interface option permits remote control of the switcher by a suitably equipped computer editing system. An 8 x 2 audio mixing system with separate control panel is included with the system. The Parallel Edit Interface is compatible with most current computer editing systems.

SPECIFICATIONS: (BASIC SYSTEM)

INPUT CHARACTERISTICS

- Video Input Level: 1V p-p composite or .714V p-p noncomposite
- Pulse Input Level: 4V p-p ± 6 dB
- Subcarrier: 2V p-p ± 3 dB
- Input Return Loss
 - Video: ≥ 40 dB (5MHz sweep)
 - Pulse: ≥ 30 dB (T Pulse)
- Input Hum Attenuation: ≥ 26 dB (reference; 1V p-p hum)

- Maximum Input Hum Level: 1.5V p-p
- Clamp APL Response: ≤ 2 mV shift for 10-90% change

OUTPUT CHARACTERISTICS

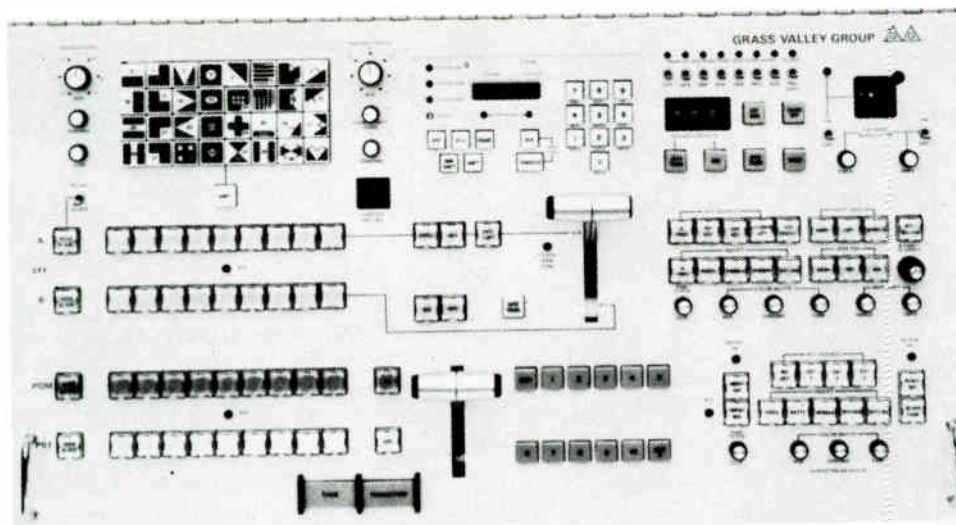
- DC on Output: ± 50 mV blanking to ground
- Output Return Loss: ≥ 40 dB (5MHz sweep)
- Output Isolation: ≥ 35 dB (5MHz sweep)
- Outputs Available: Four; $75\Omega \pm 1\%$, source terminated
- Output Level: 1V p-p composite (nominal)

MECHANICAL and POWER

- Control Panel: 12.25"H x 19"W x 3.5"D (31x48.3x 8.9cm)
- Rack Mounted Equipment: 8.75"H x 19"W x 18"D (22.3x48.3x45.7cm)
- Power Supply: Above dimension includes power supply. No additional air circulation space needed.
- Input Power: 120 or 240VAC $\pm 10\%$, 50/60Hz
- Power Consumption: 100VA approximate
- Connectors: BNC (video)
- Tally Relay Contacts: 2A, 28V (resistive load)
- Gross Shipping Weight: Approximately 100lb/45kg

OPTIONS

- RGB chroma keyer with shadow key **\$1850.00**
- Encoded chroma key system **2880.00**
- RGB switching matrix **900.00**
- Borderline® generator **2490.00**
- Downstream keyer with insert fade control **3995.00**
- Flip-flop mixer AFV system **9260.00**
- Parallel Edit Interface: compatible with most computer editing systems. Includes 8 x 2 audio mixer with control panel **8300.00**



MODEL 1600-1XN

A compact, high performance video switching system intended for use in small studios, remote vehicles, or in post production applications. A fully integrated E-MEM II effects memory system provides assistance to the operator through storage of effects, auto transitions, effects dissolves and effects sequence programming.

Model 1600-1XN Basic System \$36,500.00

- Ten inputs, four output busses
- Rotary and standard wipes
- Complete Mix/Effects (M/E) system with modulated positioner, color matte generator, and pattern generator
- E-MEM™ II system with sE-QUENCER programming system
- Four Auto transitions
- Flip-flop mixer with cut bar
- Downstream keyer
- Color black and background generator
- Non-sync inhibit system
- Camera tally system

OPTIONS

- RGB chroma keyer with shadow key **\$1,850.00**
- Encoded chroma key system **2,880.00**
- RGB switching matrix **900.00**
- Borderline® generators **2,490.00**
- Flip-flop mixer AFV system **9,260.00**
- Pulse regenerator
- Parallel edit interface with 8 x 2 audio mixer **8,300.00**
- E-MEM serial interface **1,565.00**
- E-DISK floppy disk storage **5,950.00**
- E-MEM audio system **15,500.00**

SPECIFICATIONS

Input Characteristics

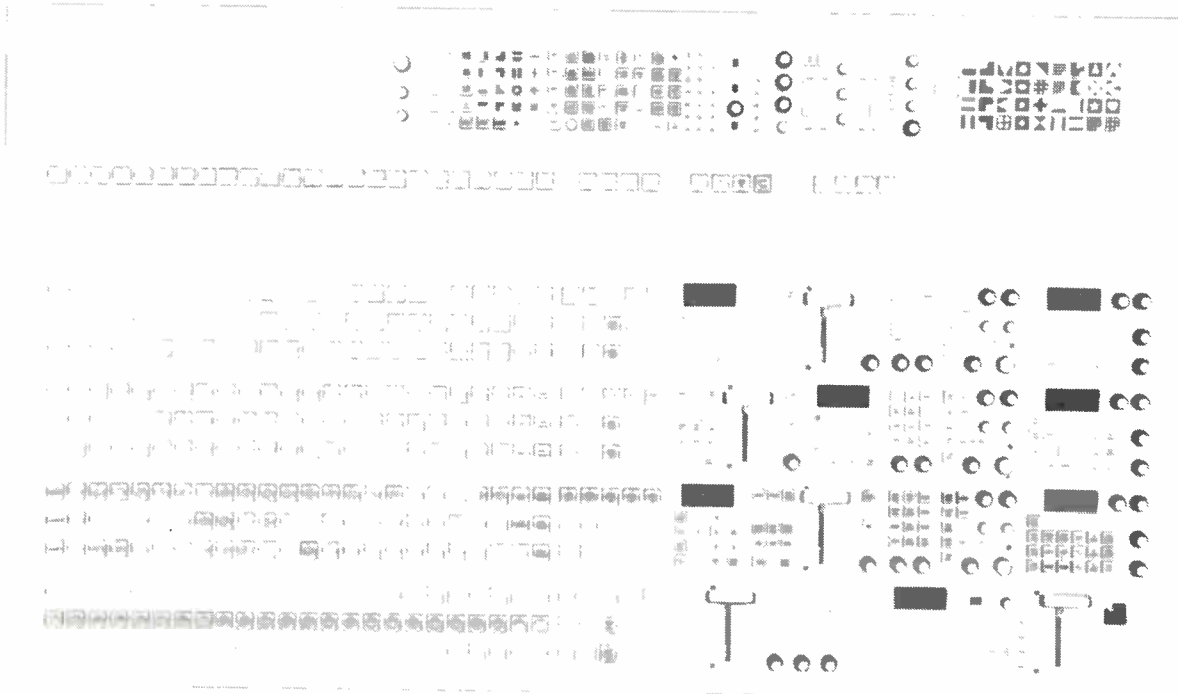
- Video Level: 1V p-p composite or .714V p-p noncomposite
- Pulse Level: 4V p-p ±6dB
- Subcarrier: 2V p-p ±3dB
- Return Loss
 - Video: ≥ 40dB (5MHz sweep)
 - Pulse: ≥ 30dB (T-Pulse)
- Hum Attenuation: ≥ 26dB referenced to 1V p-p hum
- Maximum Hum Level: 1.5V p-p
- Clamp APL Response: ≤ 2mV shift for 10-90% change

Output Characteristics

- Impedance: 75Ω ±1%, source terminated
- Level: 1V p-p composite, nominal
- DC on Output: ±50mV blanking to ground
- Return Loss: ≥ 40dB, 5MHz sweep
- Isolation: ≥ 35dB, 5MHz sweep

Mechanical and Power

- Control Panel: 15.3"H x 28"W x 5.25"D (38.9 x 71.2 x 13.4cm)
- Rack Mounted Equipment: 15.75"H x 19"W x 18"D (40 x 48.3 x 45.7cm)
- Power Supply: Above dimensions include power supply; no additional air circulation space needed
- Input Power: 120 or 240Vac ±10%, 50/60Hz
- Power Consumption: 225VA approximate
- Connectors, Video: BNC
- Tally Relay Contacts: 2A, 28V, resistive load
- Gross Shipping Weight: approximately 200lb/90kg



MODEL 300-3A

**300 SERIES PRODUCTION SWITCHING SYSTEM
FEATURES**

- Unlimited re-entry of effects
- E-MEM™ effects memory system on each Mix/ Effects (M/E) with Effects Dissolve and sequencing
- Four input buses per M/E
- Independent title mix/cut per M/E
- Lever and title auto transitions
- Multi-source title keys
- Automatic key follow
- Chroma key memory per input
- Quad split from each M/E
- Personality Programming
- Omni-Key™ system—Linear Key mode/Key Memory/Key Invert/ External Key*

The 300 Series Production Switching System has been developed to meet the demanding requirements of both live broadcast production, and complex program and commercial production in the studio or edit suite. It is the first production system designed specifically to integrate Digital Video Effects and E-MEM™ effects memory control. Careful attention to the human engineering of panel controls and computer assisted operation provide unmatched production power and ease of operation.

The fully integrated E-MEM system, standard in each mix/effects system, can learn up to 20 different M/E configurations (all switches and controls). Each effects E-MEM system is independent allowing for selective recalls during live programming. E-MEM's unique "Effects Dissolve" capability allows any combination of analog controls to be treated as a transitional device for unique new transitions and effects previously impossible under manual control. Sequencing allows a series of changes in control set-up and effects dissolves to be linked together for animated effects and complex productions. The effects E-MEM systems can be linked with control of the other switcher functions (Flip-Flop mix, DSK, Background, Quad

Split) and the MkII DVE by the Master E-MEM effects memory option. This distributed E-MEM system allows frame accurate control of individual elements of very complex effects frequently used in post-production.

Four input buses per M/E handle most common effects sequences without re-entry. Transitions from one background to another, the addition of a video key (chroma key, DVE key, self key or matte key), a title key or any combination of the above, can be accomplished with one lever movement on a single M/E. Title hierarchy is selectable over or under the video key for full flexibility. Four input buses also permit a quad split output from each M/E. Thus dissolves or wipes are now possible between quad split from different M/E s.

An automatic preview function displays the exact results of the next lever movement (including all re-entries) in the Preview monitor.

Lever and title auto transitions with independent rate programming, are provided on each M/E. Titles can be added or deleted in combination with background or video key transitions or independently from title mix (auto transition) or title cut buttons.

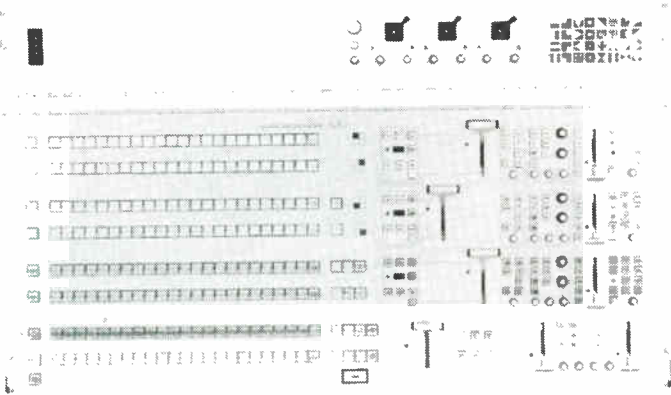
The preset black function permits a transition to black (mix or wipe) between the on air effect and the previewed effect. The first lever movement is a transition to black (the crosspoint is automatically selected), and the second lever movement is a transition to the previewed effect.

New high performance chroma keyers ignore luminance highlights in non-key areas, due to an exclusive Luminance Annihilator circuit. Encoded chroma key with shadow can be added to each M/E. For each primary input the appropriate chroma keyer (RGB or Encoded) and last key setup is memorized for automatic recall if selected.

A program/preset mixer with downstream keyer feeds the Program output of the switcher. It operates just like an M/E, with the exception of wipes, non-additive mixes, and video keys. Downstream keyer functions are accomplished in the same manner as title keys in an M/E with the same sources available.

*Available as standard on all 300 series switcher systems beginning May, 1985. Omni-Kit available to upgrade 300 series systems to include Omni-Key™ enhancements.

P.O. Box 1114
 Grass Valley, CA 95945
 (916) 273-8421



1680 SERIES PRODUCTION SWITCHERS

With the 1680 there is a new level of possibilities available to operators worldwide. With the same familiar drive of the 1600, there is more power, more control than ever before. Whether live broadcast or post production, the 1680 provides double the production power from each mix/effects system. Plus the 1680 has the ability to interface with peripheral devices integral to modern production. So your potential to create brilliant special effects explodes.

Best of all, the 1680 carries the Grass Valley Group reputation of respect, reliability, and worldwide recognition — a reputation meaning more to you than a well known name. It means when you outgrow your switcher, there will be a market to sell to. In fact, most of our 3,500 original 1600's are still in use somewhere in the world, commanding close to their original price. So, welcome to the world of the 1680. A world with power, control and Grass Valley Group reliability, all in the drive you have come to know.

The evolution from the 1600 has brought other standard features to the 1680 — expanding your ability to create visual messages. Non-Additive Mix greatly improves how supers look on the screen. New Soft Bordered Wipes allow control of border width and degree of softness. And the Downstream Keyer, formerly an option, is now standard in every 1680. Standard Title Keyers, Non-Additive Mix, Soft Bordered Wipes, and Downstream Keyer. They all add up to the production power needed to meet today's heavy demands.

E-MEM System

Although standard on the 1680-10X, the E-MEM System is an option on all other 1680 switcher models. The system provides effects memory for all switcher functions, plus the sequences created with the Post Production System. The system allows individual elements of complex effects to be adjusted and previewed separately, giving you precise control and effect repeatability.

Serial Interface Adaptor

The serial interface adaptor expands the switcher/editor interface beyond the edit decision list to total switcher control. It is the central hub that allows the switcher to connect all peripheral devices, such as the E-DISK™ Effects Storage System, post production audio, your computer editing system, and many other external production tools.

Post Production Audio

This integrates the control of audio sources with your system by placing your audio sources under computer editor control.

E-DISK Effects Storage System

With the E-Disk floppy disk system, favorite effects can be stored permanently for future use. This allows effects to be created off-line then used in live programs with perfect repetition. The E-Disk System is particularly useful in fast-paced formatted programs, where visually exciting effects are consistently repeated.

Peripheral Interface

The Peripheral Interface expands production capabilities by allowing your computer editor to control other intelligent devices, such as Digital Video Effects or character generators.

PRODUCTION SWITCHERS

Options

RGB Chroma Keyers with Shadow Key	
for 10V/10X	\$ 1,850.00
for 16F/24F — 16K/24K	1,950.00
Chroma Key Switcher*	900.00
E-MEM® III Effects Memory System**	
for 10V	19,545.00
for 16F/24F	32,180.00
for 16K/24K	37,380.00
E-MEM® III System Serial Interface	1,565.00
E-DISK™ Floppy Disk Storage	5,950.00
Digital BORDERLINE® Generators	2,490.00
Analog BORDERLINE® Generators	5,200.00
Encoded Chroma Key Systems	
for 10V/10X	2,880.00
for 16F/24F — 16K/24K	2,945.00
Parallel Edit Interface with 8 x 2 Audio Mixer	
Video Only	5,800.00
Video and Audio	8,300.00
Quad Split Generator for F/K Models Only	2,140.00
Auxiliary Switching Bus with Separate Control Panel	
for 16F	2,670.00
for 24F	3,320.00
Dual Power Supplies	
for 10V/10X	2,850.00
for 16K/24K	37,380.00

*Standard on F/K Models

**Standard on 10X Models

Preliminary Specifications

INPUT CHARACTERISTICS

Video Input Level:	1V p-p composite or .714V noncomposite.
Pulse Input Level:	4V p-p ±6dB.
Subcarrier:	2V p-p ±6dB.
Input Hum Attenuation:	≥26dB (reference; 1V p-p hum).
Maximum Input Hum Level:	1.5V p-p.

OUTPUT CHARACTERISTICS

Level:	1V p-p composite (nominal).
Available:	Three; 75Ω ±1% source terminated.
DC on Output:	±50 mV blanking to ground.

MIX/EFFECTS CHARACTERISTICS (each M/E)

Mix Tracking:	≤1% gain error. ≤10mV p-p DC error.
Chrominance Linearity	
During Mix:	≤1.5% amplitude error. ≤2° p-p phase error.

VIDEO SYSTEM CHARACTERISTICS

Short Time	
Waveform Distortion:	≤1% unweighted.
Line Time	
Waveform Distortion:	≤0.5%.
Field Time	
Waveform Distortion:	≤0.5%.
Frequency Response	
(reference; 1MHz):	300kHz to 5MHz: ±0.2dB.
	5MHz to 8MHz: +0.2dB to -0.7dB.
	8MHz to 20MHz: 0dB maximum.
Differential Phase:	≤1.5° (10-90% APL).
Differential Gain:	≤1.5% (10-90% APL).
K Factor:	0.5% (2 T Pulse).
Chrominance/Luminance Inequalities:	≤ 10ns delay. ≤0.2dB gain.
Crosstalk:	≥52dB at 3.58MHz; 50dB at 4.43MHz.
Signal-to-Noise Ratio:	≥65dB p-p signal/RMS noise to 5MHz.
Path Length Deviation:	≤1.5°.
Gain Stability:	≤1%.
Gain Uniformity:	≥0.1dB.
DC Stability:	≤30mV.

POWER

Input Power:	95-125 or 190-250 VAC, 48-62Hz.
Power Consumption:	450VA approx. (1680-24K/16K).
	275VA approx. (1680-10X).
	225VA approx. (1680-16F/24F).
	200VA approx. (1680-10V).

1680-10VN 1 Mix Effect Switcher	\$ 30,855.00
1680-10XN 1 Mix Effect Switcher	49,500.00
1680-16FN 2 Mix Effect Switcher	67,950.00
1680-16KN 3 Mix Effect Switcher	97,650.00
1680-24FN 2 Mix Effect Switcher	74,950.00
1680-24KN 3 Mix Effect Switcher	105,000.00

Prices and Specifications Subject to Change Without Notice.

VP-65

SYSTEMS 31/41/51 VIDEOTAPE EDITING SYSTEMS

Modular

Each editing system, while uniquely designed for specific applications, permits "personal tailoring" to satisfy individual editing needs.

Expandable

As your demands increase for additional editing features and equipment, GVG editing systems expand to accommodate your growth by adding hardware or software modules.

Flexible

GVG Editing systems have the industry's most flexible interfacing capabilities. Examples include RS422 and RS232 VTR Control as well as the ability to control a wide variety of switchers and other equipment.

Help File

Sometimes an editor needs a quick solution to a complex editing request; Help File with sub-categories insures easy access to definitive help...help you will remember and repeatedly use.



SYSTEM 31

An editing system designed to serve both on-line and off-line applications, the System 31 is an editing system of unusual functional dimension. With eight I/O ports, and exceptional features such as Super-Slave and Cue Ahead, the System 31 provides exceptional performance at an outstanding performance/cost ratio.

FEATURES

- DEC 11/2 CPU
- 64K Bytes of Memory
- Dual 0.5M Byte Floppy Disk Drives
- Distributed Processing Control
- 8 Control Ports for VTRs and Switchers
- 4 Accessory Ports
- Sync Interface
- 132 Column Printer
- DEC RT/11 Operating System
- Exclusive Super Edit
- Assignable VTRs, Video, Audio
- Video, Dual Audio Editing
- Edit List Display, Input-Output
- Multiple Edit List Disk Files
- Auto-Track Dissolve Setup, Anywhere in Edit List
- Match Any Edit, Both Sides of Dissolves
- Unique-Timed Action Modes
 - XGPI, Expanded Switcher Control, Log in Edit List
- Auto-Clean Removes Overlaps
- Super-Slave
 - Slave 1 to 6 VTRs, Easy Slave Setup, Positive Offset Lock, Easy Offset Change, Slaves in Edit List
- Full Preview, Edit Functions
- Sequential, Checkerboard, and Cue-Ahead Auto-Assembly
- Real-Time Edit Mode
- Replay Any Edits, with Auto-Scroll
- Six-Character Alpha-Numeric Reel ID
- Multiple-Record, Synchronous Replay
- Help File
- Event Numbers to 999
- Notes in the Edit List, with Individual Add, Delete
- User-Bit Time Reference
- Powerful Edit List Management, with/without Ripple
 - Insert, Delete Groups, Recall, Replace, Move Groups, Shift Groups

SPECIFICATIONS

Dimensions

	Height	Width	Inches Depth	Clearance
Console Model CPU	14-3/4	20-1/2	20	21-1/2
Rack Mount CPU	5-1/4	19	25-1/2	27
Keyboard	3-1/4	20-1/2	9	9
Jogger	3-1/4	8	9	9
I/O Panel	1-3/4	19	2	2
Typical Interface	1-3/4	19	13	14-1/2
Separate Disk Enclosure	5-1/4	19	26	27

Weight

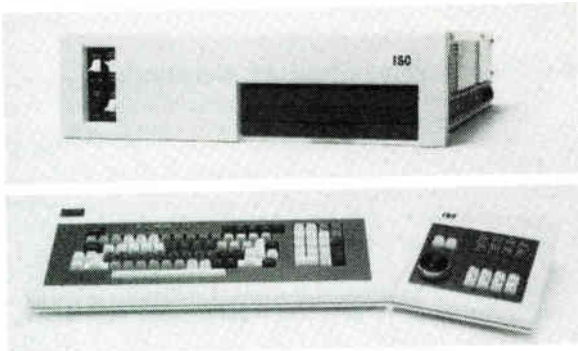
	Lbs.
Console Model CPU	50
Rack Mount CPU	60
Keyboard	3
Jogger	1
Typical Interface	4
Separate Disk Enclosure	40

Power

	Watts
Console Model CPU	500
Rack Mount CPU	500
Typical Interface	100
Separate Disk Enclosure	400

Warranty

	Months
System Hardware	6
System Software	12
Accessories	3
System 31.....	\$29,500.00



**SYSTEMS 31/41/51
VIDEOTAPE EDITING SYSTEMS (Cont'd)
SYSTEM 41**

The System 41, a high performance on-line editing system, is designed for the most demanding applications. This system has a faster CPU than System 31. It also has features which make variable-speed VTR control and editing precise and easy. System 41 software and hardware features permit full exploration of the professional's creativity.

FEATURES

- Faster DEC 11/23 CPU
 - 64K Bytes of Memory
 - Dual 0.5M Byte Floppy Disk Drives
 - Distributed Processing Control
 - 8 Control Ports for VTRs and Switchers
 - 4 Accessory Ports
 - Color-Lock Sync Interface
 - 132 Column Printer
 - Jogger Motion Control
 - DEC RT/11 Operating System
 - Exclusive Super Edit
 - Assignable VTRs, Video, Audio
 - Video, Dual Audio Editing
 - Edit List Display, Input-Output
 - 10 Macro Functions, with Nesting
 - Multiple Edit List Disk Files
 - Powerful Edit List Management, with/without Ripple
 - Insert, Delete Groups, Recall, Replace, Move Groups, Shift Groups
 - Single-Keystroke Dissolve
 - Auto-Track Dissolve Setup, Anywhere in Edit List
 - Three Freeze Modes
 - Help File
 - Match Any Edit, Both Sides of Dissolves
 - Auto-Clean Removes Overlaps
 - Full Preview, Edit Functions
 - Match to Freeze, Variable-Speed
 - Replay Any Edits, with Auto-Scroll
 - Six-Character Alpha-Numeric Reel ID
 - VTR Speedometer
 - Event Numbers to 999
 - Notes in the Edit List, with Individual Add, Delete
 - Unique Timed-Action Modes
 - XGPI, Expanded Switcher Control, Log in Edit List
 - Fill Mode Computes VTR Speed
 - User-Bit Time Reference
 - Real-Time Edit Mode
 - Multiple-Record, Synchronous Replay
 - Super-Slave
 - Slave 1 to 6 VTRs, Easy Slave Setup, Positive Offset Lock, Easy Offset Change, Slaves in Edit List
 - Precise Programmed Motion Control
 - Sequential, Checkerboard, and Cue-Ahead Auto-Assembly
- System 41** \$35,500.00

SYSTEM 51

The top of the line System 51 is without reservations an editing system unmatched in features, performance and reliability. This system was specifically designed to perform flawlessly for the profession's best in their most demanding applications. The interfacing possibilities with the industry's most complex equipment is virtually limitless. The system features huge memory capacity, 16 ports for unrestricted control, and the most powerful software features in the industry.

FEATURES

- Fast DEC 11/23 CPU
 - Memory Management
 - 256K Bytes of Memory
 - 10M Byte Hard Disk Drive
 - 0.5M Byte Floppy Disk Drive
 - Distributed Processing Control
 - 16 Control Ports for VTRs and Switchers
 - 4 Accessory Ports
 - 132 Column Wide Form Printer
 - Jogger Motion Control
 - DEC RT/11 Operating System
 - Exclusive Super Edit
 - Assignable VTRs, Video, Audio
 - Video, Dual Audio Editing
 - Edit List Display, Input-Output
 - Multiple Edit List Disk Files
 - Color-Lock Sync Interface
 - Single-Keystroke Dissolve
 - Multiple-Record, Synchronous Replay
 - Super-Slave
 - Slave 1 to 6 VTRs, Easy Slave Setup, Positive Offset Lock, Easy Offset Change, Slaves in Edit List
 - Help File
 - Auto-Track Dissolve Setup, Anywhere in Edit List
 - Match Any Edit, Both Sides of Dissolves
 - Remote Terminal Emulator
 - Auto-Clean Removes Overlaps
 - Full Preview, Edit Functions
 - Print Spooling
 - Sequential, Checkerboard, and Cue-Ahead Auto-Assembly
 - Replay Any Edits, with Auto-Scroll
 - Six-Character Alpha-Numeric Reel ID
 - Notes in the Edit List, with Individual Add, Delete
 - Event Numbers to 9999
 - Powerful Edit List
 - Management, with/without Ripple
 - Insert, Delete Groups, Recall, Replace, Move Groups, Shift Groups
 - User-Bit Time Reference
 - Real-Time Edit Mode
 - 10 Macro Functions, with Nesting
 - Three Freeze Modes
 - Film Package
 - Direct Film Entry, Slate Calculation, 35/16mm, Centered Dissolve
 - Match to Freeze, Variable-Speed
 - VTR Speedometer
 - Fill Mode Computes VTR Speed
 - Unique Timed-Action Modes
 - XGPI, Expanded Switcher Control, Log in Edit List, Precise Programmed Motion
- System 51** \$43,500.00

GRAY ENGINEERING LABORATORIES, INC.

504-P, West Chapman Avenue
Orange, CA 92668
(714) 997-4151

TIME CODE EQUIPMENT



DT-113



DR-107B



DR-107 Font

NOTE: 5 Yr. Warranty on All Products Including Parts and Labor.

SMPTE Data Receiver & Character Generator

DR-107. The DR-107 offers an unusual number of capabilities in a minimum space at an economy price. All controls are on the front panel. In addition, there are internal selectors for DROP FRAME status on the monitor, choice of monitor up-date change, and free running of time in the absence of code.

Character heights may be varied from 8 to 64 lines in four increments, and the widths may be adjusted to the preferred aspect ratio. The characters may be plain or boxed. Characters may be inserted in the Vertical Interval, offering greater versatility to recording or transferring of tapes. Lines 12 through 19 are used in the Vertical Interval mode so no interference will occur. Size: 1-3/4" High Standard 19" relay panel x 9-1/2" deep excluding plugs.

SMPTE Time Code Transmitter

DT-113. SMPTE Edit Code is generated from a master clock which may be selected for DROP FRAME count by a front panel switch. User Bits may be inserted from a parallel 32 line input. TIME or USER BITS can be displayed on an 8-Digit hexadecimal readout. The master clock may be reset or loaded to a time on an 8-Digit thumb-wheel switch. The clock can be stopped by a HOLD button.

The clock and transmitted code can be synchronized to the 60 Hz line or to Video/Sync frames. Code start is within the HNSI spec. (1 H-Line in the Vertical Interval). The clock can be synchronized to the color burst phase for odd or even frame count when the sub-carrier is in phase. Size: 1-3/4" High Standard 19" relay panel x 9-1/2" deep excluding plugs.

Code Reader and Video Character Generator

DR-103. Data Receiver and Character Generator. Reads and displays edit-code and equivalent film-frames on video monitor and has three switchable units **\$4550.00**

DR-107B. Data Receiver and Character Generator. Reads and displays time or user bits on video monitor **2795.00**

DR-115. Data Receiver and 4 Channel Character Generator. Provides 4 separate video character displays from one edit-code input for iso-camera productions **4250.00**

DR-120. Data Receiver, Character Generator, Identifier and Demultiplexer. Reads and displays time, multiplexed user bits, and video source I.D. on video monitor **3150.00**

DR-122. Data Receiver and Dual Character Generator. Allows simultaneous video display of both time code and user-bits with video source identification capability **4450.00**

Code Reader and Local Display

DR-109. Data Receiver, Display and Demultiplexer. Reads and displays time or multiplexed user bits on 8 digit hex readout **\$2795.00**

TCR-119. Time Character Reader. Reads video characters in the stop or slow VTR speed and converts to serial time code for automatic computer editing **3950.00**

TBC-117. Edit Code Time Base Corrector. Converts wide-band erratic code input to a truly regenerated "ANSI" spec code output. . . **3900.00**

Code Generators

DT-104F. Data Transmitter. Similar version of the DT-104A that provides for NTSC and PAL compatibility, Color Frame Sync, advanced Slave (jam-sync) decoding and a choice of Field or Frame Rate Time Code. **\$5950.00**

DT-113. Data Transmitter. Transmit code at 30, 25, or 24 frame counts; color frame sync mode, local hex display, user-bit input; code start accuracy to +/-1 H line **2995.00**

CC-114. Code Comparator. Compares a pre-set time with an incoming Time Code to produce an editing signal on coincidence. Must be used with any Gray Time Code Reader. **2330.00**

User-Bit Equipment

MC-110. User Bit Modifier and Combiner. Combines time codes serially from two independent sources using user bits for the second time code. **\$2595.00**

MD-111. User Bit Modifier, Display and Demultiplexer. Modifies multiplexed user bits on incoming edit code from a 32-line parallel input. **3295.00**

UBE-118. User Bit Encoder. a 10-channel multiplexer that encodes user-bits from parallel inputs. Encoder for DT-104, DT-113, or MD-111. **2550.00**

Safe Area Generator

VR-116. Video Reticle Generator. Allows precise positioning of titles and graphics from dead center to the edge of verticle and horizontal blanking. **\$2595.00**

VR-121. Video Reticle Generator. Similar to VR-116 with the addition of monitor linearity check, variable reticle size and position with memory and recall and a keying switch to set reticle areas from white to black. **3950.00**

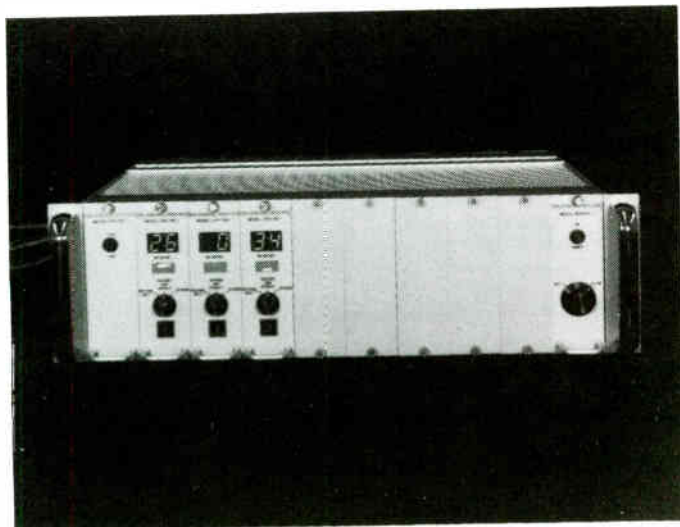
Code-Phase-Measurement

CPI-123. Code Phase Indicator. Measures the difference between an actual code frame start on a VTR versus ANSI spec of +/-1 H. Line to insure computer compatibility. **2100.00**

GRAY ENGINEERING LABORATORIES, INC.

504-P, West Chapman Avenue
Orange, CA 92668
(714) 997-4151

SMPTE EDIT CODE PRODUCTS



CPC-700

CPC-700 Code Phase Corrector

The location of SMPTE Time-Code on the cue track of a video tape and its relationship to other signals on the tape is specified by ANSI V98, 12M-1981. Although the Time-Code start of address as originally recorded may meet the specified tolerance of + one H line, an out of phase condition can develop due to video signal processing (TBC's) and the changing of the audio/video head relationship, among other things. When automatic editing is involved, a large enough displacement of the code with respect to the picture can cause the computer to reject the time code and prevent editing.

Measures, displays, and corrects the phase difference between the Cue-Track Frame Code and the Video to allow computer acceptance. One 703-1 and 703-2 modules are required for each playback VTR. Compatible with both NTSC and PAL.

\$1395.00 plus \$995.00 for both 703-1 & 703-2 modules

The equipment rack provides space for one to eight Code-Phase-Corrector Modules. One of these modules is required for each playback VTR machine in the edit bay.

Features:

SERIES 700 rack frame houses all modules. POWER SUPPLY plug-in module 701-1 provides the required power to all modules in the unit. FRAME PULSE GENERATOR plug-in module 702-1 supplies the sync timing to the Code Phase Corrector modules. CODE PHASE CORRECTOR plug-in module 703-1. TWO DIGIT DISPLAY shows the number of bits the Time Code is out of phase. Range is + 40 bits. A blinking point between the two digits indicates data is being sampled and corrected.

VIE-224 Vertical Interval Encoder

Converts longitudinal Edit Code Input to VITC for insertion into one or more video lines. Incorporates Code Time Base Correction techniques. **\$3450.00**

Features:

USER-BIT UPDATE switch offers choice of updating a time code used in the user bit section. ENCODE/OFF switch indicates when the V.I.T.C. is encoding. USER/TIME switch allows the selection of either Time or User-Bits for display. DISPLAY of time or User-Bits information of 8 Digit Hexadecimal characters. BLANK/FRAMES switch allows blanking of the two frames digits. SYNC/CUE indicates whether video sync and/or input code is present. DROP FRAME/NON DROP FRAME indicates the type of code being received.



VIE-224



VID-225

VID-225 Vertical Interval Decoder

Decodes both longitudinal and/or Vertical Interval Time Code and outputs information as longitudinal Time Code at a rate proportional to either input and acceptable to most edit computers. **\$3950.00**

A new SMPTE longitudinal code is outputted at a rate proportional to either input. Therefore VITC input can be used from freeze frame to full wind and be automatically interfaced to most existing edit controllers, SMPTE longitudinal generators, readers and character generators, etc.

Selection of the two codes can be automatic or manual, allowing the maximum advantage of both codes in various situations. At tape speeds below 1/4 play speed, the unit outputs longitudinal data at a 1/4 rate when VITC is present and will squelch if an absence of time code is required by the edit controller when the tape is stopped.

The VITC data is also available for use in encoding other video equipment.

Features:

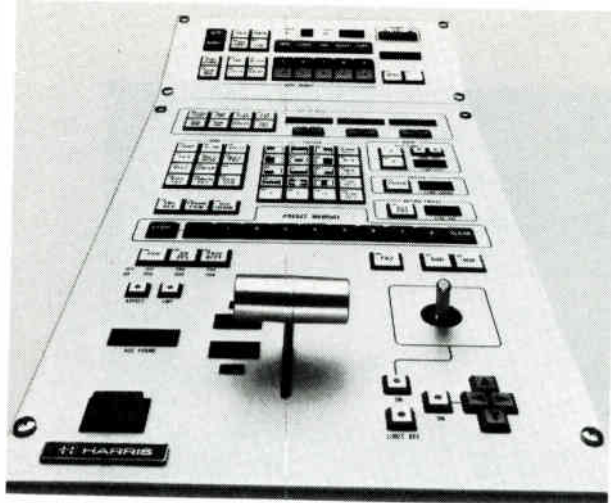
DROP FRAME/NO DROP FRAME displays the type of Time Code being received. FRAME number thumbwheel is an eleven position switch to select the unit frame number for de-multiplexed User-Bit display or to display ALL frames of User-Bits. DISPLAY/FREEZE is an alternate switch to freeze the display. TIME/USER switch allow the selection of either Time or User-Bits for display. DISPLAY of Time or User Bit information of 8 Digit Hexadecimal characters. FRAMES/BLANK switch allows blanking of the two frames digits. FIELD 1 - FIELD 2 split indicator shows which field of the V.I.T.C. code is being received. V.I.T.C./CUE split indicator shows the source of data being transmitted on the Code Output. POWER button is an alternate toggle switch to turn the instrument ON and OFF.

HARRIS CORPORATION

VIDEO SYSTEMS DIVISION

P.O. Box 4290
Quincy, IL 62305-4290
(217) 222-8200

EFFECTS SYSTEM



HDE 100/150/200 DIGITAL VIDEO EFFECTS SYSTEM

Harris introduces the HDE 200. This easy-to-use production tool features a 150 event bubble memory and easily upgradeable multi-channel capability. It is also available in two expandable versions, the HDE 100 and HDE 150. So now your effects capability can expand with your needs, and you can stay within your budget.

HDE 100 Features

- Variable Squeeze and Compression
- Slide/Push
- Split and Compression Split
- H & V Invert
- Freeze/Stop Action
- Programmable Multi-Pix Freeze
- Posterization
- Mirror/Reflect
- Montage
- Separate Border/Background
- Variable Aspect Ratio
- Fader Limiter
- Preset Effect Registers

HDE 150

All the effects of the HDE 100, plus:

- Variable Expansion/Zoom
- Programmable Trajectory
- Multi Move
- Mosaic (Tile)
- Flip/Tumble
- Wipe Follow
- Chroma Key Tracking
- Auto Operation of up to 150 Programmed Events
- On-Board Event Memory with Battery Back-up
- Removable Event Bubble Memory
- Editor Interface

HDE 200

All the effects of the HDE 150, plus:

- Automatic Input Switching
- Strobe Caption
- Decay
- Prewired for Dual Channel Option

Specifications

GENERAL

Signal processing system	PCM binary-coded signal processing
No. of bits per word	8 bits
Sampling frequency	14.3 MHz
Input signals	NTSC composite sync or monochrome signal: 1 V p-p, 75 ohms
Input key signal	0.7 V p-p or TTL
Output signals	NTSC composite sync, 1 V p-p, 75 ohms, 4 outputs
Output key signal	0.7 V p-p, 75 ohms, 3 outputs
External Reference	Black Burst: 0.3 V p-p Composite Video: 0.3 V p-p, high impedance SYNC: 4 V p-p SC: 2 V p-p

SIGNAL PERFORMANCE

Video input return loss	≥30 dB at 3.58 MHz
Reference input return loss	≥30 dB at 3.58 MHz
Video output return loss	>28 dB at 3.58 MHz
Frequency response	1 kHz to 5.0 MHz: ±0.2 dB >7.5 MHz: ≤-40 dB
(A/D, D/A only)	
K factor	≤1%
Diff gain	2%
Diff phase	2°
Signal-to-noise ratio	50 dB/rms (quantizing noise included)
Periodic noise	≤30 mV p-p
Hum	≤-50 dB
Adjustable ranges	
Video level	Adjustable to 0.7 V p-p with input of 0.56 to 0.84 V p-p
Chroma level	±10%
Set-up	0 to 17.5 IRE
Burst phase	360°
HUE	±20°
SYNC level	0.3 V ±0.1 V
Burst level	0.3 V ±0.1 V

MECHANICAL & ENVIRONMENTAL

Dimensions	Video Processor: 11.7" (30 cm) H x 19" (48 cm) W x 17.6" (45 cm) D System Controller: 5.9" (15 cm) H x 19" (48 cm) W x 17.6" (45 cm) D Control Panel: 17.2" (44 cm) H x 7.8" (20 cm) W x 5.9" (15 cm) D
EMI: Conducted & Radiated	Meets FCC Class A specifications
Operating temperature	0°C to 40°C
Spec temperature	10°C to 30°C
Power requirements	110 V ±10%, 220 V ±10%, 50/60 Hz

HDE 100	.....	\$47,000.00
HDE 150	.....	55,250.00
HDE 200 Single Channel	.....	79,000.00
HDE 200 Dual Channel	.....	135,000.00

IMAGE VIDEO, LTD.

705 Progress Ave., Unit 46
 Scarborough, Ont., Canada M1H 2X1
 (416) 438-3940 Telex 065-25392

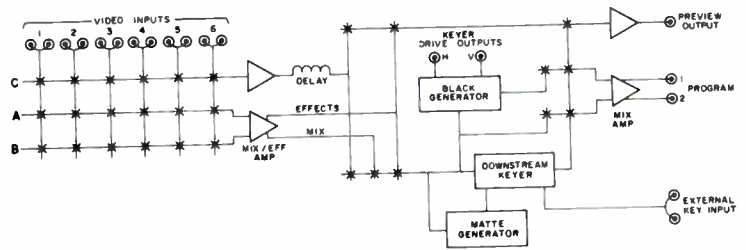
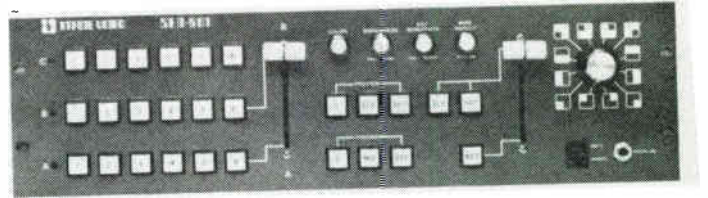
COLOR SPECIAL EFFECTS GENERATOR

SEG-801-Studio Color Special Effects Generator

With full NTSC color specifications, the Image Video SEG-801 Studio Color Special Effects Generator is designed to meet the needs of VTR post production. It will function as a standard 6 input video switcher with basic mix and effects transition. With the downstream key function, basic matte keys and fade to blacks can be performed with non-synchronous sources (non time based VTR's). It's easy to follow front panel design is engineered to enable the operator to concentrate on the creative rather than the technical aspect of production.

FEATURES

- 7 video inputs (including Ext. Key), loop thru
- Total solid state vertical interval switching
- Momentary contact, illuminated pushbuttons used throughout
- Full NTSC color specifications
- Total of 5 busses (including PV & PGM out busses)
- Versatile configuration with M/E, A/B and C Aux. allow cut buss operation and total preview of all inputs plus EFF and KEY
- Mix Functions
 - Fade In/Out
 - Lap dissolve
 - Superimpose
- Effects Functions
 - 12 regular wipes with adjustable aspect ratio
 - external matte key
 - Normal and Inverted key
- Built in color/mono matte generator locked to input video. Requires no external drives or subcarrier
- Built in black generator with downstream fade to black capability. Locked to program input, requires no external drives
- Downstream keyer for normal or invert keys and provision for dissolving in or cutting in key
- External H&V drive outputs locked to program video for external monochrome key camera allow full color matte key inserts on program video even with non capstan servo VTR program source and no external sync gen. or gen. lock required.
- Full electronic tally with dry contact closures
- Fully solid state includes 180 transistors, 77 diodes, 40 integrated circuits and 2 bridge rectifiers
- Self contained unit with standard 19 inch rack mount capability



TECHNICAL SPECIFICATIONS

VIDEO INPUTS

Input signal level	1V p-p nominal, composite
Input impedance	75 ohm loop thru, BNC connectors
Number of inputs	6 plus ext. key video in

SYNC AND DRIVE INPUTS

None required

VIDEO OUTPUT

Signal level	1V p-p nominal, composite
Impedance	75 ohm, BNC connectors
Number of outputs	2 program, 1 preview

DRIVE OUTPUTS

Signals provided	H and V drive for key camera
Impedance	75 ohm source terminated
Signal level	4V p-p
Connectors	BNC

CHARACTERISTICS

Frequency response	10 MHz \pm 1 db
Gain	Unity
Differential gain	Less than 1%, 10-90% APL
Differential phase	Less than 1°, 10-90% APL
Crosstalk	Better than 52 db at 3.58 MHz
Line and field tilt	Less than 1%
Signal to noise ratio	Better than 60 db RMS below 1V p-p
Path length accuracy	\pm 1° at 3.58 MHz

GENERAL

Tally system	6 camera—dry contact closures
Intercom	Front Panel Jack
Power requirements	117V AC 60 Hz Nom. 35VA
Weight	13 pounds
Dimensions	19" x 5.2" x 13.8" behind panel
Mounting	Rack or desktop
Operating temperature	0° to 50°C
Operating humidity	0 to 95%

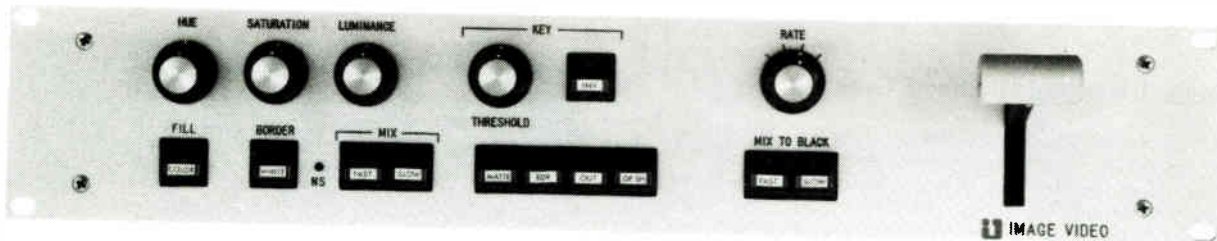
Prices and Specifications Subject to Change Without Notice.

VP-71

IMAGE VIDEO, LTD.

705 Progress Ave., Unit 46
 Scarborough, Ont., Canada M1H 2X1
 (416) 438-3940 Telex 065-25392

BORDER GENERATOR



8105 Border Generator

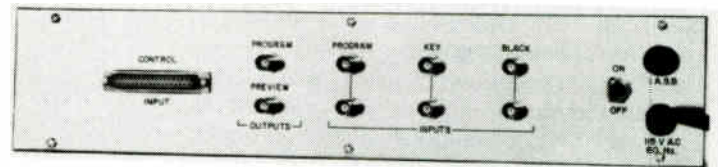
The Image Video Ltd. Border Generator provides bordering facilities controlled from a remote control panel. One special feature is the elimination of bothersome dither associated with camera originated graphics.

Features

- Built-in color fill generator locks in the incoming video
- Borders graphics or character generators
- Eliminates dither when bordering camera originated graphics
- Built-in linear keyer provides cut or auto-mix of key into program video
- Remote control panel with facilities for border, outline, color fill key, drop shadow, invert key, and variable key threshold control
- Master fade to black
- Advanced technology incorporating CCD delay lines

SPECIFICATIONS

Input	
Inputs	Program, Key, and Reference video (usually tied externally to Program input).
Input Signal Level	1 V p-p \pm 1 dB
Input Impedance	Bridging 75 ohms
Outputs	
Program Outputs	2
Program Monitor	1
Preview Outputs	1
Output Impedance	75 ohms
Differential Gain	0.5%, 10 to 90% APL
Differential Phase	0.5°, 10 to 90% APL
Frequency Response	\pm 0.1 dB to 5 MHz
	+ 0.2, -0.5 dB to 8 MHz
Output Signal Level	1V p-p
Power	120 VAC \pm 10%
Dimensions	
Electronics Rack	3-1/2"H, 19"W, 15"D
Remote Control Panel	3-1/2"H, 19"W, 4-1/2"D
Fade to Black Controls	Manual fader and 4-rate auto fade





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Today, a new group with vision and dedication is working to expand the quality and creative limits of video. This new group, known as Intergroup Video Systems, recognizes that their ultimate success will depend upon satisfying the needs of video users. Therefore, they established three important goals for all Intergroup products: each must be innovative, quality-crafted and user-friendly.

Introducing Intergroup's New 5-Year Limited Warranty And 30-Day Return Policy

Intergroup Video Systems also recognizes that their products must be dependable. That's

why each Intergroup product is backed by a 5-year limited warranty. And to go one step further, Intergroup is offering a 30-day return policy. The video user can purchase an Intergroup product with complete confidence.

Innovation And Craftsmanship

Intergroup Video Systems manufactures a complete line of video production and switching equipment including: production switchers, master control switchers, routing switchers and audio and video terminal equipment.

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INTERGROUP VIDEO SYSTEMS, INC.
P.O. BOX 1495 / GAINESVILLE, FL 32602 U.S.A.
SALES: (800) 874-7590 / IN FLORIDA (904) 373-6783
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VIDEO PRODUCTION SWITCHER



MODEL 901

FEATURES

- 3 Input Buses (A, B, and Direct)
- 6 Composite Video Inputs including, Colorizer/Black
- Mix, Wipe, Mix-Key, Wipe-Key
- Hard or Soft Wipes
- Normal/Reverse Wipes
- 12 Patterns
- Positioner
- Operates on AC or DC
- Master Fade-to-Black with Blanking Processor
- Mix or Cut from Direct to M/E
- Internal or External Key with Matt Fill or "A" Bus
- Prewired for Downstream Key Edger with Colorizer
- Prewired for RGB or Encoded Chroma Keyer
- Complete Tally
- No External Wiring between Circuit Boards

Description

The Model 901 Video Production Switcher is capable of a wide range of video effects. From soft or hard edged wipes to chroma keys with fade-to-black this unit will give you all the power you need. The

AC/DC operation makes this the ideal choice for the small production van or an EFP Unit that operates out of cases. Pulse lock, genlock, and internal sync generators are available to insure the correct mode for your system.

LEDs are provided as a convenience, indicating which bus is "on air". A low voltage indicator warning when the +12V supply is low when operating from battery power.

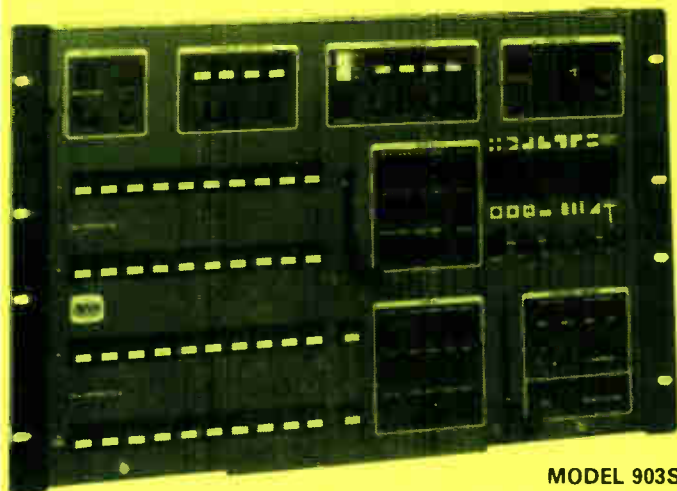
- 901 ENC Video Production Switcher
with Encoded Chroma Keyer \$4,300.00
- 901 RGB Video Production Switcher
with RGB Chroma Keyer 4,300.00

901 Options

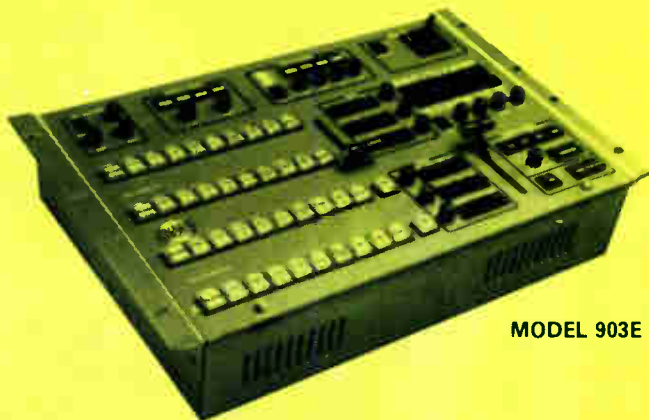
- 666-C Downstream Keyer with
Color (Frame and PS req.) 2,275.00
- 934 Additional Extender Card 40.00
- Additional Manual 65.00
- Spare Parts Kit 400.00

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VIDEO PRODUCTION SWITCHER



MODEL 903S



MODEL 903E

MODEL 903

FEATURES

- Computer Controlled Switcher
- 10 Inputs with Full Tally
- Momentary contact Pushbuttons
- Black Burst Generator/Colorizer
- Two Mix/Effects Systems with Shared Pattern Generator (Additional Pattern Generator available)
- Smart Panel enabling write or read capabilities
- Functions in each M/E: Mix, Wipe, Key, Mix-Key, Wipe-Key and Mix-Wipe-Key
- The Key System on each M/E features Matte Key, Key Invert and a three Input Key Selector that chooses between Self Key, External Key and Chroma Key Inputs
- Four Output Buses plus Separate Preview and Program Switching Buses allow easy set up, Preview and "Take" or dissolve between M/E1, M/E2, or the "B" Direct Bus
- Editor Interface Firmware (907-3)

The Model 903 Video Production Switcher is a fully computer controlled switcher. The microprocessor in the control panel makes it a "smart" terminal in relation to the microprocessor in the electronics.

A unique combination of Program and Preview Phantom Bus Switching allows for cuts or mixes from one M/E to the other. A blanking processor with Fade-to-Black is also standard.

The pattern generator has 14 standard wipe patterns. Variable softness or border width of the wipe edges is adjustable on each M/E with edge control while border color is also variable with the colorizer

control. Unique effects can be generated with the sine wave modulator. Modulation can be used on both M/E1 or M/E2 and varied with the frequency and gain controls. Both M/E's have electronic spot lite and M/E1 offers preset wipes which can be positioned for dramatic special effects. M/E1 can also be re-entered into M/E2, enabling mix or wipe behind keys colorized mattes wiping over chroma keys and many other advanced production features. An optional PROM allows External RS232 connection of an editor or computer.

903-S	Video Production Switcher with LED Buttons	\$ 9,900.00
903-E	Video Production Switcher with Illuminated Pushbuttons	11,900.00
903 OPTIONS:		
617	Downstream Key Edger with Color and 4 Input Selector	1,750.00
625	RGB Chroma Keyer	1,010.00
625-4	RGB Chroma Keyer with 4 Inputs	1,680.00
1233	Encoded Chroma Keyer	2,240.00
1233-4	Encoded Chroma Keyer	2,635.00
9026	Transition Control	2,700.00
908-4	Audio Follow Video	3,500.00
908-4S	Stereo Audio Follow Video	5,100.00
	Additional Manual	95.00
	Spare Parts Kit	650.00
	Additional Cable	5.00/ft.



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VIDEO PRODUCTION SWITCHER



904-20E

MODEL 904 VIDEO PRODUCTION SWITCHER

Standard Features

- 10 inputs including Blackburst/Colorizer
- 6 busses
- 2 independent Mix/Effects units
- Program/Preset mixer
- DSK with key edging and 4 input selector
- Master fade to black
- Pulse processor
- Full camera tally system
- Microprocessor controlled
- Single 25' cable to remote control panel
- Technical manual
- Two year warranty
- Editor Interface firmware (907-4)

Each mix/effects system includes the following standard features:

- Mix, wipe, key, mix key and wipe key modes
- 16 pattern generator with 3 rotary patterns and star
- Pattern normal/reverse
- Variable soft or border and hard pattern transitions
- Pattern positioner
- Pattern preset with separate size and aspect controls
- Pattern modulation with frequency and amplitude controls
- Pattern spotlight
- Self, chroma key and external key inputs
- Matte key
- Key invert

The 904 provides a versatile switching package for complicated studio production, remotes and post production.

Computer editing...digital effects...automation...new technologies placing new demands on production switchers.

The 904 incorporates microprocessor control, effectively interfacing the 904 with the future. Serial editor interface, event storage and total switcher automation are field installable plug-in options.

The 904 mix/effects systems are unequalled in capabilities and ease of operation. The last technical advances have been incorporated into the new pattern generators, providing crisp hard wipes and variable soft or bordered wipe transitions. Included in the 16 patterns are a star and 3 rotary wipes. Pattern preset allows control of both the preset limit and pattern aspect ratio and can be used to either mix or wipe to a preset pattern or masked key.

904 10S	Video Production Switcher with LED buttons	.. \$15,900.00
904 10E	Video Production Switcher with Illuminated Pushbuttons	..... 18,500.00
904 20E	Video Production Switcher with Illuminated Pushbuttons and 20 Inputs	..... 24,500.00

904 OPTIONS:

625	RGB Chroma Keyer	..... 1,010.00
625-4	RGB Chroma Keyer with 4 Input Selector	..... 1,680.00
1233	Encoded Chroma Keyer	..... 2,240.00
1233-4	Encoded Chroma Keyer with 4 Input Selector	..... 2,635.00
9026	Transition Control	..... 2,700.00
908-4	Audio Follow Video	..... 3,500.00
908-4S	Stereo Audio Follow Video 5,100.00
	Additional Manual 95.00
	Spare Parts Kit 650.00
	Additional Cable 5.00/ft.



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900 SERIES SPECIFICATIONS

MODEL 901	MODEL 903	MODEL 904
<p>INPUTS: Video Input Level: 1 v p-p composite Pulse: 4 v p-p ± 6 dB Subcarrier: 2 v p-p ± 6 dB Impedence: Video - 75 Ω terminated Pulse - looping Key - 75 Ω terminated</p> <p>OUTPUTS: Return Loss: > 36 dB @ 5 mHz Types: 2 Program 2 Black burst 1 Preview Level: 1 v p-p nominal</p> <p>MIX/EFFECTS CHARACTERISTICS: Black Balance Stability: ± 50 mv Switching Transients: < 5 IRE Mix Tracking: $\pm 2\%$ Key Response: Linear</p> <p>OVERALL SYSTEMS: Differential Gain: < 1.5% Differential Phase: < 1.5° K Factor (2T Pulse): 1% Freq. Response (ref 1mHz) to 6 mHz + 2 dB Chroma/Luminance: < 10 ns Crosstalk: < - 50 dB Path Delay Accuracy: 1° Signal/Noise Ratio: > 60 dB Tilt (Line or Field): < 1%</p>	<p>INPUTS: Video Input Level: 1 v p-p composite Pulse: 4 v p-p ± 6 dB Subcarrier: 2 v p-p ± 6 dB Impedence: Video - 75 Ω terminated Pulse - looping Key - 75 Ω terminated</p> <p>OUTPUTS: Return Loss: > 36 dB @ 5 mHz Types: 2 Program 2 Preview 1 Black burst 1 M/E1 A, 1 M/E1 B, 1 M/E2 A Level: 1 v p-p composite</p> <p>MIX/EFFECTS CHARACTERISTICS: Black Balance Stability: ± 50 mv Switching Transients: < 5 IRE Mix Tracking: $\pm 1\%$ Key Response: Linear</p> <p>OVERALL SYSTEMS: Differential Gain: < 2% Differential Phase: < 2° K Factor (2T Pulse): 1% Freq. Response (ref 1mHz) to 6 mHz + 25 dB Crosstalk: < 53 dB @ 3.58 mHz (4.43 PAL) Path Delay Accuracy: 1.5° Signal/Noise Ratio: 60 dB below 1 v p-p Tilt Line or Field: < 1%</p>	<p>INPUTS: Video Input Level: 1 v p-p composite Pulse: 4 v p-p ± 6 dB Subcarrier: 2 v p-p ± 6 dB Impedence: Video - 75 Ω terminated Pulse - looping Key - 75 Ω terminated</p> <p>OUTPUTS: DC on PGM: ± 50 mv Return Loss: > 36 dB @ 5 mHz Types: 2 Program 2 Preview 1 Black burst Level: 1 v p-p composite</p> <p>MIX/EFFECTS CHARACTERISTICS: Black Balance Stability: ± 50 mv Switching Transients: < 5 IRE Mix Tracking: $\pm 1\%$ Key Response: Linear</p> <p>OVERALL SYSTEMS: Differential Gain: < 2% Differential Phase: < 2° K Factor (2T Pulse): 1% Freq. Response (ref 1mHz): to 6 mHz ± 25 dB Chroma/Luminance: < 10 ns Crosstalk: < - 53 dB @ 3.58 mHz (4.43 PAL) Path Delay Accuracy: 1.5° Signal/Noise Ratio: 60 dB below 1 v p-p Tilt (Line or Field): < 1%</p>

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PRODUCTION SWITCHER ACCESSORIES



MODEL 640

MODEL 640 DOWNSTREAM KEY EDGER

FEATURES

- Built-in colorizer
- Outline, drop-shadow, border and normal keys (external cut with video fill)
- 4 input selector
- Remote control
- 3-1/2" self contained unit

MODELS 666, 666-C, 666-4C DOWNSTREAM KEY EDGER

FEATURES

- Outline shadow, border key
- Remote control



MODEL 2031

MODEL 2031 MATRIX WIPE GENERATOR

FEATURES

- Digitally derived patterns
- Switchable 32 x 32 or 64 x 64 matrix
- Variable speed auto or manual transition

- Sixteen (16) basic patterns plus pattern multiplier with 90° rotate
- Uses external key input on any switcher
- Remote control
- Self-contained rack electronics include power supply in 3-1/2" unit

MODELS 660, 660-4 RGB CHROMA KEYS

FEATURES

- Saturation selective
- Soft keying

- Full remote control
- Full 360° hue selection
- 660 uses one (1) module space in 5010 rack frame; 660-4 uses four (4) module spaces in 5010 rack frame

MODELS 1240, 1240-4 ENCODED CHROMA KEYS

FEATURES

- Wide range of encoded video sources
- Minimum chroma crawl
- Uses one (1) module space in 5010 rack frame (two (2) with input selector)

MODEL 924 BLANKING PROCESSOR

FEATURES

- Self-contained unit w/fade to black
- Inserts new blanking intervals into program output

MODEL 2065 POINTER GENERATOR

FEATURES

- Digitally synthesized
- Eight (8) direction arrow
- Uses one (1) module space in 5010 rack frame

Legend: SC-Self-Contained; # - Frame Slots
NOTE: Certain options require the use of a Model 5010 rack frame and 5050 power supply. This frame will accommodate up to seven (7) modules of options or audio/video terminal processing equipment.

MODEL	DESCRIPTION	FRAME SLOTS	PRICE
DOWNSTREAM KEY EDGERS:			
640	Downstream Key Edger with normal key mode; 4 Input Selector and Color	SC	\$2650.00
666	Downstream Key Edger with Outline, Shadow and Border	2	1680.00
666-C	Downstream Key Edger with Color; Outline Shadow and Border	3	2275.00
666-4C	Downstream Key Edger with Color; 4 Input Select; Outline Shadow and Border	4	2465.00
CHROMA KEYS:			
660	RGB Chroma Keyer	1	1010.00
660-4	RGB Chroma Keyer with 4 Input Selector	4	1680.00
1240	Encoded Chroma Keyer	1	2470.00
1240-4	Encoded Chroma Keyer with 4 Input Selector	2	2750.00
SPECIAL FUNCTION OPTIONS:			
5010	Rack Frame		
5050	Power Supply		200.00
924	Blanking Processor with Fade-To-Black		200.00
2031	Matrix Wipe Generator	SC	1370.00
2065	Digital Pointer Generator	SC	2550.00
		SC	1250.00

PRODUCTION SWITCHER ACCESSORIES



MODEL 9026

MODEL 9026 AUTOTRANSITION/ EVENT STORAGE UNIT

Features

- Autotransitions on M/E's Mix, FTB and DSK
- General Purpose Interface (GPI)
- 99 Event Storage/Recall
- Chaining of Events for Longer Sequences
- Editor Interface Built-in RS-232 or RS-422
- Stores Entire Switcher Set-up
- Operated with 903 or 904 Switchers

The 9026 offers both autotransitions for the 903 or 904 Production Switchers and Event Storage and Recall of 99 different panel "snap-shots". The autotransitions may be triggered through the GPI with either a momentary closure or TTL active low to ground. Multiple events may be sequenced to perform complex series of events. A Serial Editor interface allows either RS-232 or RS-422 editor control in concurrent operation.

Model 9026 \$2700.00



MODEL 908-4

MODEL 908 AUDIO FOLLOW VIDEO

Features

- 10 Audio Follow Inputs
- 5 Audio Breakaway Inputs
- Auto or Manual Control
- Follows M/E1, M/E2, or Mixer
- VU Meter for Program Out
- Level Adjust for Program Out
- Linear Fader for Manual Control
- Stereo Version Available

The Audio Follow Video package gives you the ability to mix audio sources concurrent with Fader movement on either the 904 or 903 Production Switchers. In addition to audio follow the 908 has 5 separate audio inputs for breakaway. Stereo operation is also available.

Model 908-4 \$3500.00

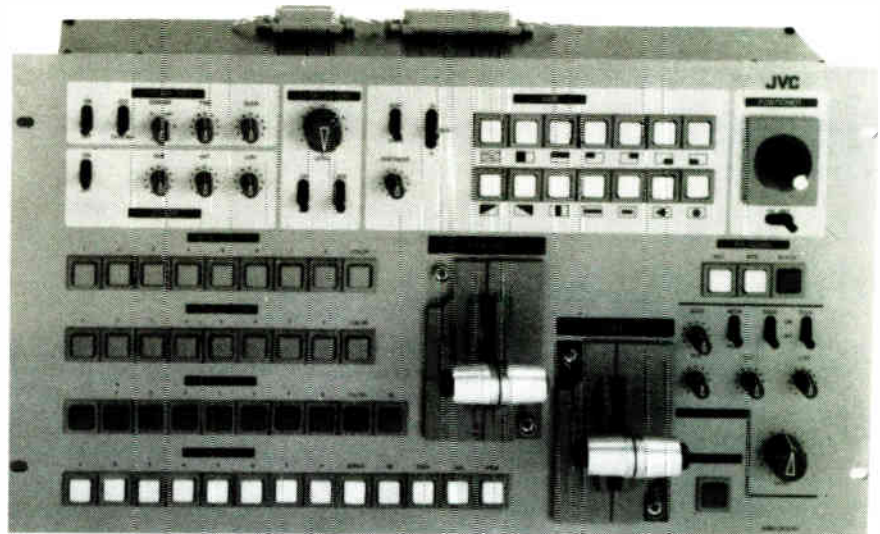
Model 908-4S Stereo Version 5100.00

SPECIAL EFFECTS GENERATOR KM-2000U

JVC®

FEATURES

- Eight Inputs (VBS), Three Buses
- Two Fader Levers
- Non-Synchronous Input
- Built-In RGB Chroma Keyer
- 13 Wipe Patterns with Soft Edge
- Built-In Color Background Generator
- Adjustable Background Color
- Color Downstream Keyer
- B/W Superimpose Circuit
- External Key Input
- Built-In S.S.G. with Genlock
- Intercom and Tally Circuits Provided
- Auto Fade-to-Black
- Auto Take



KM-2000U

The JVC KM-2000U Color Special Effects Generator is designed to meet the needs of users of professional and industrial video systems. Its popularity, and wide acceptance in both broadcast and non-broadcast environments is testimonial to its excellent design and performance.

Two-Piece Design. The KM-2000U actually consists of two components: a control unit and an electronics unit. The control unit is compact (only 3½" deep and 6 rack units high) and is connected to the main electronics unit by two ribbon cables. The electronic unit houses the primary electronics and all connections to peripheral equipment. The 16' ribbon cables provide a good deal of flexibility for placement of the components in a system.

Eight Inputs. There are eight synchronous video inputs, each with loop-thru BNC connectors. In addition, a non-synchronous input is provided, which can be routed to the program line via a pushbutton on the control panel.

Downstream Keyer. The KM-2000U's downstream keyer (DSK) has a built-in color background generator (adjustable). The polarity of this circuit can be switched so that a reversal of the key effect may be obtained. The circuit also allows the user to manually fade the effect in and out — independently of the fader controls.

RGB Chroma Keyer. Utilizing the RGB signals obtained from most 3-tube cameras, this feature allows the user to selectively replace any color in the picture with a signal from another camera. For example, a person standing in front of a blue background can be made to look as though he was standing in another location, with the KM-2000U replacing the blue color with another scene. The chroma keyer can also be switched to become an external keyer, allowing additional key effects.

Three Busses, Dual Faders. The KM-2000U's three bus system allows an effect to be created and previewed before actually putting it "on-line". The effect can then be inserted into the program output with a dissolve, using the second fader. The 13 built-in wipe patterns, together with joystick positioning and soft edge control provide most popular effects. This system can even be used to create "spotlight" and other effects, not possible with a single fader.

Other Features. An input is provided for a black & white graphics camera, allowing the signal to be independently faded in and out of the program material. An audio modulation input allows an audio source to be used to create some really unusual effects.

Suggested List Price \$4860.00

SPECIFICATIONS

Video Inputs:

X8, VBS, 1.0V p-p, 75 ohms or high (BNC)

Aux Input:

X1, VBS, 1.0V p-p, (non-synchronous) 75 ohms or high (BNC)

Chroma Key Inputs:

RGB, VB, 0.7V p-p 75 ohms or high (BNC)

External Key Input:

X1, VBS or VB 1.0/0.7V p-p, 75 ohms or high (BNC)

DSK Input:

X1, VBS 1.0V p-p, 75 ohms or high (BNC)

B/W Superimpose Input:

X1 VBS 1.0V p-p, 75 ohms or high (BNC)

EXT. Wipe MOD Input:

0dBm mini-jack (plug provided)

Program Output:

X3, VBS 25 ohms (BNC)

Preview Output:

X1, VBS 75 ohms (BNC)

Frequency Response:

60Hz to 5MHz ±0.2dB

DG/DP:

Less than 1.5%, 1.5° at 10 to 90% APL

Crosstalk:

More than 50dB at 3.58MHz

S/N:

More than 55dB (p-p/rms)

Sync Output:

HD, VD, sync, black burst X2

Power Consumption:

AC 110V 60Hz 50W

Tally:

5V DC or dry contact

Dimensions & Weight:

Electronics Unit:

175(H) x 482(W) x 250(D) mm

Standard EIA rack size (4 unit size)

Weight: 10.5kg

Control Units:

265(H) x 482(W) x 90(D) mm

Standard EIA rack size (6 unit size)

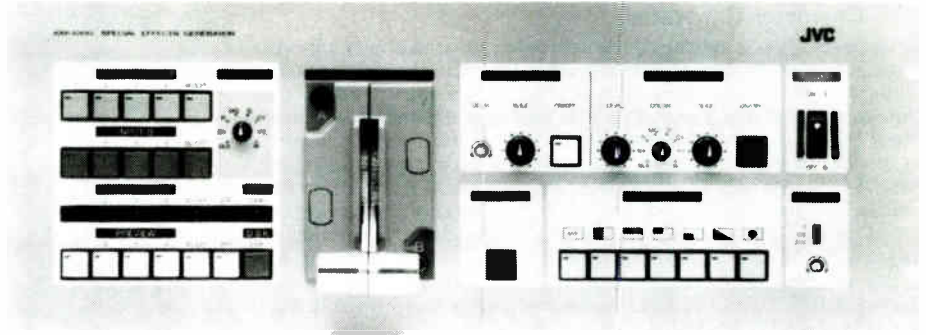
Weight: 5.0kg



SPECIAL EFFECTS GENERATOR KM-1200U

FEATURES

- RGB Chroma-Keyer
- Low-Cost, Economical
- 8-Color Generation
- 6 Wipe Patterns
- Smoother Fades and Dissolves



KM-1200U

KM-1200U SPECIAL EFFECTS GENERATOR

The KM-1200U is designed for mounting in a standard EIA rack and has 4 video inputs, a chroma key input, a background color generator and a DSK input. It incorporates an SSG and genlock operation is possible using composite video or blackburst signals. With its Autotake switch, the signal selected to be previewed can be supplied to the program line with a single operation. Both AC and DC power supplies can be used so that use on locations is possible.

RGB Chroma Keyer/External Keyer. By the use of 3 discrete signals the RGB Chroma Keyer allows for an extremely sharp key. These individual signals allow the decoder circuit to more easily distinguish subtle color differences, thus producing a more accurate and clean key.

An external keyer is also supplied for Black and White key sources, usually a CCTV type camera. This mode is selected by a back panel control, which switches between Background Color and external key. The external key circuit can also be used with a color character generator. The character generator supplies a B/W signal to cut the key hole and a color video signal to 1 of the 4 video inputs, which is in sync with the key hole.

D.S.K. — Down-Stream Keyer. The D.S.K. circuit is identical to the External Key circuit except for its electronic position in

the flow of the video signal path.

The D.S.K. circuit has the capability of colorizing itself. This internal generator has the ability to make the following 8 colors: Black, Blue, Red, Magenta, Green, Cyan, Yellow and White.

Sync Generator and Gen-Lock. The sync generator in the KM-1200U is multi-faceted because of its many modes and outputs. It is capable of generating RS-170 sync or Gen-Lock to any source, including a VCR.

The KM-1200U also supplies the following signals: Two Black Burst outputs. Composite Sync; Horizontal Sync; Vertical Sync; Blanking (Switchable as third Black Burst output).

Auto Take. The purpose of Auto-Take is to allow for preselection and confirmation of cuts, before they go to air.

Background Generator and External Input. The Background and External position is input 5 on the KM-1200U. These two sources are selectable from a back panel switch.

When in the Background position the following 8 colors are available: Black, Blue, Red, Magenta, Green, Cyan, Yellow and White.

Suggested List Price TBA

SPECIFICATIONS (Preliminary)

Video Inputs:

x4, VBS, 1.0V p-p, 75 ohms or High (BNC)

Chroma Key Inputs (EXT. KEY):

RGB, VB, 0.7V p-p, 75 ohms or High

DSK Input:

x1, VBS or BB, 1.0/0.45V p-p, 75 ohms or High

Program Output:

x2, VBS, 1.0V p-p, 75 ohms (BNC)

Preview Output:

x1, VBS, 1.0V p-p, 75 ohms (BNC)

DSK Preview Output:

x1, VBS, 1.0V p-p, 75 ohms (BNC)

Sync Genlock Output:

HD, VD, SYNC, x1 each,

*Blackburst x3 (*VD/BB-3 selectable)

Sync System:

(1) Internal mode

(2) External mode: Genlock by VBS or BB

Subcarrier Phase:

Adjustable from 0° to 360° in steps of 0°/120°/240°, continuously variable between steps

Horizontal Phase:

±0.1 μs (with reference to the input sync signal)

Chroma Keying (EXT.):

Blue only

Wipe Patterns:

x6

Tally Outputs:

x5, 5V (10 mA) DC (6-pin terminal)

Background Colors:

x8, black/blue/red/magenta/green/cyan/yellow/white (1 color selectable)

Power Supply:

AC 110/220/240V or DC 12V

Power Consumption:

AC 15W, DC 12VA

Dimensions:

482(W) x 176(H) x 90mm(D)
(19" x 7" x 3⁵/_{8"})

Weight:

Approx. 6kg (13.2 lbs.)



KNOX
VIDEO PRODUCTS

8547 Grovemont Circle
Gaithersburg, MD 20877
(301) 840-5805

VIDEO PRODUCTS

Math, Greek and Foreign
Language Symbols Included

K128B Character Generator

General Description: Keyboard entry device for purpose of generating high resolution white alphanumeric in video form. Unit self-contained requiring only AC power and sync pulse train. Allows entry of information at any location on page. Audio I/Os included. Character Specifications: Display format: 128 characters — 26 upper case, 26 lower case, 10 numerals, 26 typewriter symbols, 10 math symbols, 8 Greek letters, 11 foreign language letters, 9 special symbols, 1 flash, 1 space. Character resolution: 768 elements (32 horizontal x 24 vertical); Nominal character height: 32 scan lines, large, 16 scan lines, small; Page format: 24 characters/line; 8 lines/page; 4 pages of memory; 3 pos. title window, double size. Input full interlace composite video-sync per EIA RS170, RS330, EIAJ or similar standards. **\$3825.00**

OPTIONS: (To STD K128B)

RC128 3-Speed roll/crawl, three speeds	\$875.00
PP128 Independent Edit Channel	\$1115.00
AC128 Line-By-Line Auto Center	\$650.00
MF246 Multi-font very high resolution character set	\$1415.00
IF008 Adds 4 pages for total of 8	\$545.00
IP016 Adds 12 pages for total of 16	\$1425.00
KAM128 Automated control for KD128	\$1030.00

SYSTEMS

K128B/MOD8 K128B, RC128, AC128, PP128, IP008	\$6160.00
K128B/MOD16 K128B, RC128, AC128, IP016, PP128, with MF246.	\$8355.00
KSD128 K128B, RC128, AC128, PP128, KD128, MF246	\$12,365.00
KSD246 K128B, RC128, AC128, PP128, MF246, KD128, KAM128, Color Box	\$15,830.00

KD-128 Expansion Memory Unit

Fast random access page storage on flexible magnetic Floppy diskettes. Expands the K128 memory capacity to 400 pages, external. Roll or crawl continuously from page to page. Or, with the inclusion of the KAM128 automated control option, PROGRAM the 400 pages to do any combination of Rolls/Crawls, full page displays, loop pages, pause the program, do character animation. A remote control unit is included with each system. **\$5715.00**

K50 Titling Unit

General Description: Keyboard entry device for purpose of generating white alphanumeric information in video form. Unit self-contained requiring only AC power and sync pulse train. Used as a video source or downstream keyer-inserter. Allows entry of information at any location or page. Independent program/preview channels. 4 full pages of memory. Character Specifications: Display format: 64 characters — 26 upper case, 10 numerals, 27 typewriter symbols, 1 space. Character resolution: 7 x 9 dot matrix. Nominal character height 36 scan lines. Page format: 16 characters/line; 8 lines/page. Input: Full interlace composite video-sync per EIA RS170, RS330, EIAJ, or similar standards.

SERIES K50/K60 TITLERS

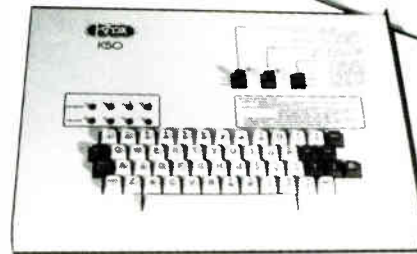
K50 Character Generator with 4 pages of memory, independent edit channel, flash. 16 characters by 8 lines per page	\$1295.00
KS50 All features in K50 plus crystal controlled internal sync	\$1550.00
KX50 All features in KS50 plus title window, crawl, and automatically timed page sequencer	\$1775.00
Upgrade Kit to convert K50 or K60 to KX50 or KX60	\$710.00
K60 Character Generator with all K50 features but increases line length to 32 characters and number of lines to 16	\$1525.00
KS60 All features in K60 plus crystal controlled internal sync	\$1700.00
KX60 All features in KS60 plus title window, crawl and automatically timed pages sequencer	\$2085.00
Colorizer adds genlocking color foreground/background generator to KS50, KX50, KS60 or KX60	\$350.00
Upgrade from K50 or K60 to KS50 or KS60	\$255.00



K128B



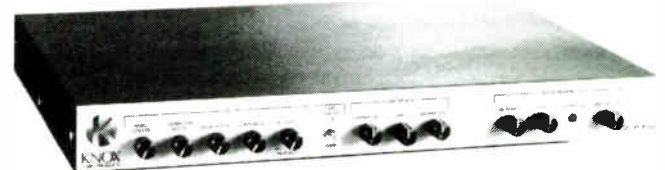
K50/60



K700

K700 Video Corrector

The Model K700 Video Corrector is a unique proc amp, chroma corrector, noise reducer and image enhancer in a 1 3/4 inch high rackmount unit. The unit is designed to provide the user with correction of both luminance and chroma without the use of expensive waveform monitors or oscilloscopes. Up to 6dB of noise reduction and continuously variable image enhancement are also front panel controlled. The automatic wide-window genlock proc amp provides completely regenerated sync, burst and blanking on the output signal. The Knox Video Corrector can be used to correct most errors that are commonly thought to require more expensive time base correctors. The unit has an automatic signal bypass in the event of a power failure. Comb filter decoding is used to maintain accurate frequency response. **\$2495.00**



THE COLOR BOX

The Color Box

The Knox Color Box generates color backgrounds, color characters and full surround edging for the K50, K60, K128B or any other character generator. It features built-in sync for stand-alone applications and a video mixer for use in studio or production environments.

APPLICATIONS:

The Color Box is compatible with Knox Character Generators and key cameras. Two video outputs are provided on the Color Box. The built-in color sync generator may be used in stand-alone installations. Or a variety of external inputs may be used, including normal system video from a production switcher, color bars, time-base corrector, color black, or camera feed. The Color Box is ideal for use between video tape recorders. The stability of the inserted color characters will reflect the quality of the signal. Superior performance can be obtained from 3/4" U-Matic equipment and 1/2" VHS units. As in all tape to tape applications, the use of a TBC is desirable but not required if the recording and equipment are of good quality. **\$1950.00**



8547 Grovemont Circle
Gaithersburg, MD 20877
(301) 840-5805

CHARACTER GENERATOR

K100 CHROMAFONT

The K100 Chromafont — full color character generation. The titler of choice when the budget is limited, the Knox Chromafont represents a totally new approach to character generator design. Advanced, high speed pipeline architecture puts sophisticated display capability in your hands at minimal expense.

Compact and versatile, the K100 is equally at home in the EJ van or in the studio. Its superior display adds elegance to routine titling such as schedule changes or weather alerts. The K100 also offers the small studio or production house a true alternative to costly and inconvenient outside titling services.

Chromafont Option B

- Full range color control (512 color palette) of background and character, organized as 16 selectable combinations. Color palette includes transparency
- Italics: two forward and two backward slants
- Variable line height
- Pinstriping. Selectable line thickness, spacing and color control. Can be inside character as well as over background
- Multi-speed forward and reverse roll and crawl
- Flexible, non-volatile 8000-character memory. Can be organized as:
 - up to 256 lines
 - up to 64 pages
- Portable, detachable keyboard
- NTSC and PAL-B compatibility
- Character-by-character color control
- Individual character background color control
- Character-by-character underlining and pinstriping
- Four Fonts: two upper and lower case, two upper case only, all in two sizes (eight 32-character font blocks)
- Horizontally and vertically adjustable shadow edging
- Fade Control: allows fade to and from black, dissolves from color to color
- Second 512 color palette for fade/cut/dissolve effects
- Serial interface for computer control or extra keyboards
- Superscript and subscript **\$3890.00**

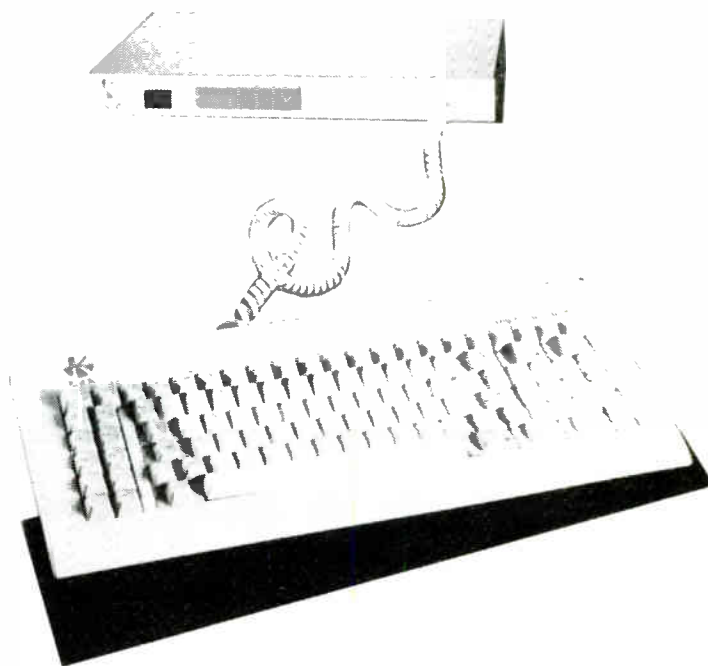
Chromafont Option C (Under Development)

(This option features all of the capabilities of Option B, plus):

- Sixteen 32-character font blocks
- Completely interactive computer interface: allows for the design and loading of custom fonts, creation of logos and symbols
- Real time clock
- Programmable, automated sequences **TBA**



Screen Display Composed on a Chromafont Option B, Including One Extra Font





Model 3300 Time/Date & Fixed Message Generator

The Model 3300 Time/Date and Fixed Message Generator is a self contained, microprocessor controlled character generator designed to key highly legible alphanumeric characters into an external video source. The display consists of twelve text rows of thirty one characters per row. The characters may be displayed in either black or white with the opposite luminance value of horizontal edging. The front consists of 64 upper case and punctuation characters.

All messages and display modes are controlled by means of a 10 key numeric keypad on the front panel of the chassis. Messages are simply called up by entering the appropriate page number into the 10 key pad. Display control and time set modes are obtained by selecting a menu and entering the appropriate mode. The menu display may be set to a visible or invisible mode. This ensures downstream compatibility. The time is referenced to the incoming power and may be strapped for 50 or 60 Hz. Consult the factory if an external 50/60 Hz frequency standard or "time hold" is required.

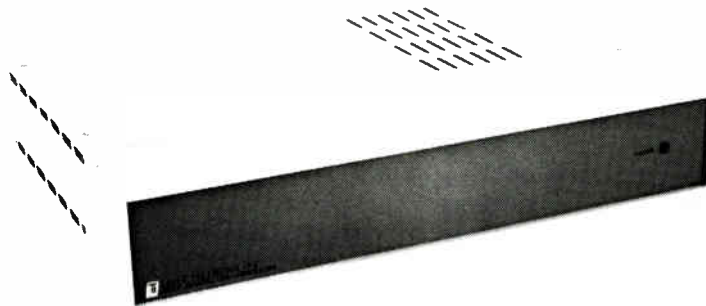
The Model 3300 is supplied from the factory with the following standard messages:

- 24 HOUR TIME AND DATE WITH TENTHS OF SECONDS "PLEASE STAND BY AUDIO DIFFICULTIES"
- 12 HOUR TIME AND DATE WITH TENTHS OF SECONDS "NETWORK DIFFICULTIES"
- 12 HOUR TIME AND DATE WITH SECONDS "PLEASE STAND BY"
- "PLEASE STAND BY VIDEO DIFFICULTIES"

Optional messages may be installed by the factory.

Several other options are available for the Model 3300. Some of the options require custom factory software. Please consult the factory for pricing and availability.

3300 Time/Date and Fixed Message Generator	\$1575.00
Custom Message (Text format and message position for each page must be supplied by the customer — consult factory for details).	
First Text Row	\$50.00
Each Additional Row	1.00



Model 3302 Character Generator

The Model 3302 Character Generator is designed to be used in conjunction with a "user's" external computer. All display control and text entry is accomplished using a single RS-232-C serial I/O port with USASCII codes. This ensures compatibility with most of the computers in the world. All text and controls must be received via the RS-232-C serial I/O port as the Model 3302 does not have a keyboard for text entry. The Model 3302 may be used in any system that requires alphanumeric characters to be keyed into a video source. The character display consists of 12 text rows of 31 characters per row. The characters are formed using a 16 by 32 dot matrix to ensure a very high degree of legibility. All characters have horizontal edging to enhance readability at varying video luminance levels. Additionally, characters may be displayed in either black or white (with an opposite luminance value of edging). The character font consists of 64 ASCII characters — upper case and punctuation.

The Model 3302 contains a single page buffer memory which is used to store incoming text while an old message is being displayed. This makes possible a "hard cut" from one page to the next.

3302 Character Generator — General purpose designed for use with an external "user's" computer. RS-232-C interface (Note. This Character Generator does not have a keyboard)	\$1575.00
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3600A CHASSIS

3610A KEYBOARD

Model 3600A Television Character Generator

Versatility, expandability and economy were of prime consideration in the design of the Model 3600A Television Character Generator. A plug in module approach permits field upgrades and additions to the basic 3600A system. The basic 3600A system includes 16 pages of resident text memory in a 10 row by 25 characters per row format. Page memory can be added in 16 page increments up to a total of 64 pages. Black or white, upper and lower case characters, can be keyed into the program video source under control of a program character on/off switch at the keyboard. A separate cursor output is included for editing text. Character edging modes include full edge, drop shadow, outline and drop shadow outline. Both the character stroke width and the edging stroke width are adjustable. Underline, overline, boxed characters and flash are provided on a word by-word basis. Dynamic display modes include roll, crawl, and page pop. In addition, a unique Format Window Position feature allows the mixture of page information with other pages and/or data sources on the same display.

Character Generators

3600A Character Generator— 10 lines of 25 characters with one preview and one program output. 9 x 14 font with large and small characters, 1000 character memory with 16 pages of roll, crawl, and pop-up. Internal External video selector switch, horizontal edging and auto centering all are provided as standard features. Must be driven by composite video. Requires 3610A or 3615A Keyboard **\$2995.00**

3610A Keyboard for 3600A Character Generator with character on/off, black/white, large/small, and fast roll/slow roll switch, and 16 key control. Includes 15' of interconnect cable **\$575.00**

3615A Keyboard/Memory for 3600A Character Generator with character on/off, black/white, large/small, and fast roll/slow roll switch, and 22-key control. Provides unlimited data storage on built-in heavy duty industrial audio cassette unit. Includes 15' of interconnect cable **\$1,295.00**

3600A Options

3620A Additional color output channel for 3600A. Provides one additional video input/output channel programmed from the first program channel. Requires a 3634B memory board **\$495.00**

3622A Dual floppy disk memory. Provides copying capability of memory up to 2000 pages. May access file for random page and operate in page or file mode. Contains separate keyboard control (Formerly 3618A) **\$2,595.00**

3630A Fixed Title — Provides 25 Character title line. (Total of 16 fixed title lines can be used per generator. Indicate line location and characters when ordering) **\$50.00**

3632A RS 232 Interface to a computer. Includes external switch to utilize 3610A or 3615A keyboard or computer. (Consult factory for control codes) **\$300.00**

3634B Solid State Memory — PC Board for 1000 characters of roll/crawl/10 LN, 2 LN pop-up. (Total of 4 memories can be used per generator) **\$995.00**

3639 Cassette Kit **\$25.00**

3640A Temperature Sensor — includes PC Board interface electronics, sensor and 100 ft. of interconnect cable. Provides fixed title and temperature display **\$455.00**

3641A Time Generator — provides fixed title and time display **\$295.00**

3642A Date Generator (Requires 3641A) provides fixed title and date display **\$350.00**

3643A Up/Down Counter — provides fixed title and up/down counting/time clock display **\$460.00**

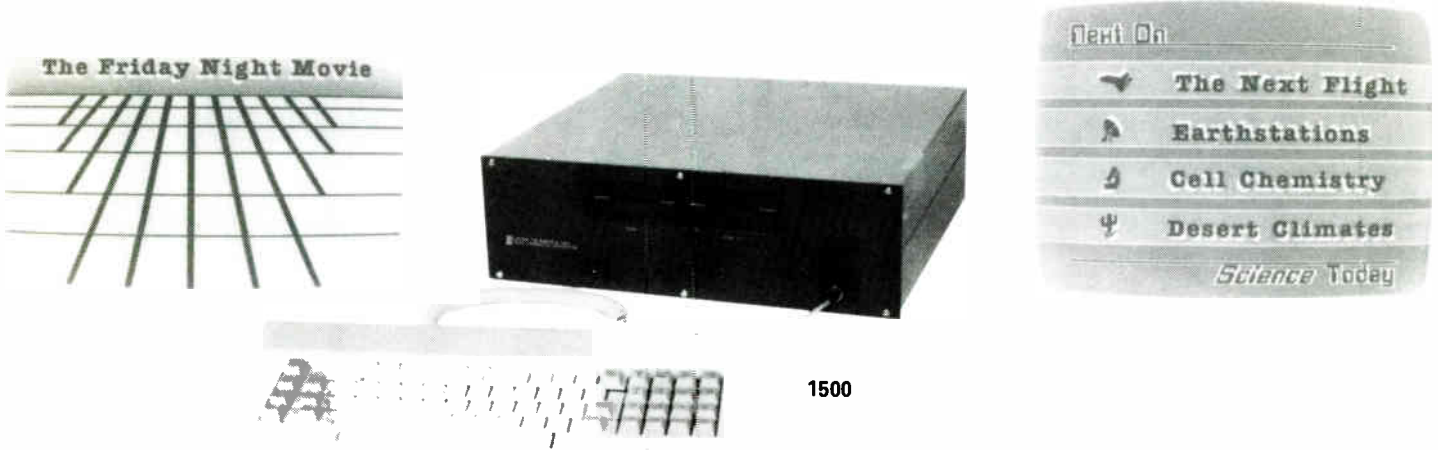
3644A BCD input for 3600A. Consult factory for special engineering requirements **\$695.00**

3650A Color background, NTSC color sync generator, including single pulse drive outputs and adjustable pulse delay for color phasing with external video source. Controlled format display of any combination of red, green, or blue background. Provides H, V, SY, BL, BF, and SC. (Less genlock) **\$1265.00**

3652A Color background, pulse interface. Provides interface with drive pulse from external sync generator. Controlled format display of any combination of red, green, or blue backgrounds. Requires SY, BL, BF and SC **\$977.00**

*Only 2 data-source options can be used per chassis

Service Manual **\$38.00**



1500

MODEL 1500 CHARACTER GENERATOR

GENERAL DESCRIPTION:

The model 1500 is a high quality television broadcast character generator system with some graphics capability. It is capable of displaying multiple font styles and sizes in a single message. Custom logos and symbols can be included in the font styles. Each character style and size is created from an entirely different high-resolution font file. None of the fonts is stretched, squashed, or otherwise distorted to achieve multiple effects, which assures consistent quality and legibility in each display.

There are 65,536 colors resident in the 1500. The colors are controlled on a scan-line basis for both characters and background. This provides the means to have multi-colored characters on a multi-colored background of different colors.

The 1500 is essentially a two channel system. One channel is the Preview/Status Channel and the other is the Program Channel. All message information is entered into the Preview/Status Channel and then transferred to the Program Channel. Such a system allows for editing while on-air.

The 3-1/2" dual disk drive system and the logic system are both in one chassis. The single chassis unit can be used as rack mount or an attractive desk-top unit. As a rack mount system, the single chassis conserves rack space.

The keyboard is a low-profile, 72-key configuration. Many of the functions can be initiated by a single keystroke from the keyboard.

SYSTEM FEATURES:

Resident Memory

- Internal text memory and font memory are size interactive
- Variable page length

Fonts

- 35 ns resolution
- Multiple resident font capability
- 96 characters per font
- Multifont library (70 fonts included)
- Proportional spacing
- Character cell adjustment
- 12-56 scan-line character sizes

Display Editor

- Instant italics (forward or backward with choice of multiple angles)
- Auto centering (line and page)
- Underline
- Insert and delete character
- Insert and delete row
- Seven edge modes: no edge, outline, full border, and 4 quadrants of drop shadow
- 8 edge intensity levels

Color

- 65,536 colors resident
- RGB encoder required for color

Dual 3-1/2" Disk Memory

- Loadable operating system software
- System initialization user defined by auto-sequence
- Page, font, and auto-sequence loadable from disk

VIDEO SPECIFICATIONS

Outputs

- RGB:** 0.7V peak-to-peak, non-composite video
- PGM Out:** 1V peak-to-peak, composite video
- PRV Out:** 1V peak-to-peak, composite video
- Key:** 1V peak-to-peak, composite monochrome video

Inputs

- PGM In:** 1V peak-to-peak nominal, composite video, positive interlace, EIA; monochrome or color

Encoded In:

- 1V peak-to-peak nominal, composite video, EIA; monochrome or color

Dimensions

Size	H	W	D
1500 Logic Unit:	7"	15-5/8"	17"
1500 Keyboard:	1-1/2"	17-3/4"	7-3/4"

Model 1500 Character Generator \$6995.00



MODEL 7200 COMMUNICATOR SYSTEM FEATURES

Fonts

- 35 nsec horizontal resolution • 128 characters per font • 4 resident fonts • Multi font library • Proportional spacing • Inter-character spacing adjustment • Inter-row spacing adjustment • Custom logo capability • Character by character font selection

Display Editor

- Instant italics (12° slope) • Auto centering row and page • Row shift left and right • Row shift up and down • Character by character underline • Character by character flash (Variable duty cycle flash rate) • Insert and delete character • Insert and delete row

R-G-B Output

- 32,768 possible colors • 32 resident background colors • 32 resident character colors • Colors may be named individually • Character by character color selection • Full borderline edging • Outline edging • Drop shadow edging

Auto Sequence

- Real time machine control • Up to 20 frame per second animation • Adjustable run rate and time delays • Editor allows command insertion and deletion

Dynamic Messages

- Roll in 10 Speeds—up or down • Roll to stop, pause, or speed change • Roll to variable position split • Roll through variable size and position window • Crawl in 10 speeds—left or right • Variable crawl position • Resident titles—Random or sequential call-up • Variable size and position titles

Resident Memory

- 120 rows of resident text memory (Allows disk drives to be turned off during use.) • Utility programs such as font developer may be placed in resident memory • Four base pages may be expanded as required for message length • Fast call-up from base page to base page

Status Channel

- Machine control status • Creates user friendly environment • Menu operation • Doubles as low resolution, monochrome, text preview output • Allows system diagnosis

Dual 8" Floppy Disk Drives

- Operating system software loads from diskette • Diskette format and copy routines allow all diskettes to be copied • User defined system initialization from diskette

Keyboards

- Power on self-diagnosis • Single function control keys • Keys grouped by function for ease of operation • Up to four keyboards may be attached

Self-Diagnosis

- Power on self-diagnosis of all memory devices • Additional long-term memory testing and keyboard testing programs included

VIDEO SPECIFICATIONS

Outputs

- R-G-B Program: .7V peak-to-peak non composite video • R-G-B Cursor: Identical to program outputs with cursor added. (Cursor may be turned on/off from the keyboard.) • External Key: 1V peak-to-peak composite monochrome video. (Adjustable delay 0-1.5 micro secs.) • Status Channel: 1V peak-to-peak composite monochrome video

Inputs

- Sync: 4V peak-to-peak looping inputs • Blanking: 4V peak-to-peak looping inputs

KEYBOARD SPECIFICATIONS

- Inputs: Four inputs are supplied. (Input #1 has control priority.) • Cable length: 15 feet standard • Signals: RS-422 bi-directional. (May be used uni-directional.)

ELECTRICAL SPECIFICATIONS

117 VAC 60 Hz	
7200 Display Logic Unit	100 W Max
7210 Keyboard	10 W Max
7220 Dual Disk Drive	330 W Max
7234 Video Keyer	10 W Max

Character Generator

7200 System Character Generator-Includes 7260 Display Logic Unit, 7210 Keyboard, 7220 Dual 8" Disk Memory, (4 Each), 7240 RAM Font Memory, 7230 RGB Color Generator, 21 Standard Fonts, and all other standard Features. (Starter Program also available at reduced price.)

\$18,995.00

OPTIONS

7204 Dual Channel Upgrade for 7200 System-Includes 7238 Interface, 7260 Display logic Unit, (4 Each), 7240 RAM Font Memories, 7230-RGB Color Generator and all other standard 7200 features.

\$11,950.00

7210 Keyboard, Full Editing-Includes 15' Interconnect Cable. Up to four keyboards may be used per system.

\$2,000.00

7212 Control Keyboard-Provides machine control capability, but no text editing.

\$500.00

7222-XX Font Diskette (7 fonts per diskette).

\$210.00

7228-02 Font Development Kit-Includes software, manual and one each Mylar Master Grid Sheet.

\$495.00

7232 Interface RS-232 to RS-422 Interface (3-1/2" x 19" Rack Mount).

\$300.00

7234 Video Keyer-For Downstream Keying of 7200 Encoded Video (1-3/4" x 19" Rack Mount).

\$495.00

7236 Y-Channel Encoder-Show full luminance from RGB signals, status channel, or shows status over luminants. All controlled by external switch closure.

\$845.00

PCE-462 Color Encoder-Lenco (Rack Mount).

\$2,950.00

CSL-710 Sync Generator-Lenco (Rack Mount).

\$1,500.00



1060A Video Pointer Desk Top

The Laird Telemedia Model 1060 Video Pointer is a versatile, easy-to-use production aid designed to enable studio personnel to add the professional touch to both live and video tape production.

Using a selected mode, a joystick positioned arrow can be suited to the video background by a three-position switch. This is accomplished by an internal keying circuit to provide black or white image insert or, in the third position, an additive mix circuit, wherein the image is superimposed upon the video signal.

An 8-position rotary switch controls the orientation of the arrow in 45° incremental steps. Two sizes of arrows are by a "large-small" switch. As an enhancement feature, the arrow may be made to flash. A "Pointer On" Switch controls the presence or absence of the arrow image within the video presentation.

The 150 nanosecond dot-width can accommodate additional shapes including preselected logotypes of considerable sophistication. One of the operator controls allows switching between logos and other symbols and the pointer. The special shapes may be presented in the same manner as the arrow with the exception of rotation. The position of these shapes is controlled by the joystick so it may be positioned anywhere within the video presentation. Special logos or other shapes and symbols can be optionally ordered from the factory to be developed from a 32-by-32 dot matrix.

Three housing configurations are available: a desk-top chassis with all controls on top, a rack mount chassis with all controls on the front face, or a rack mount chassis with a cable connected remote control unit.

Remote controls are offered in rack mount or small desk top chassis.

ELECTRICAL

• Power Requirements: 117 VAC + /-10% 60 Hz or 234 VAC + /-10% 50 or 60Hz • Power Consumption: 70 MA at 117 VAC • Fuse: 3 AG ½ Ampere • Video Input: 1 V P-P nominal, composite positive or random interlace, EIA Monochrome or color • Video Output: 1 Volt P-P nominal when 75 ohm terminated, composite • Internal Power Supplies: +5V DC filtered and regulated; +12V DC filtered and regulated; -12V DC filtered and regulated

MECHANICAL

	Model	1060A	1060B	Rack Elec- tronics	Remotes 1060C	1060D
• Model		1060A	1060B	1060C	1060C	1060D
• Height		4.0"	1.75"	1.75"	1.75"	2.50"
• Width		12.0"	19.00"	19.00"	19.00"	6.50"
• Depth		9.5"	10.50"	10.50"	3.00"	5.00"
• Weight		5 lbs.	4 lbs.	4 lbs.	1.5 lbs.	3.5 lbs.
• Shipping Weight		6 lbs.	5 lbs.	5 lbs.	2.5 lbs.	4.5 lbs.
• Connectors		BNC				
• Environmental		Operating Temperature 0-50°C at 95% Humidity				

Video Pointer

Arrow may be oriented in eight positions and operated in the following modes: on/off, static/flash, large/small, arrow/symbol, keyed white/black/or highlighted (Additive Mix).

- 1060A** Self contained desk top unit **\$1045.00**
- 1060B** Self contained 1 ¾" rack mount **1045.00**
- 1060C** Remote Controlled Unit with rack mounted remote control **1100.00**
- 1060D** Remote Controlled Unit with desk top remote control **1148.00**
- Cable for remote control **47.00 + 2.10/ft.**
- 1064** Custom logos — customer specified by filling in squares of a 32 x 32 grid **First Logo 52.00**
Additional Logos up to 15 31.00



Model 1021 Electronic "Q" Board

The 1021 Q Board adds that professional touch to your video tape productions. By a method similar to that involving a "clap" board used in movie making, important production information may be televised and recorded on the leader of any commercial or program tape. Also, both an aural and visual countdown, recorded just prior to program information, will allow accurate cueing in playback. Emission of a countdown beep tone from the built-in speaker serves to alert the studio crew and talent during taping sessions.

- 1021** Electronic "Q" Board with built-in speaker may be remotely controlled **\$415.00**
- 1040** Video "Q" Board. Visual and audio countdown with audio cue tone. Composite sync and video compatible with local and remote control. Standard 10 second cue with last 2 seconds as "dead-time". Adjustable character size. **\$625.00**

LEITCH VIDEO OF AMERICA, INC.

825K Greenbrier Circle
Chesapeake, VA 23320
(804) 424-7920 Telex II 710-882-4342

CLOCKS

UDC-508/512 UNIVERSAL DIGITAL CLOCK

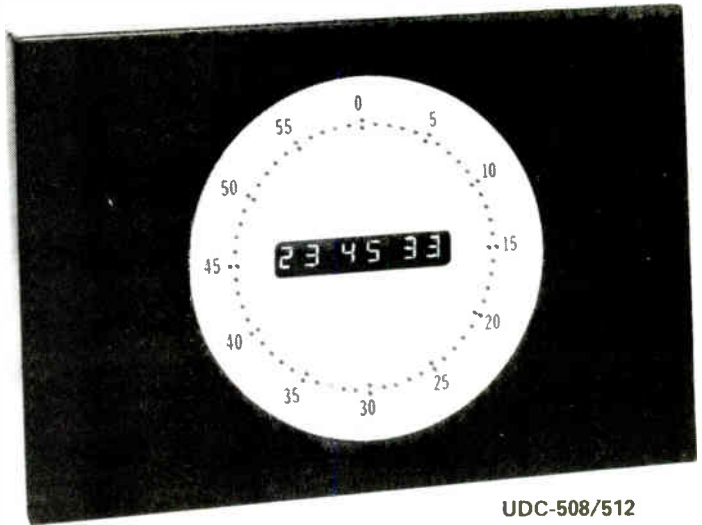
The Universal Digital Clock represents a departure from conventional clock design by combining the advantages of analog and digital time displays. It operates with any of the three most commonly available drive signals and can therefore be easily integrated into new or existing systems. The clock accepts:

- 12VDC impulse drive
- SMPTE serial time code
- 115VAC, 50/60Hz

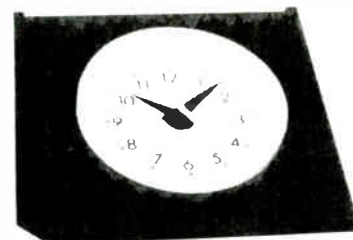
To accommodate various viewing distances, the UDC is available in two sizes. The UDC-508 is an illuminated, wall mounting unit with an 8" diameter clock face, while the UDC-512 has a 12" diameter clock face.

The analog/digital time displays together with the cool white, glare-free illumination of the clock face make the UDC suitable for use in darkened areas, such as TV control rooms. Its noiseless operation makes it ideal for noise sensitive locations, such as announce booths.

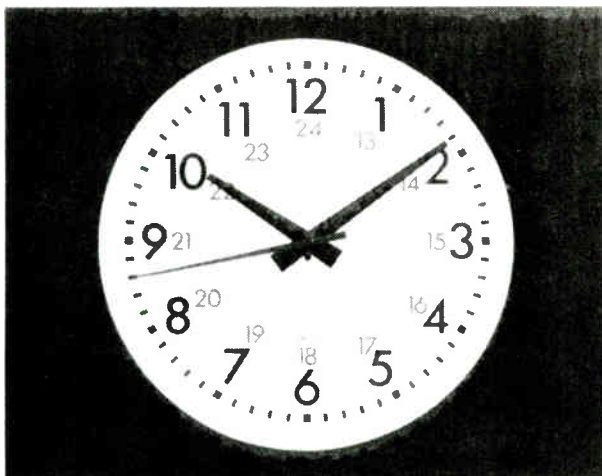
- UDC-508** Universal Digital Clock, 8" wall mounting, includes Instruction Manual \$ **990.00**
- UDC-512** Universal Digital Clock, 12" wall mounting, includes Instruction Manual **1100.00**
Extra Instruction Manual for UDC-508/512 **40.00**



UDC-508/512



CLK SERIES



CLK SERIES ANALOG IMPULSE CLOCKS

The CLK Series Analog Impulse Clocks operate with 12VDC impulse drive or, optionally, with 115VAC, 60Hz. The clocks are available in five different models. The CLK-1600 is a wall mounting clock with an illuminated, 16" diameter clock face. It is generally used in studios, auditoriums etc.

The CLK-1200 and CLK-800 models have 12" and 8" diameter, illuminated clock faces respectively. They are also wall mounting units, but can be adapted to rack mounting. These clocks are primarily used in "monitor walls" in studio and master control rooms. The cool white, glare-free illumination of these clocks has very low infrared emission and does not adversely affect the viewing conditions of color picture monitors.

The model CLK-501 is a non-illuminated, rack mounting clock which is generally used in confined areas, such as small mobile units etc. The model CLK-500 is a non-illuminated, sloping front desk top unit. The virtually noiseless operation makes it suitable for use in announce booths.

IMPULSE CLOCKS

- CLK-1600** Illuminated 16" Impulse Clock, includes Instruction Manual **\$730.00**
- CLK-1200** Illuminated 12" Impulse Clock, includes Instruction Manual **625.00**
- CLK-800** Illuminated 8" Impulse Clock, includes Instruction Manual **520.00**
- CLK-500** Non-illuminated 5" Desk-top Impulse Clock, includes Instruction Manual **475.00**
- CLK-501** Non-illuminated 5" Panel-mount Impulse Clock, includes Instruction Manual **370.00**
- CLK-503** Impulse clock (oil-filled movement) 5" non-illuminated, desk top **695.00**

Options

- CLK-002** Internal Impulse Driver for CLK Series Clocks **\$180.00**
- RM-001** Rack Mount Kit for CLK 800 and CLK 1200 **50.00**
Extra Instructor Manual for CLK Series Clocks **30.00**

Prices and Specifications Subject to Change Without Notice.

VP-89

LEITCH VIDEO OF AMERICA, INC.

825K Greenbrier Circle
Chesapeake, VA 23320
(804) 424-7920 Telex II 710-882-4342

CLOCK SYSTEMS



CSD-510

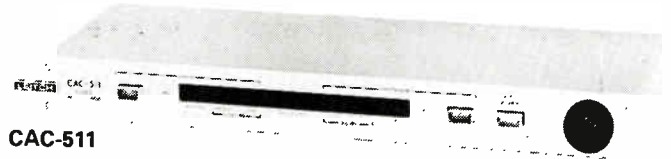
CSD-510 MASTER CLOCK SYSTEM DRIVER

The CSD-510 Master Clock System Driver provides accurate and stable drive signals for:

- 100 impulse clocks (12 VDC)
- 50/60Hz synchronous clocks
- Digital clocks compatible with SMPTE Time Code (EIA/EBU)

The unit operates with its internal, temperature controlled master oscillator, or it can be referenced to an external Cesium or Rubidium standard. With WWV/CHU reception, the CSD-510 provides automatic synchronization to Coordinated Universal Time. Special features include an automatic 1 hour advance/retard function and an internal stand-by battery with a 1/2 hour capacity for 100 impulse clocks. An external battery input is also provided.

CSD-510 Master Clock System Driver, includes Instruction Manual \$4,325.00
Extra Instruction Manual 40.00



CAC-511

CAC-511 CLOCK AUTOCHANGE

The CAC-511 Clock Autochange is used with two CSD-510 Master Clock System Drivers to provide continuity of impulse drives, time code signals and 50/60Hz sine wave outputs when a malfunction of the assigned Master Driver occurs. The Autochange is activated upon the loss of one impulse or a 6dB level reduction of the time code signal. The unit's front panel provides assignment and failure LED indicators, an aural failure alarm and manual assignment switches. In order to switch the impulse clock load from one driver to the other it is necessary that both drivers are correctly phased. The CAC-511 contains the required phase comparator and indicates an "out of sync" condition with a front panel LED. During a primary power outage, the Autochange makes it possible to utilize the available standby battery power in each CSD-510 in a sequential manner.

CAC-511 Automatic Master Clock Driver Changeover, includes Instruction Manual \$1395.00
Extra Instruction Manual 45.00



CDP-514

CDP-514 CLOCK DISTRIBUTION PANEL

The CDP-514 Clock Distribution Panel is designed as a system accessory for the CSD-510 Master Clock System Driver and CLK Series impulse clocks. The distribution panel provides isolated feeds for 32 impulse clocks. Individual feed lines may be shorted, or either side of the lines may be grounded without affecting the other clocks in the system. Shorts cause visual and aural alarms. The visual alarm is a red LED, while the aural alarm is a high pitched tone which can be switched off. Up to three distribution panels can be used in parallel to feed 96 impulse clocks from one CSD-510 Clock Driver.

CDP-514 Clock Distribution Panel for 36 CLK Series Impulse Clocks \$790.00
Extra instruction manual 30.00

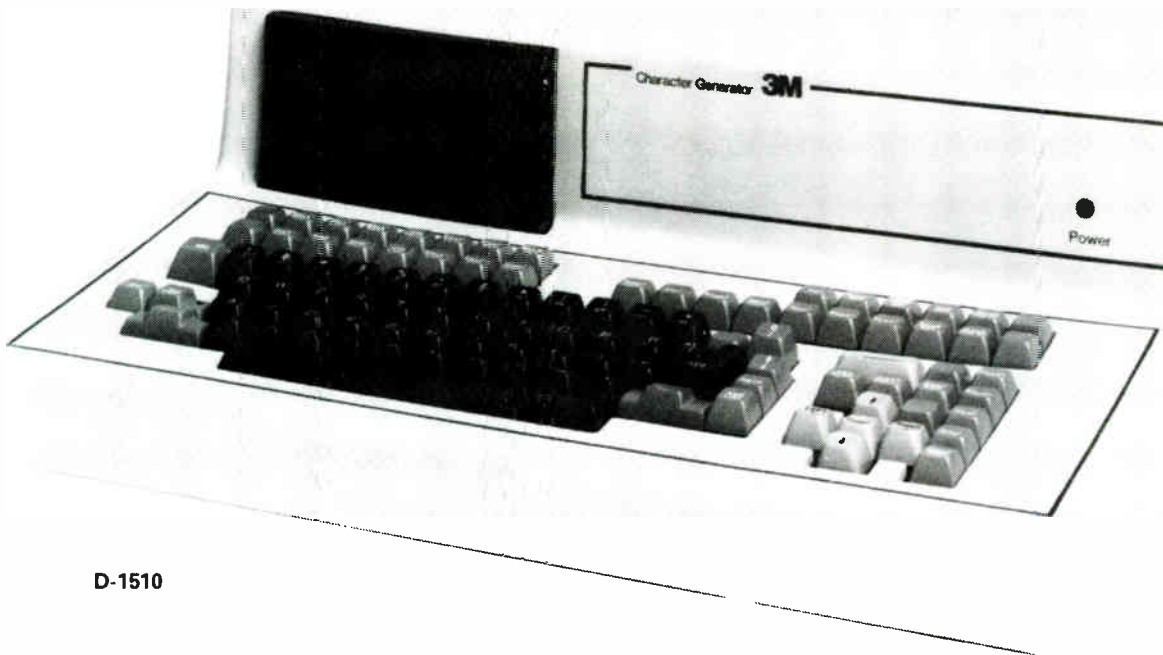


DCD-520/521

DCD-520/521 DIGITAL CLOCK DISPLAY

The DCD-520 Digital Clock Display accepts the standard SMPTE serial time code in the EIA or EBU format. The decoded signal drives a 6-digit 7-segment real time display in the 24 hour system, i.e. 00...23 hours, 00...59 minutes and 00...59 seconds. A front panel Store switch can be used to freeze the time display as an aid in event timing. When the switch is released, the unit returns to real time. The DCD-520 cannot be used for VTR editing functions. The brightness of the readout is adjustable. Also available: Model DCD-521. It provides a computer interface, i.e. a TTL (or CMOS) compatible, parallel BCD time code output. This output appears on a rear panel, 50-pin Amphenol connector.

DCD-520 Digital Clock Display, including Instruction Manual \$ 895.00
DCD-521 Digital Clock Display with Parallel BCD Code output, includes Instruction Manual 1095.00
Extra Instruction Manual for DCD-520/521 35.00



D-1510

D-1510 Television Character Generator

DESCRIPTION

The D-1510 is a multi-page video character generator that features a broadcast character display with color background and character capability. It is designed for operating in professional television systems that require quality, versatility and low cost in titling and captioning.

The D-1510 features a built-in keyer that will lock to virtually any composite video signal including 1/2 inch Beta, VHS, or 3/4 inch recorders. Eight colors: red, green, blue, cyan, magenta, yellow, black and white, can be used on the background and the characters in any combination needed on a row-by-row, word-by-word basis. Even the drop shadows and edges can be colored; three speeds, and pause can be applied to the roll and crawl modes. The D-1510 has fully independent edit channel and program channels, so editing of text can occur without affecting the program output.

There is a 32-character graphics font that allows for construction of basis charts, graphs and symbols.

The Model D-1510 is a complete titling facility. All necessary features are built into the unit eliminating the requirement for add-ons. Keyer, gen-lock sync and color, and 24-hour battery back-up are built in. This allows the unit to operate completely independently as a stand-alone unit without a support system. This "complete" system concept, plus the use of only high-quality materials, makes the D-1510 an inherently reliable device, a most important consideration for production use.

FEATURES

- 70 nanosecond resolution; 2 heights
- Built-in keyer with gen-lock
- Independent edit and program channels
- 8 background colors
- 8 character colors
- 8 edge colors
- 512 color palette
- 36-page random access memory
- 2 character sizes

- Upper and lower case
- Word Processor text editing
- 7 Graphic separators/International font set
- Automatic centering
- Left/right justify
- 9-speed roll and crawl
- 22 characters per row
- Flash
- Automatic word integrity
- User prompting
- Battery back-up
- Roll/Crawl speed — 8 speeds w/pause

Physical: 16.5"W x 18.5"D x 6.15" H
 Weight: 30 lbs.

D-1510 Character Generator \$4195.00

D-1512 Television Character Generator

D-1512 Television Character Generator shares the same features as the D-1510 except:

- 70 nanosecond resolution; 4 heights
- International font set
- Roll/crawl speed — 8 speeds w/pause
- 512 color selections
- RGB output: RS-170A compatible
- Independent channel for composition while program channel is in use
- Edge signal for external key on/off

Weight and dimensions same as the D-1510 as well

D1512 Character Generator \$4995.00



BROADCAST PRODUCTS DIVISION

3M Center Bldg. 225-3N
St. Paul, MN 55144
(612) 733-8132

CHARACTER GENERATOR

D-5000 CHARACTER GENERATOR

The 3M Model D-5000 Character Generator is a titling and graphics system designed for broadcast production and cable television use.

This is an expandable system which brings high resolution and full features into the affordable price range, while allowing future system growth.

Features

- Multi-font library 4 resident fonts
- Proportional character spacing
- Full editing capability
- High resolution character definition
- 35 nanoseconds
- Multi-speed roll, crawl, reveal, and billboard dynamics
- Auto centering, line & page
- 512 color palette
- Built-in sync and gen-lock
- 9 speeds roll and crawl
- 100 page internal memory
- Programmable roll, crawl, and roll masking
- Built-in clock
- Built-in italics, all fonts
- Internal colorizer
- Background color in 4 line increments
- Non-volatile data storage
- Split screen displays
- Character kerning & overlap
- Multi-color logos
- Vertical roll, 9 rates plus pause (blanking to blanking), five different masks are selectable
- Horizontal crawl, 9 rates plus pause (blanking to blanking), position selectable
- Word flash and color change flash
- Mix rolls and/or crawl with static displays
- Slow reveal — 7 speeds
- Billboard — 9 speeds

Specifications

Configuration

Electronics 19" rack mount

10-1/2"H x 16-1/2"D — 38 lbs.

Keyboard 21"W x 4-5/8"H x 11-1/8"D — 10 lbs.

Output

Program channel NTSC compatible, color encoded, 1.0V peak-to-peak composite into 75 ohm load adjustable $\pm 10\%$. High Resolution. Two outputs provided.

Edit channel same as program channel with cursor, system status indication and interactive operator prompting information. High Resolution.

R-G-B outputs for program channel 0.7 volts peak-to-peak.



Edge External Key Signal-composite luminance 1.0 volts.
Strap for non-composite 0.7 volts.

Inputs

Sync accepts standard 4.0V peak-to-peak or composite video signal 75 ohm looping inputs.

RS-232 keyboard loop through for multiple channel operation.

RS-422 (optional) dual 3-1/2" micro floppy disc memory Subcarrier Reference Frequency. 3.58 MHz 2.0 volts peak-to-peak loop through (4.43 MHz 2.0 volts PAL).

Model D-5000 Character Generator **\$10,995.00**

Accessories/Options

4 Additional resident fonts	\$ 675.00
24 Hour memory backup unit	50.00
48 Hour memory backup unit	100.00
72 Hour memory backup unit	150.00
Keyboard	1,700.00
Chassis	9,295.00
Custom Logos	200.00
1 Font Chip set	125.00

Memory Expansion Options

50 pages additional resident memory	\$ 250.00
Single Disc Drive	2,900.00
(Store up to 600 pages of text per disc)	
Dual Disc Drives	3,199.00
(Greater on line storage and disc duplication capability)	
4 Font Ram Memory	1,150.00
(Down load 4 of 100 fonts from 3M font library disc)	
8 Font Ram Memory	2,300.00
(Down load 8 of 100 fonts from 3M font library disc)	

GRAPHICS GENERATOR FONT LIBRARY

This series of Video Fonts is designed for use with the D-5000 Generators. The styles and sizes shown are part of our growing Video Typography Library. Additional fonts will be added regularly. Also, custom alphabets and logo fonts can be prepared to your specifications. Fonts consist of complete high-resolution, alpha-numeric character sets. Characters are fully proportionally spaced for true letterforms. Unless shown otherwise, fonts contain complete upper case characters, lower case characters, numbers, and standard punctuation. A series of standard symbols is also provided.



Similar to Cooper Black Italics
 SIZES: 18, 22, 28, 34 and 44 TV Scan Lines



Similar to Free Style Handletter
 SIZES: 34 and 44 TV Scan Lines



Similar to American Typewriter
 SIZES: 28, 34 and 44 TV Scan Lines



Similar to Cartoon
 SIZES: 28 TV Scan Lines



Similar to Data 70
 SIZES: 28 and 34 TV Scan Lines



Similar to French Helvetica Bold
 SIZES: 28 TV Scan Lines



Similar to Avant Garde
 SIZES: 16 TV Scan Lines



Similar to Cheltenham Black
 SIZES: 14, 28, 44 and 56 TV Scan Lines



Similar to Eight Ball
 SIZES: 54 TV Scan Lines



Similar to Futura Bold
 SIZES: 28, 34, 44 and 56 TV Scan Lines



Similar to Bolt Bold w/CBS Logo
 SIZES: 18, 24, 28, 32, 36 and 44 TV Scan Lines



Similar to City Bold
 SIZES: 18, 22, 34, 44 and 64 TV Scan Lines



Similar to Eras Bold
 SIZES: 34 TV Scan Lines



Similar to Futura Bold w/NBC Logo
 SIZES: 44 TV Scan Lines



Similar to Broadway
 SIZES: 54 TV Scan Lines



Similar to Cooper Black
 SIZES: 16, 24, 28, 34 and 44 TV Scan Lines



Similar to Eurostyle Bold Extended
 SIZES: 24, 34 and 44 TV Scan Lines



Similar to Futura Demi Bold
 SIZES: 28, 34, 46 and 56 TV Scan Lines

Note: All fonts photographed directly from monitor

GRAPHICS GENERATOR FONT LIBRARY (Cont'd)



Similar to **Futura Demi Bold w/NBC Logo**
 SIZES: 46 TV Scan Lines



Similar to **Helvetica Bold Italics**
 SIZES: 18, 22, 28, 34
 and 44 TV Scan Lines



Math Symbols
 SIZES: 28 TV Scan Lines



Similar to **Serif Gothic Extra Bold w/NBC Logo**
 SIZES: 30, 44, 50 and 58 TV Scan Lines



Similar to **Harry Fat**
 SIZES: 44 TV Scan Lines



Similar to **Horatio Bold UC**
 SIZES: 32 TV Scan Lines



Numbers & Fractions Font
 SIZES: 34, 56 and 64 TV Scan Lines



Similar to **Serifa Bold w/CBS logo**
 SIZES: 24 and 28 TV Scan Lines



Similar to **Harry Obese Squeezed (CBS)**
 SIZES: 36 and 44 TV Scan Lines



Similar to **Horatio Medium**
 SIZES: 28 TV Scan Lines



Similar to **Old Timer**
 SIZES: 44 TV Scan Lines



Similar to **Souvenir Demi Bold**
 SIZES: 18, 22, 28, 34 and 44 TV Scan Lines

Other fonts available.



Similar to **Helvetica Bold**
 SIZES: 16, 24, 28, 34 and 44 TV Scan Lines



Line Segment Font
 SIZES: 16 and 34 TV Scan Lines



Similar to **Russian Helvetica**
 SIZES: 28 TV Scan Lines

Similar to **Spanish Helvetica**
 SIZES: 28 TV Scan Lines

Similar to **Standard Bold Tabular**
 SIZES: 28 TV Scan Lines



Similar to **Helvetica Bold International**
 SIZES: 28 TV Scan Lines



Similar to **Mandate Script**
 SIZES: 34 TV Scan Lines



Similar to **Serif Gothic Extra Bold**
 SIZES: 30, 44, 50 and 58 TV Scan Lines

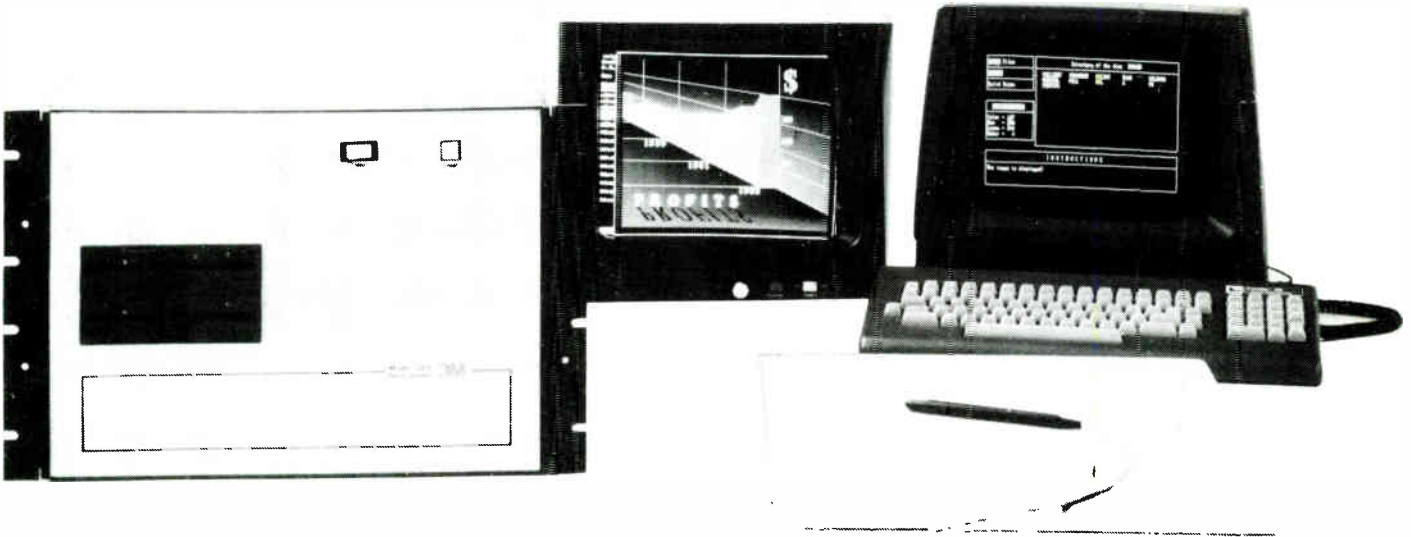
Similar to **Tea Chest**
 SIZES: 44 TV Scan Lines

Similar to **Video Bold**
 SIZES: 14, 24, 28, 34, 56 and 64 TV Scan Lines

Similar to **Windsor Bold**
 SIZES: 64 TV Scan Lines

Note: All fonts photographed directly from monitor.

Prices and Specifications Subject to Change Without Notice.



ARTRONICS/3M STUDIO COMPUTER SYSTEMS

Designed For:

- Video Producers
- Audiovisual Producers
- Illustrators
- Art Directors
- News Graphics
- Business Graphics
- Industrial Artists
- Graphic Designers

Applications:

- Beautiful comps, with exciting alternatives, for logos, layouts, ads, story boards
- Thumbnails and roughs, in full color with instant variations
- Video and Business Graphics, grids and text
- Final reflective or transparency art, 35mm color slides, 4 x 5 and 8 x 10 instant color prints
- Video tape or broadcast

Paint System Consists Of:

- Central Processor with 128K bytes
- Two Dual Density Floppy Disks with 1 megabyte each
- 13" High Resolution RGB Color Display
- 12" Monochrome Monitor
- Detachable keyboard
- 15" x 15" Digitizer Pad with Stylus
- Optional Camera Input and Font Origination
- PC Software

FEATURES:

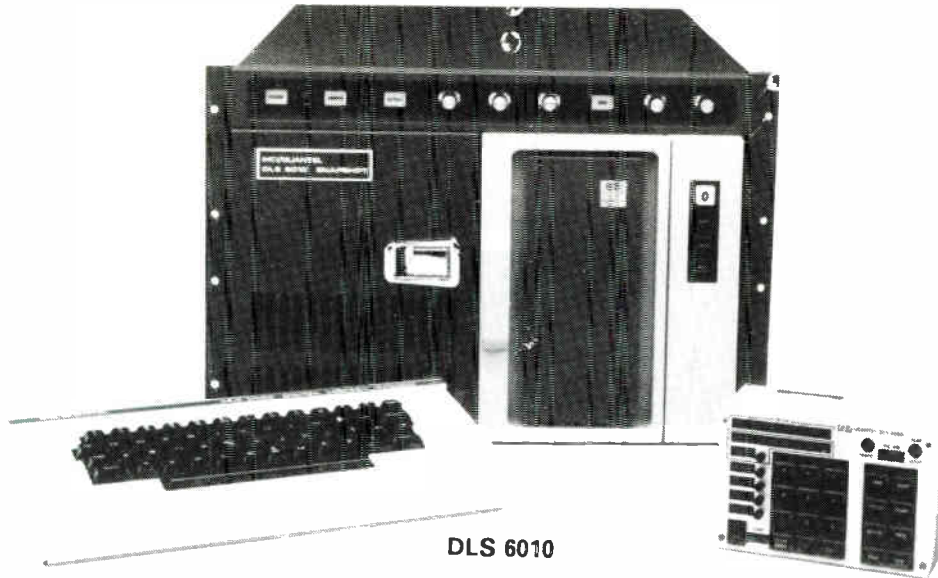
- Freehand Drawing
- Camera Input
- 128 Color Palette w/16,777,216 possible colors
- Color Mixing: Hue/Luminance/Saturation
- Color Matching
- Rainbow/Spectrum
- Continuous Tone
- Cycle "Real-Time" Color Movement
- 28 Brush Styles
- Create New Brush
- Air Brush
- Textures
- Area Fill
- Line Snap
- Squares
- Rectangles
- Intricate Curves
- Arcs
- Overlay
- Text/Type-setting
- Duplication/Transformation
- Enlarge/Reduce
- Condense
- Expand
- Shear
- Distort
- Rotate
- Copy
- Reposition
- Grids: Parallel/Perpendicular/Perspective/Align/Justify
- 16:1 Zoom
- Save-Store
- Recall
- Help
- Photo Print
- Video Tape
- Broadcast.

Paint System Consists Of:

- Electronics
- Terminal & Keyboard
- Digitizer Pad & Stylus
- Image Grabber **\$34,990.00**

OPTIONS

- 13" RGB Color Monitor **\$3,200.00**
- Business Graphics Software **5,000.00**
- Animagic® Software **10,000.00**
- Videoslides 35mm Color Film System **3,000.00**
- 8" x 10" Instant Color Print System **8,800.00**
- NTSC Color Encoder **2,950.00**
- Color Insert Keyer **4,395.00**
- Font Origination Software **500.00**



DLS 6010

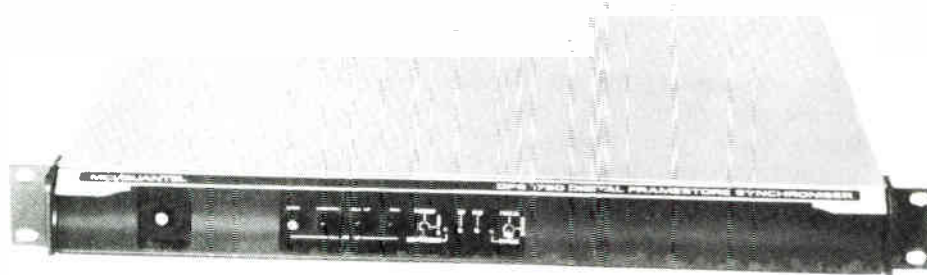
Video Effects System DLS 6010 "Snapshot"

"Snapshot" is the most advanced small-scale still store available, employing the latest in electronic and disc drive technology. It therefore includes features that, singly or in combination, other systems cannot match. These include:

- Asynchronous picture capture
- Field or frame freeze
- Picture grab
- Half-second transfer rate
- Two framestores—instantaneous vertical switching

- On-air editing
 - External key
 - "Browse" and title search
 - Autofile numbering/default titling
 - Individual user picture protection
 - Printer output
 - Interchangeable disc cartridges
- "Snapshot" records and plays still pictures with the aid of remarkable Winchester disc technology. Each removable disc cartridge holds approximately 400 pictures on-line.

DLS 6010 \$44,375.00



DFS 1750

TBC Synchronizer DFS 1750

The remarkably small size of the DFS 1750 is achieved through advanced technology and elegant electronic design, with no sacrifices in performance. On the contrary, the DFS 1750 is a powerful performer, with such features as infinite window heterodyne TBC, automatic phased/non-phased switching, fast hot cuts, freeze, built-in reference signals and test equipment, full proc amp controls, remote control—even a digital I/O

interface conforming to SMPTE recommendations on composite sampling. And it consumes just 90 VA.

- Auto phased/non-phased operation
- Built-in reference signals
- Proc amp controls
- Remote operation
- Low power consumption
- Size: 19" rack mount; 1-3/4"H x 19"D
- Weight: 15 lbs.

DFS 1750 \$13,900.00

MICRO-SCRIPT SCRIPTOVISION, INC.

7419 Lajeunesse
Montreal, Quebec, Canada H2R 2J1
(514) 271-2265

COLOR VIDEO TITLER/ CHARACTER GENERATOR



Model II Color Video Titler/Character Generator

2 MODELS

- TITLER-2 pages of memory\$259.00
- CHARACTER GENERATOR - 8 pages of memory with automatic sequencing.....\$299.00

FEATURES

- 2 character sizes
- 150 different letters, numbers and graphic symbols including punctuation marks
- 16 lines of 32 small characters, 4 lines of 10 large characters (with character by character colorization)
- 6 brilliant colors: red, blue, green, yellow, magenta, orange
- 4 way cursor control
- Status mode indicator shows:
 - direction selected
 - character or graphics mode
 - when in "shift-lock" mode
- Character size and color indicated by cursor
- Permits simple animation

- Power-on color bars
- Dependable tactile keyboard — 40 function keys
- Reliable solid-state construction — rugged metal case
- Easy to use — no computer language needed
- Completely portable...measures a mere 7" x 3-1/4" x 1-1/2" and weighs only 3/4 lbs.

APPLICATIONS

- Generates distinctive titles and graphics for home or commercial use
- TV Production
- Video Merchandising
- CATV/SMATV/MATV Channels
- HOTEL/MOTEL/HOSPITAL Announcements
- LPTV Production
- Instructional Programming

OPTIONS

- Standby Power
- Genlock Keyer/Matte Generator

Prices and Specifications Subject to Change Without Notice.

VP-97

MICROTIME, INC.

1280 Blue Hills Avenue
 Bloomfield, CT 06002
 (203) 242-4242 (800) 243-1570
 TWX 710-425-1165

DIGITAL EFFECTS SYSTEM



GENESIS 1 DIGITAL EFFECTS SYSTEM

FEATURES

- Composite or Component Inputs
- Built-In Preview Keyer
- User-Oriented Control Panel
- Full 2-Axis Rotation
- Infinite Variable Position
- Continuous Interpolation
- Spatial Antialiasing

GENESIS 1

Genesis 1 is an easy to operate, high performance digital effects system, containing features only available in the higher priced digital effects systems, and creating more special effects capabilities for users in the professional, industrial and academic areas.

Genesis 1 incorporates advanced digital technology producing effects such as zoom, flip, tumble, crop, vertical or horizontal compression, border, posterize, mosaic, smooth and freeze.

Genesis 1 with Standard Control Panel	\$21,990.00
Accessory Service Extender Card	350.00
Additional Cable (25' standard)	
— with Standard Control (100')	600.00
— with ACT 1 (2000' max.)	2.00/ft.
DATAKEY® (additional)	95.00

SPECIFICATIONS

GENESIS 1

Input Signals

Composite	NTSC*
Component	Y/R-Y/B-Y*
Reference Video	Composite Color/Black Burst, High impedance loop through 75 ohms, terminating (1) RCA phono jack (TTL level)

Program Video
 Sequence Trigger
 Routing Switcher
 Control

Active Low (TTL level)

Output Signals

Composite	NTSC per RS170A**
Component	Y/R-Y/B-Y
Key	75 ohms, terminating (1)

Differential Gain
 Differential Phase
 Power Supply

3% 10-90% APL***
 3° 10-90% APL***
 NTSC: 115/230 VAC, 60Hz
 PAL: 220 VAC, 50Hz
 240 watts

Power Consumption Weight

Shipping Weight	62 lb. (28kg), approx.
Unit Weight	52 lb. (23kg), approx.

Dimensions

7" x 19" x 21" (18cm x 48cm x 53cm)

Control Connectors

SMPTE 207M	9 pin "D"
RS449	37 pin "D"



ACT 1

GENESIS 1/ACT 1™

FEATURES

- Variable Speed, Zoom and Position
- Menu Driven Design
- DataKey® Portable Storage
- Nonvolatile Memory
- Capacity to Operate up to 2000 feet from the Genesis 1 Mainframe
- Shadow, Disassemble, Inertia, and Variable Aspect Ratio for Mosaic added to Genesis 1 Capability

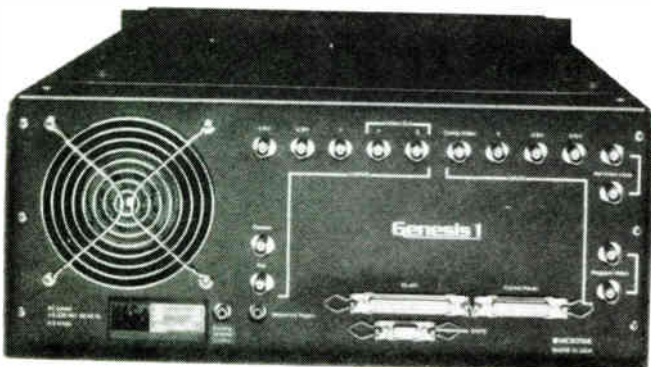
Genesis 1, Microtime's high quality, low-cost digital effects system was just the beginning. Now, ACT 1, Microtime's Artistic Control Terminal combined with the Genesis 1 mainframe, increases creative capabilities to your imagination's limit.

ACT 1 functions through the ease of the joy stick. The selection of Menu, Freeform and an Initialization File results in rapid availability of the joy stick for on-air use. Accessing the Directory and selecting a sequence number recalls a prior file, computes the requirements and obtains a playback within seconds. The sequence begins by pressing Take.

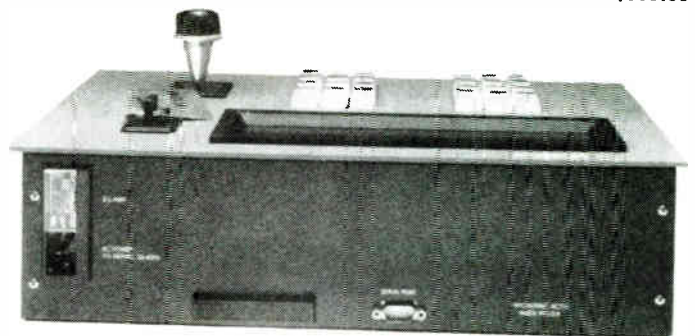
A routing switcher is used for changing sources at the system input. The switcher should have loop through inputs and flip/flop logic. Selection of the two sources is by manual entry.

The routing switcher is controlled by the Change Source command within ACT 1. Computer editors have access to the Genesis 1, ACT 1 combination via the Sequence Trigger connector on the rear panel of the Genesis 1 mainframe.

GENESIS 1/ACT 1™	\$27,990.00
ACT 1 Control Panel Only	7,000.00



GENESIS 1 (Rear panel)

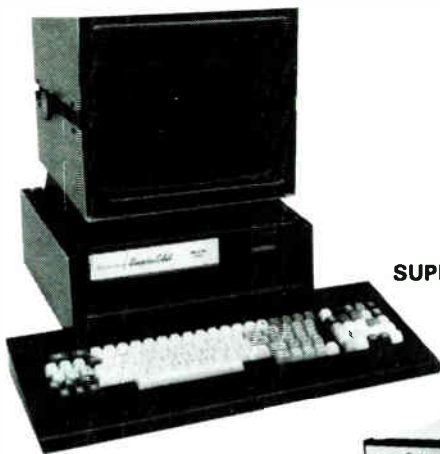


ACT 1 (Rear panel)

MYCRO-TEK, INC.

303 N. West Street
 P.O. Box 47068
 Wichita, KS 67201
 (316) 945-5087 (800) 835-2055

GRAPHIC CHARACTER GENERATORS



SUPRA EDIT



SUPRA

SUPRA SYSTEM

- Supra
- Supra Two
- SupraEdit
- Supra Graphics

The high quality 40 nanosecond resolution supplies crisp, sharp, very readable character and graphics display. Text or graphics mix easily on the same line. For emphasis combine fonts on the same page. Add various character colors over a different background color.

With its real-time sequencing, your SupraSystem lets you set different events to appear hourly, daily, weekly, in whatever order or frequency you want. Organize, create and edit your programming by content...by time...by frequency. The Supra is a single-channel character generator with 10 fonts online, 250 pages (8 lines, 32 characters per line) of memory. This can be expanded to 1,000 pages of memory. The SupraEdit is the perfect answer for offline editing. It has micro disk drive for non-volatile storage.

Operating commands on the SupraSystem are written in plain, easy to understand English, not computereze. The keys are color coded and labeled in plain English. Most users can teach themselves to operate the SupraSystem in a matter of hours.

A SupraSystem will interface to news wire or a local weather station to give viewers an excellent variety of timely information. Sports, news and financial stories can be displayed on designated pages and sequenced to be shown at specific times and frequency. Also, classified ads can be stored and sequenced to run at your choice of times and frequencies to give maximum impact in the marketplace.

The Supra's modular design lets you start with one Supra. Keep adding units until you have your complete system set up. In-house systems can operate up to 99 character generators at the same location. A regional network can operate from a central location and feed into multiple remote headends. You can do off-line editing at the same site or from a remote location using phone lines. Each Supra-System operates independently.

Genlock

The Genlock option includes manual sequencing. "Pause" and "take" keys allow the operator to preview titles offline and add them to external video, providing great flexibility when mixing alphanumerics with tape or live video.

All Supras have a six month warranty. The optional service contract offers 24 hour, 7-days-a-week WATS service assistance. With the purchase of a Spares Kit, most problems can be handled over the phone.

MODEL NUMBER	DESCRIPTION	PRICE
MV-10000	**Supra Character Generator Including Keyboard, 64K Memory and Utility Font	\$6495.00
MV-10001	**Supra Two Character Generator	9995.00
MV-10002	Including Keyboard, Supra Keyboard Only	395.00
MV-10003	SupraEdit Terminal With Micro-Disk Drive & Keyboard, Includes Serial Communications	4495.00
MV-10006	Supra Character Generator Includes Serial Communications, Utility Font	6495.00
MV-10007	Supra Two Character Generator Includes Serial Communications, Utility Font	9995.00
MV-10008	SupraEdit Keyboard Only	395.00
SUPRA HARDWARE OPTIONS		
MV-10200	Serial Communications Board & Software	395.00
MV-10271	Add-on Memory (192K)	1500.00
MV-10272	Uninterruptible Power Supply	1095.00
MV-10273	Supra Interface Formatter	3800.00
MV-10278	Genlock Sync/Downstream Keying	800.00
SUPRA FONT OPTIONS		
MV-10100(02)	Utility Font	Standard
MV-10101(08)	Video Gothic	300.00
MV-10102(04)	Pi Characters	250.00
MV-10103(04)	News	200.00
MV-10104(06)	Serif	300.00
MV-10106(04)	Graphic	250.00
MV-10106(08)	Video Italic	300.00
MV-10107(10)	Video Bold	300.00
MV-10108(06)	Display Medium	300.00
MV-10109(10)	Video Roman (Uppercase)	300.00
MV-10110(0x)	*Custom Logo	Variable
MV-10111(0x)	*Custom Font	Variable
	Graphics I Extended Includes all standard graphics characters plus 37	
MV-10122(6)	Additional graphics characters	300.00
MV-10112(28)	Variety Font-Pac (5 fonts) Video Gothic, Pi Characters, News, Serif & Graphic	1000.00
MV-10113(28)	Display Font Pac (4 Fonts) Video Gothic, Pi characters, Graphic & Video Bold	1000.00
MV-10114(32)	Production Font Pac (4 Fonts) graphic, Video Bold, Display Medium & Video Roman Uppercase	1000.00
MV-10115(02)	Spanish Utility (Standard with Spanish System)	Standard
MV-10118(08)	Spanish Video Gothic	300.00
MV-10117(04)	Spanish News	200.00
MV-10118(06)	Spanish Serif	300.00
MV-10119(34)	Spanish Variety Font-Pac (5 Fonts) S-Video Gothic, Pi Characters, S-News, S-Serif & Graphics	1000.00
MV-10120(62)	Extended Variety Font-Pac (9 Fonts) Video Gothic, Pi Characters, News, Serif, Graphic, Video Italic Video Bold, Display Medium, Video Roman Uppercase	2000.00
MV-10121(06)	Spanish Upgrade (accents)	300.00
GROCERY FONT PAC		
MV-10123(34)	Utility Double Height Video Gothic, Bottom & Top Aligned Single Height Video Gothic with wide shadow, tag characters & Grocery Pi Font	1000.00
SUPRA LOCAL WEATHER SYSTEM		
LP-10220	Weather Computer (Includes Sensors)	975.00
MV-10221	Weather Computer Interface	1025.00
SUPRA WIRE SERVICE OPTIONS		
MV-10250	Wire Interface Card (holds 2 sets of wire software)	300.00
MV-10253	Associated Press Software	350.00
MV-10254	United Press International Software	350.00
MV-10255	Dow Jones Software	350.00
MV-10256	NOAA Weather Software	350.00
MV-10257	Reuters Software	350.00
SUPRA SYSTEM SPARES		
MV-10301	Supra Spares Kit	2500.00
MV-10302	Supra Two Spares Kit	2500.00
MV-10303	SupraEdit Terminal Spares	1500.00

NOTE: () Designates value assigned to that particular font or total value of the font-pac.

Maximum font value for Supra is 64.

Maximum font value for Supra Two is 32.

*Individual evaluation is required before a firm quote will be given. These are considered one-unit prices. Mycro-Tek reserves the right to add custom fonts and/or logos to the Supra font Library.

**Include MV-10200 with each MV-10000 or MV-10001 that will be required to send and receive data from MV-10003, 10004, MV-10006 or MV-10007.

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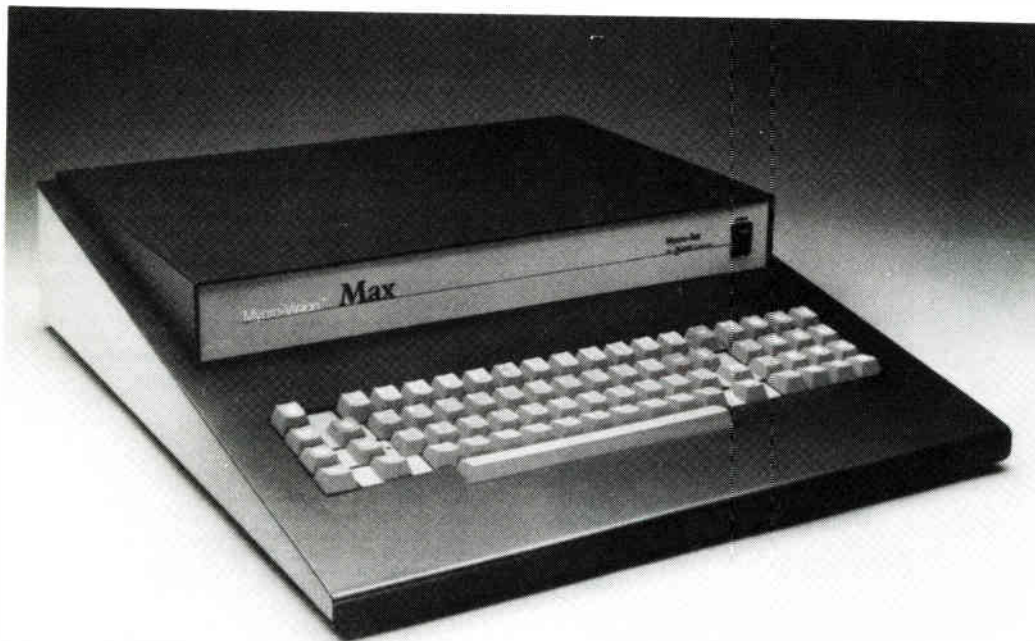
Prices and Specifications Subject to Change Without Notice.

VP-99

MYCRO-TEK, INC.

303 N. West Street
 P.O. Box 47068
 Wichita, KS 67201
 (316) 945-5087 (800) 835-2055

CHARACTER GENERATOR



MYCRO-VISION™ MAX

Mycro-Tek Introduces Max

A low-cost character generator w/non-volatile RAM storage

Features

- Real-time clock for time and calendar display
- Main and auxiliary loop sequencing
- Up to four user-definable regions, with region separators user-definable by size and color
- Eight background colors and eight character colors: red, blue, green, yellow, cyan, magenta, black and white
- Display modes in three speeds of roll: print, crawl and splash. Additional display modes are bang and ripple
- Background and character color by line, page or character
- Full character edging in black or white
- Flashing characters or graphics (three speeds)
- Display time from one to 999 seconds
- Six-month full warranty on parts and labor

Max is a technological step ahead of other character generators in its price range because it utilizes non-volatile RAM storage. A built-in, product-life battery provides power for Max's memory, so Max retains stored pages even if power is accidentally interrupted.

This backup memory gives Max portability as well as safety. The user can store pages, power Max off, move it to another location, and power up again without losing pages. This makes Max an excellent display tool for meetings, conventions and classrooms.

Max has a standard 32K memory allowing 120 pages (eight lines, 32-characters per line) of storage. Two separate high-resolution fonts for text and graphics are standard. Both fonts can be displayed in four separate styles: single height/single width; single height/double width; double height/single width; double height/double width. Two optional wire service feeds can be captured by Max.

MODEL NUMBER	DESCRIPTION	PRICE
	MAX CHARACTER GENERATOR	
MV-11000	Includes Max Text & Max Graphics Fonts	\$2995.00
	ERNIE CHARACTER GENERATOR	
MV-11001	Includes Genlock, Text & Graphics Fonts	\$3995.00
	MAX LOCAL WEATHER SYSTEM	
	Max Weather Station	
	Includes Heathkit Weather Computer, Sensors and Interface Software	\$1095.00
MV-11200	Max Weather Station (Interface Only)	499.00
MV-11201	Max Wire Service Options, interface incl. (limit: two)	
MV-11400	AMEX Stock Ticker	125.00
MV-11401	AP Cable News	125.00
MV-11402	Dow Jones Stock News	125.00
MV-11403	New York Stock Exchange Ticker	125.00
MV-11404	NOAA Service/RS232	125.00
MV-11405	NOAA Service/Current Loop	125.00
MV-11406	Reuters News View	125.00
MV-11407	UPI Cable News	125.00
MV-11408	Communications in (Receive only)	199.00
MV-11409	Communications out (Send only)	499.00

CALIFORNIA PALTEX CORP.

2752 Walnut Avenue
Tustin, CA 92680
(714) 838-8833
TWX 910-333-8535

EDITING SYSTEM

ABR-1A EDITING SYSTEM

Features

- Advanced microcomputer technology
- Individual control of transports for faster editing
- Multi-event memory storage
- CRT Status Display
- Assemble and Insert Editing Modes
- Edit points trimming
- A/B Roll, Match Cut, and Sync Roll modes
- Printer Output (RS-232C)
- Serial Communication port for computer interface
- Animation Editing mode
- Split Edits
- Manual and Auto Take control for general purpose interface
- Frame accurate extend edit
- Mark Edit Points On-the-Fly, in still frame, or by numeric entry

The microprocessor based ABR-1A editing system offers simplicity, ease of operation, and ruggedness while providing outstanding performance and features in a variety of editing configurations at a competitive cost.

The basic system includes a Video Display Output consisting of four screens of information showing all editing related data, Executive Menu, 20 Event Memory List and System Diagnostics.

By selecting the Executive Menu, the operator may change edit parameters by second level software to suit particular modes of operation. The "Off-line" feature enables a full Edit Decision List to be compiled including Reel Number, Wipe/Dissolve Selection and Duration, Split Edits, etc. The EDL can be outputted to a hard copy printer or punched paper tape in Paltex (Datatron/Tempo) or CMX-340 formats.

Normal system counting uses control track or tach pulses and as an option SMPTE/EBU Time Code or Microloc can be fitted.

Specifications

EDIT MODES

- Assemble or Insert
- Split Video and Audio Edits
- Manual and Auto Animation
- A/B Roll
- Sync Roll

SEARCH MODES

- Fast Forward
- Forward Play
- Forward Variable Speed
- Still Frame
- Stop
- Reverse Variable Speed
- Rewind
- Cruise
- Go to any Programmed Point

EVENT SET UP

- On-the-Fly Marking
- Park and Perform

- Park and Enter
- Numerical Entry
- Trim Frame by Frame or a Programmed Value
- Auto Tag, Auto Next
- Extend Edit
- Recall any Edit in Memory

EDIT LIST

- Paltex (Datatron/Tempo) or CMX Compatible Edit Decision List
- Printer Output (RS-232C)

OPERATING CONFIGURATIONS

- Sony - 2860A, 5850, BVU, SLO-383, BVW-10/40
- JVC - 8200, 8250, 6400, 8600, 8800
- Pan - 8500, 9600, 9240, AU-700, AU-300 "M"
- Hitachi - HR-200



ABR-1A

ELECTRICAL

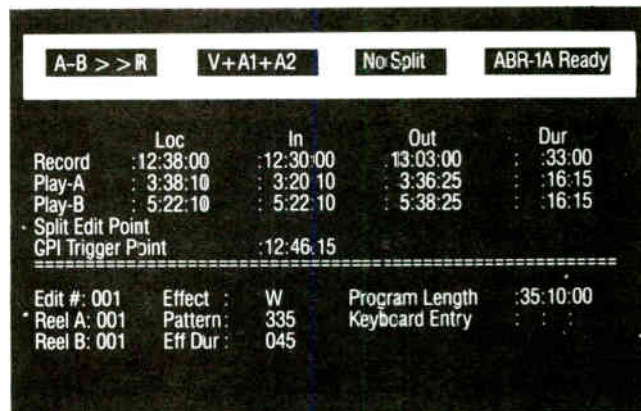
Power: 115/220 VAC ± 10%, 50/60 Hz
Power Consumption: 30 Watts
Television Standard: NTSC, PAL, SECAM
Time Code: SMPTE, Micro Loc, Pulse Count
Edit Accuracy: Frame Accurate w/Time Code

MECHANICAL

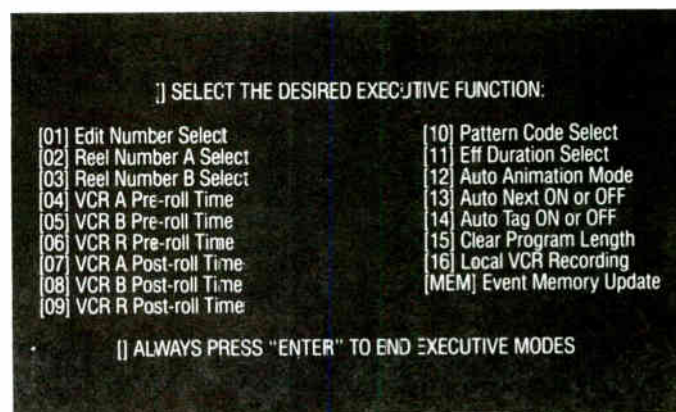
Length: 17.5"
Height: 6.0"
Width: 18.0"
Weight: 20 lbs.

ABR-1A	Three-Machine ABR-1A Editing System w/3 VTR Cable	.....	\$8,200.00
TCR-1	SMPTE Time Code Reader	.....	800.00
RCI-1	Interconnect Control Remote Cable	.....	350.00
RCI-2	Interconnect Control Remote Cable	570.00

MAIN DISPLAY



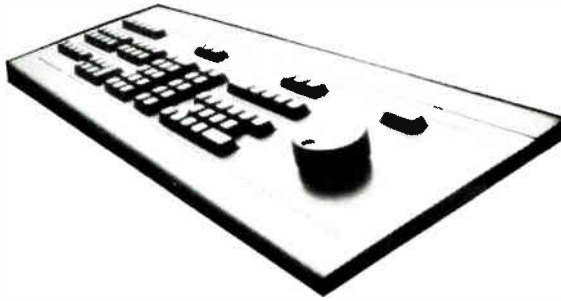
EXECUTIVE MENU



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CALIFORNIA PALTEX CORP.

2752 Walnut Avenue
Tustin, CA 92680
(714) 838-8833
TWX 910-333-8535



EDIT-STAR COMPUTERIZED EDITING SYSTEM

FEATURES

HELP

HELP is PALTEX's exclusive feature that allows you to leave your user manual on the shelf.

USER DEFINABLE KEYS

Editors can store a sequence of up to 20 keystrokes in each of three user registers.

FRAME BUMP (A/V Sync)

FRAME BUMP allows the editor to sync up a source VTR to either the record VTR or another source VTR.

ASSIGNABLE RECORD

While the EDIT-STAR initializes with your preferred VTR assignment, any of the VTRs can be assigned to be the Record VTR; and any can be assigned to be the A, B or C VTR directly from the keyboard.

DISTRIBUTED PROCESSING

For special situations where you need to interface to more than four VTRs or where you need to have more than one EDIT-STAR share control of a pool of VTRs, Distributed Processing is available.

VTR MOTION CONTROL

EDIT-STAR is equipped with a rotary Varascan for manual jog and shuttle control of the VTRs, including frame jog (deck dependent).

SPECIAL FUNCTION CONTROL

EDIT-STAR is capable of controlling any external device such as a character generator, DVE or audio cart which can be actuated via a contact closure or TTL logic level.

SYNC ROLL

Will sync roll as many as three source and one record VTR.

SWITCHER CONTROL

When interfaced to a production switcher, the EDIT-STAR enables you to perform cuts, wipes, dissolves, fades and keys from the editing keyboard.

TIME CODE READERS

The EDIT-STAR includes a Time Code Reader in its electronic chassis for each of the interfaced VTRs. These longitudinal Time Code Readers also read and allow the operator to display on the status monitor User Bits data which is a part of the time code.

TIME CODE AND CONTROL TRACK

When operating in Time Code mode, it is frame accurate. The EDIT-STAR can also edit in Control Track mode and the operator can go into Control Track while the VTRs are at rest or in motion. It is capable of simultaneously intermixing VTRs which are under Time Code and Control Track control.

MARKING "IN" TIMES

Allows you to mark "In" (and "Out") points in three ways:

- Enter the time number via the 10-key pad and mark the VTR "In" key;
- Park the VTR at the desired point and mark the VTR "In" key with a single stroke;
- Play the tape and mark the VTR "In" key "on-the-fly"

AUTO USER REACTION TRIM

Allows the operator to enter a user-selectable "reaction time" of from 1 to 31 frames. It initializes with a reaction trim of zero frames.

EDITING SYSTEM

SPLIT AUDIO-VIDEO

Is capable of designating split audio and video edits.

CUEING OF VTRS

Allows the operator to send any or all of the VTRs automatically to the Cue point, which is the edit "In" time less the preroll time. In addition, the operator can send any of the VTRs to park directly on the "In" point or the "Out" point.

SINGLE DECK PREVIEWS

While the normal "automatic preview" function is in the video-video mode format you can also perform single deck manual previews.

AUTO TAG

Selectable for all of the VTRs or the record VTR only, and the system initializes with Auto Tag off.

EDIT LIST MEMORY

Has a dynamic memory of 318 events. A protect mode enables you to automatically dump to disk on an event-by-event basis to preserve the list.

EDIT LIST FORMATS

Outputs Edit List information in any of three EDL formats selectable from the keyboard.

LIST MANAGEMENT

TEXT EDITING allows the operator to add, delete, modify or reposition an individual event in the edit list, with or without ripple.

BLOCK MOVES allows the editor to add delete or reposition blocks of events in the edit list.

MATCH, when initiated by the operator, provides for continuous automatic tracking of the edit list as the record VTR is playing.

AUTO ASSEMBLE

The entire Edit Decision List, or a designated block of it, can be automatically previewed or edited.

SCRATCH PAD MEMORY

Can store two miscellaneous time code values.

SOFTWARE IN "PROM"

Operational software onboard in resident read-only memory.

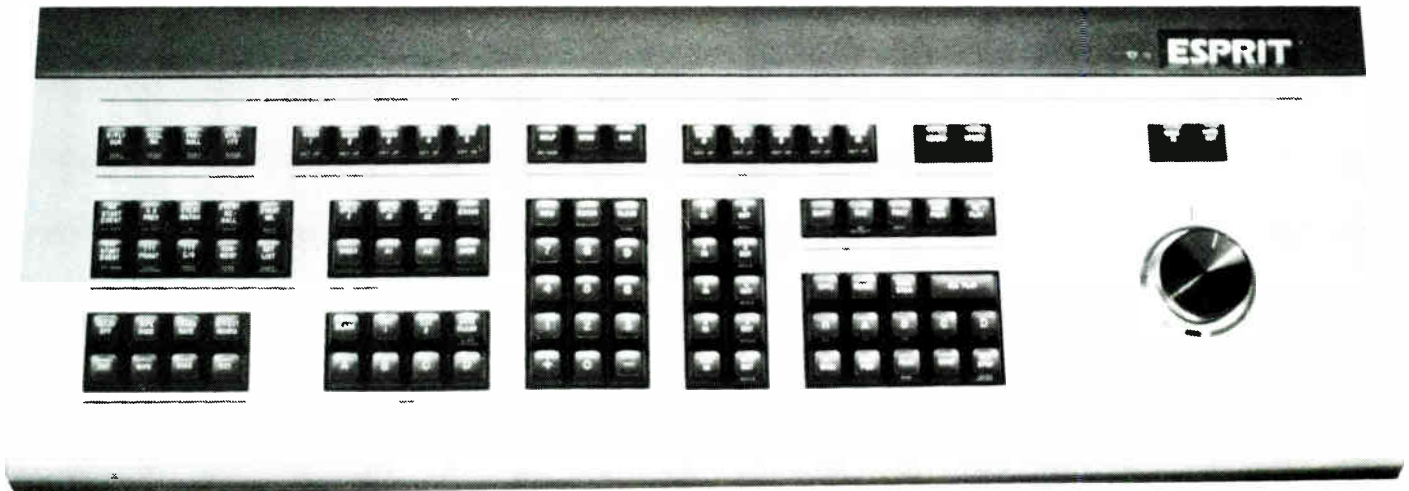
AUTO SYNC POINT

In order to sync a point within a source shot to a point within material previously laid down on the record VTR, simply park the source and record VTRs on the desired sync point. It automatically calculates and enters the correct "In" point with the push of a button.

COLOR-FRAME ADJUSTMENT

The EDIT-STAR will automatically adjust all play VTR times to be in the proper color-frame relationship (NTSC, RS-170A or PAL 8-field) to the record "In" time at the press of a button.

ES1-3	Three-Machine EDIT-STAR System	\$27,500.00
ES-14	Four-Machine EDIT-STAR System	30,000.00
INST	Installation and Basic Training (Note: No Distributor Margin)	1250.00
HSP	High Speed Line Printer	2000.00
DDS	5-1/4" Binary Disk Drive	2800.00
DD8	8" CMX-Compatible Disk Drive	5000.00
EDB	Self Analysis Debug Package	2675.00
ITCR-2	Internal Time Code Reader	1700.00
VITC-1	Vertical Interval Time Code Capability for ITCR-2	1000.00
IC-F	Interconnect Cable per Foot (beyond 25' Standard Cable Length)	4.00
GVM	Green Phosphor Video Monitor	800.00
AVM	Amber Phosphor Video Monitor	800.00
IPI-C1	Internal Processor Interface for 1" Type CVTR	1700.00
IPI-U1	Internal Processor Interface for U-matic VTR	1700.00
IPI-H1	Internal Processor Interface for 1/2" VTR	1700.00
IPI-S	Internal Processor Interface for Switcher	4000.00
CPI-U1	Universal Control Processor Interface	1200.00
CPI-D1	Downstream Control Processor Interface	3500.00
CPI-R1	Remote Machine Control	2000.00



THE ESPRIT

The Ultimate Editing Experience, includes:

Features

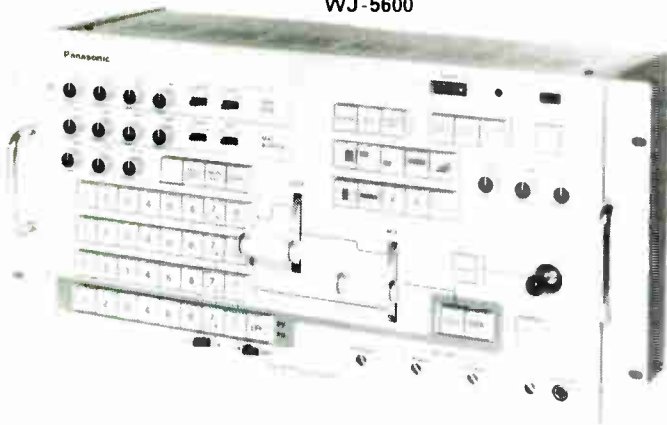
- Rolls up to 5 VTRs/ATRs in full synchronization
- Full Serial or Parallel Production Switcher interface
- Internal SMPTE/EBU Time Code Readers
- ESPRIT Broadcast Color Framers
- ESPRIT State-of-the-Art Software:
 - Smartscan (Learn Mode, Slow Motion Control in EDL)
 - Frame Bump (Audio/Video Sync)
 - 10 User Definable Keys with Disk Storage & Display
 - 20 Contact closure facilities with EDL storage
 - On-Screen Help Instructional System
 - Mix Effects & Crosspoint Assignment (with Serial Switcher)
 - Edit List Memory (1400 Edit Lines)
 - Advanced List Management:
 - Backtrac
 - Edit List Clean-Up
 - Match
 - Sort
 - Find-It
 - Block Moves
 - Text Editing
 - Comment Display

- Sync Roll with EDL listing
- Auto Assembly (Sequential, checkerboard & Animation, Continuous Roll)
- Auto-Trim & Auto-Tag
- Multiple Source Effects (All Sources in EDL)
- Assignable Record
- Split Audio1/Audio2/Video Edit
- Auto Sync Point
- Variable Pre- and Post-Roll Times
- SMPTE Time Code or Control Track
- Auto Reaction Trim
- Scratch Pad
- Programmable Switcher Delayed Effects
- Automatic Color Frame Adjustment
- Enrollment for one person in ESPRIT Maintenance Class
- Installation, Basic Training & Acceptance

	Price
ESPRIT (3 VTRs Controlled)	\$54,000.00
Additional VTR Interface	3000.00
ESPRIT Update from VANGUARD Level 6	7500.00
ESPRIT Update from VANGUARD Level 4	12,000.00
ESPRIT Update from ST-3	19,000.00

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

WJ-5600



WJ-5600 Color Special Effects Generator

- Two built-in mixing amplifiers allow three-channel mixing
- 8-channel inputs
- Three black-burst outputs
- Mixing in Fade-in, Fade-out and dissolve modes
- Switch-over in Normal, Normal-Reverse, and Reverse
- Wipe waveforms in three stages: Soft, Sharp, & Color Border
- Switchover by self-collating non-locking button during the vertical interval
- A built-in positioner circuit
- Two color generators for the Matte Key & Border Wipe, and for Downstream Keying & Background
- Color generators adjusted independently for Hue, Saturation & Luminance
- The Matte Key, has a NEGA POSI selection switch
- Downstream Keyer has a built-in edge On/Off switch
- Color matte key and RGB chroma-key are independent
- Chroma-key creates key signals in full hue, & controls key delay levels
- Downstream key signals capable of color/monochrome switch-over
- Input signals in both the VBS composite & VB non-composite modes VBS genlock is also possible
- AC or 12V DC power operation available

WJ-5600\$5750.00

WJ-5500B

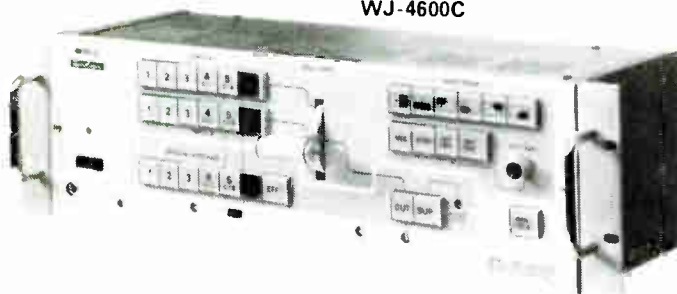


WJ-5500B Deluxe Color Special Effects Generator

- Vertical interval switching of 8 program inputs, 1 auxiliary input for VTR, 1 super input, and 1 external key input (monochrome)
- Downstream mixing of up to three cameras, including super
- Nine wipe patterns with soft/sharp edges; normal, normal-reverse, and reverse wipe modes; wipe positioner
- Wipe key, internal key, external key
- Built-in EIA RS-170A sync generator (HD, VD, Sync, BL, BFP, SC and Black Burst outputs) plus genlock capability
- Genlock circuitry for non-synchronous video signal mixing
- Subcarrier phase and horizontal phase adjustments for genlock
- Color bar generator with subcarrier phase control
- Black burst (Program Output only) 3 outputs
- Can mix composite and non-composite video inputs
- Effect, preview and two program outputs
- "CUT" pushbutton transfers program and preview buses
- 2-Step illuminated, non-locking pushbuttons: light dimly when pressed to indicate selected preview inputs; light brightly when pressed to indicate selected program inputs
- Illuminated lock release buttons light up when pressed to show function selected
- Supplies intercom power to eight cameras and level adjustable
- Supplies tally light on/off switching to all ten inputs
- BNC connectors
- Audio amplifier for intercom with level control

WJ-5500B\$3950.00

WJ-4600C



WJ-4600C Color Special Effects Generator

- DC operation for EFP use
- Vertical interval switching of 6 program inputs
- Fades, dissolves, and six wipe patterns
- Super, external key (monochrome); internal key

- Built-in EIA RS-170A sync generator (HD, VD, Sync, BL, BFP, SC, and Black Burst outputs) plus genlock capability
- Genlock circuitry for non-synchronous video signal mixing
- Subcarrier phase and horizontal phase adjustments for genlock
- Black burst (PROGRAM OUTPUT only) 3 outputs
- Can mix composite and non-composite video inputs
- Effect, preview, and two program outputs
- "CUT" pushbutton transfers program and preview buses
- 2-Step illuminated, non-locking pushbuttons: light dimly when pressed to indicate selected preview inputs; light brightly when pressed to indicate selected program inputs
- Illuminated lock-release buttons light up when pressed to show function selected
- Supplies intercom power to six cameras and level adjustable
- Supplies tally light on/off switching to all eight inputs
- BNC connectors
- Audio amplifier for intercom with level control

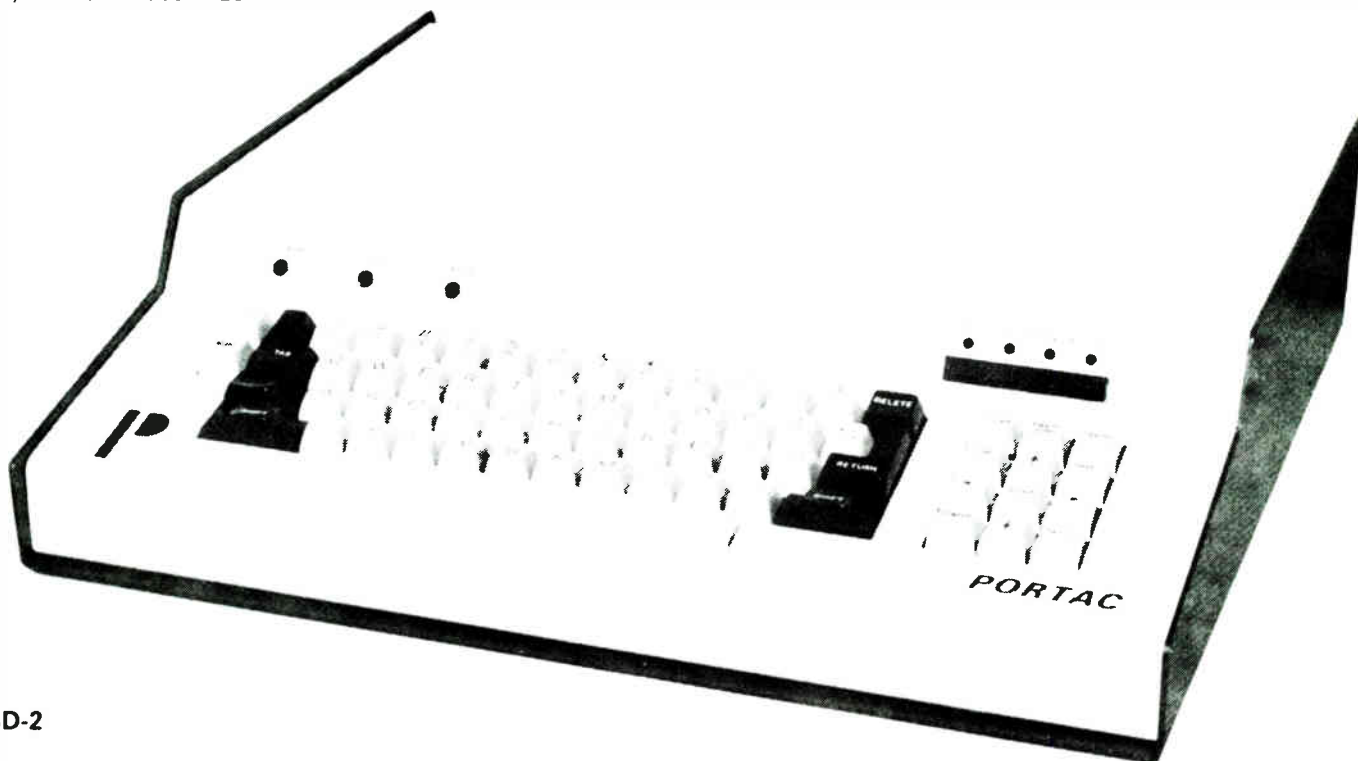
WJ-4600C\$2100.00

WJ-CC46 Carrying Case for WJ-4600C\$350.00

PORTAC, INC.

108 Aero Camino
Goleta, CA 93117
(805) 685-2960 968-2120

CHARACTER GENERATOR



KBD-2

STANDARD FEATURES

- 12 pages of memory.
 - Selectable roll, crawl, flow or static display. Programmable by page.
 - Programmable order of page display.
 - Insert/Delete editing mode.
 - Any character may be programmed to flash.
 - Full cursor control.
 - Direct page for urgent messages.
 - Internal battery to save memory.
 - BNC and F connectors.
 - Automatic line centering.
 - Lockout key to prevent unauthorized use.
- * Memory is essentially "non-volatile" during power failure. Memory retention during power failure is chiefly limited to the shelf life of the internal battery which is in excess of one year.

OPTIONS

- Six programmable background colors.
- Extra pages of memory up to 56 total.
- Time, day, and date display.
- "Heading" showing fixed message and time.
- Superimpose on external VTR or video signal.
- Dual outputs for editing.
- External audio cassette storage for increased memory or power failure back-up.

PRICING

KBD-2 Keyboard Character Generator. With 12 pages of memory; each page 8 lines of 32 characters. With Indefinite Internal Battery. **\$3175.00**

OPTIONS:

"-A"	Automatic Audio Changeover. Feeds "background" audio with internally generated video background for messages—switches over to VTR audio when VTR video is used. (Only available with "-X" option).	250.00
"-C"	Provides for pre-programming each page to one of six background colors (red, green, blue, orange, neutral). Message characters appear in white or black.	430.00
"-D"	Dual output for editing. Provides output signals on two connectors—one, for local "edit" use shows editing data during set-up. The main output shows a test bar pattern during editing.	230.00
"-F"	Spanish Font. Special keytops with accents.	450.00
"-H"	"Heading" option. Shows fixed message plus time, day and date above normal display.	550.00
"-H ₂ "	Two Line Heading without time, day and date.	260.00
"-P"	Permits Pre-programming Order of page display by time and day.	820.00
"-S"	External audio cassette recorder storage to provide extended memory capability.	845.00
"-T"	Provides for addition of one page to show time, day and date. This page may be inserted in the display sequence to show time between pages.	365.00
"-X"	Superimposes an external video (VTR) signal with auto changeover to internal sync generator if external signal fails or is turned off. (Specify -X1 to superimpose characters on external video; -X2 to blank characters when external video is used; -X3 will blank heading [-H option] only when video is used).	375.00
"-X ₁ / -X ₂ "	Switches between X ₁ and X ₂ options. (Requires -X option.)	25.00
"-24"	Added storage options. Increase display storage capability to 24	370.00
"-56"	or 56 pages.	1280.00

NOTE: Any number of options may be added to the basic KBD-2.

PORTAC, INC.

108 Aero Camino
Goleta, CA 93117
(805) 685-2960 968-2120

MESSAGE GENERATOR

KBD-2000

Keyboard Message Generator

- Up to 50 message pages
- Fixed two-line heading with time and date display
- Six color backgrounds
- Can be pre-programmed for the entire week with each day completely independent
- U.L. listed

A new approach to a total TV display system for hotels, hospitals, apartment complexes — any place where MATV or other distribution systems are required to display information, advertising or video programming.

The microprocessor controlled keyboard contains timing pages for each day of the week and the schedules for each day can be displayed on an edit monitor so that it is very simple to revise a schedule. Program outputs can be fed to dedicated monitors at strategic locations: lobby, restaurant, convention center, etc., and then routed to an MATV system for distribution to guest or patient rooms.

The KBD-2000 when combined with the new VCU-4 video control unit, can control four pre-loaded video tape players. Movies or educational videotapes may be scheduled to be shown at various times throughout the day or week and will pre-empt any messages. At the end of the program, the system will automatically resume message display and the tape player will rewind. The system gives the user complete control over what is to be displayed between videotape programs and the time at which those programs are to be turned on, 24 hours a day. VCU-4s can be stacked for increased program capability and/or multiple channel operation.

- KBD-2000** Keyboard Character Generator/Controller . . . \$6425.00
KBD-2000S With external audio cassette recorder storage for extended memory . . . 7270.00

Accessories for KBD-2000

- ECU-4** Equipment control unit for pre-programmable A/B switching. Uses four dry-contact low current relays that are connected to screw terminals . . . \$1200.00
PCU-4 Power Control Unit for pre-programmable control of AC power. Has four AC receptacles and four dry-contact relays connected to screw terminals . . . 1440.00
RFSCU-4 RF signal control unit for pre-programmable RF signal switching . . . 1650.00
SCU-4 Signal control unit for pre-programmable video switching. BNC connectors . . . 1200.00
VCU-4 Video control unit for pre-programmable control of four video players . . . 1470.00

Remote Keyboard Installations:

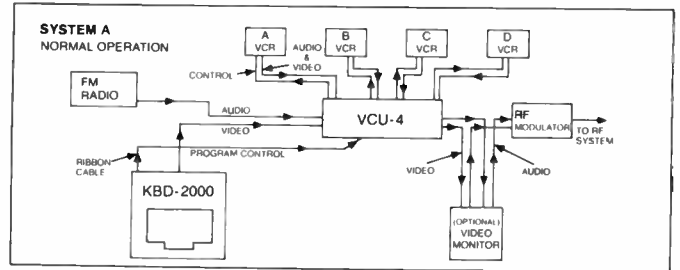
- MKU-2** Multiple Keyboard Character Generator . . . \$ 625.00
RCG-2000 Remote Character Generator/Controller for use with MKU-2 . . . 6450.00



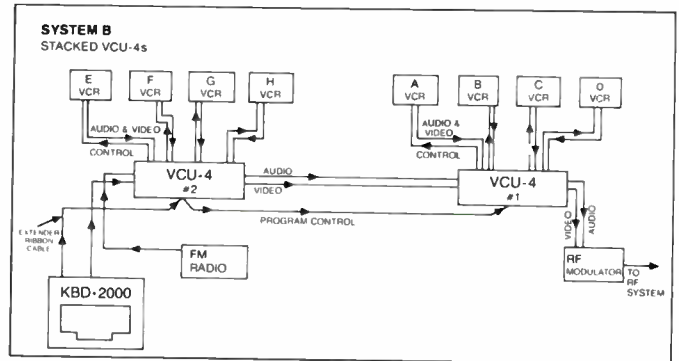
KBD-2000 w/VCU-4

KBD-2000/VCU-4

TYPICAL INSTALLATIONS



Block diagram A outlines the most commonly used configuration—a PORTAC KBD 2000 50-page message generator provides text information and control commands to a VCU-4 video control unit which controls the start-stop-rewind functions of four (4) videotape players by day and by time on a 7-day pre-programmable basis for output to a video or RF distribution system. In this example, an FM tuner provides background music during text display. When a VTR is switched on the video program will pre-empt the message and the background music, both of which will resume at the end of video: i.e. at the end of the program or, alternatively, should tape or machine failure occur.



Block diagram B outlines a system where automated control of more than four (4) VTRs is desired for increased program capacity. Up to six VCU-4 video control units can be stacked in this manner to control up to twenty-four (24) video tape players. As in the case of the example in diagram A, messages are pre-empted by video and resume at loss of video.

Q8 QUANTAFONT®

Q8 Quantafont is a broadcast teleproduction graphics and titling system, microprocessor driven, incorporating high technology circuitry and the simplicity of real time operation. Employing the highest quality components and user-oriented design considerations, Q8 provides a complete complement of video typography, graphics display, character generator effects and animation, text handling and composition functions.

Font-Flex™ Instant Sizing. Perhaps the most significant composition feature offered, Quantafont exclusive instant sizing allows for increasing or decreasing character height instantly from the keyboard. The operator can literally "create" fonts by merely selecting "height", then depressing either "up" (arrow) or "down" (arrow) until the desired font size is achieved. Sizing by row or page operates as a repeat-key function in single scan-line increments while keeping the original proportions of all characters on the row intact as well as maintaining individual character aspect ratio.

Extend/Condense. In addition to instant sizing which applies to character height, Q8 also provides the ability to extend or condense character width by row or page in horizontal increments. This function is easily accomplished by selecting either "row" or "page", then "cursor right" (extend) or "cursor left" (condense). The extended or condensed type face may be instantly returned to "normal" width.

SPECIFICATIONS

Performance:

Base

Resolution: 26 nsec.

Resident Faces: All faces at 54 vertical sizes each (from 10 to 64 lines high), plus instant condense/extend and right/left italics for all faces.

Face Selection: By character, characters are proportional.

Size Selection: By row.

Maximum

Character/Logo Height: Single character/logo, 96 lines; multiple character/logo, 384 lines.

Character Colors: 16 million colors; interactive color mix; menu of 16 colors definable per page, selectable by character.

Background Selection: 16 million colors available, select by row from a menu of any 16 for each page; external video; or row-by-row split of internal color and external video.

Edging Styles: Fine border, bold border, selectable by character; 4-quadrant drop shadow selectable by row.

Edge Color: 16 million colors, selectable by row.

Page Size: 24 rows (max.) x 64 characters per row (max.)

Pages Per Disk: 400

Roll Message

Length: Full disk.

Crawl Message

Length: 4000 characters.

Roll/Crawl

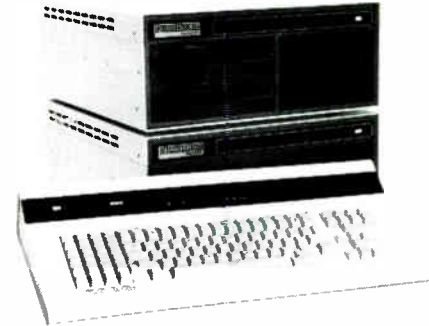
Speeds: 9 plus stop. Roll to stop function provided.

Roll/Crawl Display Area: Blanking-to-blanking. Crawl displays can include static text area.

Page Access: Random or sequential.

Character Flash: By character. Flash speeds: frame rate selectable (1 to 256 system wide).

Special Display Elements: Graphic separators, Graphic blocks, geometrics, underline, accents.



Clock Displays: Real time clock (hours; minutes; seconds), or count up/down event timer (hours; minutes; seconds).

Tab Positions: 4 per page. Tab positions are stored with page on disk.

Editing Functions: Insert row or character; delete row or page; justify row or page left or right; move character left or right (including character tuck); erase row or page; move text to lower third position.

Optional Type-Face Library: 20 face diskette.

Electrical:

Color Standards: NTSC/RGB, or PAL/RGB

System Integration: Internal RS170A sync generator with genlock provides keyboard selection between upstream or downstream matte (with cut/dissolve)

Maximum Number Of Keyboards: 5, for single or dual channel system.

Inputs: Blackburst (to genlock circuit), 1.0 Vp-p @ 75 ohms, looping. External background video, 1.0 Vp-p @ 75 ohms.

Outputs: 2, Program (internal downstream keyer output), 1.0 Vp-p composite video @ 75 ohms. 1, Edit, 1.0 Vp-p composite video @ 75 ohms. 1, Upstream Key (character plus edge size, for use as switcher key input), 1.0 Vp-p monochrome composite video @ 75 ohms. 1, Downstream Key (similar to Upstream Key, except for use with dual channel systems). 2, CG (characters plus internal color background for use as switcher input), 1.0 Vp-p composite video @ 75 ohms. RGB (non-composite, 0.7 V) and sync (4.0 Vp-p) outputs included on all units.

Data I/O Port: RS-232

Disk Unit: Two, double-density, 8" flexible disk drives.

Power: 110 VAC, 60Hz, or 220 VAC, 50Hz (nominal); 130 watts.

Mechanical:

Dimensions: Keyboard: 3-3/4"H x 21-3/8"W x 10-1/2"D (95 x 540 x 265mm)
Chassis: 7"H (4 rack units) x 19"W x 17"D (180 x 480 x 430mm)
Disk unit: 7"H (4 rack units) x 19"W x 17"D (180 x 480 x 430mm)

Note: as supplied, chassis with disk units are suitable for rack mount or tabletop installation.

QUANTA®

2440 South Progress Drive
Salt Lake City, UT 84119
(801) 974-0992 TWX 910-925-5684



MG-200

MICROGEN™ MG-200

Microgen™ MG-200 is the new addition to the Microgen product line, incorporating Quanta's exclusive instant sizing plus built-in 3-1/2" disk drives providing 400 pages of memory per disk. The MG-200 assures the same reliability, high technology circuit design and easy, real-time composition and editing common to all Quanta products.

SPECIFICATIONS

Performance:

Horizontal

Resolution: 55 nsec. at 24 characters per row.

Character Sets: 1 face style standard, small and large caps, 8 sizes from 40 characters per row to 12 characters per row, sizes selectable by row. Vertical sizes from 48 to 16 scan lines high. Second face style optional.

Character Edge: Full surround border, black or white with on/off control.

Color: 256 colors for colorizing characters by row and colorizing backgrounds by row (available simultaneously); maximum 28 colors per page.

Editing Functions: Cursor up, down, right, left, home; line feed; return; key repeat; erase row, page; center row, page; justify row or page — right or left; move up, down; insert/delete character, word, row; variable size graphic separators; variable size graphic blocks; scan line pair adjustment of top leading, bottom leading or both (row tuck); caps lock; 8 columnar tab settings per page; color palette selection of RGB colors.

Memory: Single 3-1/2" disk, 400 pages; Dual 3-1/2" disk, 800 pages. Maximum 40 characters per row, 13 rows per page.

Battery: System has NiCad battery backup.

Display Functions: Flash by character, recall page by number, recall next page, prior page; matte characters in/out of Program output row by row or page; sequential or random page sequencing; real time clock displayable any size, color or location on the page.

Dynamic Functions: Automatic or real-time sequencing of any combination of pages; dwell time, 0.25-99 sec., selectable by page; roll, 260 rows max.; crawl, 260 rows max., position on any row, any size/color and mix with static text as required; roll/crawl at 9 speeds plus pause; all dynamic displays can be displayed one time or continuously.

Electrical:

Inputs: 1 external video in, looping.

Outputs: 2 Program; 1 Edit; 1 Key.

Power: Voltage, 105-135 or 210-270 AC (PC program card selectable); frequency, 48-70Hz; 45 watts.

Data I/O Port: RS-232 (optional).

Mechanical:

Dimensions: 17-1/2"W x 4-5/8"H x 17-1/2"D

Environmental:

Ambient

Temperature: 40 — 120°F (4 — 50°C)

TELEPRODUCTION TITLERS

Microgen

MG-200 Single Disk \$4995.00

MG-200 Dual Disk \$6995.00

MG-202/SD Table top, self contained chassis with both Serif and Sans Serif faces, Single 3-1/2" Disk Drive built-in \$5295.00

MG-202/DD Same as above but with dual 3-1/2" Disk Drives built-in \$5995.00



MG-100B

MICROGEN™ MG-100B

The Microgen™ MG-100B standard features have made it the best value in low cost television production titlers. Quality character display, color, real-time editing and optional dual channel are just some of the reasons thousands of Microgens are creating titles in almost every conceivable television application.

SPECIFICATIONS

Performance:

Horizontal

Resolution: 80 nsec. at 32 characters per row.

Character Sets: Set 1, 24-characters/row; set 2, 32-characters/row; both sets 24 lines high; selectable by row.

Character Edge: Full surround border with on/off control.

Color: 256 colors for colorizing characters by row (with external input); or colorizing backgrounds by row (stand-alone).

Editing Functions: Cursor up, down, right, left, home; line feed; return; repeat; erase row, page, memory; center row, page, memory; justify row left, right; move row up, down; insert/delete character, word, row; insert graphic separator.

Memory: 600 row RAM, maximum of 32 characters/row; operable as 50 pages of 12 rows or 200 pages of 3 rows positionable at any raster location.

Battery: System has NiCad battery backup.

Display Functions: Flash by character; recall page by number; recall next page, prior page; matte characters in/out of Program output.

Dynamic Functions: Auto sequencing of any combination of pages; dwell time, 1-99 sec., selectable by page. Roll, 600 rows max. Crawl, 600 rows max, position on any row, mix with static text as required. Roll/crawl at 9 speeds plus pause. All dynamic displays can be repeated continuously.

Electrical:

Inputs: For each channel: 1 external video in, looping.

Outputs: For each channel: 1, Program; 1, Edit; 1, Key.

Power: Voltage, 105-135 or 210-270 AC (switch selectable); frequency, 48-70Hz; 50 watts.

Data I/O Port: RS-232 (optional).

Mechanical:

Dimensions: 15-3/4"W x 4-1/4"H x 14-3/4"D (400 x 108 x 375mm)

Shipping: 24 lbs. (10.9 kg)

Environmental:

Ambient

Temperature: 40 — 120°F (4 — 50°C)

Microgen

MG-100B Single Channel \$2995.00

MG-100B Dual Channel \$3695.00

QUANTAFONT® QCG-300 TELEPRODUCTION TITLING GENERATOR

FEATURES

- Instant sizing—8 to 64 scan line heights plus incremental extend/condense for both resident face styles—keyboard accessed
- 512 colors—easy RGB palette selection of background & character colors
- True proportional spacing—upper and lower case, two faces
- Edge selection—full surround border, 8 colors row selectable per page
- Easy edit—real time composition and editing capability—Quanta's exclusive text editing package
- Roll—260 rows, 9 speeds plus pause, edit in roll compose, roll to fixed title
- Crawl—260 rows, 9 speeds plus pause, edit in crawl compose
- Automatic page sequencing—random or sequential, date/time generator for real time sequences—dwell time selectable 1/4 to 99 seconds per page
- Manual page sequencing—random or sequential, forward or reverse, 0 second dwell time
- Built-in 3-1/2" Disk Drive—400 pages—second drive optional
- Built-in full terminal complement—sync/genlock RS170, NTSC or PAL-1 Encoder full studio timing
- Graphic blocks/graphic separators—variable size and color
- Real time clock and date generator
- Full battery back-up
- RS-232 Data I/O Port—optional

The Quantafont® QCG-300 is a real time professional teleproduction titling system for use in broadcast or non-broadcast applications.

Fully self-contained, the QCG-300 provides for either stand-alone operation or may be integrated into a full television production studio. The proportionally spaced type face styles provide over 40 resident fonts per face style instantly on-line with Quanta's exclusive instant sizing. Ease of operation, real time functions and Quantafont® dependability make the QCG-300 a versatile, multi-feature low-cost character generator.

SPECIFICATIONS

PERFORMANCE

Horizontal Resolution:	55 nanoseconds at 24 characters per row*
Resident Type Faces:	2 face styles standard—Quarnberg 300 (sans serif) and Journal Bold (serif), both faces proportionally spaced with upper and lower case. 40 sizes per face with 8 to 64 scan line heights plus widths of normal, condensed and extended
Color:	512 colors for coloring characters by row or page and backgrounds by row or page. Maximum 34 colors per page (13 each characters and backgrounds, 8 each edges—available simultaneously)
Character Edge:	Full surround border, 8 colors per page selected by row. See-through characters through edge selection / background selection
Editing Functions:	Cursor up, down, right, left, home; line feed; return; key repeat; erase row, page; center row, page; justify row or page—right or left; move up, down; insert / delete character, word, row; variable size graphic separators; variable size graphic blocks; scan line pair adjustment of top or bottom leading, or both (row tuck); caps lock; 4 columnar tab settings per page; color palette selection of RGB colors
Memory:	Single 3-1/2" disk; 400 pages (maximum 40 characters per row, 13 rows per page). Second disk available (optional)



Display Functions:

Flash by character; recall page by number; recall next page, prior page; matte characters in/out of Program output; sequential or random page sequencing; real time clock and date generator displayable any size, color or location on page

Dynamic Functions:

Automatic or real time sequencing of any combination of pages; dwell time, 1/4-99 sec., selectable by page. Roll 260 rows max; crawl 260 rows max; position on any row, any size/color and mix with static text as required. Roll/crawl at 9 speeds plus stop with programmed speed changes imbedded in message or manual keyboard adjustment. All dynamic displays may be one time or continuous

ELECTRICAL

Battery Back-Up: System has NiCad battery for RAM and real-time clock. Automatic program restoration including dynamic displays after power failure

Video Standards:

Built-in RS170 Sync Generator with Genlock. Built-in NTSC or PAL-1 encoder. Subcarrier phase and horizontal phase adjustment accessible from rear panel. Upstream or downstream operation. Chromalock plus regeneration of sync for proper genlock to non-time base corrected signals

Inputs:

Outputs:

1 composite video in, looping
2 Program, 1 V P-P composite at 75 ohms
1 Edit, 1 V P-P compcsite at 75 ohms
1 Key, 1 V P-P composite monochrome at 75 ohms
RS-232 (optional)

Data I/O Ports:

ELECTRICAL

Power Requirements:

105-110/210-270 VAC, 48/70 Hz

MECHANICAL

Dimensions:

17-1/2" wide x 4-5/8" high x 17-1/2" deep
Dark brown and almond

QCG-300/SD

Table-Top, Self-Contained Chassis with 2 Faces (Serif and Sans Serif), Upper & Lower Case, Proportional Spacing, Single 3-1/2" Disk Drive Built-In \$7,295.00
As above but with Second 3-1/2" Disk Drive Built-In 7,995.00

QCG-300/DD

DD-300

Second 3-1/2" Disk Drive for QCG-300 Units Customer Installed 800.00

RS-232/300

RS-232 Data I/O Port for QCG-300 Units Factory Installed 500.00

QUANTAFONT® QCG-400 TELEPRODUCTION GRAPHICS AND TITLING GENERATOR

FEATURES

- 7 resident type faces — 56 fonts on-line
- 30 topical graphics display symbols
- Instant sizing — true proportional spacing
- 128 colors — each page is palette assignable
- Built-in 3-1/2" high density disk drive (400 pages) — second drive optional
- Built-in full terminal complement—sync/genlock and NTSC or PAL-I encoder—full studio timing adjustments standard
- 224-row RAM with battery back-up — dynamic displays and automatic sequencing
- Patented NANOLOG™ character smooth & fill refinement—high resolution average rise times
- LED front-panel operator prompting
- RS-232 data I/O port option

The Quantafont® QCG-400 Teleproduction Graphics & Titling Generator is designed for real-time, easy operation in a wide variety of titling applications.

Incorporating the Easy Edit and quick, versatile composition features which have made Quanta the preferred standard of mid-range character generators world-wide, the QCG-400 is a modern, low-profile, ultra-portable self-contained unit.

SPECIFICATIONS:

Performance:

Effective Start Point Resolution	20 nsec with patented Nanolog™ character refinement
Resident Faces	7 faces at 6 vertical sizes each (from 8 to 64 lines high) <i>Face #1</i> Helvetica Medium, proportional upper and lower case <i>Face #2</i> Bolt Bold, caps non-proportional, lower case proportional <i>Face #3</i> Serifa, proportional upper and lower case <i>Face #4</i> Cooper Black, proportional upper and lower case <i>Face #5</i> Helvetica Medium Italic, proportional upper and lower case <i>Face #6</i> Grotisque 9, proportional upper and lower case <i>Face #7</i> Upper Case: 30 selected symbols Lower Case: Helvetica Bold, caps, proportional
Graphic Symbols	Weather, sports, transportation, medical, communications, miscellaneous
Face Selection	By character, maximum of two faces can be mixed on a row. All 7 faces may be used on a page
Character Color	Select any of 16 pre-defined palettes of 8 colors each. Palette is stored with page. Character color by word
Background Selection	Select either of 2 pre-defined palettes of 8 colors each or external video. Palette is stored with page. Background color by row
Edge Styles	Selectable by row: Fine border, bold border, 4-quadrant drop shadow positionable
Edge Luminance	Eight levels black to white, stored with page
Page Size	16 rows (max.) 32 characters on a row available with Grotisque 9
System Parameters	Stored within a block: tabs, memory protect, roll/crawl pointers and speeds, shadow quadrants, status line size, user-defined center of screen, last selected face description, flash speed
Roll Message Length	224 rows
Crawl Message Length	6,110 characters
Roll Speed	9 plus pause (start and re-start). Programmable roll to stop function provided
Crawl Speed	4 plus pause (start and re-start)
Roll/Crawl Display Areas	Blanking to blanking. Crawl displays can include static text area
Character Flash	By word. Flash speeds: 2
Special Display Elements	Graphic separators, graphic blocks, underline accents, special symbols (optional on international language versions)
Clock Displays	Real time clock (hours, minutes) or event timer (minutes, seconds)
Tab Positions	8 Columnar tabs with vertical tabbing



Editing Functions

Insert row or character; delete row or character; center row or page; justify row or page left or right; row move left or right; reduce top leading; reduce intercharacter spacing (selected characters); erase row or page; capture character attributes; Get, Save or Exchange row or page. Applicable editing functions operate right of the cursor on a row or from the cursor to end of page

Resident Memory

224 Rows (RAM) with battery back-up for non-volatile retention. Battery will last in excess of 24 hours

Automatic Sequencing

Full 14-page resident memory

Disk Memory

400 pages plus 2 blocks per disk

Page Access

Random or sequential

Disk Access Time

Page: average .4 sec: max. 1.2 sec.
Block: average .6 sec: max. 1.5 sec.

Electrical: Television Standards

Built-in RS-170 sync generator with gen lock. Built-in NTSC or PAL encoder. Gen lock / Color lock; built-in 360° subcarrier; horizontal drive phase adjustable ±1.5 usec. on back panel

Stand-Alone Operation

Yes

Input

One, external video in, looping

Edit Output

One, 1.0V p-p composite at 75 ohms

Program Output

Two, 1.0V p-p composite at 75 ohms:

Key Output

One, character plus edge, 1.0V p-p composite at 75 ohms

Power: (PC Card Selectable)

117VAC, 60Hz, 150W max
220VAC, 50Hz, 150W max

Data I/O Port

One, RS-232 Optional

Mechanical:

Dimensions

Self-Contained Chassis: 18"W x 5"H x 17-1/2"D

Ventilation

Filtered, forced-air cooled

Color

Dark brown and almond

QCG-400/SD

Table-Top, Self-Contained Chassis with 7 Resident Faces, 30 Graphic Symbols, Upper & Lower Case, Proportional Spacing, Single 3-1/2" Disk Drive Built-In \$8,995.00

QCG-400/DD

As above but with Second 3-1/2" Disk Drive Built-In 9,695.00

DD-400

Second 3-1/2" Disk Drive for QCG-400 Units Customer Installed 800.00

RS-232/400

RS-232 Data I/O Port for QCG-400 Units Factory Installed 500.00



QUANTAFONT[®] QCG-500 PROFESSIONAL TELEPRODUCTION GRAPHICS AND TITLING SYSTEM

FEATURES

- High resolution — 29 nanoseconds
- Font Flex™ instant sizing, instant extend/condense, instant left/right italics
- 512 color palette
- Fine, bold or 4-Quadrant Positionable Drop Shadow
- Easy Edit
- Auto-Sequencing
- Built-In sync/genlock

The Quantafont[®] QCG-500 is a fully disk loadable, broadcast quality character generator and graphics system designed for cost effective teleproduction titling and text efficiency.

A powerful software intensive system, the QCG-500 offers real time speed and convenience. No slow, time consuming menu selections are required—all functions are immediately accessible from the keyboard and happen as the operator commands them.

A low profile remote keyboard accesses the rackmounted electronics with built-in 3-1/2" disk. The entire electronics chassis requires only 7" of vertical rack space. Big system features provide a degree of professional flexibility never before attainable in the QCG-500 price range. Disk compatibility with the Quantafont[®] Q8 Teleproduction Graphics System also makes the QCG-500 an ideal remote unit or addition to an existing Q8 graphics production facility.

Graphics enhancement accessories provide for a full paint system and digital effects, all conveniently controlled from the QCG-500 tri-level keyboard permitting interaction between text, paint or effects operations.

SPECIFICATIONS

Disk Loadable:	Program, faces, pages
Rack Mount:	Chassis includes electronics, single drive, power supply
Number of Keyboards:	One standard
Disk:	Single 3-1/2" double density, double sided; second drive optional
Pages per Disk:	600 max
Power Requirements:	150 watt power supply; 110/220 VAC switchable
Stand-Alone Operation:	Yes
Encoder:	Built-in, NTSC RS-170 or PAL
Genlock/Colorlock:	Built-in, horizontal and subcarrier phase adjustments
Phasing:	External, 360° subcarrier, horizontal drive - 1.5 usec.

System Integration:	Keyboard selectable upstream/downstream, or jumper selectable
Edit Output:	One, 1.0 V P-P composite at 75 ohms
Program Output:	Two, 1.0 V P-P composite at 75 ohms
Key Output:	One, character + edge or full page, 1.0 V P-P composite at 75 ohms
Sync Output:	4.0 V P-P composite
External Video Input:	One, looping
Options:	2nd 3-1/2" disk drive
Electronic Video Paint:	Yes, addressed by QCG-500 keyboard
Digital Video Effects:	Yes, addressed by QCG-500 keyboard
Camera Capture Digitizer:	Yes, addressed by QCG-500 keyboard
QCG-500/SD	Single Channel, Disk Loadable, NTSC System, Including: Chassis, Rack Mount, with Sync/Color Lock, NTSC Encoder Keyboard, Remote, English System Software (License Required) Single 3-1/2" High-Density Disk Drive 1 Type Face Diskette — 2 Faces 1 Operating Manual 1 Operator Training Diskette Total System \$14,995.00
QCG-500/DD	As above but with Dual 3-1/2" Disk Drives Built-In . . . 15,695.00
OPTIONS	
QCC-1	Camera Capture Font/Logo Compose Accessory (PC Card Mounts in QCG-500 Electronics Chassis) 2,995.00
Electronic Video Paint Systems	
EVP-500	Paint System for Operation with QCG-500 Character Generator, Including: Micro-computer and Graphics Card Paint I Software (License Required) Single 3-1/2" Disk Drive Built-In EVP-500 System (requires operation with QCG-500) 14,950.00
EVP-800	Paint System for Operation with QCG-500 Character Generator, Including: Microcomputer and Graphics Card Paint II Software (License Required) Single 3-1/2" High-Density Disk Drive Built-In EVP-800 System (requires operation with QCG-500) 24,950.00
ACCESSORIES	
FDL-500	20 Face Library Diskettes \$1,000.00
FS-500	Single Face Style from List available 100.00
GR-500	Graphics Face—Geometric Shapes, Jumbo Numbers, Symbols 200.00
CF-500	Custom Face Style POR
CL-500	Custom Logo Style POR
	(Minimum Charge \$500.00)

Prices and Specifications Subject to Change Without Notice.

VP-111

2440 South Progress Drive
Salt Lake City, UT 84119
(801) 974-0992 TWX 910-925-5684

QUANTAPAIN™ ELECTRONIC VIDEO PAINT SYSTEMS

FEATURES

- 11 basic automatic drawing functions with individual enhancements
- 9 dynamic painting functions
- 12 illustration aids to make creating graphics fast and easy
- Anti-alias and improve overall or selected display quality
- Display/Illustration enhancements for creating superior graphics

Quanta's Electronic Video Paint systems provide the television graphics artist with multiple, full-function drawing, painting and illustration tools in an easy-to-use, high quality and compact configuration.

The system incorporates a powerful microcomputer with 3-1/2" floppy disk drive and may include a 53-megabyte fixed disk, a graphics tablet with push-button stylus, control keyboard and CRT (computer) monitor. An EVP system is a natural accessory to the Quantafont® Q8 Broadcast Teleproduction Graphics and Titling System, or the new Quantafont® QCG-500 Teleproduction Graphics and Titling System, or may be incorporated into studio facilities for providing backgrounds, enhanced digitized images, outstanding graphics with or without character generator text.

All painting, drawing and effects commands are accomplished from the graphics tablet so the artist rarely needs to refer to external equipment once a paint project is begun.



Execution of all commands is fast and simple by means of "touching" the appropriate area of the menu on the graphics tablet with the tip of the stylus. The menu may be displayed anywhere on the screen and may be turned on or off as desired by the operator. A total palette of 16.7 million colors may be called upon to create individual page palettes of 256 colors each. Color spreads, washes, chromes, neons and other dynamic color displays including color table animations, may be created for use in any portion of the illustration.

EVP-500	Paint System for Operation with QCG-500 Character Generator, Including: Microcomputer and Graphics Card Paint I Software (License Required) Single 3-1/2" Disk Drive Built-In EVP-500 System (requires operation with QCG-500)	\$14,950.00
EVP-505	Stand-Alone Paint System, Includes Microcomputer, Paint I Software (License Required), CRT Computer Monitor, Keyboard, Graphics Tablet & Stylus, Sync/Genlock/Encoder, Single 3-1/2" Disk Drive ...	\$16,805.00
EVP-550	Paint System as above but with 53-Megabyte Fixed Disk, Second 3-1/2" High-Density Disk Drive Built-In and Digitizer (Camera Capture) 256 Levels	24,995.00
EVP-800	Paint System for Operation with QCG-500 Character Generator, Including: Microcomputer and Graphics Card Paint II Software (License Required) Single 3-1/2" High-Density Disk Drive Built-In EVP-800 System (requires operation with QCG-500 Character Generator)	24,950.00

EVP-805	Stand-Alone Paint System, Includes Microcomputer, Paint II Software (License Required), CRT Computer Monitor, Keyboard, Graphics Tablet & Stylus, Sync/Genlock/Encoder, Single 3-1/2" High-Density Disk Drive and 53-Megabyte Fixed Disk Built-In	30,800.00
EVP-850	Paint System as above but with Second 3-1/2" High-Density Disk Drive Built-In and Digitizer (Camera Capture) 256 Levels	34,995.00

OPTIONS

Computer Monitor	300.00
Keyboard	395.00
3-1/2" Disk Drive	700.00
53-Megabyte Fixed Disk	3,995.00
Digitizer (Camera Capture) 256 Levels	3,495.00
Graphics Tablet & Stylus	850.00
Sync/Genlock/Encoder	310.00

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RVS-210 Video Production Switcher

With a combination of production power, built-in memory, serial interface and Ross reliability, the 210 is the best small switcher value you'll find.

Three independent auto transition units, three color generators, complete memory facility and the Ross Multi-Level Effects system means that you can create complex production effects, and get into and out of them without batting an eye. And the RVS-210 is available with the Ross analog key border generator for high quality title keys.

Combine all this with serial interface, the Ross analog key border generator and a powerful pattern generator with mask and positioner and you have the kind of production power that usually costs several times the price.

The RVS-210 can be mounted on a desk, in a console or in a standard rack-frame. The electronics package needs just 8 inches of rack space.

STANDARD FEATURES

MULTI-LEVEL EFFECTS SYSTEM:

- Three bus Multi-Level Effects (MLE) system permits manipulation of foregrounds without ever locking up the switcher
- Transition preview system enables you to see every effect or wipe before you take it, even with the switcher on the air
- Program/Preset buses permit simple flip/flop operation using the Cut button. Transition controls include cut button, wipe or dissolve using fader handle or one of the three auto transition units, programmable from 0 to 999 frames
- Key bus permits source selection for chroma keys, video keys, and matte keys
- MLE keyer features video or matte fill, external or split screen key, optional RGB chroma key, key invert, key mask using pattern generator
- Twelve wipe patterns with modifiers: hard or soft edges, hard or soft bordered edges, pattern aspect ratio, pattern reverse, rate-controlled pattern positioner
- Three independent matte generators for wipe borders, title borders and backgrounds
- Non-sync inhibit detects non-synchronous sources and prohibits a wipe or dissolve and substitutes a cut at the end of the transition. Non sync LEDs indicate selection of a non-synchronous source

DOWNSTREAM KEYS:

Key input from key bus, an external source or a character generator; Key fill from external video, character generator or the independent DSK matte generator; Digital key border generator for black or white titles with all-round or drop shadow borders or matte filled outline; Key invert; Key mask using pattern positioner; Cut or dissolve titles in or out manually or with independent frame rate auto transition; Downstream keyer transition can be tied to the effects system.

BUILT-IN MEMORY:

Storage and recall of twelve complete switcher set-ups including key levels, patterns, matte levels, transition information, etc.; In normal operation the MLE keyer and Downstream keyer "remember" key and softness levels, fill source, borders, etc. for each key source; Auto transition unit, matte/background generator, pattern positioner can store and recall current settings.

MASTER FADE-TO-BLACK:

Independent frame rate auto transition for fade-to-black; Preview system shows next program output after fade-to-black is completed.

EDITOR INTERFACE:

Standard general purpose interface to each of the three auto transitions or a fourth line which permits selection of any one of the three.

OPTIONS:

Analog Key Border Generator — produces a smooth and quiet border without any tendency to jaggedness or break-up even on small characters or slightly inclined edges. Permits colorizing in the outline mode and reduces chroma crawl on colorized characters. Also offers drop shadow borders on self keys; RGB chroma key — single RGB keyer, available as a plug-in circuit board ensuring simple field installation; Serial Interface — serial port using RS 422 computer interface for external computer control; Rack mount adaptor permits installation in a standard 19 inch rack frame; Console mounting frame permits customized installation in desk top.

SPECIFICATIONS:

Control panel measures 14" (35.5 cm) x 17" (43 cm) x 7" (17.75 cm) deep. Can be mounted on desk or in rack space using optional adaptors. Rack mounting requires 3 rack units and 22.25" (57cm) depth; Available in NTSC, PAL or PAL-M standards.

RVS-210 10 input production switcher, equipped with choice of 2 meter or 10 meter control cable **\$9850.00**

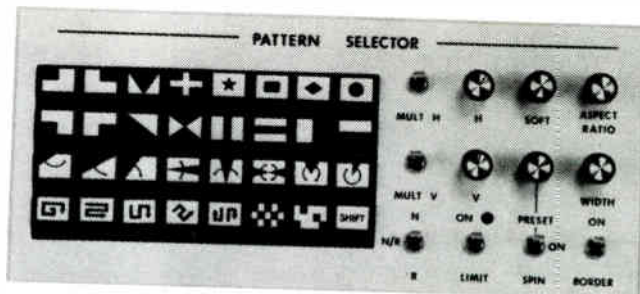
OPTIONS:

Spare components kit	\$ 100.00
30 meter cable	150.00
Extender board set	325.00
Extra manual	100.00
Rack mount adaptor for control panel	100.00
In-desk adaptor for control panel	150.00
RGB chroma keyer	750.00
Analog key border generator	2500.00
Twelve event memory system	900.00
Serial interface adaptor	850.00

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PRODUCTION SWITCHERS



RVS 524

Designed for any small studio, editing suite or mobile van, the 524 has a lot more production power than you would expect from a switcher this compact.

The Ross MLE system makes it possible to manipulate up to four video signals with just one fader handle. It permits changing the background picture either separately or in combination with the foreground and title sources...or dissolving or wiping behind a chroma key...all without locking up the switcher.

Most simple transitions are made between the PGM bus and the PST bus, using the familiar flip/flop mode or operation. The PGM bus is always the on-air bus. When the PST source is transferred to the on-air bus at the end of a transition, the former PGM source is automatically transferred to the PST bus.

The foreground source is selected on the F bus and the processing mode is selected in the foreground group of MLE controls. Mode selections include RGB and encoded chroma key, split screen, PST key and matte key.

The MLE title keyer is a complete Downstream Keyer with a 4 input source selector...the 5th bus of the switcher.

ROSS MLE Patented Transition Preview System

Ross Video was the first to introduce this unique operating feature. Now, complicated transitions that include up to four sources can be previewed and adjusted with the effects amplifier on-air...for example, the transition effect of a bordered wipe with color and softness, or a wipe limit can be previewed exactly as it will occur.

When Transition P/V is selected, the P/V monitor automatically shows the current on-air scene. After previewing the transition effect, switching off Transition P/V automatically returns the monitor to the next scene...regardless at which limit the fader is set.

Fade-To-Black

A master fade-to-black is provided from all synchronous sources by pre-setting the Fade button in the transition group and moving the fader handle.

Pattern Selector

A variety of patterns and effects can be created with the 18 basic patterns (Inner Pattern Group), Pattern Modulator, Horizontal and Vertical Multipliers, Joystick positioner and optional Rotary and Spin wipes.

The rotary selector has direct access to 18 patterns. Each can have colored and soft edge borders. A push-pull switch on the aspect ratio control knob is used to round the corners on the box wipe patterns.

- Rotary Wipes: Nine standard rotary wipe patterns are available with colored and soft borders
- Spin: A full excursion of the Fader spins some patterns 360 degrees and simultaneously reduces their size until they vanish.
- Spin Preset: the angular position of a pattern is set manually
- Horizontal and Vertical Multipliers: These multiply the pattern a number of times horizontally or vertically, or both
- Joystick: Can change the pattern multiplier factor or effectively zoom in on the pattern in the top left corner

Dimensions:

One rack frame only 7 inches high (4 RU's) houses all electronics and optional equipment, plus two aux buses. An additional frame is required to accommodate six more aux buses.

The switcher panel width is 22 inches (12 inputs) or 28 inches (20 inputs) and 16.65 inches deep.

RVS 524 Series Switchers

- Model 524B-12** Video Production Switcher, 12 Inputs .. \$23,483.00
Model 524B-20 Video Production Switcher, 20 Inputs ... \$25,417.00
 Extra control cable for basic switcher, per ft ... 8.40

Options:

- Rotary and Spin Wipe Patterns \$2,012.00
- Encoded Chroma Keyer 2,379.00
- Ultra Key RGB Chroma Keyer 3,780.00
- RGB Follow Switcher for 4 cameras and 1 Ultra Key 1,652.00
- Single RGB Chroma Keyer 770.00
- 2 RGB Chroma Keyers with Follow Switcher 1,652.00
- Video Output Sync and Burst Processor 1,273.00
- Digital Key Border Generator on Title Keyer 661.00
- Clamped Character Generator Video Input to Title Keyer 340.00
- Auto Transitions 1,230.00
- Digital Effects Interface for Quantel DPE5000/5001 1,458.00
- Digital Effects Interface for NEC 1,458.00
- Digital Effects Interface for Vital Squeezezoom 1,458.00

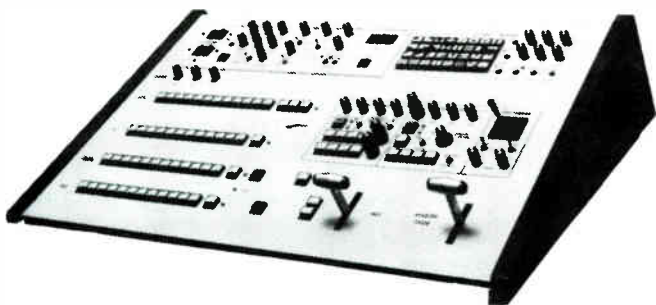
Videotape Editor Options:

- Editor Interface for CMX-340 \$1,458.00
- Editor Interface for Edge 1,458.00
- Editor Interface for Datatron ST5 1,458.00
- Editor Interface for Vanguard 1,458.00
- Editor Interface for Fernseh Mach-1 1,458.00
- Editor Interface for United Media Commander 1,458.00
- Editor Interface for Sony BVE-3000 1,900.00
- Editor Interface for Sony BVE-5000 1,900.00
- Editor Interface for Video Media Z6000 1,900.00
- Editor Interface for Video Media Z6000 1,900.00
- Editor Interface for CVC Lightfinger 1,900.00

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PRODUCTION SWITCHERS



RVS 514-Series Video Production Switchers

The new RVS-514 is designed for any small studio, edit suite or van. And the RVS-514 has a lot more power than you would expect from a switcher this compact with a wide range of options to match almost any production requirement. The operational convenience of the PGM PST style of switcher takes on a new dimension with the added power of a fully integrated MLE system. And it is easy to operate. Complex multilevel effects are immediately accessible via wipe, dissolve or cut transitions.

Fast moving shows can be handled with confidence because: You always see the next event on the preview monitor as you compose it. Logical controls allow any effect to be achieved easily. For example: Preset a title by the push of a single button, and move the fader to wipe it On-Air. All this has been made possible with the Ross patented Transition Preview System.

How The MLE Works

Most simple transitions are made between the PGM bus and the PST bus. The PGM bus is always the On-Air bus. When the PST source is transferred to the On-Air bus at the end of a transition, the PGM source is automatically transferred to the PST bus.

The Foreground source is selected on the F bus and the processing mode is selected in the Foreground group of MLE controls. Mode selections include RGB and Encoded Chroma Keys, Non-Additive Mix, Split Screen, Spotlight, PST Key and Matt Key.

The MLE Title Keyer is a complete Downstream Keyer with a 4 input source selector...the 5th bus of the switcher.

The Transition Control Group...Dissolve, Wipe and Take buttons are located adjacent to the Fader. Conveniently located HOLD buttons allow directing a transition to any or all levels. You can see at a glance which levels will change in the next transition.

Dimensions

One rack frame only 7 inches (4 RU's) also contains all optional accessories and 2 Aux buses. An additional frame is required to accommodate 6 more Aux buses. The switcher panel width is 28 inches (12 inputs) or 34 inches (20 inputs) and 18 inches deep.

The RVS-514 is available with 12 or 20 inputs, and in NTSC, PAL and PAL-M Standards.

RVS 514 Series Switchers

514A-12 Video Production Switcher (12 Inputs)	\$28,208.00
514A-20 Video Production Switcher (20 Inputs)	30,357.00
Extra Control Cable for Basic Switcher (per ft.)	8.40

Options:

Rotary and Spin Wipe Patterns	\$2,012.00
Matrix Star and Pointer Wipe Patterns	1,925.00
Encoded Chroma Keyer	2,379.00
Ultra Key RGB Chroma Keyer	3,780.00
RGB Follow Switcher for 4 cameras and 1 Ultra Key	1,692.00
Single RGB Chroma Keyer	770.00
2 RGB Chroma Keys with Follow Switcher	1,652.00
4 RGB Chroma Keys with Follow Switcher	2,819.00
Follow Switcher for 4 External Chroma Keys	1,652.00
Program Fade	1,444.00
Fader for External Leitch Proc Amp	171.00
Clamped Character Generator Video Input to Title Keyer	340.00
Auto Transitions	1,230.00
Quad Split Screen	3,596.00
Extra Control Cable for Quad Split (per ft.)	1.40
Digital Effects Interface for Quantel DPE5000/5001	1,458.00
Digital Effects Interface for NEC	1,458.00
Digital Effects Interface for Vital Squeezezoom	1,458.00
Editor Interface for CMX-340	1,458.00
Editor Interface for Edge	1,458.00
Editor Interface for Datatron ST5	1,458.00
Editor Interface for Vanguard	1,458.00
Editor Interface for Fernseh Mach-1	1,458.00
Editor Interface for United Media Commander	1,458.00
Editor Interface for Sony BVE-3000	1,900.00
Editor Interface for Sony BVE-5000	1,900.00
Editor Interface for Video Media Z6000	1,900.00
Editor Interface for CVC Lightfinger	1,900.00
Editor Interface for Ampex HPE	2,722.00
Editor Interface for Convergence Video ECS-103/104	2,722.00
Editor Interface for I.S.C.	2,722.00
Editor-controlled Audio Switcher	4,180.00
Editor-controlled Stereo Audio Switcher	7,387.00
Extra Control Cable for Audio Switcher (per ft.)	1.40
ENCORE (free standing)	13,500.00
ENCORE with extension tub to match switcher tub	14,277.00
ENCORE with cassette storage	14,326.00
ENCORE with cassette and extension tub	15,193.00
Scene Store	6,318.00
Scene Store with extension tub to match switcher	7,096.00
Scene Store with cassette storage	7,144.00
Scene Store with cassette and tub	7,922.00
Extra Control Cable for ENCORE/Scene Store (per ft.)	1.40
Aux Preview Bus (12 inputs + 3 secondaries) #1 or #2	1,590.00
Aux Preview Bus (12 inputs + 3 secondaries) #3 thru #8*	1,590.00
Aux Preview Bus (20 inputs + 3 secondaries) #1 or #2	2,018.00
Aux Preview Bus (20 inputs + 3 secondaries) #3 thru #8*	2,018.00
Extra Control Cable for Aux Preview Bus (ft.)	1.40
Expansion Frame	1,895.00
Extra Manual	97.00

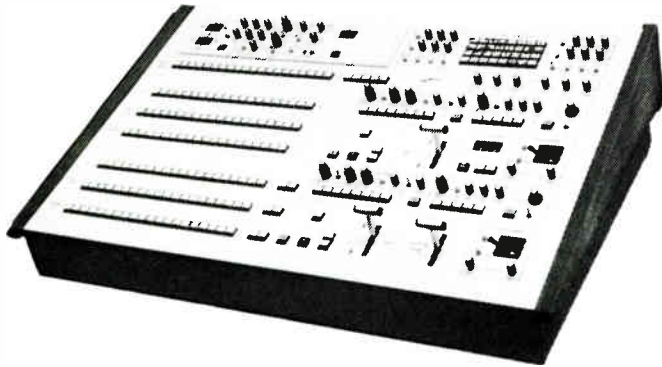
Switcher price includes spares kit, special tools kit, 1 system manual and 25 ft. control cables

Expansion Frame required if one or more options marked * are chosen

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PRODUCTION SWITCHERS



RVS 517 Series Switchers

With 12 or 20 inputs, the 517 is designed for any post-production, van or studio installation. A wide range of optional equipment enables the 517 to meet most production requirements. The operational convenience of the PGM/PST style of switcher takes on a new dimension with the added power of two fully integrated Multi-Level Effects (MLE) systems. Logical controls allow any effect to be achieved easily with a minimum of confusion. For example: preset a title by the push of only a single button, then move the fader handle to put it on-air.

Now complicated transitions that include up to four sources can be seen on the preview monitor and adjusted without disturbing the on-air output of the effects system. For example, a bordered wipe with color and softness or a wipe limit can be previewed exactly as it will occur. After previewing a wipe or dissolve, switching off TRANS P/V automatically returns the monitor to the next scene preview mode, regardless of which limit the fader is at. Most simple transitions are made between the PGM bus and the PST bus. At the end of a transition, the PST source selection is transferred to the PGM bus and the PGM source is automatically transferred to the PST bus.

The MLE title keyer is a complete downstream keyer with a four-input source selector...the 4th bus of the Multi-Level Effects System. The Transition Control Group...dissolve, wipe and take buttons are located adjacent to the fader handle. Conveniently located HOLD buttons permit directing a transition to any or all levels. The Preview (or next scene) monitor always shows what change will take place in the next transition. Adjusting key levels, effects, borders or colors is simplified and there are no surprises because the next scene is always in sight on the preview monitor.

When fully equipped, a wide variety of patterns and effects can be created with the 30 basic patterns, pattern modulation, horizontal and vertical multipliers, joystick positioner and optional rotary/spin wipes and matrix wipes. The RVS 517 is equipped with two pattern generators which are independently controlled by an assignable pushbutton pattern selector. The selector has 30 pattern keys, an assign key and a shift key. The most commonly used patterns may be selected directly. When the SHIFT key is turned on, 30 different patterns may be selected, thereby providing a total of 60 patterns from the selector panel.

DIMENSIONS: Only 17-1/2 inches of rack space required for the 517 electronics package, including all options. Control panel 34 — 38 inches wide and 26 inches high, depending on number of inputs.

RVS 517 Series Switchers and Options

517A-12 Video Production Switcher (12 Inputs)	\$49,700.00
517A-20 Video Production Switcher (20 Inputs)	53,480.00
Extra Control Cable for Basic Switcher (per ft.)	12.72
Rotary and Spin Wipe Patterns on MLE-1	\$2,012.00
Rotary and Spin Wipe Patterns on MLE-2	2,012.00
Matrix Star and Pointer Wipe Patterns on MLE-1	1,925.00
Matrix Star and Pointer Wipe Patterns on MLE-2	1,925.00
Encoded Chroma Keyer	2,916.00
Ultra Key RGB Chroma Keyer on MLE-1	3,780.00
Ultra Key RGB Chroma Keyer on MLE-2	3,780.00
RGB Follow Switcher for 4 cameras and MLE-1 Ultra Key	1,692.00
RGB Follow Switcher for 4 cameras and MLE-2 Ultra Key	1,692.00
RGB Follow Switcher for 4 cameras and 2 Ultra Keys	2,160.00
Single RGB Chroma Keyer	770.00
2 RGB Chroma Keyers with 2-bus Follow Switcher	2,138.00
4 RGB Chroma Keyers with 2-bus Follow Switcher	3,305.00
6 RGB Chroma Keyers with 2-bus Follow Switcher*	5,443.00
8 RGB Chroma Keyers with 2-bus Follow Switcher*	6,610.00
Follow Switcher for 4 External Chroma Keyers	1,652.00
2-bus Follow Switcher for 4 External Chroma Keyers	2,138.00
Program Fade	1,444.00
Fader for External Leitch Proc Amp	171.00
Clamped Char. Gen. Video Input to MLE-1 Title Keyer	340.00
Clamped Char. Gen. Video Input to MLE-2 Title Keyer	340.00
Auto Transitions	1,230.00
Quad Split Screen	4,082.00
Extra Control Cable for Quad Split (per ft.)	1.40
Digital Effects Interface for Quantel DPE5000/5001	1,458.00
Digital Effects Interface for NEC	1,458.00
Digital Effects Interface for Vital Squeezezoom	1,458.00
Editor Interface for CMX-340	1,458.00
Editor Interface for Edge	1,458.00
Editor Interface for Datatron ST5	1,458.00
Editor Interface for Vanguard	1,458.00
Editor Interface for Fernseh Mach-1	1,458.00
Editor Interface for United Media Commander	1,458.00
Editor Interface for Sony BVE-3000	1,900.00
Editor Interface for Sony BVE-5000	1,900.00
Editor Interface for Video Media Z6000	1,900.00
Editor Interface for CVC Lightfinger	1,900.00
Editor Interface for Ampex HPE	2,722.00
Editor Interface for Convergence Video ECS-103/104	2,722.00
Editor Interface for I.S.C.	2,722.00
Editor-controlled Audio Switcher	4,180.00
Editor-controlled Stereo Audio Switcher	7,387.00
Extra Control Cable for Audio Switcher (per ft.)	1.40
ENCORE (free standing)	13,500.00
ENCORE with extension tub to match switcher tub	14,277.00
ENCORE with cassette storage	14,326.00
ENCORE with cassette and extension tub	15,193.00
Scene Store	6,318.00
Scene Store with tub to match switcher	7,096.00
Scene Store with Cassette Storage	7,144.00
Scene Store with Cassette and Tub	7,922.00
Extra Control Cable for ENCORE/Scene Store (per ft.)	1.40
Aux Preview Bus (12 inputs + 3 secondaries) #1 thru #4	1,590.00
Aux Preview Bus (12 inputs + 3 secondaries) #5 thru #10*	1,590.00
Aux Preview Bus (20 inputs + 3 secondaries) #1 thru #4	2,018.00
Aux Preview Bus (20 inputs + 3 secondaries) #5 thru #10*	2,018.00
Extra Control Cable for Aux Preview Bus (per ft.)	1.40
Expansion Frame	1,895.00
Extra Manual	97.00

Switcher price includes spares kit, special tools kit, 1 system manual and 25 ft. control cables

Expansion frame required if one or more options marked * are chosen

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PRODUCTION SWITCHERS/ ACCESSORIES

ROSS 500 MLE® Switchers

The clean panel layout is only 46 inches long.

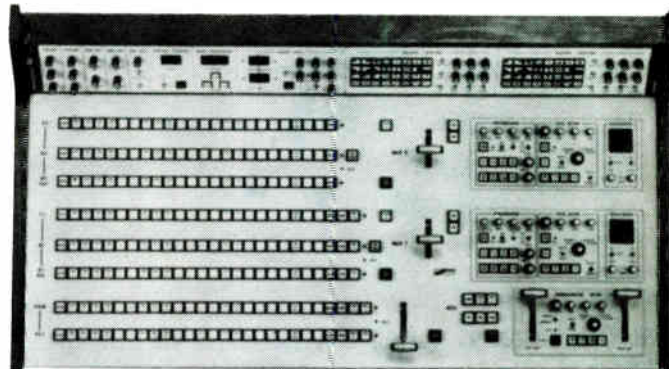
Most simple transitions are made between the Background bus (B) and the Background Preset bus (B PST). The B bus is always the On-Air Bus. When the B PST source is transferred to the On-Air B Bus at the end of a transition, the B source is automatically transferred to the B PST bus.

The Foreground source is selected on the F bus and the processing mode is selected in the Foreground group of MLE controls. Mode selections include RGB and Encoded Chroma Keys, Non-Additive Mix, Split Screen, Spotlight, PST Key and Matt Key.

Each MLE Title Keyer is a complete Downstream Keyer with 4 input sources. Three inputs can be wired from primary crosspoints...and tally is supplied.

The Transition Control Group...Dissolve, Wipe and Take buttons are located adjacent to the Fader. HOLD buttons, conveniently located in the control group for each MLE level, allow directing a transition to any or all levels. You can see at a glance which levels will change in the next transition.

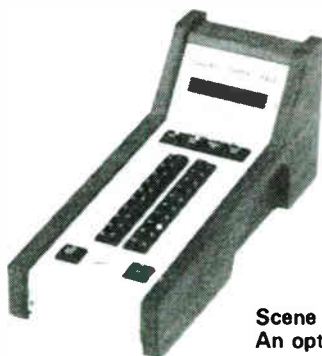
504A-16 Video Production Switcher (16 Inputs)	\$35,406.00
504A-20 Video Production Switcher (20 Inputs)	\$37,061.00
Extra Control Cable for Basic Switcher (per ft.)	8.40
505A-16 Video Production Switcher (16 Inputs)	\$39,275.00
505A-20 Video Production Switcher (20 Inputs)	\$41,346.00



Model 508B is shown

Models are available with 16, 20 and 24 inputs, and in NTSC, PAL and PAL-M Standards.

505A-24 Video Production Switcher (24 Inputs)	\$43,610.00
Extra Control Cable for Basic Switcher (per ft.)	8.40
508B-20 Video Production Switcher (20 Inputs)	\$67,513.00
508B-24 Video Production Switcher (24 Inputs)	\$71,121.00
Extra Control Cable for Basic Switcher (per ft.)	14.00



Scene Store:
An optional accessory

Scene Store Memory System

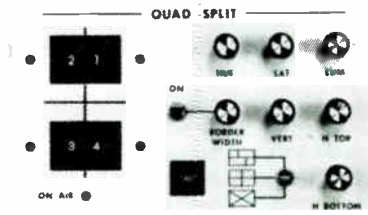
The Ross Scene Store memory system provides a simple-to-operate means of recalling video production switcher set-up information. It is designed to improve accuracy, while reducing the pressure on the switcher operator during fast-moving programs.

Features:

- Operates to/from the next scene as shown on the MLE (Multi Level Effects) preview monitor. The MLE program output is never disturbed
- Each of ten pages of memory stores 20 MLE set-ups (scenes) and one sequence of scenes up to 32 long. Total storage is 200 scenes and 10 sequences of 32 scenes each
- Extensive error checking of the recalled scene for compatibility with the on-air scene it will follow
- Stored scenes and sequences are protected against power loss for a period exceeding 1000 hours
- Built in diagnostics for simplified troubleshooting and verification of system operation
- Rack-mounted electronics only 1-3/4" high

Option:

- Cassette Tape Storage



Quad Split: An optional accessory

Quad Split

Another Ross innovative optional accessory that adds tremendous production power and flexibility to a small switcher.

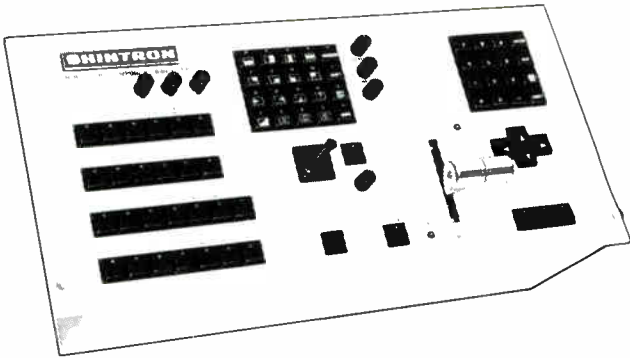
Features:

- Unique Quad Split does not tie up any switcher bus, and virtually gives you 4 extra buses for free
- Each quadrant has access to any 9 predetermined primary inputs
- Includes diagonal, offset and conventional quad patterns
- Has its own border color generator
- Lets you preset the next source for each quadrant...then do a vertical interval Take of the entire scene

SHINTRON COMPANY, INC.

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(617) 491-8700 Telex 921497

PRODUCTION SWITCHERS



390 COMPONENT VIDEO SWITCHER AND EDITOR

The Model 390 "Component Video" Switcher is a triplicated production/post production switcher with a built-in tandem (2 x Z80) microprocessor-controlled command system.

It has 6 inputs, each consisting of three component channels and internally generated black and YIQ background which can be used as input. The bus system is A & B, Preview and Program. Wipes (16 patterns), key and mix can be accomplished between A Bus and B Bus, while Preview and Program Buses have independent access to each input, black, color background and the A & B result.

The color background is generated by the microprocessor which produces three suitable pseudo-component signals to simulate the desired color background. The input accepts "currently available" standard component signals as specified by the manufacturers; however, acceptable signal format can be easily altered to comply with whatever future standards may be developed. For example, M-format defines the existence of a sync pulse on both Y and I signals, while Q has none. BetaCam specifies only Y and I signals, while Q has none. BetaCam specifies only Y to have the sync pulse and none on both R-Y and B-Y. The Model 390 Component Switcher is capable of switching the input circuit to accept either format.

The built-in intelligence consisting of two Z-80 microprocessors communicates with the editor of the user's choice, decodes instructions, and selects operational switches. The on-board intelligence, in addition to the standard operational functions, is expandable to accommodate the function to handle both SMPTE and in-house time codes. This feature is an industry first by Shintron.

Professional editors used in the post-production environment use time codes extensively to communicate and mark edit points. An RS-232 or RS-422 port becomes a necessity in these circumstances. Also, the Model 390 is equipped with a special port to communicate with Convergence Editors. All decision points can be independently input to the switcher's intelligence on a time code basis. The switcher reads time codes and acts upon instructions based on time codes. This makes the Model 390 a unique combination of a triplicate switcher and a universal editing machine interface. The system is equipped with plenty of on-board processing capability and its upgrading to being an editor is just a software step away.

390 \$18,000.00

Optional Time Code Reader/Generator Board,

Part #390CR \$ 2,460.00

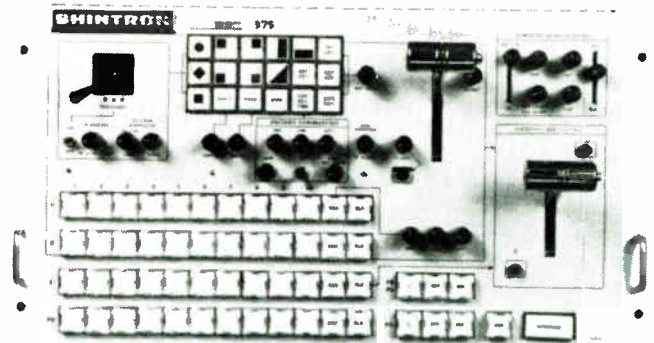
Optional Downstream Keyer with dropshadow and border .. 6,000.00

StratosI† A 12 input, A, B, Preview/Program Bus Switcher with downstream keyer, chromakeyer, Empress features. The StratosI is a combination of an Empress 2000 control panel, 390 electronics, DK-3 downstream keyer, 390CR time code board all joined together with Orange bus..... \$36,000.00

StratosII† A Model 390 with downstream keyer in component. 22,000.00

StratosIII† A Model 390 with downstream keyer plus Model Empress 2000 with its own downstream keyer. Controlled from one keyboard of Model 390. 40,000.00

†Available in PAL: specify NTSC or EBU when ordering.



375 SUPERSWITCHER FOR NTSC, PAL & PAL-M FEATURES

Vertical Interval Switch: Momentary contact, high-grade incandescent lighted pushbutton switch with VIS on all controls.

Automatic Take System: Automatic transfer of preview set-up to program, located before chromakey. Dissolve into Effects by (A/B)-C bus structure.

Re-entry:

Independent Pre-set Output:

Preset Bus has its own output.

Independent Preview Output:

Preview Bus has its own output to prevent chromakey effects.

10 Basic Wipe Patterns:

10 basic wipes and 12 more modified wipes.

Soft Wipe & Edge Wipe: Wipe Modulator & Positioner:

Built-in audio generator modulates wipe patterns and positioner is joy-stick.

Wipe Direction Control:

Normal/Normal-Reverse/Reverse.

Wipe Limit Controls:

Wipe limiters are built-in.

Encoded Chromakeyer:

Takes input from preview bus. No delay compensation necessary. Easy color match by its own color generator.

Three Built-in Color Background Generators:

One for general use, one for chromakeyer, the third for downstream matte keyer.

Downstream Matte Keyer:

Has its own background generator, and dissolve to Program bus. Preview capability.

Fade-to-Black:

Downstream Fade-to-Black.

Total Tally Logic:

All tallies are a true expression of signal states.

Non-Sync Detector:

Non-sync is handled as "take".

Self-Test of Buses:

Unique feature of bus self-test.

Rugged Construction:

For ENG, EFP users.

Remote Control:

Separate Electronics.

Shintron Model 375-375P Chromatic Special Effects Generator is a part of the Chromatic series Color Video Equipment. The Model 375-375P SEG is a complete color studio programming switcher having the features of the most modern professional studio equipment together with a compact size and a highly human-engineered operational panel for teleproduction directors.

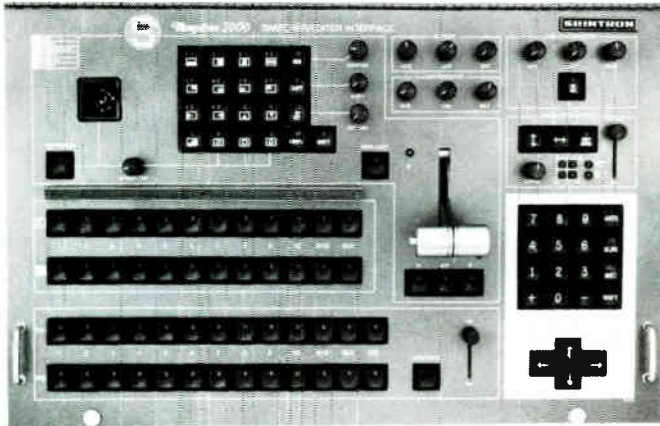
Model 375-375P Chromatic is designed to produce sophisticated special effects. The unit is intended for use as a main switcher in any advanced teleproduction situation, studio or mobile.

375 \$14,000.00

SHINTRON COMPANY, INC.

144 Rogers Street
 Cambridge, MA 02142
 (617) 491-8700 Telex 921497

SWITCHERS



EMPRESS 2000

EMPRESS 2000 SWITCHER

Shintron offers the perfect solution for your production and post production needs, the Empress 2000 Switcher. Empress, which means Event Memory Programmable Effects Switching System is the most powerful of its type on the market.

At the heart of the Empress 2000 is the Shintron Empress System itself, the most flexible editor interface and switching control system. The Empress System consists of two Z-80 microprocessors which accept digital data from the switcher and edit control systems to fully integrate edit suite operations. Auto transitional switching can be triggered by either internally or externally generated SMPTE Time Code, through general purpose relay contact closure, through RS-422 and direct plug compatibility with edit control systems.

The Empress System interfaces with operators through a CRT display. All switching functions are digitized so that precise settings can be achieved in editing and the Empress System can be taught to do tricks.

The Empress 2000 comes standard with 12 inputs, 10 for external video sources, colorizer and color black. The bus structure is A/B, Preview and Program, with 16 basic wipe patterns, soft and hard borders, RGB chromakeyer, master fade to black, and a downstream keyer equipped with drop shadow.

The Empress 2000 is equipped with Orange Bus (Organized Ancillary Grouped Equipment) digital control. Orange Bus allows the Empress 2000 to communicate with other Shintron products, the Model 270 Audio Follow Video Mixer/Router and the 12x series of routing switchers which allows for remote studio operations.

EMPRESS 2000 \$8,670.00

DK-3 DOWNSTREAM KEYER FOR COMPONENT VIDEO

The Model DK-3 is a stand-alone downstream keyer derived from the design incorporated in the Empress 2000 Encoded Switcher. The model DK-3 is triplicated to accommodate component signal.

Features

- Matte fill or video fill
- Four corner edges, drop shadow and border-around letters
- Dissolve to Key + Program from Program
- It is compatible with Shintron's Orange Bus

DK-3 \$3,450.00



12X SERIES

12X ROUTING SWITCHER SERIES

Shintron introduces a new family of digitally-controlled routing switchers created specifically for the video professional — the new "12X" Series. The 12X Series has been designed for flexibility and expandability, and is suitable for situations where superb signal quality and cost-effectiveness are chief considerations.

The "12X" Series is based on twelve inputs of either composite video (V), three-channel component video (C), or three-channel audio (A, for left channel, right channel, and time code). Current models in the 12X Series are available with either one or four independently controlled outputs. Thus, the 12X-V4 is a twelve by 4 video switcher, the 12X-C4 has twelve inputs and four separate outputs for component video, and the 12X-A1 is a three channel, twelve by one audio switcher.

At the heart of the 12X Series is Shintron's remarkable new "Orange" (Organized Ancillary Grouped Equipment) digital control. Orange consists of a stream of RS-422 digital data which is understood by all of Shintron's new products. With the flexibility of Orange, any switching device in the 12X Series can receive commands from any 12X Remote Control Unit.

The "12X" Routing Switcher Series has been superbly engineered for the highest possible electrical performance and system transparency. The wide bandwidth of the 12X Series is even suitable for High Definition TV (HDTV).

Video switching in the 12X Series is done during the vertical interval, and with the 12X-C4 Component Video Routing Switcher, the same timing system developed for our successful Model 390 Component Video Switcher/Editor Interface assures that timing errors between channels are eliminated. The 12X-C4 is in fact the world's first routing switcher originally designed to simultaneously control three separate video channels for either RGB, YIQ, or Y, R-Y, B-Y format signals, and represents one more way in which Shintron is maintaining its role as the primary supplier of "Components for Component."

12X-C4 \$6,990.00
 12X-V4 4,910.00
 12X-A1 POR

SHINTRON COMPANY, INC.

144 Rogers Street
Cambridge, MA 02142 USA
(617) 491-8700 Telex 921497

INTERMATRIX CONVERTER/ READER/GENERATOR



MC-1



690 ET

MC-1 COMPONENT INTERMATRIX CONVERTER

Shintron introduces another first in the growing field of component video, the MC-1 Intermatrix Converter. The MC-1 is an important link in our burgeoning line of "Components for Component," and is sure to become a standard element of every component system.

The MC-1 is a stand-alone unit, one rack-unit high, that accepts as input signals in either RGB, YIQ, or Y, R-Y, B-Y format, and produces outputs in any of the other formats.

The absence of a highly reliable and superbly engineered unit to perform component matrix conversions has, until now, been a major stumbling block to designers of component video systems. With the MC-1 used as an integral part of editing and post-production set-ups, a degree of flexibility and variety of effects approaching that of standard NTSC systems is now possible, while taking advantage of the inherently higher quality offered by component video.

RGB graphic generators, processing equipment, and cameras can now be incorporated into M-Format and Beta-cam suites, various types of component products can be simply interfaced, and relatively inexpensive RGB monitors can be used to monitor YIQ or Y, R-Y, B-Y signals with true component quality. The MC-1 is a completely transparent addition to any state-of-the-art component system, and enables discerning producers to enjoy a fuller range of available effects without sacrificing one bit of resolution or colorimetry.

Inputs are three BNC connectors for either YIQ, RGB, Y, R-Y, B-Y External Genlock Input. Outputs are six BNC connectors for two sets of the selected format. Bandwidth is better than 20MHz and Intermatrix Conversion Accuracy is better than 0.2%.

MC-1 \$2,000.00

690 ET (Everything Time Code) READER/GENERATOR

Shintron introduces the single time code product that does it all...the remarkable Model 690 ET Reader/Generator. Reading and generating SMPTE or EBU Time Code is just the start. The ET comes equipped with every function ever put in a Time Code product and several unique innovations. Independent readers and generators can handle time code and user bits in either Vertical Interval Time Code (VITC) or Longitudinal Time Code tracks. The 690 can actually be used to translate between VITC and longitudinal Time Code. A sophisticated character generator will burn a high-quality numeric display onto any video source, and even generates a set-up menu onto a video screen which makes access to all of its digitally-controlled functions available at the push of a button. The Model 690 can jam-sync to other Time Code Generators in either longitudinal or VITC mode, has ten internal memories which can be used to mark edit points, and automatically adjusts itself to read in any frame-rate standard.

The performance of the Model 690 is no less amazing than its range of features. In the longitudinal mode, the ET can read at speeds from 1/60 to 80 times normal play speed in either forward or reverse. One frame is automatically added when reading in the forward direction or is subtracted when reading in the reverse direction to keep the resulting display in direct correspondence with the frame that is currently under the tape machine's playback head. The ET has adjustable hysteresis levels from -15 to -25dBm to allow the user to select the amount of noise rejection desired.

The ET comes equipped with Shintron's unique Orange (Organized Ancillary Grouped Equipment) digital control. That means that it can be directly interfaced with any of our new switchers or routing systems to become part of a completely interconnected studio control system.

The most amazing feature of all is the ET's price. Compare the ET with any Time Code Product on the market for features, performance, and price, and you will discover how truly remarkable the ET is.

690 ET \$4,500.00

SKOTEL CORP.

1445 Provencher
Brossard, Quebec CN J4W 1Z3
(514) 456-8990

TIME CODE GENERATORS/ READERS/METRONOMES

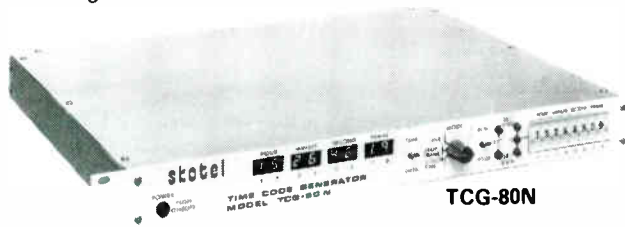
TCR-80 SMPTE TIME CODE WIDE BAND READER

- LED display with contrast enhancing filter
- Low power consumption
- Small size
- Display of Time and User Data
- Reads code from less than 1/20X to greater than 40X play speed
- Digital decoding techniques
- Retains and displays last code read when machine is stopped
- Self-contained Video Character Generator
- Low level head pre-amplifier available
- Automatic selection of record bias filter
- Display of Drop Frame mode
- Wide dynamic range AGC
- Error detection and bypass
- Dub output of reshaped LTC code input

TCR-80 SMPTE/EBU LTC Reader \$2,100.00
TCR-80V SMPTE/EBU LTC & VITC Reader 2,700.00

TCR OPTIONS

- 011 Parallel Data Input-001/output-011 \$450.00
- 012 Byte Serial Data Input-002/output-012 for Jam Slave ... 175.00
- 114 Video Character Inserter 850.00
- 214 Same as 114-Includes Remote Control with 2 meter cable
- 017 Intelligent Interface 800.00
- 018 VITC Input
- 019 Regen (Reshaped or reclocked) Code Output 250.00



TCR-80N



TCR-80

TCG-80N SMPTE TIME CODE PRODUCTION GENERATOR

- LED display with contrast enhancing filter
- Thumbwheel switches to set Time and User Data
- Full User Data facilities
- Low Power
- Small size
- Full Frame or Drop Frame mode is front panel selectable
- High level output capable of feeding multiple machines
- Self-contained Video Character Generator
- Unaffected by momentary power dropout
- Internal LTC Reader for Jam Slave of Time and/or User Bits
- Color Field Identification defined by Internal Measurement or External Field One Pulse

TCG-80N SMPTE LTC Generator \$2,690.00
TCG-80N/008 SMPTE VITC & LTC Generator 3,590.00
TCG-80P EBU LTC Generator 2,880.00
TCG-80P/008 EBU VITC & LTC Generator 3,780.00

TCG OPTIONS

- 001 Parallel Data Input-001/output-011 \$450.00
- 002 Byte Serial Data Input-002/output-012 for Jam Slave ... 175.00
- 004 Video Character Insert 850.00
- 006 VITC Reader for Jam Slave 550.00
- 007 Intelligent Interface 800.00
- 008 VITC Output

PTC-100 PORTABLE TIME CODE GENERATOR/READER

- Generates and Reads Time Code
- Jam Sync Capability
- Video Standards: NTSC, PAL, PAL-M
- Film Standards: 24, 25, 30 fps
- User Bit Generation and Display
- Remote Control for Time Counter
- Standard Connectors (type XLR, BNC...)
- Large, Bright LED display
- Antiglare Contrast Enhancing Display Filter
- Identification of Color Field Sequence in Code
- Simple, Straight Forward Operation
- Time of Day Clock

The Skotel Portable Time Code Generator/Reader Model PTC-100 provides a reliable source of time code for field production. A reader with Jam Sync capability is included to enable several units to be synchronized together in the field.

PTC-100

Portable Time Code Generator/Reader with LED display and longitudinal code output. Includes — service manual, Ni-Cad battery pack, battery charger & spare battery pack to accept 4 size AA cells.

PTC-100 \$2,800.00



PTC-100



DM-1000

DM-100 DIGITAL METRONOME

- Can be used for film and videotape productions
- Resolution to 1/100th of a frame makes metronome rate calculations easy
- Headphone and line outputs
- Fits into an attache case (8" x 6" x 1.75")

Modern editing methods, and production techniques such as computer animation, animation using computer assisted editing, and shooting directly on videotape, have created a demand for music scores more accurately timed than in the past. This demand is easily satisfied by the Skotel Digital Metronome.

DM-100 Digital Metronome \$750.00

DM-1000 DIGITAL METRONOME

Same as DM-100 and with 1/1000th of a frame resolution.
DM-1000 Digital Metronome \$870.00



SEG-2000A Special Effects Generator

The SEG-2000A is a fully equipped, rack-mountable studio unit and it's also a totally self contained, lightweight EFP portable that can be operated on AC, DC or rechargeable battery packs. At less than 21 pounds, with its own optional custom fitted carrying case plus a matched companion case for a CCU and a monitor, SEG-2000A offers an unprecedented level of flexibility and versatility.

The SEG-2000A incorporates the most sophisticated Sony industrial video features and delivers a high level of operating and control flexibility. Six video inputs and four output buss lines from the core of a system which accommodates a wide selection of cameras and offers wide latitude in transition switching. These are coupled with controls designed to achieve special effects in professional style. Cut, mix, ext. key, downstream key and wipe with 6 wipe patterns and soft, hard and border modes plus a built-in background color generator. Additional features, such as a built-in NTSC sync generator with Gen-lock capability, help assure high operating flexibility.

The outstanding performance of the SEG-2000 is based on the same engineering that's brought outstanding picture quality, color integrity and long-term reliability to all Sony video equipment.

FEATURES

- Built-in Sync Generator • Three-way Operation • SC and H Phase Adjustment • Four Output Buss Lines • Cut and Dissolve Between Inputs • Comprehensive Inputs/Outputs • Mixing, External Keying and Wipe Effects • Six Separate Wipe Patterns • Downstream Keyer and background color generator • Super-convenient Operation • Tally Intercom Circuit.

SPECIFICATIONS

- Power requirements AC 120V, 50/60 Hz, DC 10-24V (Ext DC), DC 12-24V with BP-60 Battery pack (1 or 2) • Power consumption 37W(AC), 30W(DC) • Operating temperature 0°C to 40°C (32°F to 140°F) • Weight Approx. 9.5kg (20 lbs, 15 ozs) • Dimensions Approx 482(W) x 168(H) x 266(D)mm (19x6³/₈x10¹/₂"") • Color system NTSC color • Switching system Vertical blanking switcher

Effects

- MIX, Dissolve by special effects control lever and PGM/PST MIX lever • WIPE, 6 wipe patterns (selectable) • Wipe edge: The softness is continuously variable • Border line: Hue, chroma, luminance, width and amplitude are continuously variable • EXT KEY, Input signal: 0.7Vp-p (VB) or 1.0Vp-p (VBS), 75 Ohms, unbalanced, EXT KEY connector (BNC), Slicer circuit is included • DOWNSTREAM KEYS, Gen-lock with PGM buss line signal, B&W CAMERA connector (6-pin) • Output signal: HD, VD 4Vp-p, 75 Ohms, unbalanced • Input signal: Video 0.7Vp-p, 75 Ohms, unbalanced • Shadow: Wide and narrow (selectable) • BACKGROUND COLOR, Chroma 0-650mVp-p (variable according to the hue level) • Hue 0°-360° • Luminance (Y) 0-450mV continuously variable.

Video Inputs

- VIDEO IN, 1-6 connectors (BNCx6) 0.7 Vp-p (VB) or 1.0Vp-p (VBS), 75 Ohms, unbalanced, with 75 Ohm termination switch (The PHASE INDICATION switch does not function with the VB input signal.) • VIDEO IN AUX, connector (BNCx1) 1Vp-p (VBS), 75 Ohms, unbalanced, with 75 OHM termination switch • GEN LOCK IN, connector (BNCx1) 1Vp-p (VBS) or 0.3V 0.3V (black burst), 75 Ohms

Video Outputs

- PGM OUT, 1-3 connectors (BNCx3) • PST OUT, 1, 2 connectors (BNCx2) 1Vp-p (VBS), 75 Ohms, unbalanced • VIDEO OUT, connectors (BNCx7) 1Vp-p (VBS), 75 Ohms, unbalanced (loop-through output of the corresponding VIDEO IN connector) • BLACK BURST OUT, 1-4 connectors (BNCx4) Sync burst 0.3Vp-p, 75 Ohms, unbalanced • V DRIVE OUT, connector (BNCx1) 4Vp-p, 75 Ohms, unbalanced • TALLY INTERCOM, 1-4 connectors (DIN, 4-pin x 4) • DG, DP 1.5%, less than 1.5° (APL 10-90%) • Crosstalk (SC) Over -40 dB • Supplied accessory AC power cord.

Optional Accessories

- Sony CVM and PVM series Color Video Monitors • Sony DXC series Color Video Cameras • Sony B&W Video Cameras • Sony CCDD, CCF & UGC Connecting Cables • BP-60 Rechargeable Battery Pack • LC-2003 Carrying Case for camera controller and monitor • LC-2006 Carrying Case for SEG unit • BC-20 Battery Charger

\$4990.00



SMC-70 Microcomputer

SPECIFICATIONS:

Main Unit

CPU

Processor: Z-80A*. Clock: 4.028 MHz

Memories

Read/Write Memory: 64K Bytes fully accessible. Read Only Memory: 32K Bytes includes System Monitor, Sony BASIC and Automatic start up diagnostic. Video Memory: 32K Bytes Graphic RAM, 6K Bytes for character, attribute and programmable character generator.

Display

Format: (software selectable) 25 lines of 80 characters or 25 lines of 40 characters x 2 pages. Character Set: ASCII character set (includes upper and lower case). Software programmable fonts (up to 256 total character types) 8x8 character cell size, 8 colors. Graphic Resolution: 640x400 dots, 2 colors (green or black and white); 640x200 dots, 4 colors; 320x200 dots, 16 colors; 160x100 dots, 16 colors, 4 pages. Border Area: 16 color display. Output Video Signals: Color—Analog RGB signals (0.714 Vp-p 75 Ohms, positive); Sync Signals (4 Vp-p 75 Ohms, negative); System Control Signal (TTL, 525/625 lines select); B/W—Composite Video Signal (1 Vp-p 75 Ohms, sync negative). Horizontal Frequency: 15.73 kHz. Vertical Frequency: 50 or 60 Hz Selectable.

Keyboard

Type: Standard QWERTY, full alphanumeric keyboard. Keys: Total 72 (individually sculpted and contoured by row) including 5 Programmable function keys (up to 15 defined functions), Editing function keys (insert, delete and clear), 5 Cursor position keys, Programmable HELP key.

Standard Interfaces

RS-232C Interface. Printer Port (Centronics type 8 bit Parallel). RGB Video Out (Color). Composite Video Out (Monochrome). Cassette Tape Recorder Interface. Light Pen Interface. Numeric Key Pad Interface. 5 Expansion I/O slots: (2 inside, 3 outside), Micro floppydisk drive (internal); Expansion memory port (internal); 3 expansion I/O slots (on tray). Expansion Unit Connector (for expansion unit).

Additional Standard Features

Timer/Calendar (battery backed up). Earphone Jack. Audio Speaker. Sound Level Switch. System Turnkey Switch. Tone Generator. Dimensions: 3.5" x 14.5" x 17.5" (HWD). Weight: 10.6 lbs. Power Requirements: 115 VAC +/- 10 % 60 Hz, 30 W. Operating Temperature: 5° to 35° Centigrade. **\$995.00**

Optional Accessories

RS-232C Interface Unit. IEE-488 Interface Unit. Video Signal Converter. Battery Backup Unit. Cache Disk Unit. Floppy Disk Control Unit: for 8" single sided, single density disk drive. VCR Control Unit. VideoDisc Superimpose Unit. Expansion Unit: Includes 5 additional I/O slots and power supply. 192K Bank RAM Unit. 16-Bit Adaptor.

SMI-7011 (A) Micro Floppydisk Unit

Console mounted, single drive, Single sided, double density, 280K Bytes capacity (formatted), 135 Tracks per inch, 70 Tracks, 500k bps transfer rate. Media: Sony micro floppydisk (3.5"). Size: 2.3" x 14.5" x 6.3" (HWD). Weight: 3.5 lbs. **\$565.00**

Other Disk Storage Options

Sony Dual Micro Floppydisk Unit. (SMI-7012): Console mounted, dual drives. Sony External Micro Floppydisk Unit. (SMI-7013): Single drive with power supply and cabinet (requires SMI-7011 and SMI-7012). Sony Micro Floppydisk Drive. (SMI-7014): Single drive (only for use with SMI-7011 and SMI-7013). 8" High Density Floppy Disk Drive: 1.0 megabytes (unformatted). Hard Disk System: 5.7 megabytes (formatted).

SMI-7012 \$1,100.00
SMI-7013 775.00
SMI-7014 500.00

KX 1211HG (Z) Trinitron® Component TV

12" picture tube measured diagonally, Composite and RGB Color Monitor, High Resolution Display (25 lines of 80 characters), 525 and 625 line mode (software selectable). Inputs: RGB Multi-input (Analog and TTL), Composite Video Input, Audio Input (2 channels). Dimensions: 13.1" x 13.3" x 15.0" (HWD). Weight: 28.9 lbs.

\$895.00

CPD-120 Character Display

12" picture tube measured diagonally, Non-glare tube with long persistence green phosphor, High resolution display (25 lines of 80 characters), 525 and 625 line mode (software selectable), Built-in audio amplifier and speaker. Inputs: Composite Video Input, Audio Input. Dimensions: 11.1" x 12.8" x 12.7" (HWD). Weight: 17.9 lbs.

\$280.00

Other Display Option

Standard color TV receiver: (with Sony Video Signal Converter).

SMI-7020 Dot Matrix Printer

Printing Method: Impact, dot matrix, logic seeking printing, bidirectional, incremental printing. Printing Quality: 7(H) x 9(V) dots Alphanumeric, 8(H) x 8(V) dots character generator based graphic, N(H) x 8(V) dots, bit image graphics. Print Speed: 120 cps, 63 LPM (10 CPI). Line Spacing: 1/6", 1/8", N/144 (N=0-99). Print Density: 5, 6, 8.5, 10, 12, 17 char/inch. Interface: 8-bit Parallel. Dimensions: 4.9" x 15.0" x 11.2" (HWD). Weight: 18.7 lbs. **\$725.00**

Other Printer Options

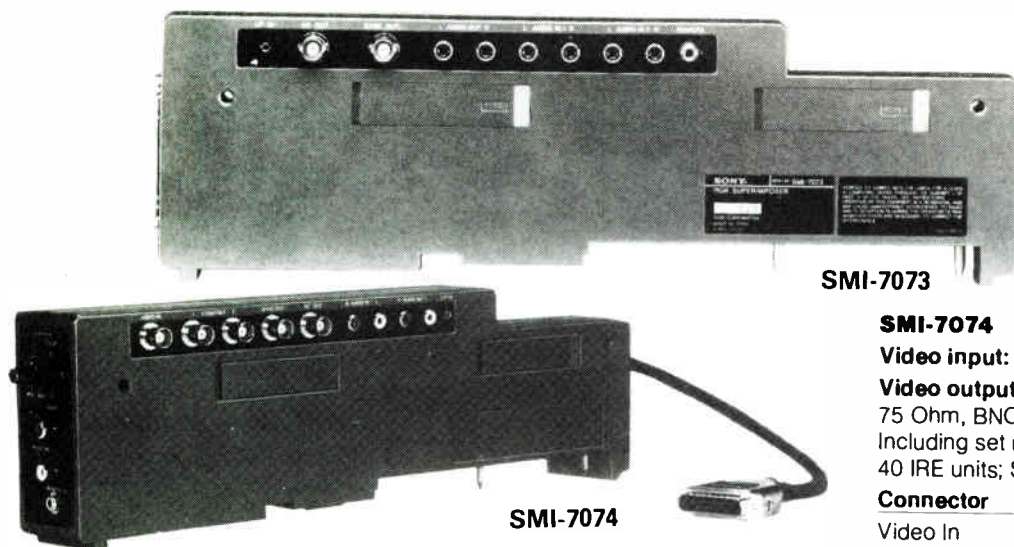
Dot Matrix 136 Character Printer, Letter Quality Printer (40 CPS).

*Z-80A Trademark of Zilog, Inc.

Prices and Specifications Subject to Change Without Notice.

VP-123

MICROCOMPUTER TO VIDEO SUPERIMPOSER



SMI-7073 RGB
SMI-7074 NTSC
Superimposers

The Sony Superimposers are modules that plug into the SMC-70G enabling character or graphic data generated on the Genlocker™ Microcomputer to be superimposed on video signals.

SMI-7073

Lock pulse input (for LDP-1000): TTL level, 4.7k Ohms, pull-up

Superimpose and mix mode: Superimposed portion of video signal: Same as above; Other portion of video signal: Dependent on external video signal

Sync out (for LDP-1000): 2V p-p ±0.5V p-p, 75 Ohm, BNC connector

SC out (for LDP-1000): 2V p-p ±0.5V p-p, 75 Ohm, BNC connector

Audio input level: -5dBm (Z in), 50k Ohms

Audio output level: -6dBm (Z out), 600 Ohm

Audio control:

Audio Out	0	1	2	3	4
R	Off	Audio 1 R	Audio 1 R	Audio 1 L	Audio 2 R
L	Off	Audio 1 L	Audio 1 R	Audio 1 L	Audio 2 L

Display capability: 8 colors* under following modes:

Mode	Superimposed Video	Mix Video
640×400	No	No
640×200	No	No
320×200	Yes	Yes
160×100	Yes	Yes

*One fixed color is used as a transparent color in superimposed mode

Remote control jack (for audio recorder): Minijack

RGB video input (from SMC-70): 25 pin connector

RGB video output: 0.7V p-p, 75 Ohm, 37 pin connector

SMC-70 interface: 50 pin connector

Dimensions: 4.4"×14.6"×1" (HWD)

110mm×365mm×25mm (HWD)

Weight: 1.7 lbs. (0.65kg)

SMI-7073 (RGB) \$500.00

VP-124

SMI-7073

SMI-7074

Video input: 1V p-p, 75 Ohm, BNC connector

Video output: Encoded video: 1V p-p (140 IRE units), 75 Ohm, BNC connector; Signal level: 100 IRE units including set up; Sync Level: 40 IRE units; Burst level: 40 IRE units; Set up level: 7.5 IRE units

Connector	Power On	Power Off
Video In (1V p-p)	75 Ohm terminated	75 Ohm open
Video Out 1	1V p-p, 75 Ohm	Connected to Video In
Video Out 2	1V p-p, 75 Ohm	No signal

Superimpose and mix mode: Superimposed portion of video signal: Same as above; Other portion of video signal: Dependent on external video signal

Lock pulse input (for LDP-1000): TTL level, 4.7k Ohms, pull-up

Volume adjustment: Inside of case: Video gain, sync gain, set-up level, chroma level, encoder gain
Outside of case: Chroma level with chroma on/off switch, subcarrier phase (360 degrees)

Sync out (for LDP-1000): 2V p-p ±0.5V p-p, 75 Ohm, BNC connector

SC out (for LDP-1000): 2V p-p ±0.5V p-p, 75 Ohm, BNC connector

Audio input level: -5dBm (Z in), 50k Ohms

Audio output level: -6dBm (Z out), 600 Ohm

Audio control:

Audio Out	0	1	2	3	4
R	Off	Audio 1 R	Audio 1 R	Audio 1 L	Audio 2 R
L	Off	Audio 1 L	Audio 1 R	Audio 1 L	Audio 2 L

Display capability: 16 colors* under following modes:

Mode	Encoded RGB	Superimposed Video	Mix Video
640×400	Yes	No	No
640×200	Yes	No	No
320×200	Yes	Yes	Yes
160×100	Yes	Yes	Yes

*One fixed color is used as a transparent color in superimposed mode

Remote control jack (for audio recorder): Minijack

RGB video input (from SMC-70): 25 pin connector

SMC-70 interface: 50 pin connector

Dimensions: 4.4"×15.3"×2.4" (HWD)

110mm×382mm×60mm (HWD)

Weight: 3.3 lbs. (1.5kg)

SMI-7074 (NTSC) \$950.00

Prices and Specifications Subject to Change Without Notice.

**SMC-70G****SMC-70G GENLOCKER™****Microcomputer with Genlock Capability**

The SMC-70G is an incredibly versatile, highly flexible, readily expandable microcomputer with genlock that enables it to synchronize internally generated text and graphics with an external video signal. It can superimpose text and graphics directly onto any video signal using either the RGB or NTSC Superimposer module (optional).

The SMC-70G is a cost effective system for video production houses and industrial studios that currently rely on outside services to add text and graphics to their video productions.

Features**Video**

- Built-in genlock capability
- Sync mode selectable by hardware or software
- Looping input for composite sync or video
- BNC connectors for composite input, reference output, RGB and sync or B & W outputs simplify computer/video equipment connections
- RGB superimpose capability with optional plug-in module—SMI-7073
- NTSC computer output and superimpose capability with optional plug-in module—SMI-7074
- Outstanding graphics capability in four modes: 640 x 400 dot, 1 color; 640 x 200 dot, 4 colors; 320 x 200 dot, 16 colors; 160 x 100, 16 colors
- Programmable character display
- Independent control of graphics and character displays from software
- Dual composite sync/video loop outputs
- Simultaneous RGB and B & W computer outputs
- Wide range of available peripherals and software due to complete compatibility with SMC-70 Micro Computer

Microcomputer

- Compact, integrated CPU/keyboard unit designed to accept either single or dual, built-in, 3.5" Auto Shutter micro floppy disk drives
- Optional 16 bit adaptor plug-in via expansion unit connector
- Custom LSI circuitry for graphics display and timing generation
- 16 resident I/O ports for RGB video x2, composite monochrome video x2, RS-232C, Centronics-type parallel printer port, numeric keypad interface, light pen interface, tape cassette interface, expansion unit connector and 2 internal and 4 external I/O slots on a slide-out tray
- Resident clock/calendar with battery backup
- Resident audio tone generator, speaker and volume control switch
- Three-mode turnkey switch: Off: System monitor signs on when powered on; Disk: OS or application program automatically loaded from diskette when powered on; ROM: Software loaded from ROM pack (contained in plug-in expansion module) when powered on
- Sculpted and contoured 72 key QWERTY type keyboard with 5 function keys (software definable up to 15), 4 edit keys and 5 cursor position keys
- Optional 17 key numeric keypad unit
- Optional light pen for non-keyboard data entry
- Direct memory access

\$2400.00

**SMI-7075 VIDEOTIZER
 FOR SONY MICROCOMPUTER SMC-70/70G**

The Sony's VIDEOTIZER takes you to a new world of graphics and images with much easier and faster input capability than a keyboard and a tablet.

It allows you to make a picture file for computer with the images from any NTSC composite video source, such as Video Camera, VTR, Video Disk and so on.

And more, enhances the usages of SMC-70/70G as an eminent presentation tool, and a special effect equipment for video post-production, with the mosaic effect capability.

The picture file made by VIDEOTIZER has compatibility with "Graphics Editor" and "Video Titler" in the PIC. file format.

FEATURES

- Field Still — Can freeze the video picture with resolution of 448 x 262 pixels*.
- Color Mode — 2 planes of 256 colors, 448 x 262 pixels*.
- B&W Mode — 2 planes of 256 gray scales or 16 planes of user sliceable binary mode, 448 x 262 pixels*.
- * SMC-70/70G: 320 x 200 pixels.
- Write-in Speed — 1/60 sec. (1 field real timing)
- Built-in Genlock capability for any NTSC video input
- Mosaic Effect
- 1 pixel can be enlarged up to 32 times for a special mosaic effect

SMI-7075 **\$2900.00**

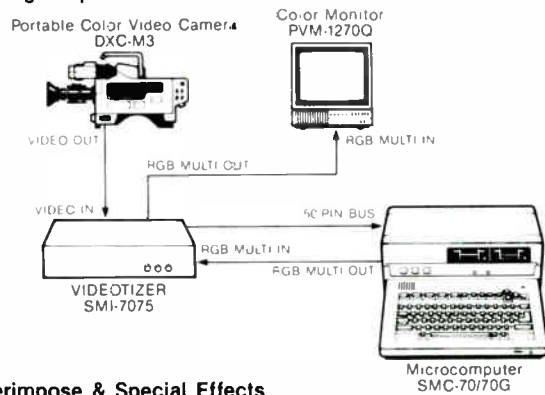
SPECIFICATIONS (Inputs/Outputs)

- Video Input:** BNC Type, 1.0Vp-p 75 ohms, sync negative
- B&W Video Output:** BNC Type, 1.0Vp-p 75 ohms, sync negative
- RGB Video Output:** BNC Type, 0.7Vp-p 75 ohms
- Composite Sync Output:** BNC Type, 4.0Vp-p 75 ohms
- Keying Signal Output:** BNC Type, 0.7Vp-p 75 ohms, without sync signal
- RGB Multi-Input:** 25-pin Connector
- RGB Multi-Output:** 25-pin Connector

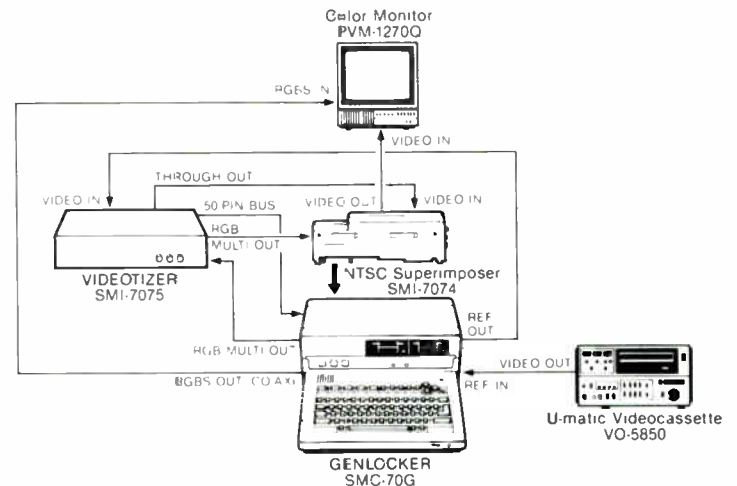


Connections

Creating Graphics



Superimpose & Special Effects



6000 Peachtree Rd. N.E.
 Atlanta, GA 30341
 (404) 455-7626

PROGRAMMABLE VIDEO CONTROLLER (PVC)

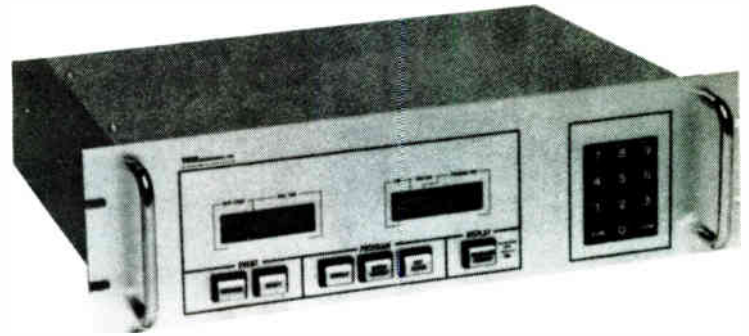
The PVC is compatible with most remote controllable VTR's, and when combined with existing VTR's it provides a cost effective playback system without the large initial expenditure necessary with other similar systems. The PVC will automatically control up to 8 different VTR's following your pre-programmed schedule. The PVC will control and can intermix different industrial tape formats such as 3/4", Beta and VHS. The PVC provides maximum flexibility.

Best of all, the PVC gives you ease of programming. An entire day of programming can be entered in a few minutes. Up to 64 separate commands can be programmed into memory for daily operation of power, play, stop or rewind functions — automatically switching video and audio sources at the prescribed time.

A special input is provided so that a Character Generator or Title Camera can be automatically switched on whenever the VTR's are not playing. In addition, an audio input is provided so that background music can be played over this special input.

For those occasions when it is necessary to insert a non-scheduled program or live camera input onto the system, a special auxiliary input is provided. Switching to the auxiliary input does not disturb the scheduled programming commands stored in memory. To activate the special auxiliary input only requires pressing two buttons on the PVC keyboard.

All VTR inputs can be switched up manually by pressing buttons on the keyboard. This does not disturb the scheduled programming commands stored in memory, and is particularly useful for previewing tape programs already loaded on the VTR's.



Battery backup prevents loss of memory during momentary power failures.

Because a PVC-based playback system includes several VTR's, the failure of any particular VTR eliminates only one input channel, and in no way affects the programming or playback of other VTR's.

OPTIONS

The PVC can be wired for two separate independent channel outputs utilizing four input positions per output channel. Programming and control of the two channels can be simultaneous.

An additional memory section can be added to the PVC, increasing its memory an additional 64 positions, to a total of 128.

Both options are available either as factory installed or as a field update.

Programmable Video Controller
 Model PVC-5 **\$4850.00**
 Expanded Memory Option **668.00**

Control Cables:
 Sony or Panasonic - 12' Length **\$36.00**
 JVC - 12' Length **66.00**

Video Cables
 (Specify Sony, Panasonic or JVC)
 12' Length **\$14.00**

Audio Cables
 12' Length **\$6.00**

Power Strip - 6 Receptacles **\$35.00**

NOTE:
 Longer Cables Available Upon Request

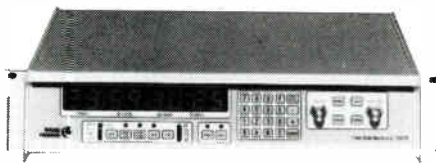
TCR 660



6010



TCG 550



T5010



T-7000

TCG 550 Time Code Generator

FEATURES

- Low, low cost opens up many new applications • Rugged construction. It's built to live in the real world • Operates on four standards. Drop frame, 24, 25, and 30 frames per second • Color framing. Operates with both NTSC and PAL color field sequences... necessary for work requiring great precision such as animation
- Auto preset to 23:58:30:00. Accommodates 1-1/2 minute pre-roll
- 'Lock' & 'Line' indicator lights. Lets you know if you're properly sync'd to video signal or powerline • Large, bright display. LED's .6in/1.5cm high are readable at a glance • Microprocessor-design. Fewer parts; lower operating temperature; greater reliability • Low power consumption. The TCG 550 draws only 4 watts from an AC source and 3 watts from 7-1/2-16 volt DC source. **\$995.00**

TCR 660 Time Code Reader

FEATURES

- Low cost opens up many new applications • Rugged construction for long, trouble free life • Operates on four standards. Drop frame, 24, 25 and 30 frames per second • Indicates color framed time code. Operates with both NTSC and PAL color field sequences . . . necessary for work requiring great precision such as animation • Time or user data display is selected from front panel • Front panel and remote Run/Hold lets you freeze a reading while the code count continues • Convenient operating range of .1 to 10 times play speed • Error light indicates absence of code • Large, bright display. LED's .6 in/1.5 cm high are readable at a glance • Microprocessor-design. Fewer parts; lower operating temperatures; greater reliability • Low power consumption. Draws only 4 watts from AC source and 3 watts from 7 1/2 - 16 volt DC source. **\$995.00**

T5010 SMPTE/EBU Time Code Generator

FEATURES

- Generates SMPTE (drop and non-drop frame), EBU and 24 frames per second time code • 4 field NTSC and 8 field PAL color framing sequences • Jam Sync and Continuous Jam operation featuring indicators for received time code error and received time code synchronous. All jam operations are held pending until received time code errors clear • Keyboard entry of time and user bits • High resolution 16 x 16 dot character generator. Offers boxed or uniquely bordered characters, reverse character video, continuously variable character position, frames suppression switch and two isolated video outputs • Time and user data displayed together or separately in video • Parallel input/output of time/user data • Two isolated 600 Ohm time code outputs • Large, bright .8" high display with intensity adjustable to match your control room lighting • Microprocessor design and extensive use of NMOS large scale integrated circuits. Fewer parts and low operating temperature for greater reliability. 19" rack mount only 3.5" high • Versatility. Combination of function and size makes the T5010 ideal for VTR room and mobile applications. **\$2695.00**

6010 High Speed Time Code Reader

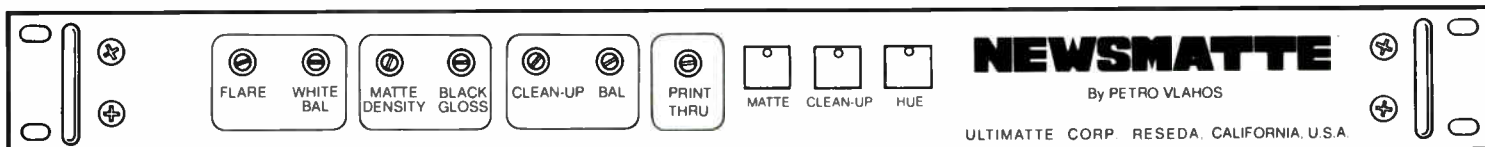
FEATURES

- Full compatibility with any source of SMPTE/EBU time code • Drop frame indicates 25 or 30 frames per second modes
- Reads 1/10 to 80 times play speed. Accommodates precise edit choices • Wide input level range accepts signal from any professional equipment source • Time or user data display is selectable from front panel. Provides time code for edit selection and user data for further identification or control purposes • High resolution 16 x 16 dot character generator. Offers boxed or uniquely bordered characters, reverse character video, two isolated video outputs, continuously variable character position, and frames suppression switch • Regenerated 600 ohm +11 dBm time code output
- Time and user data displayed together or separately in video • Remote and front panel Display Run/Hold control • Parallel output of time or user data • Indicates color framing in NTSC and PAL for precision editing jobs, such as animation where the odd/even color framing sequence is significant • Forward/Reverse indicator. Tells you the direction in which the tape is being read • Error indicator shows that you're not reading good code, and in the event of an error, the display will freeze on the last valid reading • Decoding delay compensation • Large .8" (2cm) high, bright LED display with intensity adjustable to match your control room lighting • Microprocessor design. Fewer parts for greater reliability. 19"/48.3cm rack mounting only 1-3/4"/4.5cm high. The low operating temperature means T6010 can be racked immediately above or below other equipment • Versatility. Combination of size and function makes the T6010 ideal for VTR room and mobile applications. **\$2295.00**

T-7000 Time Code Generator/Reader

FEATURES

- Self-powered, it weighs only ounces • This pocket calculator size time code generator/reader operates up to 8 hours on its internal rechargeable power supply; another 18 to 30 hours from the reserve supply in the book-size carrying case • It offers direct keyboard entry of time and user bits; standard 600 ohm +11 dBm output; jam-sync with built-in reader; color framing; all 3 standards (drop frame 30 and 25 frames per second) as well as remote start/stop capability • High intensity display readable in direct sunlight without using the sun shield **\$1695.00**



CAN SOLVE YOUR VIDEO MATTING PROBLEMS FOR LIVE BROADCAST

The **Newsmatte** has been designed to satisfy the needs of broadcasters desiring Emmy Award winning **Ultimatte** composites for their newscasts. Chromakey in newscasting has always been both desirable and undesirable. Desirable because image compositing allows for dynamic presentations and undesirable because of the distracting edge effects on the newscaster.

Newsmatte now permits image compositing without any edge effects, with every strand of hair reproduced. There is no blue edge or blue tinting, shadows are totally linear and quiet.

Newsmatte operates on the encoded signal and therefore does not require an encoder. It is connected in line between the camera and the switcher and delays the composite video 18 nanoseconds.

The output of the **Newsmatte** is either the direct unaltered camera video or processed video, whereby the blue backing and blue flair have been removed. Processed video is automatically selected when the chromakey button is depressed on the switcher.

The RGB inputs are used to generate the matte (key) signal which is made available along with the processed

foreground for subsequent mixing with the background scene within the switcher.

Newsmatte also contains its own mixing amplifiers, and when the background video is connected directly, it can be used as a stand-alone compositing device, without need of a switcher.

Many switcher manufacturers have **Newsmatte** interfacing options available for their new switchers. There are several ways of connecting **Newsmatte** into existing switchers, depending upon customer requirements.

Live news broadcasting demands immediacy whereby human engineering is developed to an ultimate. **Newsmatte** comes as close to this ideal as possible with its one-knob "matte density" control. One more button for selecting "shadows" or "no shadows" and the operational controls are defined.

Newsmatte departs from **Ultimatte** in both intended end user and principle of operation, while maintaining **Ultimatte's** flawless, undetectable compositing performance.

Operational Controls

Flare — normally set full-on for full suppression.

White Balance — Adjust color temp of FG grey scale. One time adjustment upon installation.

Matte Density — Sets foreground matte density. Adjustment may be needed when cool wardrobe colors are present.

Black Gloss — Used to stop background print-thru from blue reflections on shiny black objects. Typically set for black glossy hair.

Clean-Up — Allows elimination or reduction of shadows on background. One time adjustment used when shaded logos are present on blue backing.

Bal — Allows for fine adjustment of edge transitions when Clean-up is used.

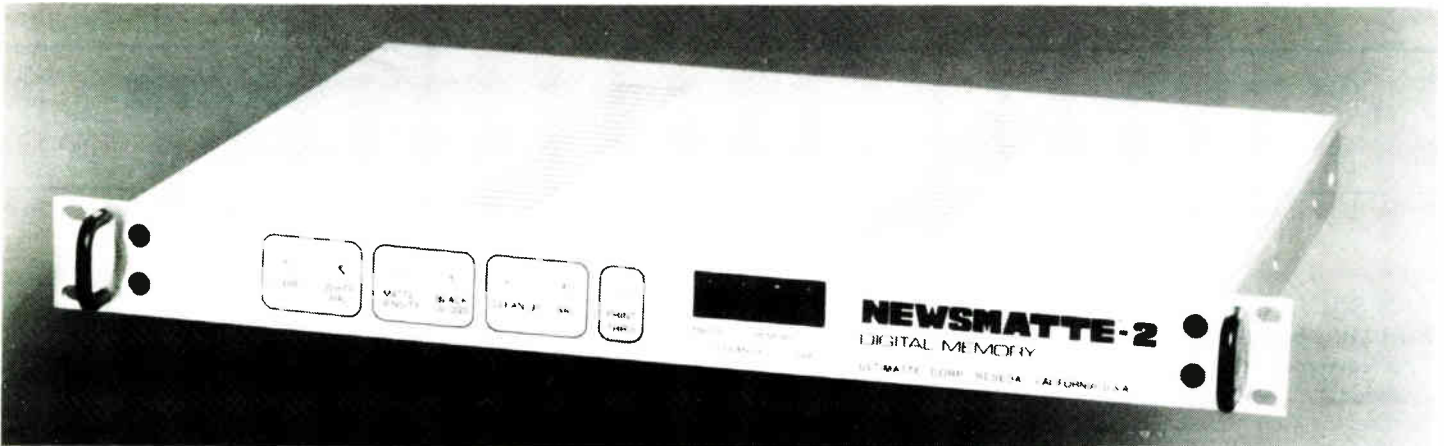
Print Thru — Sets null for background multipliers. One time adjustment needed only when **Newsmatte** is being used as a stand alone device.

Matte (Switch 1) — Composite image is selected when switch is lighted; direct FG camera is selected when switch light is off.

Clean-Up (Switch 2) — Clean-up enabled when switch is lighted.

Hue (Switch 3) — Selects blue or green backing color.

\$4870.00



NEWSMATTE-2 – a Professional Compositing Tool that is both easy to operate and easy to integrate into a video system

PERFECT, UNDETECTABLE COMPOSITES

Since Ultimatte Corporation introduced Newsmatte in early 1982, it has literally revolutionized the set design and format of news and weather programs throughout the world.

Unlike Chromakey, Newsmatte allows the foreground subject to be close to or even touching the blue backing. Sets can therefore be much smaller, less expensive.

Broadcasters have enjoyed the flexibility of a compositing device which gives them freedom to use transparent objects, smoke, fast moving objects, and other difficult-to-composite items. Newsmatte picks up even the finest hair detail and there is never a "cut-out" look, again not available with chromakey—even the new "soft edge" designs. Newsmatte contains its own mixing amplifiers, and when the background video is connected directly, it can be used as a stand-alone compositing device, without need of a switcher. Newsmatte has been designed to handle the immediacy of live broadcast, with its automated controls. Unlike chromakey, adjustment of iris and paint pots do not require a readjustment on the Newsmatte.

Newsmatte-2 has all these same advantages, plus Digital Memory, along with some other interesting developments to make it even more useful for the broadcast industry—not only as a more versatile tool for news and weather, but allows the News Department and Production Department to share the benefits and costs.

Newsmatte-2 is introduced not as a replacement for the original, but as a medium priced compositing device

suitable for either live broadcast or simple production work. Newsmatte-2 has all the desired features of the Newsmatte, plus digital memory. For small or fairly simple productions, where, perhaps, the more expensive and versatile Ultimatte-4 could be an "overkill" Newsmatte-2 has the necessary features for a professional job.

Newsmatte's ability to handle simple production situations makes it an extremely useful product for corporate or industrial video departments or smaller production houses. At a comparatively small cost, it is possible to obtain professional results, not available from even the very best and most expensive chromakey.

In the event a set is unevenly lit, say with hot spots at the top, the camera can zoom in on the area immediately surrounding the subject. Pressing the memory button locks in the backing characteristics; the camera can then be pulled back and the background will be perfectly composited without the ill effects normally caused by hot spots.

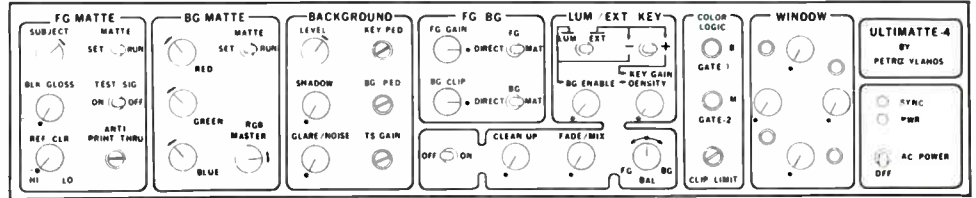
Dissolves and Wipes: An output to a switcher is available with continuous flare suppression of the foreground image. It is then possible to dissolve or wipe from the Newsmatte effect to the direct picture, while still maintaining the color balance of the foreground subject. This feature gives the foreground picture an appearance of better definition and depth and no noticeable difference between a composited or non-composited image.

\$7500.00

ULTIMATTE®

VIDEO MATTING

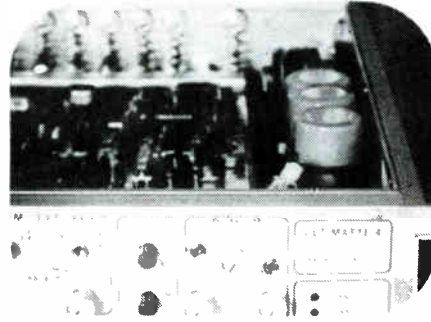
18607 Topham Street
 Reseda, CA 91335
 (818) 345-5525
 Telex 662453/ Answer back Ultimatte RSDA



ULTIMATTE®-4 FRONT PANEL



FOREGROUND DIRECT



BACKGROUND-ULTIMATTE-4



FINAL COMPOSITE

ULTIMATTE® -4

FEATURES

- Flawless Composites
- New Creative Opportunities
- Finer Quality Control
- Unusual Production Features

Black logic—compositing against black backing with variable level and density, for streak photography, titles, etc. Shadow control—reproduce, darken, lighten or eliminate. Overshoot the backing—using the built-in window/mask generator. Contrast control of foreground subject independent of background. Foreground fade-in/out—to extinction—to black silhouette. Fill a silhouette with a second scene (using two Ultimattes). Create halos in any color (using two Ultimattes). Subject can walk completely around himself during a continuous take (using two VTRs). Many other special effects are possible by creative use of the unique switching/mixing/mating functions of the Ultimatte.

Production

With live video camera in foreground and background. With live video camera in foreground—with background scenes on tape.

Post Production—Film

Composites onto tape images previously photographed on film (foreground and background, 16 or 35mm). This is done during the film-to-tape transfer process. The quality of the matte is superior to any film matting system. Replaces film opticals for both blue screen composite photography and streak photography on black backings.

Post Production—Tape

By recording the matte output signal at the same time as the Ultimatte processed foreground, post production video composites of the highest quality become possible.

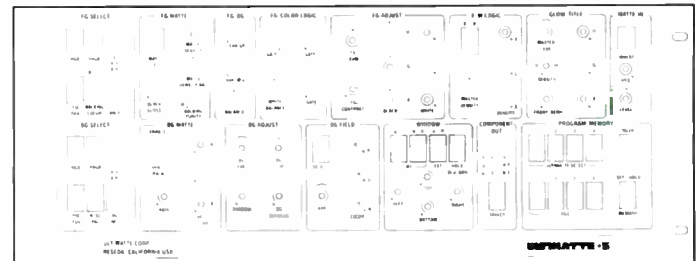
Now you can achieve superior blue screen video matting that can defy detection and will composite two images with no restrictions of any kind as to the nature of the subject matter.

Ultimatte is designed on a linear principle. It is not a keyer, and can thus solve problems Chroma-Key type systems cannot. It will reproduce (unless purposely inhibited) all foreground information seen by the camera.

Normally used with a blue screen, the Ultimatte can also composite against green or red backings.

Ultimatte is available with either local controls (UM-4) or a remote control panel (UM-4R).

Ultimatte®-4 \$13,500.00



ULTIMATTE® -5 FRONT PANEL

ULTIMATTE® -5

FEATURES

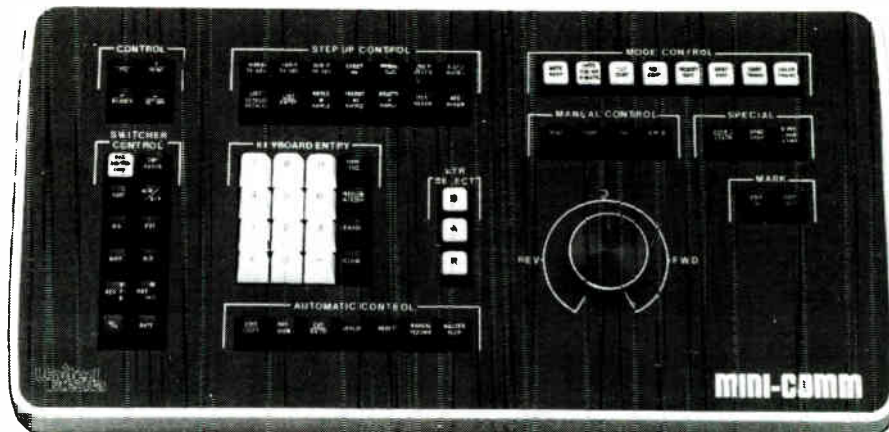
- Post Production—Makes high quality composites from taped (analog component) originals
- Soft or hard-edge windows
- Reverse window. Allows shut-off of background scene within window area
- Digitally based remote control over a single coax cable
- Can be controlled from 4 remote locations
- 32K random access memory
- Accepts all inputs, RGB/YRGB/YR-Y B-Y/YIQ (YUV)/NTSC
- Automatic BG matte setting
- Dynamic BG matte tracking through color changes from back wall, through coving, to floor. (A Breakthrough)
- Matting logic for Blue, Green, White, and Black backings
- May be computer controlled through switchable interface
- RBG Black balance/RGB White balance. Permits matching of color tones in FG/BG blacks and whites
- Inserts Glow or title—solid or transparent
- Accepts external Matte (key) signal

Ultimatte®-5 \$25,000.00

Prices and Specifications Subject to Change Without Notice.

mini-comm

VIDEO TAPE EDITOR
 Expandable and Up-Gradable to a
 Commander II, Eight Machine Editor.



List Management — Includes Insert, Delete, Change, Replace with and without Ripple, also Display 2, manual control of any parameters.

Edit List Memory — For up to 250 events with manual entry of dissolves, wipe or keys when using a single source.

Interfaces — 2 or 3 Interfaces for either 1", 3/4" or 1/2" VCR.

Switcher Control — To include crosspoint selection, dissolves and wipes up to 999 frames with partial effects in 10% increments. Keys, Pop, Fade, In, Out or Both.

User Definable Key — Allows storage of up to 125 keystrokes. Simply depress the key again to repeat each and every keystroke stored in memory.

Assignable Record/Play — Any machine in the system can be a recorder or player.

Multiple Recorders — Record/Slave Operation, one or all machines on the system can be recorders.

Automatic Assembly — Either sequential or checker-board.

Audio Switcher Control - Using the Model 425 for cuts or dissolve up to 999 frames.

Mark One/Mark All — VTR assigned to the system in one stroke, can also be used to trim the Edit in, Edit out, or duration.

Fully Time Code and Control Track Capable — Intermixing DF, NDF, SMPTE T/C or Control Track is perfectly acceptable.

Motion Control — Rotary Control of Search Speeds with detents and variable rotation

without detent when in Jog Mode. Jog is available on all types of video and audio machines.

Slow Motion Control — Manual Slo-Motion during the Edit Interval to achieve variable speed effects.

Special Function Control — Control of any external devices such as DVE, Audio Cart Character Generator or any device which can be activated by a contact closure.

Color Frame — All color frame parameters are checked for proper C-F relationship in NTSC-RS-170A or PAL 8-Field Sequence.

Cueing of VTR's — Cue one or all machines to the cue point or to the Edit point automatically as desired.

Edit Back Timing — Operator selectable Edit durations, for Back Timing of Edits and quick Edit adjustments.

Animation — Allows repeated Edit or previews to occur in durations of one frame to many hours operator selectable.

Frame Bump A/V Sync — Frame Bump, Audio/Video, on one or all machines in the system, with computer assistance in modifying the in times to ensure complete synchronization when recycled.

Back Timing — Automatic Back Timing of Edits — enter the outpoint and the desired duration. The Mini-Comm does the rest.

RS-232 Input/Output Port — Output of Memory Data or Edit list is via an RS-232C Port. Device Optional.

Sync Roll — All machines on the system can be used.

Single Machine Preview — For BVB, VBV, or VVV either source or Recorder.

Auto Tag or Manual Tag — Allows freedom of mixing the operation as desired.

Edit List Format — The industry standard Edit list can be displayed, printed, paper tape punched or output to disc.

Time code standards: SMPTE/EBU 24, 25 and 30 FPS; Drop/Non-drop Frame.

Electrical

Source Voltage: 115-220 VAC
 Source Frequency: 50-60 Hz. Single Phase
 Brownout Voltage: 30% of Source Voltage
 Power Consumption: 300 watts nominal

Dimensions:

Electronic Chassis: 16.5"W x 20"D x 10.5"H
 Keyboard:
 Rear — 28.0"W x 9"D x 3.6"H
 Front — 19.5"W x 9"D x 1.5"H

Weight:

Electronic Chassis — 80 lbs.
 Keyboard: Rear — 8 lbs.
 Prices start at \$9200.00

ACCESSORIES FURNISHED

VTR Control Cables
 TC Cables
 Instruction/Maintenance Manual
 Detailed Electrical Drawing
 Parts List

VIDEOMEDIA, INC.

211 Weddell Drive
Sunnyvale, CA 94089
(408) 745-1700

EDITING SYSTEMS



EAGLE I, II And III

EAGLE I

FEATURES

- Full Transport Mode Feedback
- The Most Accurate System Available
- Distributed Intelligence
- 250 Event Memory
- Built-in Sync Generator
- Built-in Black Burst Generator
- Animation
- Multiple Split Edits
- Auto-Tag
- Auto-Edit from Memory or the Eagle Disk Operating System
- ADR
- Printer Output
- Two Source Capable
- Fully Digital Speed Control
- Cruise Control
- Full Function "All" Button
- Search to any Register
- Trim + or - any Register
- Calculate Mode
- Full Capstan Override Routines
- Tape Number Handling
- Sync Roll Capable
- Program Length Counter
- Micro-Loc II and Control Track or SMPTE
- Single Defined Pushbuttons
- Multi-Display
- Transition and Pattern Entry
- Software Selectable Pre-Roll and Post-Roll
- Fully Upgradable to the Eagle II or Eagle III
- Software Lockout of Assembly Edits
- Full Complement of Error Messages
- Can be used with the Eagle DOS Dual Disk Drive System
- Slide Feature

\$7500.00

EAGLE II

All the features of the Eagle I but includes full list management functions including: Insert Event, Delete Event, Move Event, Index, Ripple, Auto-Clean and Slide.

\$9,500.00

EAGLE III

A full A/B roll system including the switcher. Includes all the features of the Eagle I and II plus third TCP module, Z6006, Z6007, complete switcher control, and Echo SE-3 computerized production switcher with Videomedia editing interface.

\$30,000.00

EAGLE EDITING OPTIONS AND ACCESSORIES

MICRO-LOC "2"	Intelligent Micro-Loc reader generator. (specify type VTR)	\$ 750.00
SM-3	Triple SMPTE/EBU readers (for three VTRs)	2,800.00
EA100	Single 5-1/4" mini-floppy disk file storage and retrieval system. Includes one 5-1/4" drive, mounting chassis and disk controller card.	1,995.00
EA-DOS	Dual 5-1/4" mini-floppy disk operating system. Includes two 5-1/4" drives, mounting chassis, disk controller card, and disk operating system software.	5,000.00
Z6004	Dual 8" floppy disk operating system. Includes two 8" drives, rackmount power supply and chassis, disk controller board and operating software.	7,500.00
VER 2.00	Enhanced operating software includes expanded list management and software assignable VTRs. Must have the Z6004 DOS for this option. Not available on the Eagle I.	1,500.00
C1-TRAN	Translator software to convert a Videomedia edit list to CMX format. Includes error tagging of all functions incapable of being performed by a "CMX" type editor. This option is available with the Z6004 only.	1,000.00
EA101	CMX edit list translator to printer port only. EPROM version	1,500.00
EA102	Non-volatile memory. Retains memory for extended periods of time even when the editor is not plugged in. No external batteries or power supply backup is required. ...	1,000.00
Z6007	Contact closure and general purpose interface. Includes audio and video monitor switcher and software control; 5 separate contact closures for use with external devices. (This unit is standard with the Eagle III).	900.00
Z6008	Monitor switcher for use with any Eagle I or II to provide single monitor use for rehearsal and shuttling.	450.00
TCP-2	Complete set of hardware and software with Z-80 microprocessor for parallel interface of additional transport to the Eagle. (specify type transport).	2,500.00
TCP-3	Complete set of hardware and software for serial interface of two additional transports to the Eagle. (specify type transports).	5,000.00

Note: Maximum number of transports controlled — 6 serial or 4 serial and 1 parallel or 2 serial and 2 parallel or 3 parallel.

EA-RM	Rack mount version option for any Eagle model editor.	\$ 450.00
SP-EAG	Spare parts for Eagle editing system	650.00

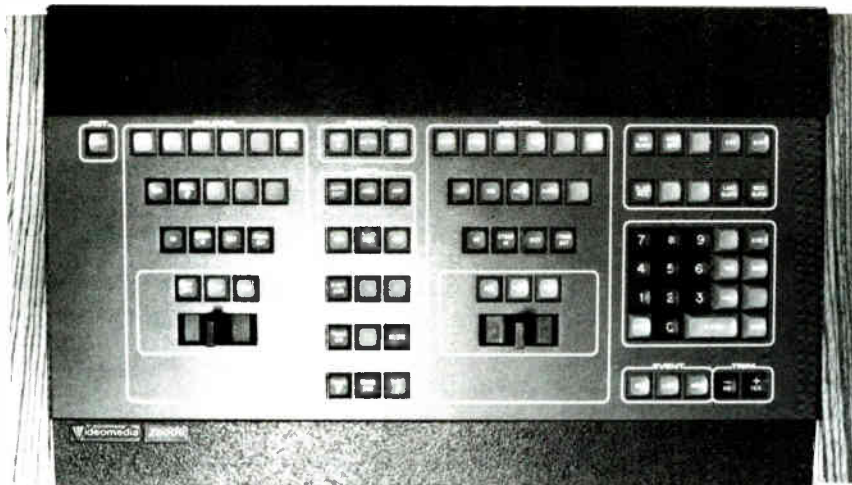
Upgrade or changeout charges

TCP-2 to TCP-2 (VTR Change)	Includes software and cable swap.	\$ 800.00
TCP-2 to TCP-3 (VTR Change)	Includes software and cable swap.	1,400.00
Eagle to Magnum upgrade charge	.....	POR

VIDEOMEDIA, INC.

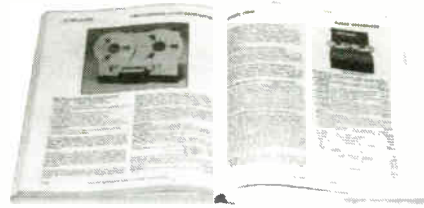
211 Weddell Drive
Sunnyvale, CA 94089
(408) 745-1700

EDITING SYSTEM

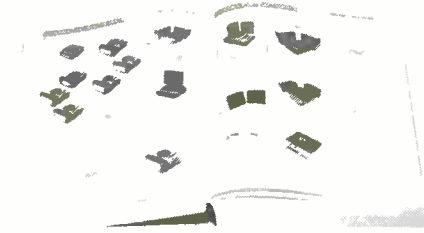


Z-6000			
FEATURES			
<ul style="list-style-type: none"> • Distributed intelligence using standard S-100 bus • Standard rackmount chassis • Z80A - 8-bit microprocessor • Frame accurate, color framed w/SMPTE or Micro-Loc; Machine dependent w/control track • Dedicated; Full alpha-numeric capability w/KR-6000 • Serial printer/Videomedia disk operating system 			
<p>The Z-6000 Editing System is the latest in the family of post-production products from Videomedia. It incorporates full distributed intelligence for control of teleproduction devices, assuring maximum system flexibility and precise system timing. Machines may be intermixed or changed easily as the user's requirements vary. SMPTE Time Code, Micro Loc and control track can be used together with complete accuracy. The Z-6000 may be economically installed in its simplest configuration as a single source, control track, on-line editing system, and then expanded, as the needs dictate, to an 8-source editing system with full switcher control, Text Editing (List Management) and a sophisticated Disc Operating System, which allows the editor to custom design the Z-6000 to his particular style of editing.</p>			
Z6000-A	2 machine, 8 event, cuts only, printer output, 2 TCP modules (specify type transports).....	\$ 9,800.00	
Z6000-B	2 machine, 250 event, cuts only, printer output, 2 TCP modules (specify type transports).....	13,400.00	
Z6000-C	2 machine, 250 event, cuts only, list management, printer output, 2 TCP modules (specify transports).....	16,250.00	
Z6000-D	3 machine, A/B roll, 8 event, printer output, 3 TCP modules (specify type transports) and switcher to be used (order switcher and/or software driver separate).....	22,750.00	
Z6000-E	3 machine, A/B roll, 250 event, list management, printer output, 3 TCP modules (specify type transports) and switcher to be used (order switcher and/or software driver separate).....	30,500.00	
Z6000 EDITING OPTIONS AND ACCESSORIES			
MICRO-LOC	"2" Intelligent Micro-Loc reader generator. (specify type VTR).....	\$ 750.00	
Z6001	Software based intelligent SMPTE EBU time code reader. S-100 bus.....	1,000.00	
Z6004	Dual 8" floppy disk operating system. Includes two 8" drives, rackmount power supply and chassis, disk controller board and operating software.....	7,500.00	
VER 2.00	Enhanced disk operating system includes expanded list management and software assignable VTRs. Must have the Z6004 DOS for this option. Available on the Z6000-C and E models only.....		1,500.00
C1-TRAN	Translator software to convert a Videomedia edit list to CMX format. Includes error tagging of all functions incapable of being performed by a "CMX" type editor.....		1,000.00
Z6006	Software and hardware driver for switchers capable of a computer interface i.e. CDL CAP, Grass Valley EMEM, Echo SE-3, Crosspoint Latch, etc. Contact factory for availability of other switcher interfaces.....		3,950.00
Z6007	Contact closure and general purpose interface. Includes audio and video monitor switcher and software; control 5 separate contact closures for use with external devices. (This unit is standard with the Z6000 D and E. It is not available for the Z6000-A).....		900.00
Z6008	Monitor switcher for use with any Z6000 A, B or C to provide single monitor use for rehearsal and shuttling. Please note: This unit is mandatory if type "C" transports are to be used on a Z6000 A-C. This unit is not required in either case with a Z6000 D or E.....		450.00
Z6010	I.O. expansion chassis will house up to 4 TCP modules. The main computer chassis will house an initial 3 TCP modules. (Any Z6000 can control up to 8 source and 1 record transport). This unit is necessary when adding more than 2 sources.....		2,450.00
Z6012	Hardware and software package to allow an external computer to engage in two way communications and control the Z6000 system. Use of the Z6012 does not interfere with normal keyboard operating parameters.....		2,495.00
TCP MODULE-1	Complete set of hardware and software with Z-80 microprocessor for interface of any transport to the Z6000 system. (specify type transports).....		2,750.00
VTB-2Z	Card extender and logic probe.....		150.00
SP-6000	Spare parts for Z6000 systems.....		800.00
MAFV-1	10 x 1 audio/follow/video vertical interval switcher and I.O. port for use with any Z6000 A-C when expanding number of source decks.....		1,900.00

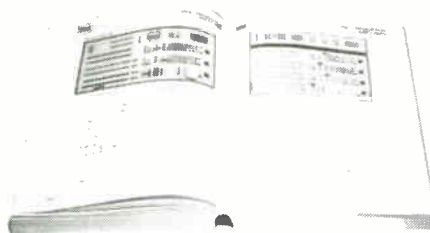
ILLUSTRATED TRADE REFERENCES



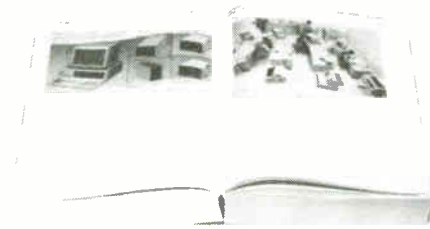
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INDUSTRIAL & PROFESSIONAL VIDEO EQUIPMENT Buyers Guide — 1280 pages of cameras, recorders, production & terminal equipment, monitors, lighting, telecine, RF equipment, enclosures, wire & cable. **\$95.00**

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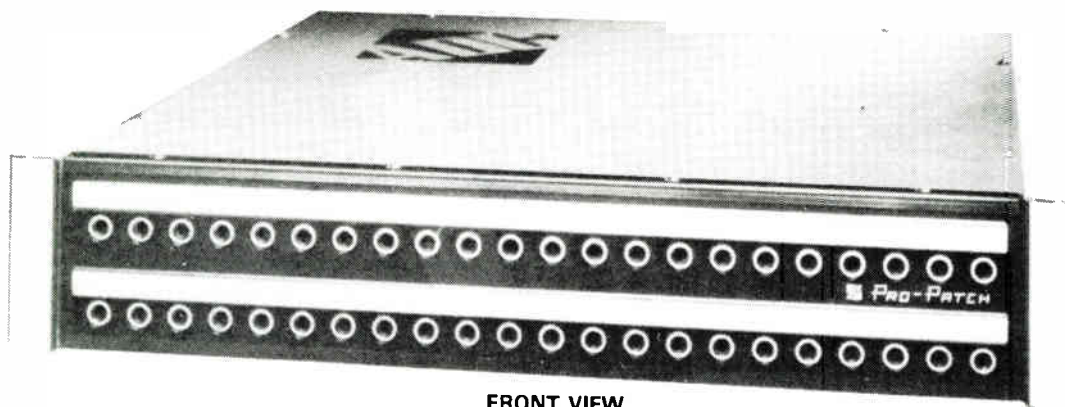
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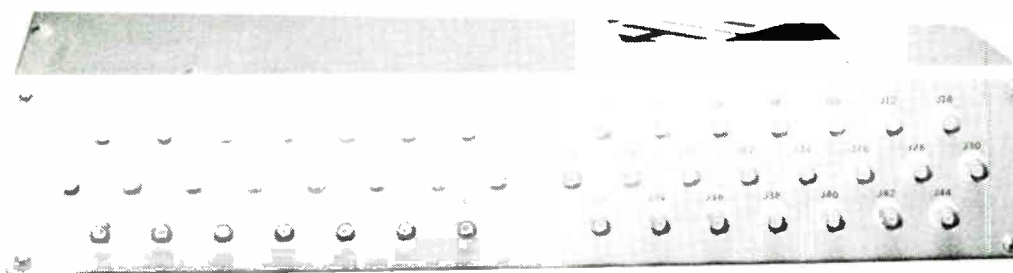
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4900 West 78th Street
 Minneapolis, MN 55435
 (612) 835-6800



FRONT VIEW



REAR VIEW

PRO-PATCH

New Concepts In Audio and Video Patching

Pro-Patch — ADC's newest family of jackfields offers the user additional features, greater savings and new concepts in both audio and video patching.

Pro-Patch units are re-usable and especially suited for remotes, special broadcasts and advance builds as well as studio environments. Pro-Patch jackfields allow matching audio and video configurations while providing a uniform and professional look to any system.

The Pro-Patch video jackfield features a 2 x 22 or 2 x 24 array of ADC switching (self-normalling) coax jacks wired back to quick and simple BNC connectors on a clutter-free rear panel. Self-normalling loops internal to the jackfield are color-phase compensated for cross patching. No phase shift occurs between self-normal and patch cord providing a phase coherent patching system.

ADC Part Number:

4-26053-0010 2 x 22 (44 Jacks) \$14.10
 4-26053-0020 2 x 24 (48 Jacks) 15.40

Note: Minimum order on patch cords, two each length.
 Additional discount for 10 or more of each length.

PRO-PATCH (Video/Coax Patch Cord)

3' Coax Patch Cord ADC No. CC-1076-N \$13.66

Note: Use only 3 foot patch cord to preserve phase coherent capability of ADC Pro-Patch Video Jackfield.

Accessories

Longframe (1/4") Patch Cords

ADC No.

PJ-81	1-foot Length	\$23.53
PJ-82	2-foot Length	24.78
PJ-83	3-foot Length	25.75
PJ-84	4-foot Length	26.65
PJ-86	6-foot Length	28.58

Bantam Patch Cords

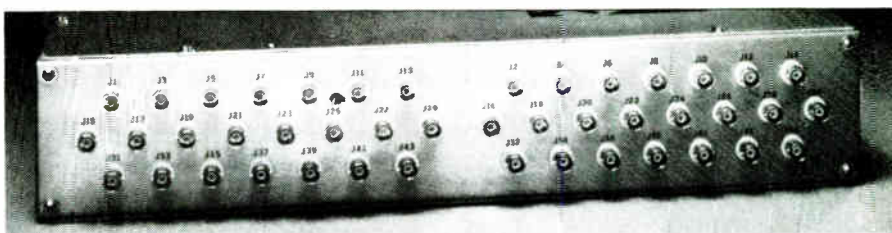
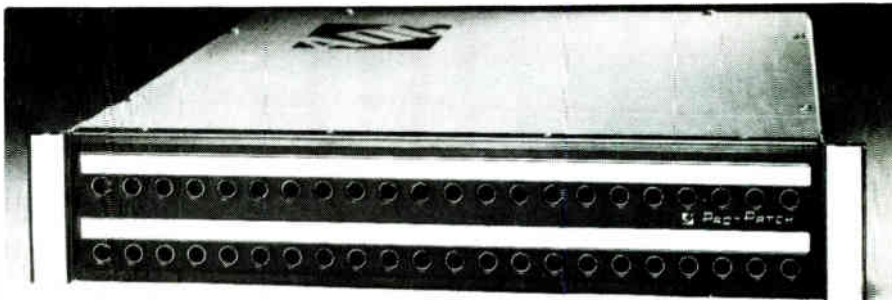
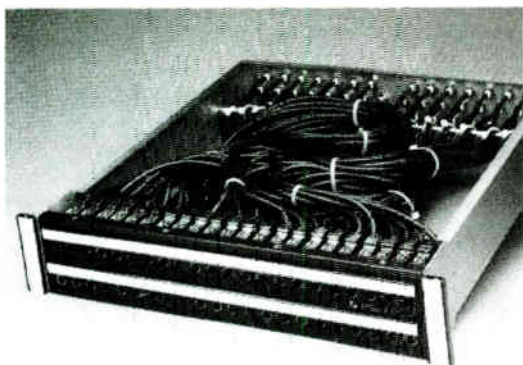
ADC No.

PJ-712	12-inch Length	\$14.82
PJ-713	18-inch Length	15.11
PJ-714	24-inch Length	15.45
PJ-715	30-inch Length	15.75
PJ-716	36-inch Length	16.04
PJ-718	48-inch Length	16.62
PJ-720	60-inch Length	17.26
PJ-722	72-inch Length	17.84

ADC MAGNETIC CONTROLS CO.

4900 West 78th Street
 Minneapolis, MN 55435
 (612) 835-6800

PRO-PATCH VIDEO JACKFIELDS



The Pro-Patch video jackfield features a 2 x 22 or 2 x 24 array of ADC switching (self-normalling) coax jacks wired back to quick and simple BNC connectors on a clutter-free rear panel. Self-normalling loops internal to the jackfield are color-phase compensated for cross patching. No phase shift occurs between self-normal and patch cord providing a phase coherent patching system. ADC Part Number PPV-22 or PPV-24

PPV-22 \$1410.00
 PPV-24 1540.00

SPECIFICATIONS

Physical

Chassis: Aluminum with gold anodized finish
 Front Panel: Black thermoset plastic or black thermoplastic.
 Rear Connectors: Isolated BNC bulk-head receptacle, non-tarnish finish

Cable

RG-59 series coax cable (75 ohms impedance)

Jacks

Nickel plated zinc alloy housing. Gold-plated beryllium copper and phosphor-bronze springs.

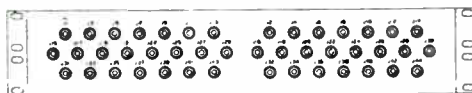
Electrical

Better than 90dB isolation between circuits in range of 0.6 MHz. Not greater than 0.2dB of insertion loss. VSWR of less than 1.1 in range of 0-100 MHz.

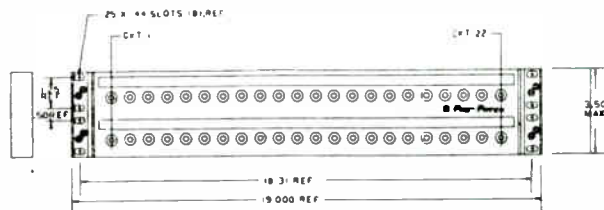
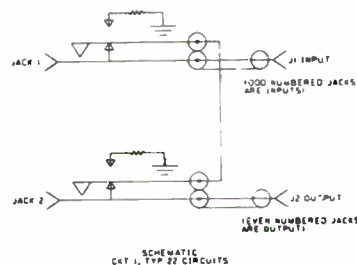
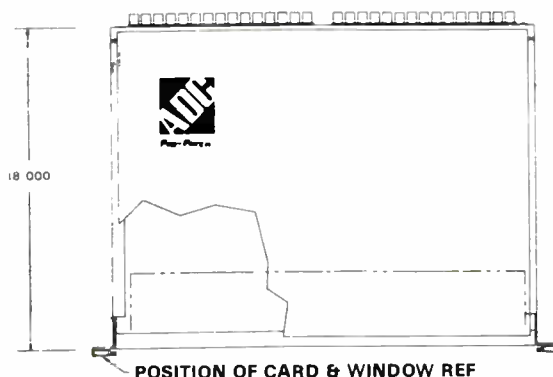
Environmental

Operating Temperature: 2°C to +50°C
 Non-operating Temperature: -50°C to +70°C
 Humidity: 5% to 95%

MARKING AS SHOWN TO
 IDENTIFY CIRCUITS



REAR VIEW (ROTATED)



Prices and Specifications Subject to Change Without Notice.

VT-3



VW-2



VW-3

*OUT OF BUSINESS
CALL HARRIS*

VW SERIES Time Base Corrector/ Frame Synchronization

VW SERIES FEATURES

- Full frame "infinite window" time base correction
- Electronic Frame or Field Freeze for production applications
- Remote control panel for full studio control of operational and setup functions
- Exceptional degree of transparency in either TBC or Synchronizer mode
- Hot switching without video roll or breakup
- Selectable freeze on loss of video—last good field or system black
- Horizontal blanking fixed at 10.8 usec.
- Bandwidth exceeds 2.4 MHz in heterodyne TBC mode
- RS-170A
- Direct or Heterodyne color processing
- Vertical Blanking is switch selectable in any order between lines 15-20
- Velocity compensation in both Direct and Heterodyne TBC mode
- Bandwidth exceeds 2.4 MHz in Heterodyne TBC mode
- Adjustable chrominance-to-luminance delay of ± 200 nsec.
- Advanced vertical output to minimize video delay for multiple generation editing
- Capable of delaying non-synchronous video feeds by as much as a full frame to make them synchronous with system reference

VW-2/VW-3 TBC, Frame Synchronizer, Electronic Freeze Frame

The VW-2 is designed to provide first-quality time base correction and dropout compensation for systems which utilize direct color Type C format VTR's.

The VW-3 is designed to provide first-

quality time base correction and synchronization for systems applications.

The VW-2/VW-3 also supply superior heterodyne processing for systems employing 3/4 and 1/2-inch format video tape machines.

The VW-3 has a signal-to-noise of 56 dB and is smaller with less power consumption.

The VW-3 provides simultaneous time base correction and synchronization, making it possible to take random feeds from land lines, microwave links or satellite and switch them synchronously with program materials.

- Hot switching without video roll or breakup
- Electronic Frame or Field Freeze for production applications
- Selectable Freeze on loss of video, last good field or system black
- Remote control unit can be operated from any location. Two remotes may be used
- Internal sync generator or Gen-lock mode
- Dropout compensation: TTL or RF inputs

SPECIFICATIONS

Television Standard

NTSC 525-line 60 Hz

Video

Bandwidth: ± 0.5 dB to 5 MHz; Heterodyne 2.4 MHz (luminance)

K Factor: 1% (2T pulse); Heterodyne 4% (2T pulse)

Differential Phase: Less than 2°

Differential Gain: Less than 2%

Signal-to-Noise: (VW2 + 56 dB)
(VW-3 + 58 dB)

Sampling Rate: 4th Harmonic of color sub-carrier

Time Base Error:

Monochrome: ± 20 ns

Heterodyne: $\pm 3^\circ$

Direct Color: ± 2 nsec

Range of Correction: 1 TV frame (two fields)

Line Rate Tilt: 1%

Field Rate: 1%

Output Sync Jitter: ± 1 nsec

Operating Controls

Bypass: Bypasses input video to Video Out 1

HET: Selects Heterodyne TBC mode

Freeze Frame: Full frame freeze

Freeze Field: Field freeze eliminates interfield flicker

Chroma Level: ± 3 dB

Hue: $\pm 45^\circ$ (with $\pm 180^\circ$ switch)

Setup: ± 10 IRE

Video Level: ± 3 dB

Outputs: Video — 2 outputs composite video
1 volt p-p

3.58 MHz — jittering 3.58 MHz 1 volt signal + adv. sync

Inputs: Video input — 1 volt ± 3 dB composite (NTSC) 75 Ohm terminating

Reference input — composite video or black burst looping input; 1 volt ± 3 dB return loss is 40 dB with power on or off.
(VW-3 — RF or TTL DOC)

VW-2 Physical

Size: 5-1/4"H, 19"D, rack mount

Weight: 50 lbs.

Power Consumption: 250 watts at 115 VAC

Operating Voltage: 100 v-240 V AC 50/60 Hz

Operating Range: 0-35°C

VW-3 Physical

Size: 1-3/4"H, 23"D, rack mount

Weight: 28 lbs.

Power Consumption: 150 watts at 115 VAC

Operating Voltage: 115/230 V AC 50/60 Hz

Operating Range: 0-35 C

Basic System Description:

	Price
1 — VW-2 Main Frame	\$15,500.00
1 — Remote Control	1875.00
1 — VW-3 Main Frame	\$14,500.00
1 — Remote Control	1875.00

130 Knowles Drive
Los Gatos, CA 95030
(408) 379-1500

AC 20A DUAL CHANNEL VIDEO SIGNAL PROCESSING SYSTEM

The Modular Concept

Truly modular signal processing is more than a collection of plug-in parts; it is an integrated system of interchangeable components that can be selected to perform a number of specific tasks at the user's discretion.

It may be configured as a single or dual channel system of time base correction or field/frame synchronization or a combination of both...by simply inserting the appropriate modules.

The AC 20A concept was the first digital video processor designed to grow with you as your needs expand. Start with a single channel processor at a very modest cost and add the second when you're ready.

Select the TBC module for tape machine use or the synchronizer module for integrating non-synchronous video...or a combination of both.

The simple architecture of the AC 20A includes four major elements...mainframe, genlock board and two signal processing channels.

AC 20 A Mainframe

The mainframe chassis occupies only 7" of rack space. All connections are made on the rear panel, power, video, external reference for video and advanced vertical and 3.58 MHz feedback for VTR use. Multi-pin connectors are used for interconnection with remote units and accessories.

Proc amp controls, genlock indicator and bypass switches may be included on the front panel of the mainframe, or on a separate Engineering Remote unit.

Inside, a single printed-circuit interconnect board routes power, video and sync signals to and from the genlock board, the module boards and the outboard remote and accessory units.

The AC 20A may be equipped with either a single or dual changeover power supply.

Genlock Board

The AC 20A may operate as a stand alone system with its own internal sync generator, or it will genlock to house reference black burst or composite video. The GL 1 board supplies each channel with accurately timed blanking, sync and burst for reinstantiated into the corrected output video.

The optional GL 2 genlock board performs all GL 1 functions plus production remote control as well as control from many commercial tape editors. It provides switching effects and channel C output circuitry which may be controlled by the PRC 20.

Modular Video Processing

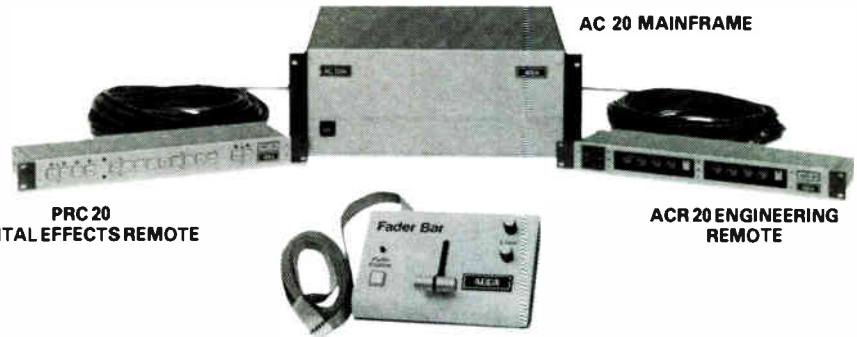
Interchangeable modules provide for one or two channels of digital video processing — time base correction and/or field/frame synchronization.

You may add either one or two TBC or field/frame synchronizer boards in any combination...two TBC's, two synchronizers, or one channel of each. Processor modules in the AC 20A are totally interchangeable.

TB 1 Digital TBC Processor Module

The time base corrector module in the AC 20A accepts color NTSC composite video from common V-locked, nonsegmented video tape machines which will accept 3.58 MHz subcarrier feedback (supplied from the AC 20A).

MODULAR VIDEO PROCESSING



PRC 20
DIGITAL EFFECTS REMOTE

AC 20 MAINFRAME

ACR 20 ENGINEERING
REMOTE

Output is time base corrected NTSC composite signal meeting RS-170A specifications.

TB2 Digital TBC Processor Module

The TB2 TBC module has all the TB1 capabilities, plus: Heterodyne processing — 3.58 MHz feedback available but not required (for 3/4 and 1/2" VTR's); Sony BVU 820 Slo Motion capabilities; viewable picture up to 40 times shuttle speed; and, drop out compensation.

VS 1/VS 2

Digital Synchronizer Module

The synchronizer module delays non-synchronous video by as much as a full frame to make it synchronous with system reference. Field synchronization is provided with the VS 2 board; frame synchronization is provided with the VS 1 board.

With 8 bit resolution and a sample rate of 4 times subcarrier, the synchronizer module makes the AC 20A ideal for all broadcast and production applications.

PRC 20 2:1

Production Remote Control

The PRC 20 puts digital switching effects within the reach of almost any budget, delivering professional control of speed, type and direction of transitions between the two channels without tying up a costly production switcher. Microcomputer controlled effects include Push On, Push Off and Pull On...transitions not available on any analog switcher.

Transitions are selected by pushbutton control and may be made at any of four fixed rates — 16, 24, 32 or 48 frames.

When added to the AC 20A with two TBC channels, the PRC 20 transforms the system to an ingenious post-production tool to smooth out the complexities of three-machine, A/B roll editing.

GL 2 Editor Interface

Many editing system controllers are able to interface directly to the AC 20A in order to fully control the digital switching effects as part of the edit list.

Take Box Editor Interface

Lower cost editing systems which do not include software interface provisions may still control the switching transitions between channels with the "Take Box"...a 3 x 4 x 1" accessory which initiates the last function selected on the PRC 20 remote control panel when it receives a ground closure signal from the editor controller.

Dual Power Supply

In order to meet the needs of many broadcast applications, a full standby power supply may be included as an option. This alternate power supply may be selected at the flip of a switch.

Manual Transition FADER BAR

This accessory unit, with familiar T-type "handle bar," permits the operator to control the duration of transition effects manually.

Available in desk top or panel-mount configurations, the Fader Bar extends the range of creative control for production and post-production applications.

System Pricing

Product	Price
Time Base Correctors (TBI)	
AC 20A 1-Channel	\$6,950.00
AC 20A 2-Channel	13,450.00
AC 20A 2-Channel with Digital Production Effects	17,450.00
Note 1-Add \$550 for ACR 20 Configuration (PROC AMP Remote)	
Note 2-Add \$1,500.00 Per Channel for TB 2 TBC Module	
Field Synchronizers	
AC 20A 1-Channel	7,990.00
AC 20A 2-Channel	14,990.00
AC 20A 2-Channel with Digital Production Effects	18,990.00
Note 1-Add \$550 for ACR 20 Configuration (PROC AMP Remote)	
Note 2-Add \$1000.00 Per Channel for Frame Synchronizer	
TBC/Field Synchronizers	
AC 20A 1-Channel TBC (TBI)	
1-Channel Synchronizer	13,750.00
with Digital Production Effects	17,750.00
Note 1-Add \$550 for ACR 20 Configuration (PROC AMP Remote)	
Note 2-Add \$1000.00 for Frame Synchronizer	
Note 3-Add \$1500.00 Per Channel for TB 2 TBC Module	

Upon request 1 or 2 channel models may be ordered with the GL 2 Gen Lock Module for Digital Production Effects in place of the GL 1 Gen Lock Model for an additional \$2500.00

Spares Pricing

Product	Price
TB 1 Video Module	\$6500.00
TB 2 Video Module	6000.00
ACR 20 Engineering Remote	1200.00
GL 1 Gen Lock Board	2200.00
GL 2 Gen Lock Board	4200.00
PRC 20 Production Remote	1500.00
AC 20 Mainframe without plug-in modules	4300.00
AC 20S Mainframe without plug-in modules	4300.00
AC 20 Power Supply	500.00
VS 1 Frame Synchronizer Board	8000.00
VS 2 Field Synchronizer Board	7000.00
Take Box	500.00
Fader Bar	530.00
Rack Slides	80.00

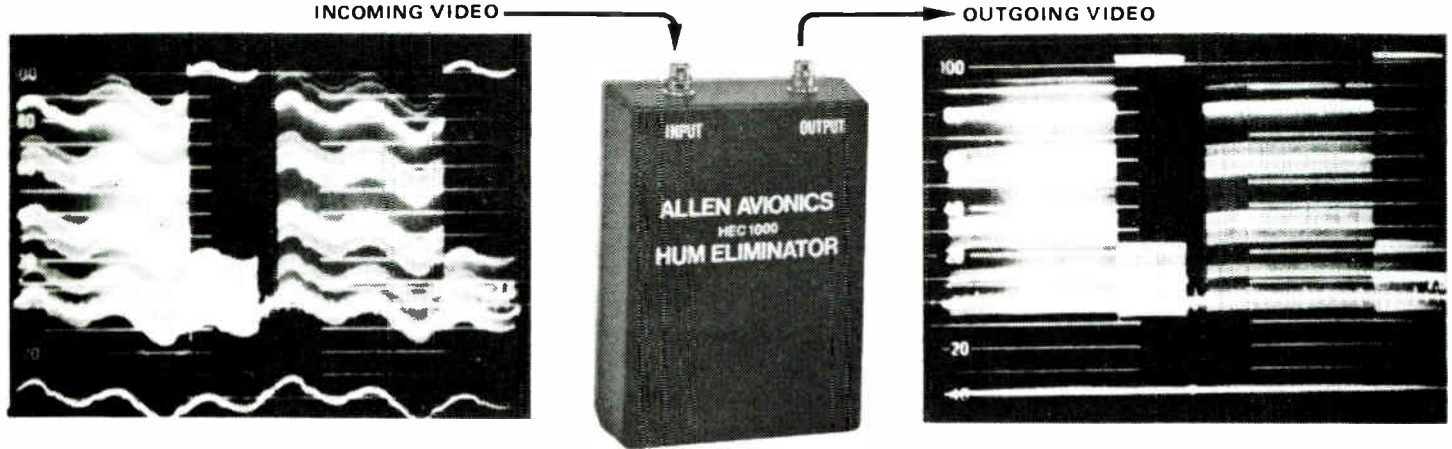
Circuit Board Repair

Circuit board repair on "exchange" basis...\$350.00*

*Adda Corporation reserves the right to refuse to repair any board out of warranty.

HUM ELIMINATOR

HUM ELIMINATOR HEC1000



ELIMINATES HUM AND OTHER INTERFERENCE in Video Lines caused by differences in Ground Potential.

- FLAT - DC to 10 MHz
- For Color and Black & White
- No Low Frequency or High Frequency Roll-Off
- No Differential Gain Distortion
- No Differential Phase Distortion
- Passive Device - Failure Free
- Reversible
- Small Compact Package
- Low Price

IN FIELD:

Between Remote Truck & Telco
Between Remote Truck & Microwave
For Intertruck Hookup
For VTR Units
For Monitoring Lines

IN STUDIO:

Between Buildings
On long runs in Buildings
Between Studios & Transmitter
On incoming Telco Circuits
On outgoing Telco Circuits

Impedance
Connectors
Bandwidth
Hum Reduction
Dimensions
Weight
Insertion Loss

SPECIFICATIONS:

75 ohms, unbalanced
Type BNC
DC to 10MHz (0.6 dB @ 10 MHz)
to 50 dB depending on system
5.3" x 4.0" x 2.0" (135 x 102 x 51 mm)
Approx. 3 lbs. (1.36kg)
< 0.2 dB

NETWORKS

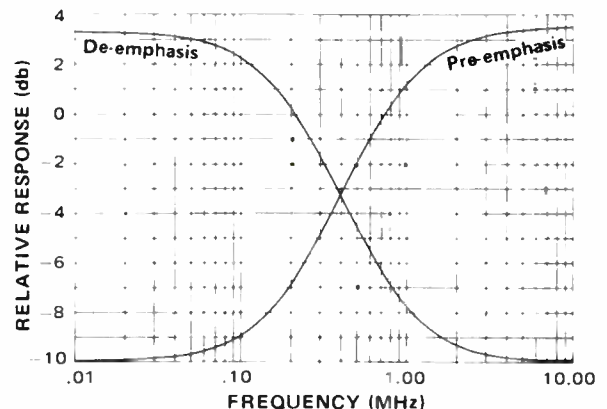
PRE-EMPHASIS & DE-EMPHASIS WAVE SHAPING NETWORKS

Pre-emphasis networks are used preceding the FM modulator in order to optimize the TV transmission.

De-emphasis follows the demodulator and serves to restore the wave shape of the demodulated signal.

IMPEDANCE 75 OHMS

Part No.	Description	Size
NW400	Pre-emphasis	2" x 1 ⁵ / ₈ " x 1 ¹ / ₈ "
NW500	De-emphasis	2" x 1 ⁵ / ₈ " x 1 ¹ / ₈ "



UNITS SUPPLIED IN METAL CANS
WITH BNC CONNECTORS

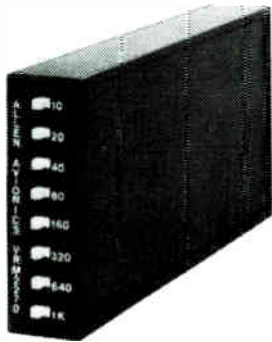
ALSO AVAILABLE – RANDOM NOISE MEASUREMENT NETWORKS TO EIA STANDARD RS-250B

RACK MOUNTABLE VIDEO/ PULSE DELAY LINES

Allen Avionics, Inc.

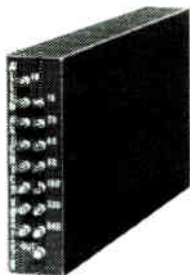
(516) 248-8080

A complete rack mountable series of video and pulse delay lines, with the capability of replacing up to 1450 feet of cable, is now being marketed by Allen Avionics.

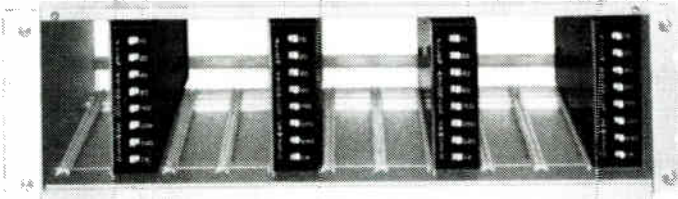


Showing 8 individual slide switches for rapid delay changes.

Photo shows 1 of 4 Strappable versions (VRS Series). Note that there are 7 input and output terminals available for strapping desired delay.



All units are manufactured to fit standard 19 inch racks and are provided with additional inserts to satisfy almost any mounting requirement. Delay units and racks can be purchased separately. The rack is manufactured with a hinged panel so that fast delay adjustments can be made. However, once adjustments are made, the front panel prevents further tampering with the slide switches or terminals.

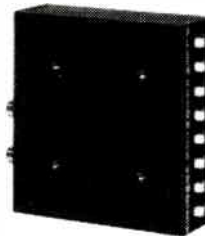


All models are stocked in our plant in Mineola, New York.

RACK MOUNT showing delay units with switches and terminals available for delay changes. Up to 11 delay units can be housed. Cards for mounting units in rack are purchased separately. Note hinged front panel.

Rack Size: 19" w., 10" d., 5 1/4" h.

Four variable slide switch units are being offered with total delays of 255, 637.5, 1275 and 2270 nanoseconds. Each unit contains 8 individual delay units. Four strappable units are also manufactured with total delays of 317.5, 635, 1270 and 2260 nanoseconds. The strappable units consist of 7 separate delay lines each having their own input and output terminals. The slide switches or terminal strapping provide methods for adding the individual lines together so that the output is always the summation of the individual lines. This eliminates most video distortions and assures good chrominance to luminance delay. Precision delay changes of as small as one nanosecond are easily accomplished. Low insertion loss, amplitude and delay flatness, along with excellent pulse fidelity, are characteristic of this series.



Units are rack mounted by attaching a durable plastic card to the large surface. Note inserts provided for the attachment.



To satisfy requirements other than rack mounting, additional inserts are provided.

Part No.	Delay Range (Nano-Sec.)	Delay Steps (Nano-Sec.)	Method of Variation	Maximum Insertion Loss @ 100 KHz (db)	Amplitude Flatness At Any Delay Setting 100KHz to 5.5MHz (db)	Max. Rise Time (Nano-Sec.)	Package Size (Inches)
VRM0255	0-255	1.0	Slide Switch	.40	.4 Max.	20	1.250 x 4.15 x 4.00
VRM0637	0-637.5	2.5	Slide Switch	*1.00	.4	28	1.250 x 4.15 x 6.00
VRM1275	0-1275	5.0	Slide Switch	*3.00	.4	33	1.250 x 4.15 x 9.00
VRM2270	0-2270	10.0	Slide Switch	*3.00	.5	40	1.250 x 4.15 x 9.00
VRS0317	0-317.5	2.5	Strap	.40	.5	26	1.250 x 4.15 x 4.00
VRS0635	0-635	5.0	Strap	.75	.5	35	1.250 x 4.15 x 6.00
VRS1270	0-1270	10.0	Strap	1.50	.5	37	1.250 x 4.15 x 9.00
VRS2260	0-2260	20.0	Strap	3.00	.5	40	1.250 x 4.15 x 9.00

*±.2db variation at any delay setting.

Impedance: 75 ohms.

Pulse Distortion: Less than 4% with an input pulse rise time of 20 nanoseconds.

Working Voltage: 50 volts maximum.

Return Loss: 15db minimum.

Delay Tolerance: 5% or 1 nanosecond, whichever is greater.

Prices and Specifications Subject to Change Without Notice.

VT-7

Allen Avionics, an established leader in the design and manufacture of Electromagnetic Delay Lines and L-C Filters has now developed a specialized group of products for the video market.

In color television broadcasting, accurate timing of signals is essential. This was initially achieved by the use of 75 ohm coaxial cable. The cost in time and materials to accomplish precise trimming and the lack of a rapid and convenient method of changing delays is currently responsible for the decline in cable usage. Television studios, studio equipment manufacturers and others engaged in the video industry are changing from 75 ohm cable to a more suitable method of achieving precise short delays. Allen Avionics now offers a line of Video Units for this purpose. Their use will result in a reduction of size, weight, installation cost and an overwhelming saving in time and effort to make delay changes.



Models VPO635, VP1270 and VP2075 are padded to provide a flat loss at any setting. As a result of this padding, these units will exhibit a maximum variation of $\pm .2$ db at any delay setting.

Model VP0010 was designed specifically to be used as a delay trimmer in conjunction with our other delay units or any 75 ohm system. It offers .5 nanosecond switching resolution with excellent amplitude flatness up to 5.5 MHz.

These new delay units feature extremely flat amplitude response to 5.5 MHz, small increments of delay variation, low signal distortion and tight delay tolerance. The delay networks are ideal for pulse applications because of their fast rise times and low distortion. Amplitude equalization is employed to achieve excellent flatness over the video frequency range. The delayed output of any model in this group is the summation of individual lines. It is not the result of a tapped line. This feature insures that output pulse distortions are minimized. Units will match to any 75 ohm system and can be directly connected into the video signal path by means of BNC connectors.



Part No.	Delay Range (Nano-Sec.)	Delay Steps (Nano-Sec.)	Method of Variation	Maximum Insertion Loss @ 100 KHz (db)	Amplitude Flatness At Any Delay Setting 100KHz to 5.5MHz (db)	Max. Rise Time (Nano-Sec.)	Package Size (Inches)
VP0010	0-10.5	.5	Toggle	.15	.2 Max.	3	4 3/8 x 2 3/8 x 1 1/16
VP0127	0-127	1.0	Toggle	.15	.3	14	4 3/8 x 2 3/8 x 1 1/16
VP0255	0-255	1.0	Toggle	.15	.3	16	4 3/8 x 2 3/8 x 1 1/16
VP0317	0-317.5	2.5	Toggle	.15	.3	20	4 3/8 x 2 3/8 x 1 1/16
VP0635	0-635	5.0	Toggle	* .50	.4	25	4 11/16 x 3 11/16 x 2 1/16
VP1100	0-1100	10.0	Rotary	1.25	.4	30	4 11/16 x 3 11/16 x 2 1/16
VP1270	0-1270	10.0	Toggle	*3.00	.4	30	4 11/16 x 3 11/16 x 2 1/16
VP2075	0-2075	25.0	Toggle	*3.00	.5	40	7 3/8 x 4 11/16 x 2 1/16
VS0315	0-315	5.0	Strap	.25	.4	28	4 x 2 x 1 1/4
VS0635	0-635	5.0	Strap	.60	.5	33	5 x 2 x 1 1/4
VS1275	0-1275	5.0	Strap	1.25	.5	33	5 x 3 x 1 1/4
VS2075	0-2075	25.0	Strap	2.50	.5	40	6 1/2 x 3 1/2 x 2



* $\pm .2$ db variation at any delay setting.

Impedance: 75 ohms.

Pulse Distortion: Less than 4% with an input pulse rise time of 20 nanoseconds.

Working Voltage: 100 volts maximum.

Return Loss: 20db minimum. 15db minimum for VP2075 & VS2075.

Delay Tolerance: 5% or 1 nanosecond, whichever is greater.

DELAY TRIMMERS—VRM011, VAR011 & VAR005



VRM011

These VAR Units, which permit an infinitely small delay adjustment, insure an amplitude and delay flatness superior to that of any other unit presently available.

The units can be used as delay trimmers alone, or in conjunction with any of our other delay boxes from D.C. to over 5.5 MHz.



VAR011

Part No.	Delay Range (Nano-Sec.)	Toggle Switch Variation (Nano-Sec.)	Trimmer Variation (Nano-Sec.)	Maximum Insertion Loss @ 100 KHz (db)	Amplitude Flatness at Any Delay Setting 100KHz to 5.5 MHz (db)	Package Size (Inches)
VRM011	0 - 11	.5 steps to 10.5	Continuously Variable to .5	.3	.3	1 1/4 x 4 5/32 x 4
VAR011	0 - 11	.5 steps to 10.5	Continuously Variable to 1	.2	.25	4 3/8 x 2 3/8 x 1 1/16
VAR005	3 - 7	---	Continuously Variable from 3 to 7	.2	.2	3 5/8 x 1 1/2 x 1 1/4



VAR005

Impedance: 75 ohms.
 Working Voltage: 100 volts.
 Pulse Distortion: Less than 3% with an input rise time of 20 nanoseconds.
 Return Loss: 20db or greater.

TYPE AV-397 & 75-2A

75-2A
 7-3/8"x4-11/16"x2-3/16"

Maximum Delay: 2.075 microseconds ±3% variable in .025 μs. steps from .025 to 2.075 microseconds.

Time Delay of Individual Lines: 1, .5, .2, .1, .05, .025 microseconds.

Rise Time for Entire Line: .06 microseconds maximum.

Frequency Response: 3db down at 5 megahertz for 2.075 microseconds delay.

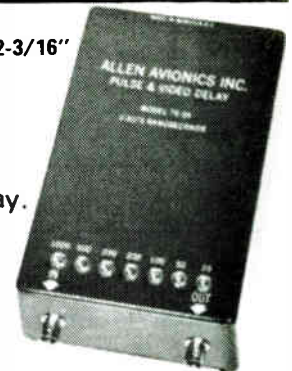
Distortion: 2% maximum with .2 microsecond input pulse.

Impedance: 75 ohms ±5%.

Working Voltage: 100.

Temperature Coefficient: 50 parts/million/°C from -55°C to 105°C.

Attenuation: 7% maximum for 2.075 microsecond delay.



AV-397
 2"x2-1/2"x5-1/2"

TV LINE EQUALIZERS—VE300 & AV-535

IMPEOANCE: 75 ohms + 2 ohms to 8 Megahertz.
 ATTENUATION OF CABLE PLUS EQUALIZER: 3db.

These Equalizers are designed to compensate for losses in RG-11/U (75 ohm) cable and its equivalents. The units are capable of equalizing 50 to 300 feet in 50 foot increments.

The VE300 is provided with a rotary switch to select the required amount of cable footage to be equalized. It is supplied with BNC connectors for quick input and output connections and is foamed in a metal can.

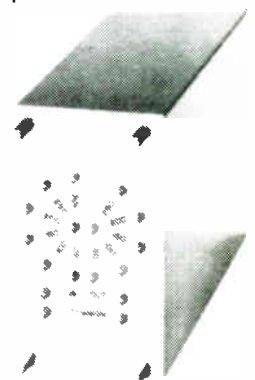
The AV-535 has terminals on its mounting surface arranged to provide for simplified strapping of different cable lengths. The unit is foamed and hermetically sealed in a metal can.

Attenuation of equalizer alone is as shown. TOLERANCE ±.07 db.



VE300
 4-11/16"x3-11/16"x2-1/16"

Feet	0.1 MHz	2 MHz	4 MHz	8 MHz
50	2.97 db	2.86 db	2.79 db	2.67 db
100	2.93	2.68	2.53	2.27
150	2.90	2.51	2.28	1.88
200	2.86	2.35	2.03	1.52
250	2.82	2.19	1.82	1.21
300	2.78	2.02	1.58	0.86



AV-535
 2"x3-1/2"x5"

Prices and Specifications Subject to Change Without Notice.

NEW "MVFL" SERIES

DELAY EQUALIZED NTSC LOWPASS FILTERS — VFL, MVFL & VCL SERIES

For the video field, we have built many lowpass filters having sharp roll-offs and good passband delay linearity with cut-off frequencies from .1 MHz to 10 MHz. The most popular of these are used to attenuate the harmonics of the NTSC color sub-carrier frequency 3.58 MHz. The most commonly used filters in this group are tabulated below:

VFL & MVFL SERIES — IMPEDANCE = 75 OHMS

Standard Size Max. Insertion Loss 1db Part No.	Miniature Size Max. Insertion Loss 2db Part No.	Max. .25db Attenuation @ Frequency (MHz)	Max. 3db Attenuation @ Frequency (MHz)	Min. 45db Attenuation @ Frequency (MHz)	Approximate Passband Delay (Nanoseconds)
VFL1P7	MVFL1P7	1.75	1.92	2.41	1691
VFL2P2	MVFL2P2	2.25	2.45	3.10	1325
VFL2P7	MVFL2P7	2.75	3.00	3.77	1082
VFL3P2	MVFL3P2	3.20	3.50	4.40	928
VFL3P5	MVFL3P5	3.50	3.84	4.82	846
VFL3P8	MVFL3P8	3.80	4.16	5.22	781
VFL4P0	MVFL4P0	4.00	4.38	5.51	741
VFL4P5	MVFL4P5	4.50	4.93	6.19	659
VFL5P2	MVFL5P2	5.20	5.70	7.16	570
VFL6P0	MVFL6P0	6.00	6.58	8.27	494
VFL6P5	MVFL6P5	6.50	7.12	8.95	457

Max. Delay Variation = ±3% to —.25 db Freq. Max. Passband Ripple = ±.25db.

VFL Size: 4" x 2" x 1 1/4" in metal can with BNC Connectors.

MVFL Size: 3" x 1 1/2" x 1/2" in metal can with terminals for PC mounting.

VCL SERIES — IMPEDANCE = 75 OHMS

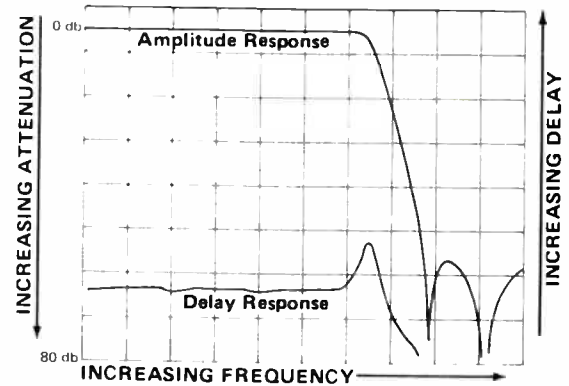
Part No.	Maximum ±3% Delay Distortion to Frequency (MHz)	Maximum .25db Attenuation @ Frequency (MHz)	Minimum 45db Attenuation @ Frequency (MHz)	Approximate Passband Delay (Nanoseconds)
VCL3P2	2.7	3.2	3.63	1100
VCL3P5	2.9	3.5	3.97	1010
VCL3P8	3.2	3.8	4.31	930
VCL4P2	3.5	4.2	4.76	840
VCL4P5	3.8	4.5	5.10	780
VCL4P9	4.1	4.9	5.56	720
VCL5P2	4.4	5.2	5.90	680
VCL5P7	4.8	5.7	6.46	620

Max. Insertion Loss @ 100 KHz = 2.5db.

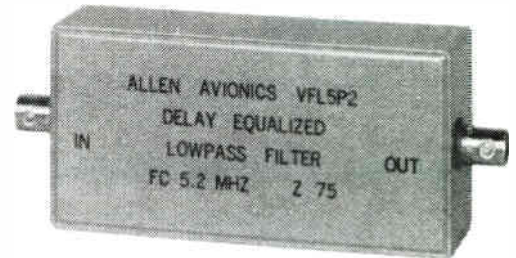
Max. Passband Ripple = ±.25db.

Size: 6" x 2" x 1 1/4" in metal can with BNC Connectors.

DELIVERY FROM STOCK



TYPICAL AMPLITUDE & DELAY RESPONSE OF VFL & MVFL SERIES



NTSC REJECT FILTERS

Some of the most frequent specifications that we encounter in the video industry are based upon rejection of the color information in the video signal to provide isolation from the luminance signal. These specifications require very low phase distortion to the luminance signal. To satisfy this requirement, Allen Avionics has designed a group of band reject filters with phase equalization where necessary. One of the most often used applications for this band reject filter is in color systems for monochrome transmission to prevent color flashes from appearing on the screen. Since various segments of the television industry have different passband requirements, we are listing three filters with different reject bandwidths.



Impedance = 75 ohms.
Maximum Insertion Loss @ 100 KHz = 3db.
Maximum Passband Ripple to 5.5 MHz = ±.25db.

Part No.	Maximum 3db Attenuation @ Frequency (MHz)	Minimum Attenuation @ 3.58 MHz
VFR4P6	1.95 — 6.55	40db
VFR1P3	3.00 — 4.30	40db
VFR0P5	3.37 — 3.88	30db

Size: 4" x 2" x 1 1/4" in metal can with BNC Connectors.

NTSC BANDPASS FILTER

Allen Avionics sub-carrier bandpass filter is a low distortion unit designed to attenuate the luminance information in color TV signals. This filter is useful in most applications where it is required to isolate the chrominance information.

Impedance = 75 ohms.
Maximum Insertion Loss @ 3.58 MHz = 1.5db.
Maximum Ripple = ±.25db.

Part No.	Maximum 3db Attenuation @ Frequency (MHz)	Minimum 30db Attenuation @ Frequency (MHz)
VFB3P6	3.40 — 3.70	2.40 — 5.80

Size: 4" x 2" x 1 1/4" in metal can with BNC Connectors.

Prices and Specifications Subject to Change Without Notice.



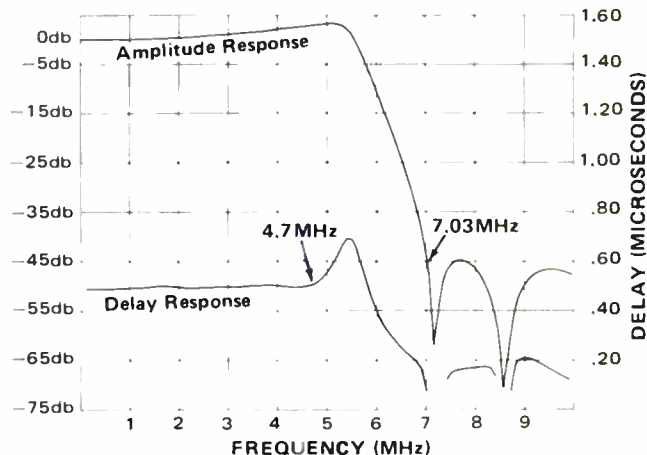
VSL4P5 DELAY EQUALIZED LOWPASS FILTER

This filter is similar to the VFL series and is intended for use at the output of a digital to analog converter. Its special feature is that amplitude equalizers have been incorporated to shape the passband response for $\frac{\sin x}{x}$ correction.

- Impedance = 75 ohms.
- Attenuation = 38db or greater at 7.03 MHz.
- Maximum Group Delay Distortion = 30 nanoseconds or less to 4.7 MHz.

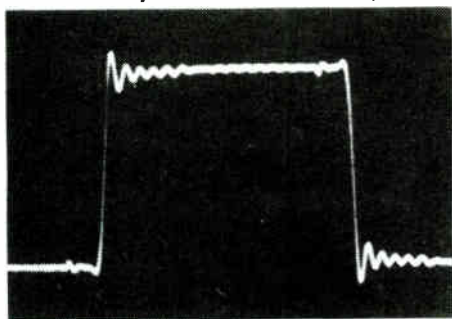
Nominal Delay = 500 nanoseconds.
Size - 4 x 2 x 1 1/4 inches.

Units supplied in Metal Cans with BNC Connectors

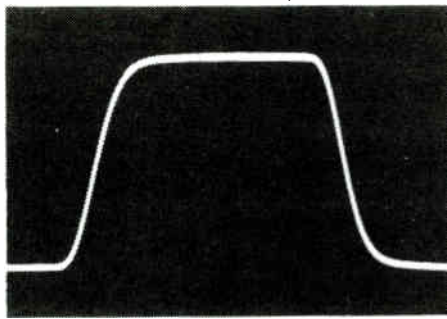


VIDEO GAUSSIAN FILTERS

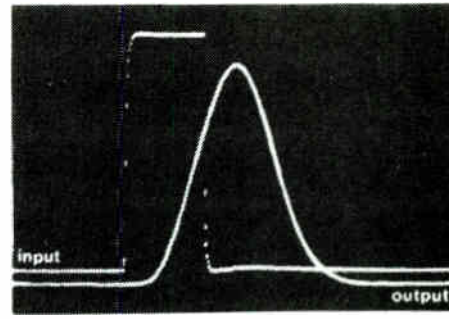
These filters are used for pulse shaping and bandwidth limiting. They are very useful in the removal of unwanted distortions caused by noise, ringing, preshoot and overshoot. Due to their fine impulse response, they are often used in conjunction with delay lines that must have minimum pulse distortion in the delayed output.



Input Pulse



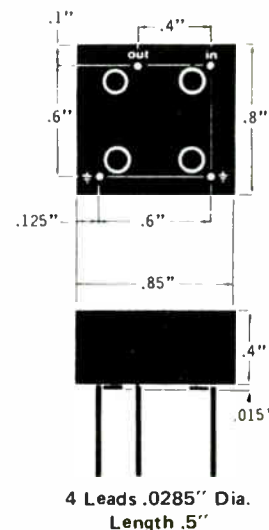
Output Pulse



An approximate Gaussian Waveshape obtained by passing a pulse through a Gaussian Filter.

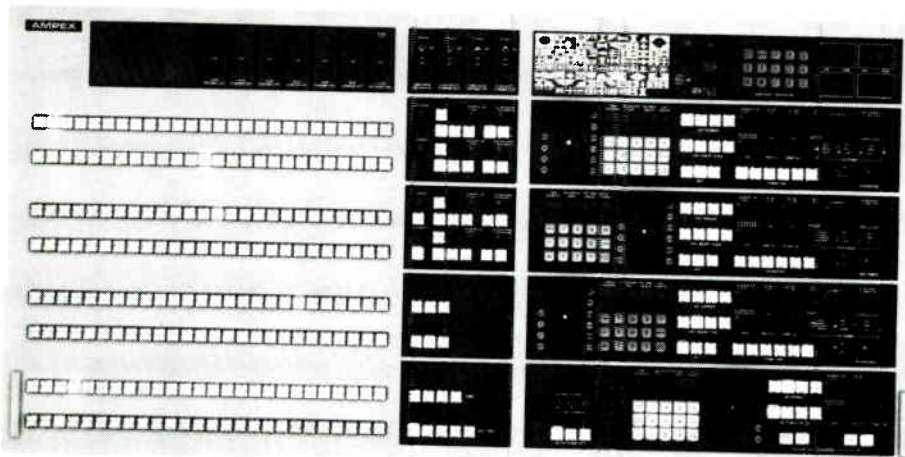
Part No.	3db ± .5db Frequency (MHz)	Impedance (Ohms)	17db Min. Attenuation Frequency (MHz)	Delay Time (Nano-seconds) Nominal	Rise Time (Nano-seconds) Nominal
VGF00P17Z500	0.17	500	.45	1988	2016
VGF00P30Z500	0.30	500	.80	1126	1147
VGF00P33Z500	0.33	500	.87	1024	1038
VGF01P00Z***	1.00	50, 75, 500	2.60	340	357
VGF01P14Z***	1.14	50, 75, 500	3.00	296	300
VGF01P25Z***	1.25	50, 75, 500	3.30	270	275
VGF01P50Z***	1.50	50, 75, 500	4.00	225	229
VGF01P72Z***	1.72	50, 75, 500	4.50	196	200
VGF02P00Z***	2.00	50, 75, 500	5.20	169	171
VGF02P39Z***	2.39	50, 75, 500	6.30	142	144
VGF02P50Z***	2.50	50, 75, 500	6.60	135	137
VGF03P00Z***	3.00	50, 75, 500	8.00	113	115
VGF03P44Z***	3.44	50, 75, 500	9.00	98	100
VGF04P00Z***	4.00	50, 75, 500	10.50	84	86
VGF04P89Z***	4.89	50, 75, 500	12.80	68	70
VGF05P00Z***	5.00	50, 75, 500	13.20	67	69
VGF05P53Z***	5.53	50, 75	14.65	67	69
VGF12P00Z***	12.00	50, 75	32.00	29	30

*** Replace asterisks with 050, 075 or 500 depending on your impedance selection from chart.



Prices and Specifications Subject to Change Without Notice.

Ampex Corporation - One of The Signal Companies [Logo]
401 Broadway
Redwood City, CA 94063
(415) 367-2011



4100 SERIES

4100 SERIES VIDEO SWITCHING SYSTEM

The Ampex 4100 Series Switcher has something to appeal to everyone at the teleproduction or broadcast studio.

As the heart of the television operation, the 4100 Series provides a wide range of effects. It does its job swiftly and effectively.

The 4100 Series easily accommodates virtually any combination of video sources and keys.

FEATURES

- Extended A/B format for logical signal flow and straightforward operation
- Keypad control allows the operator to control several visual functions from a small space with speed and accuracy
- The Series 4100 keypad gives you fingertip control of:
 - 100 different patterns
 - 99 transition rates (in seconds to make your job a lot easier) From 0.1 to 9.9 seconds
 - Key sources (10 key sources from phantom buses that allow you to make any type of key appear at any video level)
- Dual bus keyers to provide the ability to put any of 10 key sources (including RGB chroma keys, encoded chroma keys, character generator, luminance keys, etc.) upstream of the M/E amplifier
- Function Module, together with the keypad's operation lets you fully control the M/E bank without having to reach away from the M/E itself
- Status indicators show you exactly what's happening on the switcher at all times so you're in total command of every situation
- Exceptionally high quality keyers deliver clean, noise-free operation, even under adverse conditions
- Auto-transition is standard on each M/E
- Rugged construction using only the highest quality, multi-sourced components assures you a superior level of reliability and maintainability
- The 4100 Switchers are controllable by electronic editing systems for cost-effective production and post-production applications

OPTIONS AND ACCESSORIES

Downstream Mixer/Keyer: Offers a program to preset mix or take and automatic transition for keys and master fade to black. It provides keyboard control of 10 sources (including an additional external

source not available on the M/Es) and automatic transition control. The Downstream Mixer/Keyer genlocks independently to the program bus so that even non-synchronous sources can be smoothly faded to black.

Quad Slit: The individual size and aspect ratio of each quadrant is fully variable. Quadrants may also be diagonal and even then the quadrant sizes are fully adjustable. Three border choices are available with variable width, softness and color control.

Quadrant Selector for Quad Split: This option doubles the number of video sources available to the Quad Split. And it allows any bus video from Buses 1A, 1B, 2A, 2B and the preview bus to be placed in any of the quadrants. M/E1 and M/E2 outputs, as well as an external video source, may also appear in any of the quadrants. This option also permits quadrant video sources to be pre-set and entered whenever and wherever you desire.

Linear Key Border Generator/Composite Chroma Keyer: In addition to providing an exceptionally high quality encoded chroma key, this option allows keys to be bordered with adjustable border luminance. It also allows drop shadows and colored outlines. Encoded chroma key is hard to distinguish from high-quality RGB keys.

Bi-Level Linear RGB Chroma Keyer: Up to four are available on the 4100-E and up to six on the 4100-H, A and L models.

Pattern Extender for 100 Patterns: With the 4100 Series, 65 patterns are standard. Thirty-five additional patterns (rotary and rotating patterns) are also available for use in the system. This option may be installed in any or all M/E pattern systems at any time.

In-Line Dual Bus Keyer Upstream of Mix/Mix Effects: Provides all the keying power and flexibility needed to meet today's teleproduction operations.

External Key Signal Processor: Allows full capability character generators to be fed to the phantom buses.

Aux Buses: Available with Audio Follow Video and Audio Break-away. Includes M/E re-entries. Up to 8 aux buses may be installed, depending on the switcher model involved. Two video only aux buses are prewired standard for easy field installation.

Editing Interface: Provides extensive control of the 4100 Series by electronic editing systems.

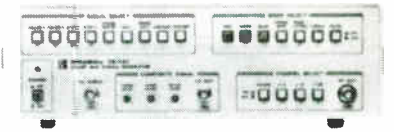
Digital Effects Interface: Allows the 4100 Series to be used with and control any digital effects unit currently available on the market.



ASACA/SHIBASOKU CORP. OF AMERICA
 12509 Beatrice Street
 Los Angeles, CA 90066
 (213) 827-7144

TEST EQUIPMENT

TV TEST SIGNAL GENERATORS



CB11A Color Bar Generator

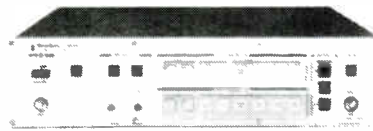
The CB11A is designed for the precise adjustment of television receivers and monitors. There are 10 basic patterns available and combining these with the specially designed "mode switch," an additional 50 patterns and combinations are available. Available in NTSC, PAL, SECAM.



TG/7 Video Test Signal Generator

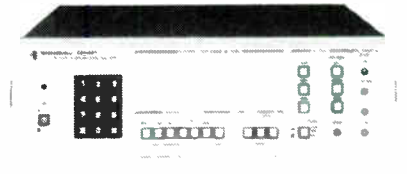
A complete modular test signal system with all drives. Seven interchangeable modules provide up to 48 different test signals. RS170-170A Sync, Gen Lock, and Black Burst.

The TG/7 may be completely automated with the QB102A (531) GP-1B Interface unit. Available in NTSC, PAL, SECAM.



TG53A1 Digital Test Signal Generator

This generator uses an 8 bit high speed digital-analog converter. It generates 6 signals and also utilizes two RAMs with a two-line writing capacity. Utilizing the GP-1B Interface Bus, special test signals may be designed, placed on a floppy disc and displayed via the RAM.



CB53A1 Digital Color Bar Generator

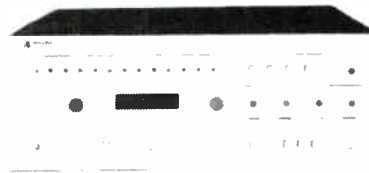
The CB53A1 provides 7 signals as well as an RF modulator, Audio Oscillator, Gen Lock, and a character Generator which displays 31 characters on 2 lines. AC/DC Operation. Available in NTSC, PAL.

SPECIALIZED TEST EQUIPMENT



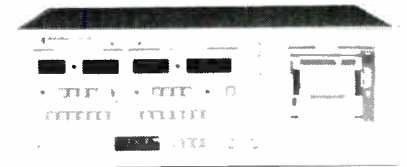
CC-5 Color Encoder

The CC-5 is a high quality encoder which converts the RGB signals to composite video. In addition, the unit also outputs Y, I, Q, and R-Y, B-Y and has aperture corrector. Available in NTSC, PAL, SECAM.



205A Video Sweep Generator

The 205A is used to measure the frequency response on color TV sets, Video Tape Recorders and other video equipment. The frequency range is 100kHz-10MHz. Available in NTSC, PAL.



VH01BZ VTR Dropout Counter

With dropout detection levels selectable from -10dB-24dB and dropout time widths selectable from 0.5-50 Micro seconds, the VH01BZ gives high precision readings and is also an automatic testing system using the QB101A GP-1B Interface Unit. Available in NTSC, PAL, SECAM.

CD101A Color Decoder

The CD101A demodulates the VBS signal to generate RGB, Y, I, Q, and R-Y, B-Y. Drive signals of BL, BF Sync, and SC are also available for interfacing with other equipment. Also available is the CD902A to generate RGB and sync only. Available in NTSC, PAL, SECAM.

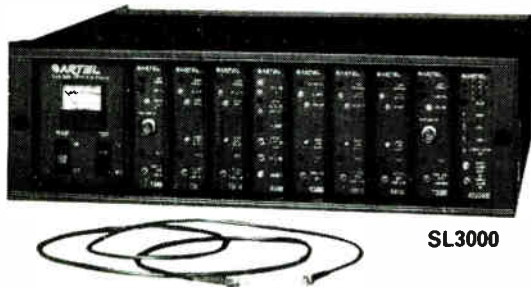


For Complete Catalogs and Data Sheets, Please Call Asaca
 (800) 423-6347 — In California, Call (213) 827-7144

Prices and Specifications Subject to Change Without Notice.

ARTEL COMMUNICATIONS CORP.

P.O. Box 100
West Side Station
Worcester, MA 01602
(617) 752-5690



SL3000

SL3000

LASER-BASED FIBER OPTIC SYSTEM

For simultaneous transmission of video, audio and data.

FEATURES

- Over 20 mile (32km) range without repeaters
- Exceeds RS-250B short haul standards
- Over 20 MHz video bandwidth
- Automatic protection switching option
- On-line self-diagnostics and metering
- Automatic alarming (local and remote)
- 75 ohm or 124 ohm (balanced) input/output
- Easy access connectors (WECO or SMA-type)
- Long wavelength, singlemode option
- Coaxial input/output equalization
- Compact, modular construction
- Front panel monitor output
- Multiple audio subcarrier option

This FM laser-based system combines state-of-the-art modulation techniques with the latest in reliability/maintainability features. These features include automatic protection switching and on-line self-diagnostics. The SL3000 is a compact, modular system designed to replace microwave radio and balanced coaxial cable in video transmission links ranging over 20 miles (32 kilometers).

Longest Distance Transmission

The SL3000 is available as a short wavelength (840nm) multimode system for distances up to 10 kilometers, and as a long wavelength (1300nm) singlemode system (SL3000L) for distances over 32 kilometers without repeaters. Artel's low-noise receiver circuitry means that the SL3000 can transmit over 10dB greater cable loss than other systems.

Most Transparent Video and Audio

The SL3000 exceeds the most stringent video transmission standards: RS-250B (short haul). The system's bandwidth is a full 20 MHz wide, allowing you to send wideband video and multiple subcarriers. Audio is flat from 20 Hz to 20 kHz, with better than 70 dB RMS signal-to-noise ratio and less than 0.1% total harmonic distortion.

Flexible Modular Construction

Video and subcarrier cards are separately packaged on compact plug-in modules. Up to nine card modules can be housed in a single 19-inch card frame. The T/R3000 video module set can be configured for transmission of high resolution (up to 20 MHz) video or for standard video plus up to six subcarriers. Subcarrier modules are switch selectable for either audio or data transmission, and can be incrementally added or changed as needed. All modules are quick and easy to change and to troubleshoot, with self-diagnostic indicators on the front of each module.

Video Plus Data and Audio Subcarriers

The Artel SL3000 system consists of three transmitter/receiver pairs designated the T/R3000 for broadcast quality video and T/R3111 and T/R3114 FM subcarriers for broadcast audio or TTL data. The SL3000 system lets you independently add up to two channels of audio or TTL data or one of each on a single optical fiber. Both video and audio modules exceed RS-250B short haul standards over installed cable with losses exceeding 40dB. An additional four channels of microwave-compatible (standard) audio subcarriers can be provided upon special request.

POR

FIBER OPTIC SYSTEMS



SL2000

The T3000 cards accept unbalanced 75 ohm coax and 124 ohm balanced pair, 1 Vp-p video. These cards also have built-in coax equalizers. The subcarrier transmitter cards (T3111, T3114) accept 600 ohm balanced audio or TTL asynchronous data, with the selection of audio or data made by on board DIP switches.

All transmitter cards convert the video, audio and data signals to a composite optical signal which is transmitted through the fiber optic cable. The receiver cards reconvert the optical signal to full level video, audio and data. BNC connectors are used for loop through video inputs.

SL-2000 FIBER OPTIC TRANSMISSION LINK

FEATURES

- Broadcast quality video/audio
- Long distance transmission
- Extended frequency response
- Eliminates group loops, hum
- Immune to RFI and EMI
- Self-monitoring, self-testing
- EIA/CCIR compatibility
- Space saving cable
- Versatility
- Convenient modular construction
- Dual video outputs
- Loop through input
- Switchable AGC/MGC
- Switchable squelching
- Adjustable I/O levels
- Tunable differential gain
- Signal level alarm outputs
- High reliability
- Quick, easy set-up
- Switchable DC clamping

A high performance fiber optic video/audio system for fixed point-to-point transmission. This versatile system delivers broadcast quality signals over long distances with complete freedom from interference and ground faults.

The Artel SL2000 is a revolutionary advance in video communications. For the first time fiber optics can be used to transmit broadcast quality video and audio signals over several kilometers without the need for repeaters. This modular system offers the convenience of small, lightweight cable, with performance that rivals microwave. And there is no need to obtain an FCC license with fiber optics.

The SL2000 is specifically designed to meet the performance requirements of the broadcast industry. Only with fiber optics can this performance be achieved, without regard to atmospheric or electromagnetic considerations. Only the SL2000 can deliver this level of quality over such long distances.

The SL2000 delivers all the intrinsic advantages of fiber optics, plus unique features that enhance performance, reliability and ease of use.

POR

BECKMAN INSTRUMENTS, INC.

630 Puente
Brea, CA 92621
(714) 871-4848

TEST EQUIPMENT

HEAVY-DUTY SERIES DIGITAL MULTIMETERS

- Diode test function.
- Drop Proof.
- Shock Proof.
- Contamination Proof.
- High Overload Protection.
- Easy-to-use.

The Heavy-Duty Series is designed for dependability under rugged industrial conditions. The meters are built of tough fire-retardant thermoplastic and sensitive components are shockmounted. The housing is of waterproof construction so dirt, grime, and moisture can never get inside to cause inaccurate readings or damaging shorts. All voltage ranges can withstand transients up to 6KV. Resistance ranges are protected to 600 volts and current ranges are protected by a 2 amp/600 volt fuse.

Model HD-100

- 0.25% DC Volts Accuracy.
- 2000 Hour Battery Life.
- Insta-Ohms® Quick Continuity.

The HD-100 is built for accuracy under rugged conditions.

The HD-100 includes a test lead set, battery, spare fuse, and operator's manual. **\$169.00**

Model HD-110

- 10 Amp Current Range.
- 0.25% DC Volts Accuracy.
- 2000 Hour Battery Life.
- Insta-Ohms.

The HD-110 is used with confidence by transportation companies, electrical contractors, and maritime operators. Each HD-110 includes test lead set, battery, spare fuse, operator's manual. **\$189.00**

Model HD-110T

- Temperature Function.
- 10 Amp Current Range.
- 2000 Hour Battery Life.
- 0.25% DC Volts Accuracy.
- Insta-Ohms Quick Continuity.

HD-110T is designed for service in the heating, ventilation and air conditioning industry because of its ability to measure temperature. A simple field adjustment is all that is required to switch from Fahrenheit to Centigrade.

The HD-110T comes with test lead set, battery, spare fuse, operator's manual, and a K-type thermocouple wire. **\$209.00**

Model HD-130

- True RMS (AC + DC coupled).
- 10 Amp Current Range.
- 0.1% DC Volts Accuracy.
- 2000 Hour Battery Life.
- Insta-Ohms Quick Continuity.

The HD-130 is built to withstand industrial, factory, and automotive applications. The HD-130 includes the Adaptor Capacitor Accessory (Model BC-047), which allows decoupling of the AC and DC signals. The HD-130 includes test lead set, battery, spare fuse, BC-047 Accessory, and operator's manual. **\$239.00**

Model HD-140

- 4-1/2 Digits.
- True RMS (AC + DC coupled).
- 0.05% DC Volts Accuracy.
- 10 Amp Current Range.
- Insta-Ohms.

The HD-140 is designed for production testing, field servicing, industrial maintenance, and design engineering applications. The 4-1/2 digit display provides high resolution and accuracy.

Model HD-140 comes complete with test lead set, battery, spare fuse, and operator's manual. **\$259.00**

Model 320



PROFESSIONAL SERIES DIGITAL MULTIMETERS

- Dependable.
- Easy-to-use.
- High Overload Protection.
- Diode Test Function.
- Long Battery Life.

The Professional Series Digital Multimeters provide reliability and ease of use. Each meter is designed for day in and day out use.

The single rotary function/range selector switch is a special patented design which eliminates the friction wear that reduces the life of typical wafer-type rotary switches.

These multimeters contain extra overload protection. All voltage ranges can withstand 6KV transients for 10 microseconds. Resistance ranges on the Series 300 multimeters are protected to 600 volts.

Model 300

- 3-1/2 Digits.
- 0.5% DC Volts Accuracy.
- 2000 Hour Battery Life.
- Diode Test Function.

The Model 300 is ideal for repairing televisions, appliances, stereos, and common electrical problems.

High performance is achieved through a combination of special features, including RF shielding to prevent stray signals from affecting the reading. The Model 300 comes complete with test lead set, battery, spare fuse, and operator's manual. **\$120.00**

Model 310

- 10 Amp Current Range.
- 0.25% DC Volts Accuracy.
- Insta-Ohms.
- Diode Test Function.
- 2000 Hour Battery Life.

The 310 group comes complete with test lead set, battery, spare fuse, and operator's manual. **\$145.00**

Model 310B

The Model 310B features an audible continuity beeper for busy technicians who need to perform repeated continuity checks. Within 100 milliseconds, the meter beeper signals continuity. **\$155.00**

Model 310T

- Temperature Function.
- 10 Amp Current Range.
- Diode Test Function.

Model 310T features a built-in temperature function which uses any K-type thermocouple having a standard miniature or subminiature connector to measure up to 1999°F with one degree resolution. A single adjustment allows the meter to read in Fahrenheit or Celsius. **\$165.00**

Model 320

- 0.1% DC Volts Accuracy.
- 10 Amps Current Range.
- Diode Test.
- 2000 Hour Battery Life.
- Insta-Ohms Quick Continuity.

The 320 group is designed for the professional who desires high accuracy in a reliable hand-held meter. The 320 group comes complete with test lead set, battery, spare fuse and operator's manual. **\$179.00**



Model 350

Model 320B

The Model 320B is designed for situations that require an audible continuity beeper and high accuracy. The "beep" allows a technician to check circuit continuity without having to look at the LCD display. This feature is an excellent aid in trouble-shooting. The momentary beep requires very little power which helps retain the 2000 hour battery life. **\$189.00**

Model 330

- True RMS (AC + DC coupled).
- 0.1% DC Volts Accuracy.
- 10 Amp Current Range.
- 2000 Hour Battery Life.
- Insta-Ohms Quick Continuity.

The Model 330 comes complete with test lead set, battery, spare fuse, BC-047 accessory, and operator's manual. **\$219.00**

Model 4410

- 4-1/2 Digits.
- True RMS (AC + DC coupled).
- 0.05% DC Volts Accuracy.
- 10 Amps Current Range.
- Insta-Ohms Quick Continuity.
- Diode Test Function.

The True RMS feature is ideal for testing switching power supplies, heating elements, flyback transformers, motors, electronic flashes, and SCR or TRIAC controlled power supplies. The meter comes complete with test lead set, battery, spare fuse, operator's manual. **\$239.00**

Model 350

Bench/Portable

- 20 Ohm Resistance Range.
- 0.1% DC Volts Accuracy.
- Diode Test Function.
- 10 Amp Current Range.
- Audible Continuity Beeper.
- 12,000 Hour Battery Life.

Model 350 includes test lead set, batteries, spare fuse, and operator's manual. **\$229.00**

Model 360

Bench/Portable

- True RMS (AC + DC coupled).
- Temperature Function.
- 20 Ohm Range.
- 0.1% DC Volts Accuracy.
- Diode Test Function.
- Audible Continuity Beeper.
- 12,000 Hour Battery Life.

The True RMS feature makes the Model 360 an ideal meter for testing power supplies. A decoupling switch allows the AC ripple of a DC power supply to be easily measured. The storage compartment on the top of the meter will hold the test lead set, spare fuse, and an operator's manual. **\$289.00**

B & K PRECISION

DYNASCAN CORPORATION

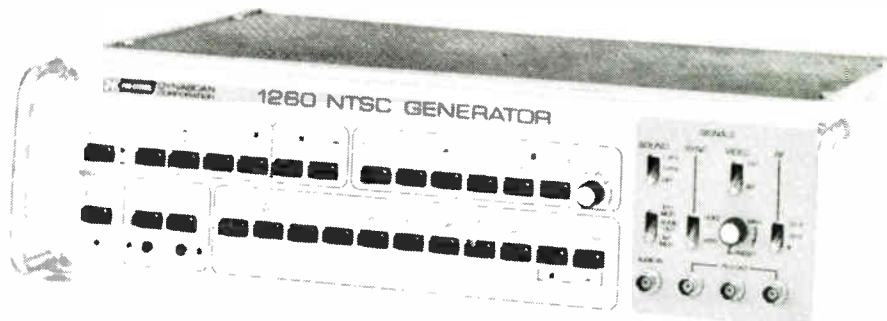
6460 West Cortland St.
Chicago, IL 60635
(312) 889-9087

VIDEO SIGNAL GENERATOR

DELUXE VIDEO SIGNAL GENERATOR MODEL 1260

FEATURES

- NTSC Color Bars—with or without —IWQ signal
- TCXO Master Oscillator Stability Exceeds Broadcast Requirements
- Five step linear staircase; selectable high/low chroma
- Selectable chroma and burst
- Circle pattern
- Multiburst pattern—full field, stepped or variable
- Convergence patterns—dot, cross-hatch, dot-hatch, center cross
- Raster patterns—eight EIA colors
- RGB outputs
- Interlaced or progressive scan



- Gen lock
- Crystal Oscillator—I-F, CH 3, CH 4 and sync generator
- Composite video output
- RF output
- External Video input
- Sound output—1 kHz or 3 kHz
- External audio input and output
- Black Burst output
- Sync Pulse output
- Subcarrier output
- Multiburst output
- Composite blanking output
- Rugged rack-mount cabinet design

APPLICATIONS

Television studio and transmitting station set-up and maintenance... CATV, MATV, CCTV system installation, adjustment, service and maintenance... Color or black and white video monitor or RGB color monitor installation, adjustment, and service... television, VTR, VCR and Video disc testing, service and adjustment... Production line testing of nearly any type of video product... video product design lab.

SPECIFICATIONS

PATTERNS

NTSC Color Bars: White (75%), yellow, cyan, green, magenta, red, blue, black (7.5% set-up).

—IWQ: —I, white (100%), Q, black. Switch selectable on or off with NTSC color bars. Pattern appears on bottom 1/4 of vertical scan

Top Burst Off: Switch selectable (top 1/4 of vertical scan)

Full Burst Off: Switch selectable

Chroma Off: Switch selectable

Circle: May be superimposed on any pattern.

Dots: 19 x 15

Crosshatch: 19 x 15.

Dot Hatch: Dots and crosshatch.

Center Cross: 1 vertical and 1 horizontal line.

Linear Staircase: 5 equal steps.

High or Low Chroma Staircase: Burst phase chroma, 40 or 20 IEEE units.

Raster: Black (7.5%), red, blue, green, yellow, cyan, magenta, white (7.5%).

MULTIBURST

Gated Multiburst: Six fixed frequencies (0.5, 1.5, 2.0, 3.0, 3.58 and 4.2 MHz $\pm 5\%$) with a leading white level.

Full Field: Any one of the six frequencies selectable for full field display.

Variable Frequency: One selectable variable frequency may be substituted for 4.2 MHz as the sixth frequency or full field (variable from 2 MHz to 7 MHz).

Amplitude Flatness: ± 1 dB to 4.2 MHz.

MULTIBURST OUTPUT

Multiburst output available at rear panel for frequency measurement.

Voltage: 2.4 V p-p into open circuit.

Impedance: 1 k Ω .

VIDEO OUTPUT

Composite Video Voltage: Preset=1 V p-p. Variable=0 to 1.5 V p-p.

Impedance: 75 ohms.

Polarity: Positive (negative sync).

RF OUTPUT

Modulation: Negative

Carrier Frequency: Crystal controlled.
CH 3=61.25 MHz.
CH 4=67.25 MHz.
I-F=45.75 MHz.

Voltage: 5 mV rms minimum into 75 Ω .

Impedance: 75 ohms

External Video Input: Switch selectable; requires 1 V p-p, 75 Ω input

SOUND OUTPUT

RF Modulation: 4.5 MHz FM-modulated intercarrier (± 25 kHz deviation with internal 3 kHz audio signal).

Internal Signal: 3 kHz or 1 kHz.

Audio Output: 3 V p-p into 1 k Ω .

External Audio Input: 1 to 3 V p-p, 100 Hz to 10 kHz, pre-emphasis of 75 μ s.

Input Impedance: 10 k Ω .

SYNCHRONIZATION

Type: 59.94 Hz field of 525 lines, interlaced scan; 262 lines non-interlaced scan.

Horizontal Frequency: 15.734 kHz.

Vertical Frequency: 59.94 Hz.

Horizontal Blanking: 10.76 μ s.

Vertical Blanking: 1.33 ms.

Horizontal Sync: 4.89 μ s.

Front Porch: 1.47 μ s.

Burst: 8 cycles minimum 3.58 MHz.

Equalizing Pulse: 2.44 μ s.

TRIGGER OUTPUT

Type: Horizontal or vertical sync pulse available at front panel, switch selectable.

Horizontal sync pulse available on rear panel.

Voltage: TTL level.

Impedance: 75 ohms.

Polarity: Negative going sync.

SUBCARRIER OUTPUT

Frequency: 3.579545 MHz, (± 5 Hz, 0 $^\circ$ to +40 $^\circ$ C).
Stability ± 1 Hz; TCXO

Voltage: Approx. 1 V p-p, no load.

Impedance: 75 ohms.

GEN LOCK

Generator synchronizes horizontal and vertical sync and color burst with external NTSC video input. Adjustments on front panel for horizontal delay and chroma phase. BNC connector on rear panel for loop through.

COMPOSITE SYNC OUTPUT

—4 V into 75 Ω .

COMPOSITE BLANKING OUTPUT

—4 V into 75 Ω .

BLACK BURST OUTPUT

Continuous output consisting of negative sync (286mV p-p), color burst (206mV p-p), and black level; 75 Ω .

RGB OUTPUT

Outputs: Red, green, and blue outputs to drive 525 line color monitors.

Video Patterns: Convergence, full field raster, multiburst, circle, and staircase.

Voltage: High/low selectable. Use low level for staircase.

Low level approx. 1 Volt p-p into 75 ohms.

High level 2.4 V into open circuit (TTL).

Sync: Horizontal and vertical sync; 2.4 V into open circuit (TTL).

Polarity: Positive sync.

Positive RGB.

MISCELLANEOUS

Input Power Requirements: 105-130 VAC, 60 Hz, 25 Watts.

Operating Temperature: 0 $^\circ$ to +50 $^\circ$ C. Specifications apply for operating temperature of +18 $^\circ$ to +28 $^\circ$ C unless otherwise noted. Temperature coefficient less than 0.1 times the stated accuracy per $^\circ$ C.

Dimensions (HWD): 5-5/16 x 19 x 14" (135 x 483 x 356 mm).

Weight: 14 lb (6.36 kg)

ACCESSORIES SUPPLIED WITH MODEL 1260

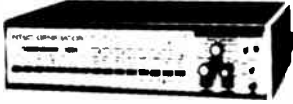
Instruction Manual
Schematic Diagram & Parts List

Model 1260 \$1695.00

OPTIONAL ACCESSORIES

RM-20 Rack Mount Slide Kit \$69.00

NTSC SIGNAL GENERATOR



Model 1251 / \$995.00

FEATURES

• Generates NTSC color bars with or without -IWQ signal, 5 step linear staircase, staircase with high or low chroma; multiburst-stepped, full field and variable • External video input - modulates RF or I-F carrier outputs • Crystal controlled RF, I-F, NTSC sync • 4.5 MHz audio intercarrier modulation, selectable 1 kHz, 3 kHz, external • Dot, cross-hatch, dot-hatch, center cross convergence patterns • Raster color selection - red or green or blue and all combinations • 3.579545 MHz sub-carrier output • Selectable vertical and horizontal sync output • Selectable on/off for chroma burst

lation, selectable 1 kHz, 3 kHz, external • Dot, cross-hatch, dot-hatch, center cross convergence patterns • Raster color selection - red or green or blue and all combinations • 3.579545 MHz sub-carrier output • Selectable vertical and horizontal sync output • Selectable on/off for chroma burst

SPECIFICATIONS

PATTERNS-NTSC Color Bars - IWQ (bottom) Top Burst OFF (top 1/4 of vert scan) Selectable Full Burst OFF Selectable Chroma OFF Selectable Dots, Cross-hatch, Dot Hatch, Center Cross, Linear Staircase, High or Low Chroma burst phase chroma 40 or 20 IEEE units, color raster.
MULTIBURST - 0.5, 1.5, 2.0, 3.0, 3.58 and 4.2 MHz Six bursts with a leading white level and ON-OFF selectable color burst Selection of any one of the six bursts for full field display. One variable frequency selectable as full field or the sixth burst of multiburst
VIDEO OUTPUT - Voltage Fixed 1 V p-p Variable 0-1.5 V p-p Impedance 75 Ω
RF OUTPUT - Crystal Controlled CH 3, CH 4, Video IF, 47.75 MHz Voltage 10 mV RMS approx (No Load) Impedance 75 Ω Ext Video Input Selectable (1 V p-p, 75 Ω input)

SOUND OUTPUT - FM 4.5 MHz Modulation on RF On-Off Select (1 kHz, 3 kHz) Ext Audio Input 1-3 V p-p 100 Hz-10 kHz Pre-emphasis of 75 μs Input Z 10 kΩ
SYNCH - Horiz 15.74 kHz Vert 59.94 Hz Horiz Blanking 10.76 μs Vert Blanking 1.33 ms Horiz Sync 4.89 μs Front Porch 1.47 μs Burst 8 cycles min (3.58 MHz) Equalizing Pulse 2.44 μs
TRIGGER INPUT - Horiz vert. Voltage: 1 V p-p Impedance 75 Ω
SUBCARRIER OUTPUT - 3.579545 MHz ±50 Hz Voltage 1 V p-p Approx (No Load) Impedance 75 Ω
GENERAL - Power 105-130 WAC, 60 Hz, 19 W Size (HWD) 11.5 x 4.5 x 7 x 30.5 cm (4 1/2 x 1 1/2 x 12") Weight 5 kg (11 lbs)

VACUUM TUBE VOLTMETER



Model 177 / \$228.00

FEATURES

• Internal DC power supply for ohms ranges - no battery needed • 37 ranges, including dB and zero center scales.

The 177 includes the PR-43 DC/AC Ohms probe with switch and ground

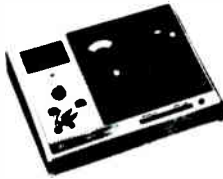
lead. Low AC ranges have special calibrations. Features easy-to-read 7" mirrored scale, DC polarity switch and 1% precision resistors in all critical circuits.

SPECIFICATIONS

DC Volts: ±0.5, 1.5, 5, 15, 50, 150, 500, 1500.
AC Volts: RMS, 0-1.5, 5, 15, 50, 150, 500, 1500; peak-to-peak, 4, 14, 40, 140, 400, 1400, 4000; frequency response, ±1 dB, 4 Hz-4 MHz, 600

ohm source, 5V range.
 Resistance: 0-1 K, 10 K, 100 K; 0-1, 10, 100, 1000 meg; 10, 100, 1000, 10K, 100K center scale.
 Input Resistance: 11 MΩ (1 MΩ in probe).
 Accuracy: DC, ±3% f.s.; AC, ±5% f.s.
 Power Required: 117/234 VAC, 50/60 Hz.
 Size (HxWxD): 18 x 18 x 9 cm (7.5" x 7.5" x 3.6")
 Net Weight: 2.2 kg. (6 lbs.)

LAB QUALITY SEMI-CONDUCTOR TESTER



Model 530 / \$497.00

FEATURES

• Measures transistor beta or FET gm • Measures transistors cut-off frequency up to 1500 MHz • Non-destructive testing of transistor and diode breakdown voltages • Measures Ices and loss • Fast testing of transistors, FET's and SCR's - in or out-of-circuit • Base diagrams are not required • No biasing information required • Identifies all leads of transistors and SCR's • Automatic identification of PNP/NPN types and N or P channel FET's.

• Measures transistor beta or FET gm • Measures transistors cut-off frequency up to 1500 MHz • Non-destructive testing of transistor and diode breakdown voltages • Measures Ices and loss • Fast testing of transistors, FET's and SCR's - in or out-of-circuit • Base diagrams are not required • No biasing information required • Identifies all leads of transistors and SCR's • Automatic identification of PNP/NPN types and N or P channel FET's.

f.: Three ranges (0-100 MHz; 0-750 MHz; 0-1500 MHz). Ices and loss: From .5 μA to 5 mA. BVces of transistors and PIV of diodes at 10 V (5 mA max.) or variable 10-100 V (100 μA max.).
 Accuracy: Within ±10% for β, gm test; ±20% f: tests.

High-power beta and gm Tests: Special 300 μs, 1% duty cycle current pulses enable testing at 2 amps without over-dissipation of device under test. Maximum beta (200) and maximum gm/425 milliohms correspond to test current of 2 amps.

SPECIFICATIONS

IN-CIRCUIT TESTS
 Good/Bad Test: For bipolar transistors, FET's and SCR's.
 Identifies: All leads of bipolar transistors and SCR's, and gate lead of FET's. Also identifies device polarity by automatically indicating PNP, NPN, and P or N channel FET's.
OUT-OF-CIRCUIT TESTS
 Measures: Transistor beta, gm, f_c, Ices, loss, BVces, and PIV.
 Transistor Beta: Two Ic ranges (low power, 10-600; high power, 15-200). gm: DF FET's

INDICATORS
 Audible tone for GOOD indication. Front panel switch provides tone defeat. LEDs identify device polarity. Panel Indicator and Test Switch identifies all leads of transistors and SCR's and base lead of FET's. Jacks and test leads are color coded. Meters indicate other device parameters.
APPLIED TEST CURRENTS
 Collector: 100 mA at 4% duty cycle. Base: 200 mA at 4% duty cycle (HI drive); 0.75 mA at 4% duty cycle (LO drive).
 Test Repetition Rate: 6 per second. Voltage for Leakage Test: Variable from 0-100 VDC.

LIMITING IN-CIRCUIT SHUNT VALUES FOR IN-CIRCUIT GOOD/BAD TEST
 Resistance: Down to 10Ω (HI drive). Down to 1.5 kΩ (LO drive).
 Capacitance: Up to 15 μF (HI drive). Up to 0.3 μF (LO drive).
GENERAL
 Color-coded Mini-lock clips for hands-free operation. Detailed instruction manual. Optional FP-5 Dynaflex three-lead, one-hand probe for easy in-circuit testing.
 Power Required: 117/234 VAC, 50/60 Hz, 10 watts.
 Size (HxWxD): 10 x 33.6 x 25.6 cm (4 x 13.5 x 10.25")
 Net Weight: 2.3 kg. (5 lbs.).
 CSA Listed.

PORTABLE INDUSTRIAL TRANSISTOR TESTER



Model 510 / \$155.00

FEATURES

• Fast GO/NO-GO in-circuit transistor testing • Fast and thorough GOOD/BAD out-of-circuit testing • Tests FET's and SCR's in-circuit or out-of-circuit • Connect any test clip to any component lead • Gives positive emitter-base-collector identification in LO drive - positive base identification in HI drive • Light-Emitting Diodes indicate NPN-OK or PNP-OK • Pocket-size - over 100 hours of testing from single set of "AA" cells • Digital stability - no adjustments; nothing to go out of calibration.

SPECIFICATIONS

IN/OUT-CIRCUIT TESTS
 GOOD/BAD test for transistors, FET's, SCR's and Darlingtons.
 Identifies transistors as NPN or PNP. FET as N-channel or P-channel. Identifies FET gate lead.
 Identifies all leads of transistors in LO drive; base lead in HI drive. Identifies all leads of SCR.
APPLIED TEST CURRENTS
 Base Drive: 250 mA (HI) or 1 mA (LO) at 2% duty cycle.
 Collector Drive: 125 mA at 2% duty cycle.

Test Repetition Rate: 5 Hz.
IN-CIRCUIT SHUNT LIMITS FOR VALID GOOD/BAD TEST:
 R/C: >10 ohms with HI drive; >1.5 K ohms with LO drive/Up to 25 μF with HI drive; up to .3 μF with LO drive.
 Power Requirements: 6 VDC from four "AA" cells, not supplied.
 Accessories: Carrying Case and test leads supplied. Model FP-5 Dynaflex Probe (optional).
 Size (HxWxD): 4 x 9.5 x 17 cm (1.75 x 3.75 x 6.6")
 Weight: .45 kg. (1 lb.).

INDUSTRIAL TRANSISTOR TESTER



Model 520B / \$275.00

FEATURES

• Now with HI/LO drive • Works in-circuit when others won't • Identifies all three transistor leads • Random lead connection • Audibly and visually indicates GOOD transistor • Automatic NPN/PNP determination • Positive Si/Gc identification • Tests diodes, SCR's, FET's, and Darlingtons.

SPECIFICATIONS

IN-CIRCUIT TESTS
 Good/Bad Test: For PNP and NPN transistors, FET's and SCR's.
 Identifies: NPN or PNP; N or P channel FET's.

OUT-OF-CIRCUIT TESTS

Good/Bad Test: For PNP and NPN transistors, FET's, SCR's, leakage and loss.
 Identifies: NPN or PNP; silicon or germanium transistors.
 Measures: Reverse leakage from 0.1 μA to 5 mA.
AUTOMATIC INDICATORS
 Audible Tone for GOOD indication. LEDs identify NPN or PNP devices and Ge or Si types. Test Switch automatically identifies base or gate lead for good transistors or FET's.
 Meter Scales: 0.1 μA to 5 mA for Ice leakage; silicon and germanium power and signal transistor leakage limits.

APPLIED TEST CURRENTS
 Collector: 250 mA at 3% duty cycle. Base: 125 mA at 3% duty cycle. Test Repetition Rate: 10 per second.
LIMITING IN-CIRCUIT BASE-EMITTER SHUNT VALUES FOR VALID TESTS
 R/C: Greater than 10 ohms/Less than 15 μF.
GENERAL
 Accessories: Color-coded test leads with Mini-Lock clips; detailed instruction manual.
 Power Required: 105/125 VAC, 50/60 Hz; also available for 120/240 VAC, 50/60 Hz.
 Size (HxWxD): 20 x 17 x 8.9 cm (8 x 7 x 3.5")
 Net Weight: 2.27 kg. (5 lbs.).



BPFa

BPFa SINGLE-CHANNEL BANDPASS FILTER **Stock No. 4414**

Features

- Suitable for use in adjacent channel headends
- Lower adjacent channel sound down 60dB
- Upper adjacent channel picture down 60dB
- Fits standard 19" rack

The BPFa is a VHF single-channel bandpass filter. It provides extremely high rejection of signals outside of its bandpass, including adjacent channels. A BPFa is available for each standard VHF channel, midband channels A thru I, superband channels J thru P, and FM. Circuitry consists of a high-Q, six-stage bandpass filter and two-phase cancellation traps,

The traps are normally factory aligned to the lower adjacent sound and upper adjacent picture carrier frequencies.

BPFa's are recommended in adjacent channel headends, ahead of individual strip amplifiers. The model BPFa may also be used to eliminate the undesired lower sideband of a CCTV camera with RF output to permit the use of the camera with a lower adjacent VHF channel.

Typical Specifications

- Impedance: 75 ohms
Return Loss - Input/Output (between video and sound carrier): 13dB
Return Loss - FM band (90-107MHz)
Input/Output: 16dB (with traps)
Insertion Loss (Low Band)
At picture carrier: 3.5dB
Sound carrier ref. to pix: -2.0dB
Insertion Loss (High Band)
At picture carrier: 8.0dB
Sound carrier ref. to pix: -2.0dB

Insertion Loss (FM Band)

90-108MHz: 3.0dB

At 88MHz: 5.0dB (no traps)

Bandpass Flatness ref. to picture carrier

Low Band (from pix minus 0.5MHz

to pix plus 4.0MHz): + /-1.5dB

High Band (from pix minus 0.25MHz

to pix plus 4.0MHz): + /-1.5dB

FM Band (90-108MHz): 1.5dB (with traps)

Selectivity - Low Band

Trap - lower adj. sound: 60dB down

Trap - upper adj. video: 60dB down

Lower adj. video: 40dB down

Upper adj. sound: 50dB down

Lower adj. band edge: 55dB down

Upper adj. band edge: 55dB down

Selectivity - High Band

Trap - lower adj. sound: 60dB down

Trap - upper adj. video: 60dB down

Lower adj. video: 40dB down

Upper adj. sound: 45dB down

Lower adj. band edge: 50dB down

Upper adj. band edge: 50dB down

Selectivity - FM Band

At 82MHz: 30dB

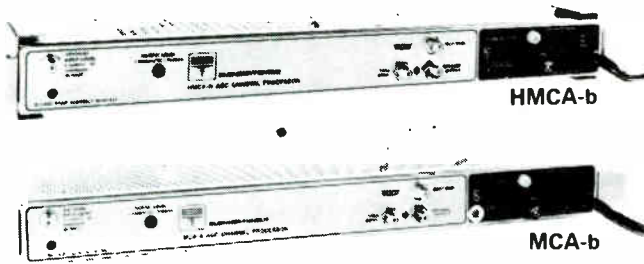
At 114MHz: 22dB

At Sound Trap: 60dB down

At Pix Trap: 60dB down

\$414.66

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000



MCA-b SINGLE CHANNEL PROCESSOR Stock No. 4454

The MCA-b channel processor is a 3 volt VHF TV strip amplifier with automatic gain control and all solid-state circuitry. It is intended to amplify and stabilize the level of a single VHF channel in MATV and CATV headend systems. The model number of the MCA-b amplifier indicates the channel number it will amplify (e.g. MCA-b 2 is for amplifying Channel 2).

The MCA-b features high output even on adjacent channels through the use of a built-in intermodulation notch filter and a built-in aural carrier level control notch filter.

Each MCA-b consists of three modular sections: A 6MHz wide channelized input amplifier with variable gain for AGC, a main amplifier with five broadband RF stages as well as the power supply and AGC control circuitry, and a channelized output module consisting of a directional filter diplexer to enable backmatched mixing of alternate channels in a system. All three modules can be easily removed for servicing and/or channel changing.

FEATURES

- Interchangeable broadband amplifier board to facilitate maintenance
- Adjustable aural carrier control for lower distortion
- Lightning and line voltage surge protected
- True peak detector AGC
- Wide dynamic range

SPECIFICATIONS

Electrical

Maximum output for 1/2dB sync compression: 69.5dBmV (3.0 volts) min.; 71.0dBmV (3.5 volts) typical

Recommended output level for color operation: 68dBmV (2.5V) for 920kHz beat down 55dB min., 60dB typical (measured with P = -8dB, S = -15dB, C = -17dB)

Recommended output level for adjacent channel operation: 66dBmV (2.0V) for adjacent channel beat down 48dB min., 58dB typical (measured with S = 15dB)

Gain: 55.0dB min., 61.0dB typical

Noise Figure at Full Gain: 7.0dB typical

AGC Range: 40dB min

AGC Stiffness (output change for +/-20dB input change): Less than +/-0.25dB at 69dBmV output; Less than +/-0.5dB at 59dBmV output

Maximum input with level set at 69dBmV output: 43dBmV

Bandpass Flatness, 6MHz BW (over 40dB gain control range): +/-1.5dB max.; +/-0.75dB typical

Alternate channel rejection (use with BPFa Bandpass Filter at input for adjacent channel operation): -30dB (+/-9MHz from channel center) typical

Input Match: 14dB return loss typical

Output Match: 18dB return loss typical greater than 9MHz from channel center; 18dB return loss typical on channel

Power Requirement: 117VAC, 60Hz, 0.11 amp

Semi-conductor Complement: 2-ICs, 1-FET, 6-transistors, 9-diodes

Mechanical

Line Cord: 3-wire grounded; 3-wire convenience outlet

Connectors: BTF-100, F-type, Female; G/F monitor point

Fuse: 1/8 amp., Slo-Blo

Dimensions: 19"L x 1-3/4"H x 4"D

Shipping Weight: 4lbs.

\$385.77

HMCA-b SINGLE CHANNEL PROCESSOR Stock No. 4462

The HMCA-b channel processor is a 6-volt VHF TV strip amplifier with automatic gain control and all solid-state circuitry. It is intended to amplify and stabilize the level of a single VHF channel in MATV and CATV headend systems. The model number of the HMCA-b amplifier indicates the channel number it will amplify (e.g. HMCA-b 2 is for amplifying Channel 2).

Each HMCA-b consists of three modulator sections: A 6MHz wide channelized input amplifier with variable gain for AGC, a main amplifier with five broadband RF stages as well as the power supply and AGC control circuitry, and a channelized output module consisting of a directional filter diplexer to enable backmatched mixing of alternate channels in a system. All three modules can be easily removed for servicing and/or channel changing. To simplify maintenance, there are two main amplifier configurations, one for the low band (Channel 2-6) and one for the high band (Channel 7-13).

FEATURES

- Provides a stable, quality signal free of distortion and intermodulation products
- A built-in aural carrier control reduces the sound level for maximum output and adjacent channel operation
- Modular construction for quick, easy servicing
- Contains a diplexing output filter for loop-thru lashups of alternate channels
- Convenience AC outlet mounted on front of panel for easy connections between mounted units

SPECIFICATIONS

Electrical

Maximum output for 1/2dB sync compression: 75.5dBmV (6.0 volts) min., 77.5dBmV (7.5 volts) typical

Recommended Output Level for Color Operation: 74dBmV (5.0V) for 920kHz beat 55dB down min., 58dB typical (measured with Pix = -8dB, Sound = -15dB, Color = -17dB)

Recommended Output Level for Adjacent Channel Operation: 73dBmV (4.5V) for adjacent channel beat down 48dB min., 55dB typical (measured with Sound = -15dB)

Gain: 63dB min., 69dB typical

Noise Figure at Full Gain: 7.0dB

AGC Range: 40dB min.

AGC Stiffness (output change for +/-20 input change): +/-0.25dB at 76dBmV out; +/-0.5dB at 63dBmV output level setting

Maximum Input with level set at 72dBmV out: 48dBmV

Bandpass Flatness, 6MHz BW over full 40dB AGC range: +/-1.5dB max., +/-0.75dB typical

Alternate Channel Rejection (skirt selectivity): -30dB (+/-9MHz from center) typical

Input Match on Channel at 75 ohms at 10dB AGC gain reduction: 14dB return loss typical

Output Match on Channel at 75 ohms: 13dB return loss typical

Output Match, alternate channels and rest of 54-216MHz band at 75 ohms: 18dB return loss typical

Power Requirement: 117V, 60Hz, 0.20 amp

Supply Voltage Range for 0.5dB change in level or output capability: 100-130VAC

Semi-conductor complement: 10-transistors; 1-FET; 2-ICs; 16-Diodes

Mechanical

Line Cord: 3-wire grounded; 3-wire convenience outlet

Connectors: BTF-100, F-type Female; G/F monitor point

Fuse: 1/4 amp, slow-blow

Dimensions: 19"L x 1-3/4"H x 4"D

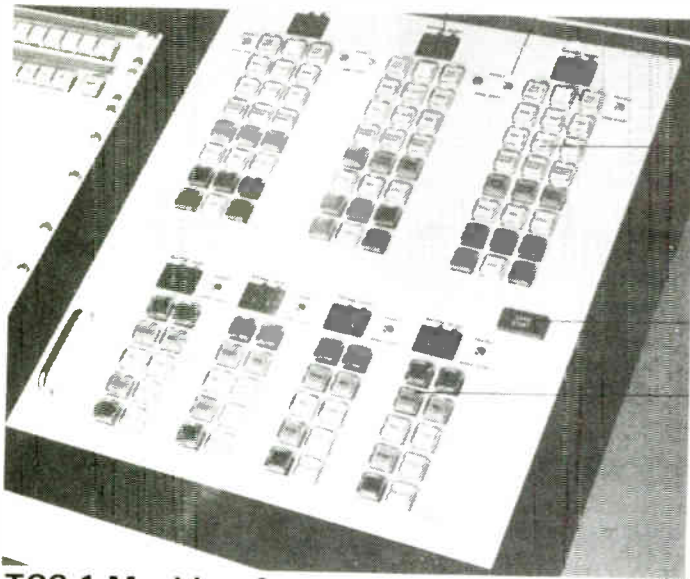
Shipping Weight: 5lbs.

\$664.49



BOSCH

2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352



TCS-1 Machine Control System

FEATURES

- Controls up to 100 VTR's/film chains
- Dual twisted pair wiring simplifies installation
- Control of each VTR/film chain can be delegated to any one of eight studio control panels or machine control multiplexers:
 - Each studio control panel can operate up to four VTR's and three film chains simultaneously; each includes a "Gang-Start" switch. (custom configurations available)
 - Each machine control multiplexer can accommodate up to 30 MC-24 control panels
- Central microprocessor can be programmed to provide special functions, such as permanent assignment of specific machines to specific control panels
- System can be integrated with Bosch TVS/TAS-1000 Distribution Switcher to provide dynamic machine selection

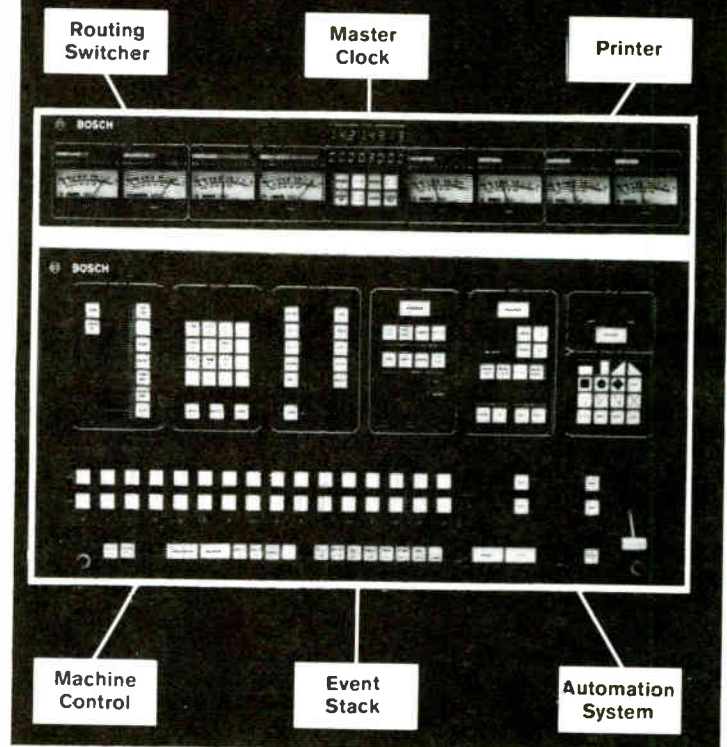
The TCS-1 is a microprocessor/software based machine control system designed to operate up to 100 videotape recorders and/or teletext film chains. It eliminates patch panels or complex relay switching systems where it is desirable to delegate control of machines to various points. Connection between the control panels and the VTR's/film chains is accomplished with dual twisted pair audio-type wiring, rather than the multiple-conductor cabling normally used with remote controls. The system includes provisions for assigning specific machines to specific control panels, eliminating the possibility of conflicting or unauthorized control commands reaching the same machine from different control stations.

MI-8	8-Function Machine Interface, 1 3/4" Rack mount
MI-24	24-Function Machine Interface, 3 1/2" Rack mount
MD-8	Machine Delegate Panel, 1 3/4" Rack mount
MC-200	Studio Control Panel
MC-24	Single-machine Control Panel, requires MCM-1000. Includes space for one CP-1200A or BP-1200
MCM-1000	Machine Control Multiplexer, connects with up to 30 MC-24's
DC-1	Dynamic Machine Selector, connects with up to 6 MD-8's and 30 MI-8/24's (must be used in connection with Bosch TVS/TAS-1000 Distribution Switcher)
CP-1200A	Single-bus Control Panel, with audio breakaway, mounts in MC-24
BP-1200	Blank panel, mounts in MC-24 not having CP-1200A

VT-20

MACHINE CONTROL SYSTEM/ MASTER CONTROL SWITCHER

Because It Communicates.



MCS-2000 Master Control Switcher

FEATURES

- Dynamically labeled input buttons, assignable to any input
- Instant switching between on-air and production work with the bypass mode, allowing one switcher to do the work of two, automatically
- Two fully independent keyers allow mix-keys and key-mixes
- Microprocessor control of up to four channels of audio allows smooth transitions and precise control of audio levels
- Multiple memories allow Saves and Recalls of switcher configurations
- Single-stage mixing of both audio and video provides excellent operational specifications, and eliminates system timing problems

The MCS-2000 allows unlimited input selections. Select any of these inputs as key sources, with as many external key inputs as you need, automatically. It allows you to use any input as an audio under or audio over source. It also enables the MCS-2000 to offer the easiest system timing, and the simplest installation in the master control industry.

The MCS-2000 can offer the most sophisticated, and yet still the simplest preroll system you can get. It offers the capacity to multi-roll A/V splits and backup machines, to automatically handle film chain multiplexers, and to provide automatic full-function machine control at the operator's finger-tips.

The MCS-2000 can provide complete on-air automation, with every function of the switcher available to an automation system. The automation system can even adjust the clip levels of a keyer.

The MCS-2000 can provide automatic logging of all switcher events, even without an automation system.

The Switcher can be interfaced to a complex machine control system such as the TCS-1 and will provide complete full-function control of any machine selected on the preset or program bus.

Prices and Specifications Subject to Change Without Notice.



BOSCH

2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

DISTRIBUTION SWITCHING SYSTEMS

TVS/TAS-2000 Video/Audio Distribution Switcher

FEATURES

- Multi-level breakaway capability (7 level standard)
- Power supply alarm indicators on all boards
- Power supply alarm indicators with contact closure for remote alarm
- No PROM changing on crosspoint boards
- Clamped video inputs
- Output delay trim
- Redundant control card capability
- Coax party line or RS-422 control standard
- Internal refresh memory with 120-hour memory save
- Fused power supply outputs
- Redundant power supply capability
- Vertical internal switching of video
- Field expansion of outputs without rewire
- Compact — 10 x 10 matrix arrangement. 60 x 10 audio and video or 130 x 10 audio or video in 8-3/4" card cage
- Internal cooling fans. Fans removable during normal operation
- Matrix "in use" indicator
- Computer automated system testing of audio and video circuit parameters through all possible signal paths. Hard copy results supplied.

The TVS/TAS 2000 Distribution Switcher is the newest in the family of Bosch distribution switchers. Bosch developed the 2000 switcher system using the knowledge gained from earlier switcher experience, and adding features suggested by our customers. Improved packaging, audio signal performance, video DC restoration, output delay adjustments to simplify timing, circuitry to monitor the power supplies on each circuit board. The power supplies are also monitored for failures. Redundant power supplies allow the system to continue operation if one power supply fails. The user is alerted to the failure of the first power supply, while the system continues to operate on the second.

CP-1400 Control Panel

The CP-1400 a Single Bus 10-key Control Panel for the TVS/TAS 1000 and TVS/TAS 2000 Video/Audio Distribution Switcher features alphanumeric LED displays for rapid identification of selected source.

CP-1404 Lever Wheel Control with Status

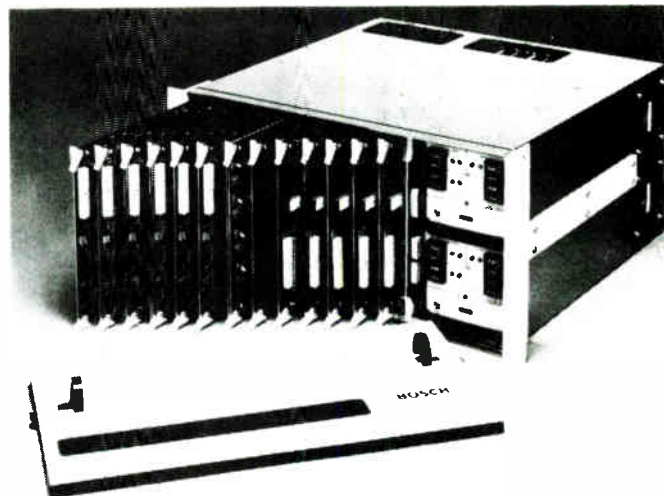
The CP-1404 Control Panels, for use with TVS/TAS 1000 and TVS/TAS 2000 Distribution Switchers, have lever wheel switches for input selection. LED readouts are provided for true switcher status.

CP-1405 Desk Top Lever Wheel Control Panel

The CP-1405 Control Panel, for use with TVS/TAS 1000 and TVS/TAS 2000 Distribution Switchers, is designed to sit on a desk or table top. It is intended to provide economical switcher control in offices and conference rooms.

CP-1420 Control Panel

The basic CP-1420 Control Panel for use with TVS/TAS 1000 and TVS/TAS 2000 Distribution Switchers, provides for 20 pushbuttons to select inputs for one switcher output. The buttons can select inputs in numerical order, or they can be encoded to select inputs in any order. Additional buttons may be added to expand input selection. X-Y control and category/number selection are also available.



TVS/TAS-2000

CP-1440 Control Panel

The CP-1440 Control Panels for use with the TVS/TAS 1000 and TVS/TAS 2000 Distribution Switchers have three level alphanumeric lever wheel switches for input selection. Four character alphanumeric LED displays are provided for status.

CP-1450 Control Panel

The CP-1450 is a single-bus, microprocessor based control panel for use with TVS/TAS 1000 and TVS/TAS 2000 Video/Audio Distribution Switchers. Alphanumeric lever wheels are used to reduce space requirements and cost while still providing category/number operation.

CP-1500 Control Panel

The CP-1500, a full-matrix control panel for use with TVS/TAS 1000 and TVS/TAS 2000 Video/Audio Distribution Switchers, features alphanumeric LED displays for rapid identification of sources and destinations. The alphanumeric displays, which can consist of any combination of one to four letters or numbers, are complemented by descriptive labels on a 10-key pad to provide simple error-free operation.

CP-1550 Control Panel

The CP-1550 is a single-bus, microprocessor based control panel for use with TVS/TAS 1000 and TVS/TAS 2000 Video/Audio Distribution Switchers. Alphanumeric lever wheels are used to reduce space requirements and cost while still providing category/number operation.

TI-2000 Telephone Interface

The TI-2000 Telephone Interface allows remote control of TVS/TAS 1000 and TVS/TAS 2000 Distribution Switchers from any Touch-Tone® telephone. All commands to the switcher are entered, using the Touch-Tone® pad. Prompting of the operator and status from the switcher are reported by a synthesized voice.

SM-2000 Full Matrix Status Monitor

SM-2000 Full Matrix Status Monitor provides full matrix status information in alphanumeric format of entire matrix for display on any video monitor. Selection of display pages may be remote controlled via the party line control system. The video output is compatible with the TVS/TAS 1000 and TVS/TAS 2000 video switchers.



2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

TERMINAL EQUIPMENT

"525" SERIES EQUIPMENT

TVA-528

Video Distribution Amplifier

• Differential input • One input/Six outputs • Precision-grade components assure long-term stability • 1% bounce (overshoot) • 0.25% distortion and tilt, 50Hz square wave (Servo on) • Accepts delay and equalizer plug-in operations • DL 525 Delay plug-in option — up to 300 nsec delay with frequency response/ripple of less than 0.25dB to 5MHz • EQ 525 Equalizer plug-in option — corrects for up to 1000 feet of 8281 cable • Delay/Equalizer combinations possible

TVA-528 Precision Video Distribution Amplifier\$410.00

TVA-524

Video Distribution Amplifier

• Differential input • One input/Four outputs • Direct-coupled outputs • 0.25dB to 5.5MHz frequency response • 0.5% tilt 60Hz square wave • 0.25% 0.25° differential gain and phase (10-90% APL)

TVA 524\$326.00

TPA-527

Precision Pulse Distribution Amplifier

• One input/Four outputs • Precision design assures long-term stability • Separate output stages • Individual output 350-4000 nsec delay adjustments

TPA-527\$399.00

TPA-528

Precision Broadcast Pulse Amplifier

• One input/Six outputs • High input noise immunity • 0.5% tilt; 1% overshoot and ringing • Symmetrical output rise and fall times • Strappable for 2 or 4 volt operation

TPA-528\$289.00

TSA-525

Distribution Amplifier

• TSA-525 for NTSC and PAS-M systems (3.58MHz), TSA-535 for PAL-I systems (4.43MHz) • 40dB input return loss at subcarrier frequency (Power on or off) • Greater than 360° individual phase adjustments • 1.8 to 2.0V p-p adjustable output level • Four outputs with 36dB isolation at 3.58MHz

TSA-525\$625.00

TAA-525

Audio Distribution Amplifier

• Extremely low distortion at all power levels • Accepts balanced or unbalanced inputs • Wide dynamic range • High common mode rejection • Transformer-coupled inputs and outputs with individual gain adjustments

TAA-525\$515.00

TVS/TAS-525

Video/Audio Distribution Switcher

• 5 x 1 modules can be stacked for additional inputs with common latching or for multiple bus operation • Video-loop/audio-bridge inputs • Video switching is vertical interval, with a sixth crosspoint for improved isolation specifications in multimodule systems, (0.2° differential phase, 0.2% differential gain), (-60dB crosstalk) • Switchers self-latch, require only momentary closures • TAS-525 Audio Distortion: 0.1dB overall; Crosstalk: -75dB • 5 x 1 illuminated pushbutton control panel available • The RC5 pushbutton remote control panel can be mounted in RP-203 rack frame. The RC5 will operate either a TVS-525, or a TAS-525, or both simultaneously (audio follow video). Looping control connections allow two control panels to operate in parallel. Each RC5 requires a CC5 interconnecting cable.

TVS-525\$488.00

TAS-525\$515.00

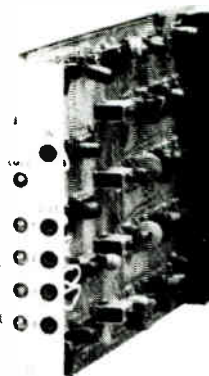
TBB-525

Black Burst Generator/Sync Blanking and Burst Adder

• Burst adder • Permits smooth fades to black without loss of color-lock • Two separate outputs permit simultaneous sync/blanking/

VT-22

Prices and Specifications Subject to Change Without Notice.



TPA-527



TAS-525



TVS-525

burst addition to monochrome source with separate blackburst output to switcher • Remote on/off control of burst on either output • Either output can be used for sync/blanking adder and/or burst adder • 360° burst phase adjustment

NOTE: Modules may be installed in RF-525 or RF-175 Rack Frames. 525 Series equipment may be intermixed subject to power supply and mounting space restrictions. Please specify with order.

TBB-525\$814.00

ACCESSORIES

DL-525 Delay plug-in for TVA-528\$326.00
EO-525 Equalizer plug-in for TVA-52874.00
RC-5 5-pushbutton remote control panel, mounts in RP-203205.00
RP-203 Rack panel for up to three remote control panels89.00
CC-5/25 Connecting cable, 25 ft.68.00
CC-5/50 Connecting cable, 50 ft.79.00

RACK FRAMES AND POWER SUPPLIES

RF-525 5-1/4" Rack frame for PS-525 and up to twelve 1" modules247.00
PS-525 Power supply, 115V +/-10%, 50/60Hz389.00
PS-525RK Power supply redundancy kit, two required for PS-525's116.00
PS-526RK Same as PS-525RK but for use with PS-526's116.00
PS-526 Power supply, 230V +/-10%, 50/60Hz431.00
EX-526 Module extender147.00
RP-203 Rack panel for remote control modules, accommodates up to three modules89.00
BP-203 Blank panel for RP-203No Charge

NOTE: A PS-525 Power Supply must be ordered with each RF-525 Rack Frame. The RF-175 Rack Frame contains a built-in power supply; therefore, a PS-525 is not required.

BLANK FILLER PANELS

BP-1 1-3/4" x 19"\$16.00 BP-4 7" x 19"\$37.00
BP-2 3-1/2" x 19"26.00 BP-5 8-3/4" x 19"42.00
BP-3 5-1/4" x 19"32.00 BP-6 10-1/2" x 19"47.00

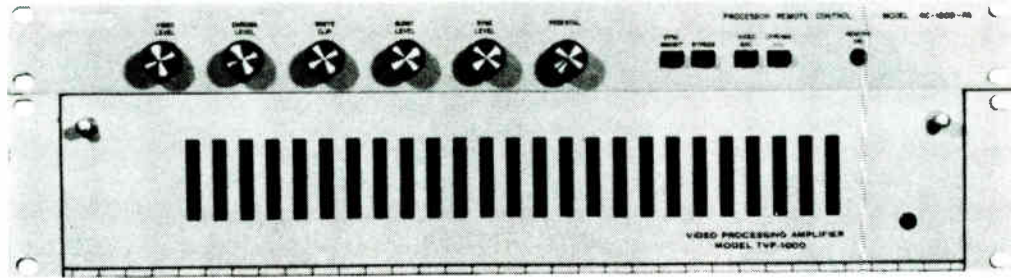
VENTILATION UNITS

TVU-175 Ventilation Unit, 117VAC\$290.00
VRU-176 Ventilation Unit, 234VAC315.00



2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

SIGNAL PROCESSING EQUIPMENT



TVP-1000

TVP-1000 Video Processing Amplifier

Features

- Full sync, blanking, burst regeneration
- Includes programmable pulse width digital sync generator with genlock
- Differential input rejects up to 30 V P-P Common Mode Hum
- Strappable for operation with helical scan and U-Matic format recorders
- Separate sync, luminance, chrominance and burst processing
- Failsafe compensated metallic-contact bypass
- Full 360° subcarrier phasing
- Full remote control
- Reverts to monochrome black on incoming signal loss
- Luminance and chrominance AGC (optional)
- VIRS AGC Mode — Luminance/chrominance ratio maintained. Loss of VIRS causes reversion to burst AGC mode
- Available for NTSC, PAL, or PAL-M standards
- Selectable AGC responds to VIRS or burst for chroma gain — sync, VIRS or video for luminance gain

The TVP-1000 Video Processing Amplifier meets modern broadcast performance requirements with superior operating features and stability. Handling both color and monochrome signals, the TVP-1000 is designed to operate with quadruplex, helical scan or U-Matic format videotape recorders. Models are available for NTSC, PAL or PAL-M.

A differential amplifier at the processor input, together with an input clamp circuit, provides over 60 dB common mode hum rejection and over 35 dB reduction of single-ended hum. A wide dynamic range permits the circuit to effectively remove over 30 V P-P common mode hum from the incoming video.

RC-1000 Remote Control

A remote control is available and separate controls are provided for Video, Chrominance, Pedestal, Sync, Burst and White Clip levels plus Sync Bypass, Processor Bypass, Video AGC and Chroma AGC. Any or all of these adjustments can be remotely controlled.

Sync Generator with Genlock

The sync generator built into the TVP-1000, a programmable digital unit, is an application of the TeleMation-originated digital approach to sync generator design. Transitions of the output pulses are all clock-derived and can be programmed in 100-nanosecond increments (83 nanoseconds for PAL operation). Once timed to meet local requirements, no further timing adjustments are required.

The special genlock circuit developed for the TVP-1000 provides stable performance even with badly degraded input signals. Output signal variations are minimal—regardless of wide variations in video level, burst level, time base stability and input signal-to-noise ratio. Internal strapping is provided for operation with helical scan or U-Matic format videotape recorders.

The PO-1000 Pulse Output accessory permits the TVP-1000 to be

used as a local sync generator. Sync generator outputs in 625/50 PAL units may be so used when genlocked, but do not provide the 25 Hz offset sync derivation when free-running.

In normal operation, sync, burst and blanking are replaced with internally generated waveforms. A remotable Sync Inhibit switch optionally allows the sync portion of the waveform to pass through the amplifier unchanged. Luminance, chrominance, sync and burst information are separated, processed separately then recombined.

AG-1000 AGC Option

The TVP-1000 provides automatic luminance and chrominance gain control with the plug-in AG-1000 AGC option. The luminance detector in the AG-1000 is switchable to operate on peak video, sync, a standard VIRS signal or any combination where the greatest of the selected signals compared to its reference level is used for control of output video level. Similarly, the chroma detector can be strapped for detection of burst amplitude or VIRS reference, but not both. If VIRS are not present, burst will automatically be used instead.

Unique to the TVP-1000 is the ability to select Full Video or Partial Video AGC operation. The Partial Video selects an area of the raster approximating the safe title area for the sampling. When VIRS referenced AGC is used, chrominance/luminance ratios are precisely maintained. With the absence of VIRS, the TVP-1000 reverts to burst and video/sync AGC references.

Range of the luminance and chrominance AGC circuit is sufficient to restrict output variations to less than 5%, with 6 dB increases or decreases in luminance or chrominance level.

The TVP-1000 allows a variety of sync and subcarrier reference options. All references can be derived from the incoming video. Sync and/or subcarrier may be referenced against external pulse sources or from an external black burst signal, if desired.

Video Processors

TVP-1000N	NTSC Video Processor, use with RC-1000 Remote Control recommended	\$5,229.00
TVP-1000P	PAL-I Video Processor	5,859.00

Accessories

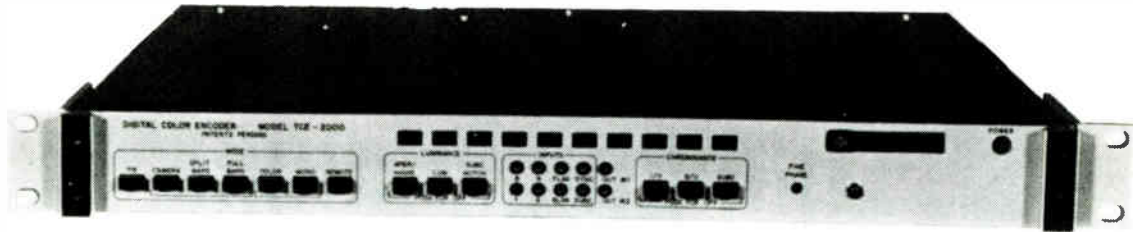
AG-1000	AGC Option. Specify for NTSC, PAL, PAL-M operation	\$646.00
PO-1000N/M	Pulse Output Module, NTSC/PAL-M	273.00
RC-1000	Remote Control Panel, rackmount. Requires CC-6.	299.00
CC-6/5	Connecting Cable, 5 ft.	105.00
CC-6/10	Connecting Cable, 10 ft.	160.00



BOSCH

2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

SIGNAL PROCESSING EQUIPMENT



TCE-2000 Digital Color Encoders For NTSC/PAL/PAL-M Systems

TCE-2000N

Features

- Available for NTSC, PAL-I, PAL B, G, and H or PAL-M operation
- Drift-free digital modulators (U.S. Patent No. 3721755)
- All-digital color bar generator — full/split bars — optional
- Level-dependent proportional aperture correction
- 100% circuit access during operation — no extenders required — no phase shift or gain change during adjustment
- Umbilical connection for instant service replacement
- Subcarrier rejection typically 55 dB
- No DC shift with APL change
- Drift-free current summing matrices (U.S. Patent No. 3715470)
- Meets all specifications over 100-130 VAC, 0°-60°C range without readjustment

TCE-2000 Digital Color Encoders are available to produce NTSC, PAL or PAL-M encoded color signals according to NTSC, CCIR and EBU specifications. With the use of digital circuitry and precision components, set-up and maintenance requirements are minimized on the TCE-2000 Series.

The TCE-2000 Encoders are designed for use with both live and film cameras, either three or four-tube types. All inputs are bridging with looping jacks provided. Compensation networks assure excellent input return loss characteristics.

TCE-2000N

- NTSC Digital Color Encoder
- Digital Color Bar Generator
- Pulse Delay Module

TCE-2000N \$4,473.00

TCE-2000P

- PAL Color Encoder
- PAL-1 Digital Color Encoder
- Digital Color Bar Generator
- Pulse Delay Module

TCE-2000P \$5,208.00

THE-100 Hum Eliminator

Features

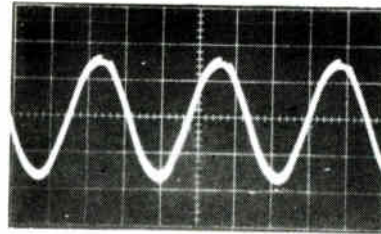
- For use in color and monochrome systems
- Greatly reduces common mode power line hum in video circuits
- Passive, failure-free
- Compact
- Flat frequency response
- No differential phase or gain distortion

The THE-100 greatly reduces common mode hum caused by differences in ground potential as frequently encountered in installations with long video cables, incoming and outgoing lines, or separate power distribution systems.

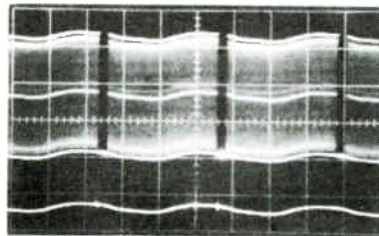
Specifications

- Impedance** 75 ohms, unbalanced
- Connectors** Type BNC
- Bandwidth** DC to 10 MHz
(-0.1dB at 5 MHz, -0.6dB at 10 MHz)
- Hum Reduction** To 50dB depending on system
- Dimensions** 4-11/16" H x 3-11/16" W x 2-1/4" D
(119 x 93 x 57mm)
- Weight** 3 lbs. (1.36 kg)
- Insertion Loss** Greater than 0.5dB

THE-100 Hum Eliminator \$142.00



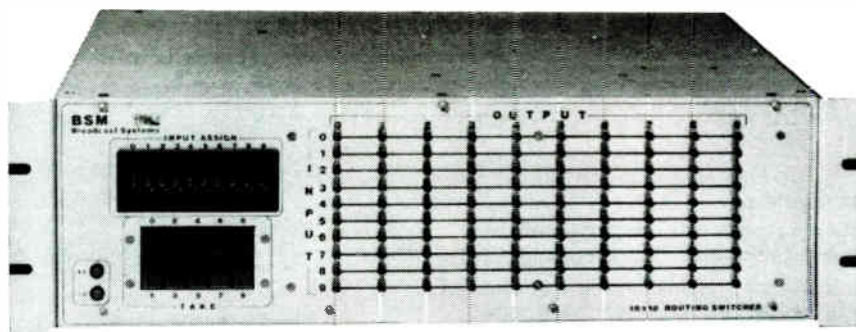
Incoming Video with
16V P-P hum superimposed
(5 V/Division)



Outgoing Video with 50
mV P-P hum: attenuation
of 50 dB. (200 mV/Division)



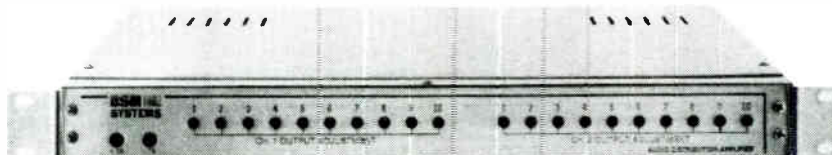
AUDIO-VIDEO DISTRIBUTION AMPLIFIERS & ROUTING SWITCHERS



10 X 10 BCD BASED ROUTING SWITCHER



10 X 1 VIDEO ROUTING SWITCHER



AUDIO DISTRIBUTION AMPLIFIER

VIDEO DISTRIBUTION AMPLIFIER

Self-contained, 1-3/4" x 19" rack mount, level control, standard BNC connections, power supply included.

- 2 x 12 (Dual 1 x 6's) \$495.00
- 4 x 24 (Quad 1 x 6's) 795.00

10 X 1 ROUTING SWITCHER

Direct access momentary pushbutton controls, 1-3/4" x 19" rack mount, 10 inputs/1 output, power supply included, transformer input.

- Audio**
- 110-Mono \$695.00
- 120-Stereo 995.00
- Video**
- 210-Video Only \$1095.00
- 220-Audio Follow Video (1 level audio) 1295.00
- 230-Audio Follow Video (2 level audio) 1495.00

AUDIO DISTRIBUTION AMPLIFIER

Self-contained, regulated power supply, 1-3/4" x 19" rack mount, individual front panel output level controls, shielded power supplies and transformer inputs. Available with either active or transformer outputs.

- 1 x 10-MA-Mono, Active Out \$395.00
- 1 x 10-DMA-Stereo, Active Out 595.00
- 1 x 10-MT-Mono, Transformer Out 695.00
- 1 x 10-DMT-Stereo, Transformer Out 895.00

10 X 10 AUDIO ROUTING SWITCHER (BCD BASED)

Thumbwheel control with LED Matrix display of active crosspoints, 5-1/4" rack mount, power supply included, remote controls available. (Please specify on order).

- 510-Mono 10 x 10 \$3595.00
- 520-Stereo 10 x 10 4595.00

THE MODULAR SERIES

A complete line of Audio and/or Video
 Routing Switchers...Price On Request

CENTRAL DYNAMICS CORP.

147 Hymus Blvd.
 Pointe Claire, Quebec CN H9R 1G1
 (514) 697-0810
 TWX 610-422-3906 Telex 05-821506

SIGNAL DISTRIBUTION SYSTEM

SDS-2 Signal Distribution System

SDS-2 Signal Distribution System is a totally new concept for meeting today's and tomorrow's signal distribution and control requirements.

System Architecture...the basic system's architecture is a modular straightforward simplistic design to assure extremely high performance and reliability regardless of system size.

This design approach also provides:

- Flexibility...microprocessor controlled and 4 levels of switching
- Extremely Hi-Density 2048 crosspoint array
- Expandable...from 32 x 32 up to 512 x 512

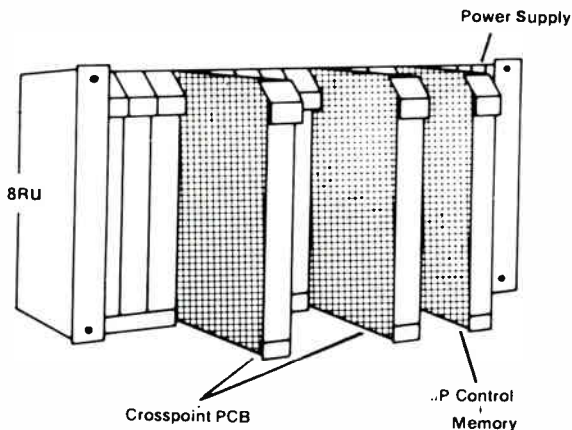
RS-2000 Switching Array

RS-2000 Hi-Density switching array features the latest state-of-the-art circuitry and packaging techniques in the audio and video domains.

The basic RS-2000 Switching Array contains 2048 crosspoints, the control board, a power supply...all in a rack frame that is only 14" high and 15" deep...8 RUs.

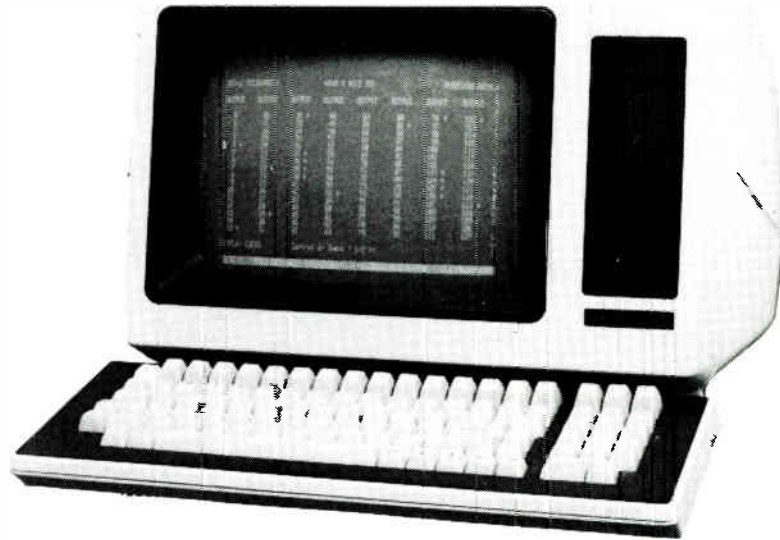
The control board includes the master intelligence system that uses the Intel 8085 microprocessor which has the capacity and speed to control a system using more than one RS-2000 array. The power supply has the capacity to power any two RS-2000 frames; therefore, providing redundant power supply capacity.

RS-2000 Array



The basic array configuration is 32 inputs by 32 outputs and a variety of switching array types are available.

	64 x 32	32 x 32
Audio Only	X	
Data Only	X	
AFV		X
Dual Audio		X
Video Only		X
Video + Data		X
Audio + Data		X
Dual Data		X



The basic system is configured for up to 4 signal levels and any combination of the above arrays may be combined. As an example...a system could include 1 video, dual audio and 1 data level. The latter could be used for SMPTE Time Code, digital control signals or data lines connecting peripheral computer hardware to various host computer systems. All 4 levels can be controlled in a Follow mode or separately at the discretion of the user.

The SDS-2 has been designed to accommodate arrays as large as 512 x 512 with up to 4 levels.

Examples: Space requirements for SDS-2 systems using RS-2000 Hi-Density arrays.

32 x 32 AFV	8 RU	14"
64 x 32 Audio Only	8 RU	14"
3 Level		
64 x 32 AFV		
64 x 32 Audio Only	24 RU	42" (3 RS-2000 arrays)
1 Level		
96 x 96 Video Only	72 RU	126" (9 RS-2000 arrays) (Less than 2 std. racks)

MicroPatch™ Control System

MicroPatch is the computer software operating program that puts the intelligence into SDS-2's control scheme. MicroPatch is highly sophisticated, flexible and includes a variety of software application programs.

Among the programs included with MicroPatch are:

- Salvo Take
- Security Loc
- System Alert
- MacroPath
- Quick Switch
- SysConfig

An exclusive feature of the SDS-2 MicroPatch control software is the ability to initiate up to eight Salvo Takes automatically using the systems on-board clock. This feature permits users to define various matrix configurations that are used on a daily basis and have the system select them at a predetermined time. Each of these Salvos can be of any size from one crosspoint to 512 crosspoints with all switches occurring in the vertical interval.

MicroPatch also includes Help and extensive Diagnostic software routines.

CENTRAL DYNAMICS CORP.

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SIGNAL DISTRIBUTION SYSTEM

SDS-2 Signal Distribution System (Cont'd)

Diag. 1 is used for Microprocessor/Memory/Control maintenance. Diag. 2 tests the switching array(s) to verify that the routing switcher is operating properly. Individual crosspoints, tally, latches, all inputs to a specific output, a specific input to all outputs are all separate diagnostic routines...as is a check which cycles through all the crosspoints.

Self-Test routines are also included and are transparent to the operating system as are the other tests.

The above represent a sampling of the available programs. Software development will continue through Central Dynamics Computer Labs and a formal Central Dynamics Users Group. Testing, documenting and debugging will be conducted by Central Dynamics to assure that all programs developed by Users are compatible and available to other interested users.

MicroPatch also includes programs that permit communicating with the outside world. The ports are compatible with RS-422/423 and RS-232.

Control Hardware

The control system is based on the Intel 8085 microprocessor which communicates to all control panels and switching arrays. The array's frame control board communicates to the matrices within the array. Example: If the array is configured into a 32 x 32 Video Only matrix and a 32 x 32 Audio Only matrix, the control board would talk to each path separately making it possible to independently control each half of the frame. This board also has sufficient RAM to store operating data so all the application programs can be executed efficiently; programs such as Salvo Take, Security Loc, etc.

Memory is also backed up with battery power that can protect the memory for a minimum of 15 days.



MICROPATCH CRT STATUS DISPLAY

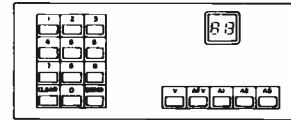
A CRT control console is standard equipment and is used for defining the basic system operating parameters and as a master control center for the system. Besides providing control, it is used to monitor the status of all input and output signals. Other status displays include input and output Lock configurations and Salvo Take tables.

When installing the SDS-2 system, reconfiguring the switching arrays or expanding the system, the terminal is used to define the control panel types used, their priorities, and the basic system operating parameters, i.e., audio follow video, stereo audio, digital control, etc.

In addition to the CRT control console, the user may select any number of a wide variety of discrete and multi-function numeric or alphanumeric control panels...up to a maximum of 512. The panels communicate with the 8085 microprocessor via eight coax serial control loops.



DEDICATED CONTROL PANEL



ALPHANUMERIC CONTROL PANEL

Video System

The SDS-2 switcher RS-2000 uses the latest state-of-the-art video switching technology. The basic design of the crosspoint is a high speed analog multiplexer developed by Central Dynamics expressly for the SDS-2. Each video crosspoint board contains 16 multiplexers; each one under microprocessor control. This permits selecting a crosspoint and receiving a confirming tally, via a return signal from the matrix, that verifies that the selected crosspoint is latched.

Each video input amplifier PCB contains 16 unity gain wideband video amplifiers that distribute each video signal to a maximum of 32 multiplexers. The video output card contains 16 video output amplifiers which receive outputs from a maximum of 8 multiplexers. The unique Central Dynamics designed output switching amplifier eliminates the requirement for "combiners" when expanding a SDS-2 system. This output switching amplifier concept permits expanding the inputs by simply connecting the output of each frame to the output of another frame...via a standard 75 Ohm coax cable.

This unique design not only reduces rack space when expanding, but assures maintaining and optimizing the system's signal distribution transparency and timing.

Audio System

The SDS-2 utilizes a Central Dynamics design that closely simulates the characteristics of a manual patch panel.

This is achieved by processing all audio signals in a balanced configuration. Each input signal is routed through two separate, isolated input buffers; therefore, two parallel crosspoint paths.

All audio switching uses highly reliable, standard CMOS analog switches. Packaging design for the input crosspoints and output amplifier cards achieves the same density as the video matrix.

CENTRAL DYNAMICS CORP.

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MASTER CONTROL SWITCHER



MC-4000 Master Control Switcher

The MC-4000 is a perfect blend of hardware and software. The sophisticated microprocessor control system processes all analog and digital commands. Control extends to all audio and video interfaces, plus all matte, color background and all audio level control. Digital VU meters that measure peak and average audio levels. Video crosspoint circuitry is high speed analog multiplexer design. Advanced packaging concepts . . . rack electronics require only 8 RUs; control console mounts on top of the console and only 2 small cable accesses are required.

Ergonomics. More than cosmetics. The industrial designed back-lighted control panel has been designed by experienced master control operators for efficient, safe On-Air operations. On-Air switching and control can now reach a high confidence level with the MC-4000. All controls have been strategically located based upon operator usage.

Exclusive On-Air Program confidence switching system protects against accidental changes to On-Air signal. This system continually verifies that the computer hardware and software are functioning properly.

Pushbutton LED verifies that a command has been communicated to its crosspoint and that the crosspoint has latched.

Automatic control features reduce the number of manual functions required when executing complex program breaks.

Many control functions are automatically cleared after a transition to air. This concept reduces operator error and permits a higher level of operating confidence.

On-Air mirror protection system inhibits preset film island mirror flips. Audio Over preset selection can be monitored while On-Air.

Output Path selector may be used to bypass Mixer and Downstream Keyer outputs.

Preset bus can be used as an On-Air emergency bus.

Optional emergency switcher (VAS-1010) controls can be located in console panel.

Software status tables for control console and electronics computer systems are stored in battery protected CMOS RAM. Switcher will return to "before main power failure" status, after power is restored.

Machine control and Preroll system for 10 VTRs, 2 film islands and 4 Audio Only starts.

Preroll delay times are user definable for individual machines in 10ms increments up to a maximum of 10 seconds. Separate preroll delays can be used for 2 projectors on the same island.

Preroll system automatically adjusts delays to accurately follow Mix and Fade transitions.

Transition multifunction ramp generator provides for Mix, Fade, Fade Cut and Cut Fade and 4 transition rates of 0.5, 1, or 2 seconds, or Cut.

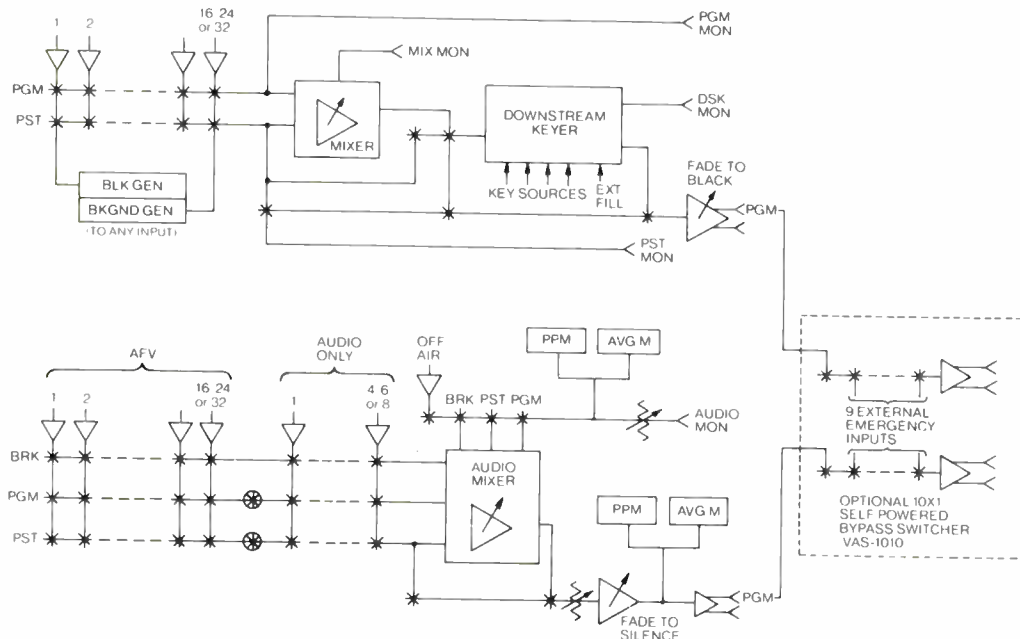
Stereo audio. Second Program output control locations and cutouts are provided to add stereo to existing system. Rack electronics only requires 4 RUs.

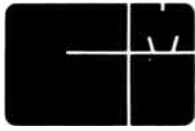
Serial port available for external digital communications.

A MC-4000 System is available for any size location.

MC-4164 16 AFV inputs; 4 Audio Only inputs
MC-4246 24 AFV inputs; 6 Audio Only inputs
MC-4328 32 AFV inputs; 8 Audio Only inputs

All models are available in NTSC, PAL and PAL-M.





CHANNELMATIC
821 Tavern Road
Alpine, CA 92001
(619) 445-2691

PATCHMASTER™

The PATCHMASTER is a broadcast-quality bridging audio-follow-video routing switcher which will satisfy a variety of switching requirements. Configured as a 10 input by 1 output switcher, the moving of internal jumper plugs converts the unit to two independent 5-input by 1-output switchers. Switching is vertical interval as referenced to the output signal.

The extremely high impedance, low capacitance bridging inputs cause negligible line loading, therefore, many switchers may be looped together for expansion to any desired number of outputs. Expansion in increments of ten inputs is provided with automatic secondary switching to eliminate crosstalk degradation. Stereo audio is available optionally.

Connections are also provided for remote switcher control. The switches are momentary and provided with electronic interlocking.

AVS-10A SPECIFICATIONS VIDEO

- Inputs: 10 or 5 x 2, plus expansion in increments of 10
- Input Impedance: High impedance looping
- Return Loss: Greater than 50 DB at 5 MHz
- Input Level: 0.5 to 2.0 VPP
- Outputs: 2(10 x 1) or 1 (each 5 x 1) at 75 ohms
- Output Level: 4 VPP maximum
- Frequency Response: ± 0.05 DB to 5 MHz ± 0.1 DB to 10 MHz
- Crosstalk: 60 DB or more at 3.58 MHz
- Differential Gain: Less than 0.1 percent
- Differential Phase: Less than 0.1°

AUDIO

- Inputs: 10 or 5 x 2, plus expansion in increments of 10
- Input Impedance: High impedance balanced or unbalanced bridging
- Input Level: + 8 DBM Nominal, + 12 DBM Maximum
- Outputs: 2(10 x 1) or 1(each 5 x 1); 600 ohms Balanced
- Output Level: + 19 DBM Maximum
- Frequency Response: ± 0.05 DB, 20 Hz to 20 kHz
- Crosstalk: Greater than 70 DB at 20 kHz

AVS-10A PATCHMASTER \$1000.00
RCP-15A Remote Control Panel 350.00

UAA-6A Universal Audio Amplifier

The UAA-6A is a broadcast-quality universal audio amplifier providing six separate transformerless amplifiers in a self-contained 1.75 by 19 inch rack mounting frame. Each amplifier has a high impedance input which may be either balanced or unbalanced and a low impedance output of 600 ohms balanced or 150 ohms unbalanced. A front panel gain control and test points are also provided for level adjustments.

**ROUTING SWITCHERS,
AUDIO AMPLIFIERS, AUDIO AND VIDEO
DISTRIBUTION AMPLIFIERS**

It is particularly useful in installations utilizing video cassette machines to convert their high impedance preamp audio output to 600 ohms balanced and to provide gain control.

UAA-6A SPECIFICATIONS

- Response: 20 Hz to 20 kHz ± 0.1 DB
- THD: Less than 0.05% at +24 DBM output
- Connectors: XLR on input and output or terminal Board (UAA-6A-TB)

UAA-6A with XLR connectors \$750.00
UAA-6A-TB with screw terminals 700.00

ADA-1A, ADA-2A, ADA-3A Audio Distribution Amplifier

The ADA-1A is a broadcast quality audio distribution amplifier providing six balanced 600 ohm source-terminated outputs from one high impedance bridging input. Both inputs and outputs may be connected to provide balanced or unbalanced circuits. Outputs are independent precision integrated amplifiers, providing accurate output balance. Gain is adjusted with a 25-turn potentiometer for ease and accuracy of control.

The 1.75 by 19 inch rack-mounting package is available with one, two or three independent amplifiers with a common power supply.

SPECIFICATIONS

- Frequency Response: ± 0.5 DB, 10 Hz to 30 kHz
- Hum and Noise: 80 DB down with + 20 DBM Output
- Distortion: 0.1% or Less
- Connectors: Terminal Strips

ADA-1A One Amplifier \$375.00
ADA-2A Two Amplifiers 600.00
ADA-3A Three Amplifiers 800.00

VDA-1A, VDA-2A, VDA-3A Video Distribution Amplifier

The VDA-1A is a self-contained broadcast-quality video distribution amplifier with six source-terminated 75 ohm outputs and one high-impedance looping input.

The 1.75 by 19 inch rack-mounting package is available with either one, two or three independent amplifiers with a common power supply.

SPECIFICATIONS

- Frequency Response: ± 0.10 DB to 5 MHz ± 0.20 DB to 10 MHz
- Differential Gain: Less than 0.1%, 10 to 90 APL
- Differential Phase: Less than 0.1°, 10 to 90 APL
- Automatic DC Offset Compensation

VDA-1A \$375.00
VDA-2A 600.00
VDA-3A 800.00



AVS-10A PATCHMASTER



AVS-10A PATCHMASTER BACK VIEW



RCP-15A REMOTE CONTROL PANEL



UAA-6A FRONT VIEW



UAA-6A WITH XLR's BACK VIEW



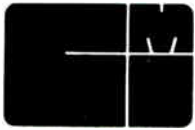
ADA-1A BACK VIEW



VDA-1A FRONT VIEW



VDA-1A BACK VIEW



CHANNELMATIC

821 Tavern Road
Alpine, CA 92001
(619) 445-2691

SPOTMATIC

**Random Access
Commercial Insert System**

The SPOTMATIC Random Access Commercial Insert System is designed to schedule and automatically insert local commercials into any length of available time slot on multiple channels of satellite service programming. SPOTMATIC locates, cues and inserts the proper commercials in the proper order from standard 3/4 inch video cassettes. Up to 100 randomly mixed commercial spots can be added to each cassette, greatly reducing tape and editing costs. In addition, it prints out a log of all switching functions as they occur and also prints out a daily advertiser-grouped listing identifying all spots inserted on each channel. Insertion is accomplished in a clean, broadcast-quality fashion.

FEATURES

- Controls up to Four VCR's Per Channel
- Display-Prompted Keypad Programming
- Controls Multiple Channels/VCR's Simultaneously
- Each Channel Independently Programmed for Versatility
- Uses Non-Modified Sony Type-5 VCR's
- Expandable to Control Up to 32 VCR's

The SPOTMATIC Random Access Commercial Insert System uses sophisticated multiple microcomputers to automatically locate an individual commercial spot on a video cassette, cue it in accordance with a satellite service's chosen preroll time and insert it upon receipt of the proper satellite cue tones. SPOTMATIC may be configured to control from one to four VCR's per channel and to insert commercials on as many channels as desired, as long as the total number of VCR's to be controlled does not exceed 32. SPOTMATIC also has a built-in automatic logging feature which gives the operator a hard copy printout of the times and contents of each commercial insertion.

\$18,000.00 & up

SPOTMATIC JR.

Single VCR

Commercial Insert System

The SPOTMATIC JR. provides a highly versatile, yet extremely cost-effective means of inserting local commercials into satellite programming. The microcomputer controlled unit performs all of the functions necessary to insert commercials in a broadcast fashion and is also equipped with a full-feature logging and verification printer.

The SPOTMATIC JR. is completely self-contained and provides all the necessary control for one satellite service. It decodes satellite tones which occur at the beginning of a local availability and inserts a VCR commercial into the satellite program. All variable microcomputer functions are programmed with an external handheld touchpad which is easily connected to a front panel mounted jack.

\$2,750.00

COMMERCIAL INSERT SYSTEMS, TONE SWITCHER, AND SONY VP/VO5000 SERIES VIDEO/AUDIO INTERFACE MODULE

The same touchpad is used to encode commercial tapes with spot cueing and advertiser information. **\$225.00**

ATS-4A

Automatic Tone Switcher

The ATS-4A Automatic Tone Switcher provides a simple and inexpensive means of inserting local programming from an audio source and a character generator or other video source into satellite programming. It decodes the satellite tones which occur at the beginning and end of the satellite programming or a local commercial insert period and uses the locally generated information to automatically fill the time period surrounded by the cue tones.

All switching is performed by integrated circuits and occurs during the vertical blanking interval for clean, broadcast-quality performance. The microcomputerized tone decoding circuitry is programmable for various satellite service tone codes and is equipped with a lithium backup power supply for memory retention in the event of power failure.

SPECIFICATIONS

INPUTS

- Tone: 600 ohms balanced, 0 DBM nominal
- Audio: 600 ohms balanced, 0 DBM nominal
- Video: 1 volt PP, 75 ohm unbalanced
- Video A and B: 1 volt PP, 75 ohm unbalanced

OUTPUTS:

- Audio: 600 ohms balanced, 0 DBM nominal
- Video: 1 volt PP, 75 ohm unbalanced

\$1,200.00

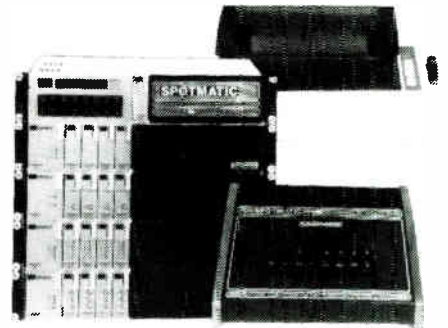
HANDIMOD I.

- **Auto Sync-Lock** — Automatic vertical sync-lock of Sony Type 5 VCR to an external video source so vertical interval switching is possible
- **Balanced Audio** — Converts 47,000 ohm high-impedance audio line output of VCR to 600 ohm balanced or dual 150 ohm unbalanced for compatibility with most audio equipment
- **Audio Level Control** — Installed in seconds by plugging into modulator cavity on rear of VCR; absolutely no VCR modifications necessary

Broadcast-Type Audio Output. The HANDIMOD I converts the high-impedance preamp audio output of the VCR into either one 600 ohm balanced audio output or two independent 150 ohm unbalanced audio outputs. An audio level control is also provided, which allows adjustment of the output level from zero to better than +14 DBM

Auto Sync-Lock. The HANDIMOD I also adds circuitry to enable the VCR to be sync-locked to an external video source.

The HANDIMOD I is particularly useful in VCR systems which require vertical interval switching between the VCR and an external source. **\$300.00**



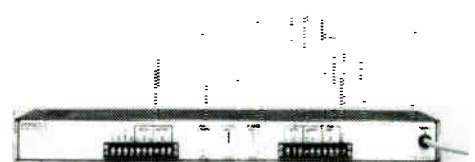
SPOTMATIC



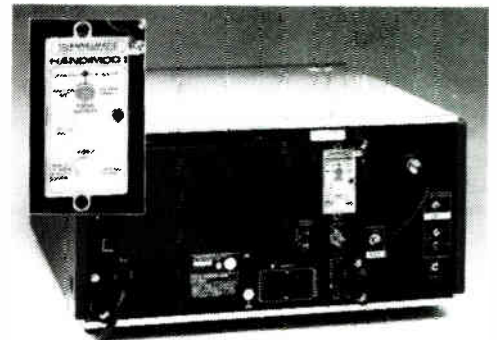
SPOTMATIC JR.



ATS-4A FRONT VIEW



ATS-4A BACK VIEW



HANDIMOD I

COHU, INC.

5755 Kearny Villa Road
 P.O. Box 85623
 San Diego, CA 92138
 (619) 277-6700 TWX 910-335-1244

SWITCHING SYSTEM

MODEL: V8800 SERIES

The Matrix 88 is a microprocessor-based video switching system that automatically routes video signals from a requested camera position to a specified monitor. The basic system configuration permits video switching of up to 64 cameras on 8 monitors, and when fully expanded, a total of 255 cameras and 32 monitors can be utilized without additional hardware. Removeable printed circuit boards, featuring plug-in connectors, provide on-line serviceability and eliminate down-time of the entire system.

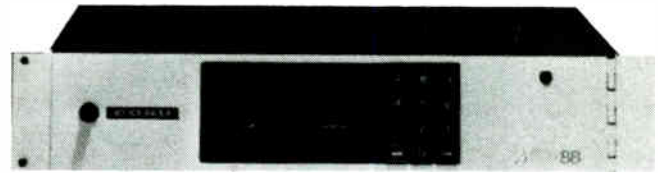
Standard System components consist of a Control Processing Unit (CPU), an 8 x 8 Matrix Switcher, and a Power Supply Unit. The control unit contains the system software, and when automatic sequencing is desired, the EAROM memory programming card. The control front panel houses the numerical keypad for video selection and the LED displays for camera/monitor number indication.

The CPU decodes signals accepted from external sources and transmits the information directly to the Matrix Switcher. A total of 48 Remote Keypads can be added to the basic System when multiple video control is desired.

Internal Switcher components consist of three mother boards which accommodate ten vertical boards; eight of which are switcher boards that route video from eight cameras to eight monitors for a total basic Matrix Capacity of 64 cameras by eight monitors. The remaining two boards are the Address Board and the Output Amplifier Board respectively.

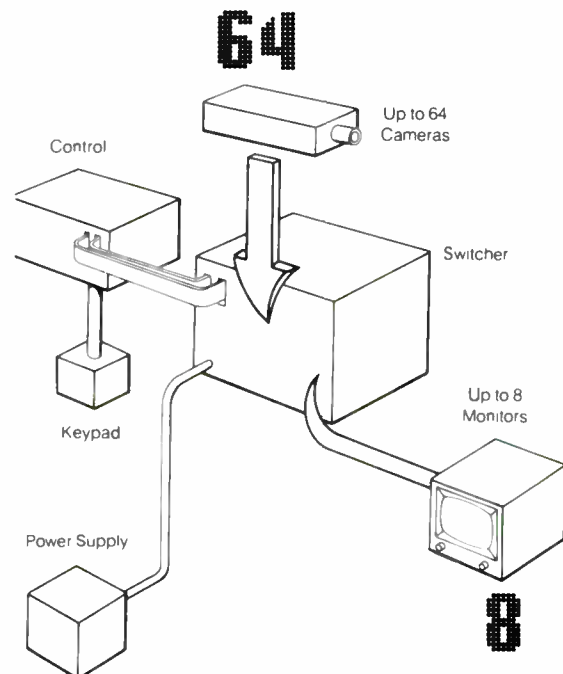
The Power Supply Unit consists of six output circuits that are individually double-fused, and provide power for up to six Matrix 88 Switcher Modules. Positioned internally are two transformers that deliver +12V at 7½ amp. and -12V at 1 amp. to each of the switcher units respectively.

This diagram illustrates some of the ways that the modular components can be configured to meet video system requirements. Using the fewest possible components, this simple Matrix 88 system can meet video switching requirements for up to 64 camera inputs and eight monitor channels out



MATRIX 88 CONTROL UNIT

MATRIX 88 SWITCHER SYSTEM COMPONENTS			
Assembly	Model No.	Product Code	Application
Matrix Switcher			
Video Card Cage Assembly	V8820SCC	0814	Contains address buffer, video amplifier, video and address mother boards
Video Switch Card Assembly*	V8810S	0813	Input, switching, and decoding circuitry
Control			
CPU/Manual Routing Keypad Assembly (local)	V8860CK	0818	May be used with remote manual routing keypads
CPU/Sequential Routing Keypad Assembly (local)	V8862CSK	0602	May be used with remote sequential and remote manual routing keypads
CPU-Manual	V8864C	0603	Used with remote manual routing keypads
CPU-Sequential	V8866CS	0604	Used with remote sequential and remote manual routing keypads
Remote Manual Keypad	V8868RK	0605	Must be used with V8860CK, V8862CSK or V8864C
Power			
Power Supply Assembly	V8830SPS	0815	Powers a maximum of six video card cage assemblies



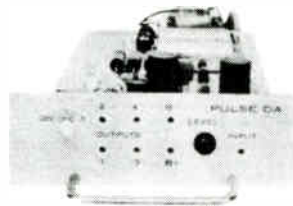
BASIC MATRIX 88 SYSTEM

Prices and Specifications Subject to Change Without Notice.

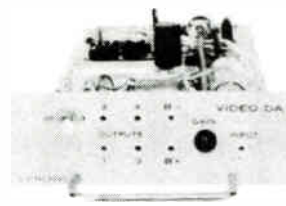
COHU, INC.

5755 Kearny Villa Road
P.O. Box 85623
San Diego, CA 92138
(619) 277-6700 TWX 910-335-1244

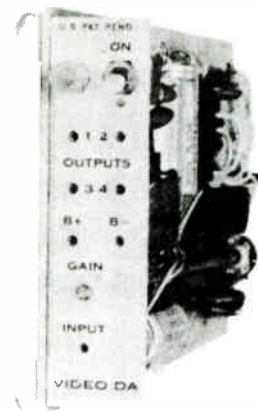
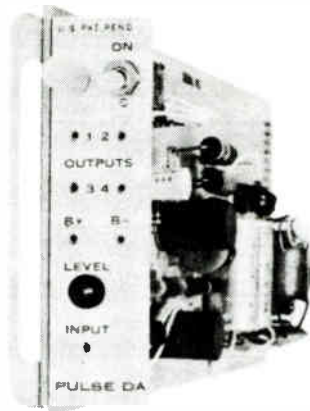
PULSE AND VIDEO DISTRIBUTION AMPLIFIERS



PULSE DA



VIDEO DA



9800 Series Distribution Amplifiers

- Modular Construction with Total Solid-State Active Circuitry
- Etched Glass Epoxy Circuit Boards
- Mix or Match both PDA's and VDA's in Same Enclosure
- Choice of Vertical or Horizontal Configuration
- Fits Standard 19-inch Rack or Cabinet
- Integral Power Supply on Each Module

The Cohu 9800 Series Pulse Distribution Amplifier is a solid-state, regenerative pulse-amplifier that processes and distributes television synchronizing signals from one input to four output channels. The input may be horizontal drive, vertical drive, blanking, or sync pulses. Each amplifier has an integral power supply; ac on-off switch and indicator; front panel test points for input, output, and power supply;

and an output level adjustment on the front panel. Individual connector panels, one for each amplifier, fasten to the rear of the enclosure and have six BNC or UHF connectors, one connector for each output and two for the bridging (loop-thru) input.

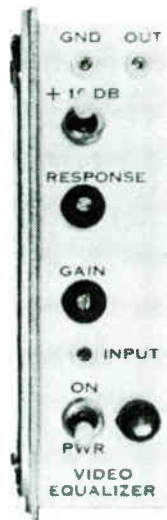
The Cohu 9800 Series Video Distribution Amplifier is a solid-state, wide-band video amplifier that amplifies (optional sync adding) and distributes video signals from one input to four output channels. The input may be composite or noncomposite, monochrome or color video. Each amplifier has an integral power supply; ac on-off switch and indicator; front panel test points for input, output, and power supply; and a video gain adjustment on the front panel. Individual connector panels, one for each amplifier, fasten to the rear of the enclosure and have six BNC or UHF connectors, one connector for each output and two for the bridging (loop-thru) input. The outputs to which sync is to be added (optional) are selected by means of slide switches mounted on a special version of the rear connector panel of the pulse distribution amplifier.

	Pulse DA	Video DA	Description
ENCLOSURE			
Vertical Chassis	9850-000	9850-000	Holds 10 DA's
Horizontal Chassis	9860-000	9860-000	Holds 3 DA's
DISTRIBUTION AMPLIFIERS			
For Horizontal Chassis	9800-162	9800-152	With BNC connector assembly, one input (with loop-thru) and four outputs
	9800-362	9800-352	With UHF connector assembly, one input (with loop-thru) and four outputs
For Vertical Chassis	9800-161	9800-151	With BNC connector assembly, one input (with loop-thru) and four outputs
	9800-261		With BNC connector assembly, one input (with loop-thru) and nine sync adder switches
	9800-361	9800-351	With UHF connector assembly, one input (with loop-thru) and four outputs
	9800-461		With UHF connector assembly, one input (with loop-thru) and nine sync adder switches

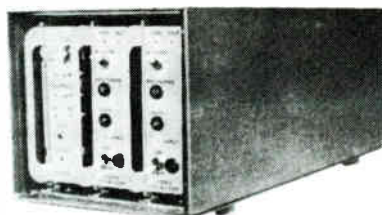
COHU, INC.

5755 Kearny Villa Road
 P.O. Box 85623
 San Diego, CA 92138
 (619) 277-6700 TWX 910-335-1244

VIDEO CABLE EQUALIZER



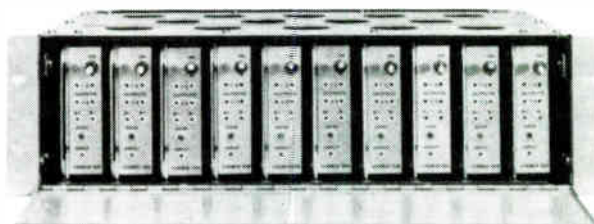
EQUALIZER MODULE



PORTABLE CABINET



HORIZONTAL FRAME



VERTICAL FRAME

9800 Series

- Up to 30 dB Equalization at 10 MHz
- Dependable Operation Over a Wide Environmental Range
- Front Panel Variable Equalization Adjustments
- Total Solid State Active Circuitry
- Exceptional Low Hum and Noise Level
- Integral, Regulated Power Supply on Each Module

The Cohu 9800 Series Video Cable Equalizer compensates for high frequency losses due to long runs. Equalization is sufficient for up to 6000 feet of RG-11/U foam dielectric cable. Longer distances can be equalized by using polyfoam dielectric cable having even lower losses.

The equalizer is a self-contained, plug-in module, having its own integral regulated power supply. All circuitry is contained on an etched, glass epoxy circuit board. All components, test points and adjustments are prominently marked.

Equalization to 30 dB at 10 MHz is provided by three convenient front panel controls, variable RESPONSE control, a variable GAIN control, and a fixed + 15 dB toggle switch. Equalization of 0 to 15 dB is made using the RESPONSE control. Equalization above 15 dB requires activating the + 15 dB toggle switch and using the variable RESPONSE control. Activating the + 15 dB toggle switch introduces a fixed 15 dB of equalization to which the variable RESPONSE control will add the necessary signal for up to a total of 30 dB equalization at 10 MHz. Should low frequency gain compensation be necessary, the variable GAIN control will provide -4 dB to + 6 dB adjustment,

which shifts the entire equalization curve, low frequency to high frequency.

The Cohu 9800 Series Equalizer when used at the receiving end of a cable provides excellent results with both color and monochrome video signals. The equalizer will accept either a 75-ohm unbalanced or 124-ohm balanced output. Differential input provides rejection of hum caused by ground loops. The equalizer may also be used at the transmitting end with similar excellent performance.

ENCLOSURES

The Cohu Video Cable Equalizer Module may be mounted in any of three enclosures. A 10 module vertical frame, a 3 module horizontal frame or a 3 module self-contained portable cabinet. The 10 module vertical or 3 module horizontal frame will mount into a standard 19 inch rack.

MODEL NUMBER ENCLOSURE DESCRIPTION

9850-000	10 Module Vertical Frame
9860-000	3 Module Horizontal Frame
9870-000	3 Module Portable Cabinet

AMPLIFIERS VIDEO CABLE EQUALIZER

9800-855	Vertical Amplifier
9800-856	Horizontal Amplifier

Comprehensive has recognized the benefits of making all types of video supplies and accessories, and below are listed a small sampling of what is available.

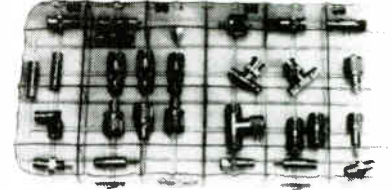
COMPREHENSIVE VIDEO ACCESSORIES

- | | |
|---------------------------------------------|------------------------------------------|
| AC power accessories | Lighting background supports |
| Breakout boxes | Studio expendable supplies |
| Cable crimp connector kits | Video/audio connector adaptors |
| Complete line of cables (video/audio) | Video & film production prop accessories |
| Degaussers | Video labels and cards |
| Distribution amplifiers | Video maintenance tools & accessories |

Video Adapter Kit

Contents:

- | | | |
|----------------------------------|-------------------------------|--------------------------|
| 2 BNC Jack, Plug, Jack (T) | 2 "F" Jack to Jack (Barrel) | 1 Phono Plug to UHF Jack |
| 1 BNC Jack, Jack, Jack (T) | 1 Phono Jack to Jack (Barrel) | 1 Phono Plug to "F" Jack |
| 2 BNC Jack to Jack (Barrel) | 3 BNC Plug to UHF Jack | 1 Phono Jack to BNC Plug |
| 1 BNC Plug to Plug (Barrel) | 3 BNC Jack to UHF Plug | 1 Phono Jack to UHF Plug |
| 1 BNC Jack to Plug (Right Angle) | 1 "F" Plug to BNC Jack | 1 Phono Jack to "F" Plug |
| 1 UHF Jack, Plug, Jack (T) | 1 "F" Jack to BNC Plug | 2 BNC 75 ohm Terminator |
| 2 UHF Jack to Jack (Barrel) | 1 "F" Jack to Mini Plug | 1 UHF 75 ohm Terminator |
| | 1 Phono Plug to BNC Jack | 1 "F" 75 ohm Terminator |

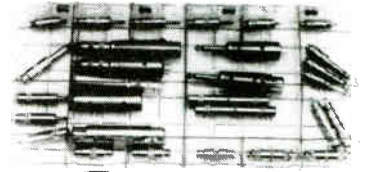


Adapt and interface with Video Connectors - includes 75 ohm terminators **VDAP-1 \$99.00**

Audio Adapter Kit

Contents:

- | | | |
|-------------------------------------|----------------------------------------|-----------------------------------|
| 3 Mini Plug to Phono Jack | 2 Standard Phone Plug to Mini Jack | 1 Standard Phone plug to XLR Jack |
| 3 Mini Plug to Standard Phone Jack | 2 Standard Phone Plug to Phono Jack | 1 XLR Plug to Phono Jack |
| 2 Mini Jack to Jack (Barrel) | 2 Standard Phone Jack to Jack (Barrel) | 1 XLR Plug to Standard Phone Jack |
| 3 Phono Plug to Mini Jack | 1 Phono Plug to XLR Jack | 1 XLR Plug to Plug (Barrel) |
| 2 Phono Plug to Standard Phone Jack | | 1 XLR Jack to Jack (Barrel) |
| 3 Phono Jack to Jack (Barrel) | | |



Adapt and interface with Audio Connectors **ADAP-1 \$99.00**

BNC AND UHF CRIMP CONNECTOR KIT

BUCK-2 \$179.00

Contents:

- 25 BNC Plug for RG59/U Cable
- 25 UHF Plug for RG59/U Cable
- 1 Crimp tool
- 1 Cable stripper for BNC
- 1 Cable stripper for UHF

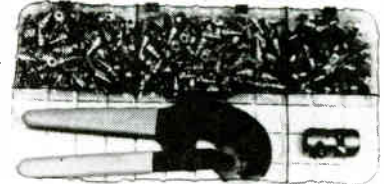


DELUXE "F" CRIMP CONNECTOR KIT

FCK-2 \$129.00

Contents:

- 200 "F" Plug for RG59/U Cable with Crimp Ring
- 1 Heavy Duty Crimp tool for FP
- 1 Cable stripper



Break-Out Boxes



PS-7B

Features 10 pin cable (E10P) to plug into camera input of portable VCR or other equipment using 10 pin jack (E10JCM). Provides video in/out via BNCs and audio in/out via Minis (3.5mm). **PS-7B \$59.95**



PS-6B

Features 8 pin cable (E8P) to plug into equipment using 8 pin jack (E8JCM). Provides video in/out via BNCs and audio in/out via Minis (3.5mm). **PS-6B \$54.95**



CBB-10

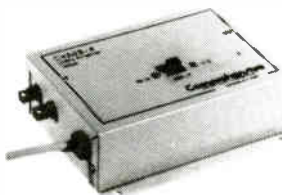
Provides access to individual signals of color cameras using the common 10 pin (E10P) connection. Features: 10 pin camera input (E10J), Video out via BNC connector, Audio out via 3.5mm Mini connector, 12 volts DC power input fused via 4 pin DIN (allows external powering of camera), Remote record/pause via extended Mini jack.

CBB-10 \$69.95

Video Distribution Amplifier

Overcome line loss, provide additional equipment outputs and line equalization, or any combination of these. Comprehensive's 4 output Video Distribution Amplifier contains two input connectors to permit signal looping, thereby allowing the units to be "ganged" if more than four outputs are needed. Mounts easily on any flat surface.

CVA2B-4 \$175.00



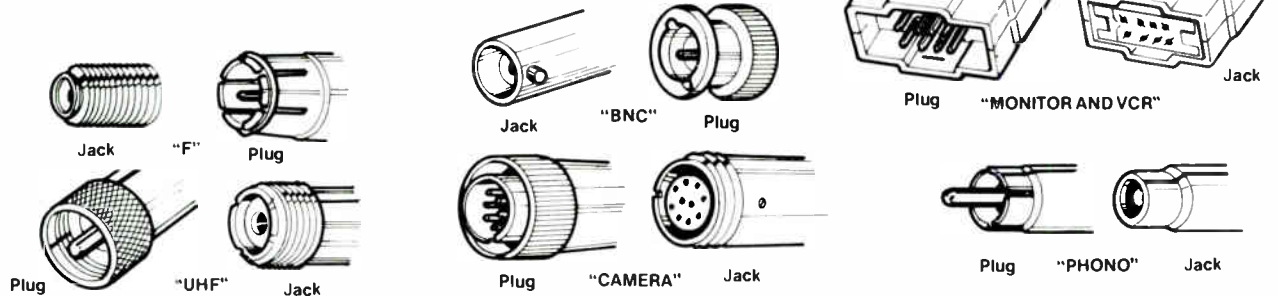
Passive Video Switchers

Versatile Switchers You Can Depend On

Comprehensive's passive video switchers with audio pass-along offer a fast simple way to interconnect video and audio equipment. Pushbuttons select the input and automatically terminate the other video inputs, for constant impedance.

CPS-4A 4 Pair Video with Audio pass-along \$129.00
CPS-8A 8 Pair Video with Audio pass-along \$179.00





VIDEO ADAPTERS

PART NO.	DESCRIPTION	1-4	5-49	50+
BNC				
BT	BNC Jack, Plug, Jack (T)	\$ 8.99	\$ 8.09	\$ 7.19
BT-J	BNC Jack, Jack, Jack (T)	7.49	6.74	5.99
B-BL	BNC Jack to Jack (Barrel)	4.99	4.49	3.99
BP-BL	BNC Plug to Plug (Barrel)	7.99	7.19	6.39
BJ-BP-L	BNC Jack to Plug (Right Angle)	8.99	8.09	7.19
UHF				
UT	UHF Jack, Plug, Jack (T)	4.99	4.49	3.99
UJ-UP	UHF Jack to Plug (Push-On)	3.99	3.59	3.19
U-BL	UHF Jack to Jack (Barrel)	1.99	1.79	1.59
UJ-UP-L	UHF Jack to Plug (Right Angle)	4.99	4.49	3.99
"F"				
F-BL	"F" Jack to Jack (Barrel)	1.59	1.43	1.27
FJ-FP	"F" Jack to Plug (Push-On)	2.79	2.51	2.23
FJ-FP-L	"F" Jack to Plug (Right Angle Push-On)	2.99	2.69	2.39
Phono (Video)				
PT	Phono Jack, Plug, Jack (T)	2.99	2.69	2.39
PT-J	Phono Jack, Jack, Jack (T)	2.99	2.69	2.39
PJ-BL	Phono Jack to Jack (Barrel)	1.79	1.61	1.43
Between Series: BNC, UHF, "F", & Phono (Video)				
BP-UJ	BNC Plug to UHF Jack	5.59	5.03	4.47
BJ-UP	BNC Jack to UHF Plug	4.99	4.49	3.99
FP-BJ	"F" Plug to BNC Jack	4.59	4.13	3.67
FP-UJ	"F" Plug to UHF Jack	4.59	4.13	3.67
FJ-BP	"F" Jack to BNC Plug	5.59	5.03	4.47
FJ-UP	"F" Jack to UHF Plug	4.59	4.13	3.67
FJ-MP	"F" Jack to Mini Plug	4.29	3.86	3.43
MP-UJ	Mini Plug to UHF Jack	2.99	2.69	2.39
PP-BJ	Phono Plug to BNC Jack	4.59	4.13	3.67
PP-UJ	Phono Plug to UHF Jack	2.29	2.06	1.83
PP-FJ	Phono Plug to "F" Jack	4.29	3.86	3.43
PJ-BP	Phono Jack to BNC Plug	5.29	4.76	4.23
PJ-UP	Phono Jack to UHF Plug	4.29	3.86	3.43
PJ-FP	Phono Jack to "F" Plug	4.29	3.86	3.43

VIDEO CABLES

PART NO.	DESCRIPTION	1-4	5-49	50+
Molded Video Cables-Flexible Coax				
BNC Plug to Plug				
BB-C-1.5	1 1/2 ft.	9.99	8.99	7.99
BB-C-3	3 ft.	10.29	9.26	8.23
BB-C-10	10 ft.	12.99	11.69	10.39
BB-C-25	25 ft.	15.99	14.39	12.79
BB-C-50	50 ft.	21.99	19.79	17.59
"F" Plug to Plug-Push-On				
FF-C-1.5	1 1/2 ft.	5.99	5.39	4.79
FF-C-3	3 ft.	6.29	5.66	5.03
FF-C-10	10 ft.	7.99	7.19	6.39
FF-C-25	25 ft.	10.99	9.89	8.79
FF-C-50	50 ft.	16.99	15.29	13.59
"F" to "F" Right Angle Push-On				
FF-CR-3	3 ft.	7.29	6.56	5.83
FF-CR-10	10 ft.	9.99	8.99	7.99
FF-CR-25	25 ft.	12.99	11.69	10.39
UHF Plug to "F" Plug				
UF-C-10	10 ft.	11.69	10.52	9.35
UF-C-25	25 ft.	14.69	13.22	11.75

PART NO.	DESCRIPTION	1-4	5-49	50+
UHF Plug to Plug				
UU-C-3	3 ft.	\$ 9.99	\$ 8.99	\$ 7.99
UU-C-10	10 ft.	11.69	10.52	9.35
UU-C-25	25 ft.	14.69	13.22	11.75
UU-C-50	50 ft.	20.69	18.62	16.55
BNC Plug to UHF Plug				
BU-C-3	3 ft.	9.99	8.99	7.99
BU-C-10	10 ft.	11.69	10.52	9.35
BU-C-25	25 ft.	14.69	13.22	11.75
BU-C-50	50 ft.	20.69	18.62	16.55
"F" Plug to 3.5 Mini Plug				
F-MP-C-10	10 ft.	8.69	7.82	6.95
Phono (RCA) Plug to Plug-Video				
PP-PP-CV-1.5	1 1/2 ft.	6.99	6.29	5.59
PP-PP-CV-3	3 ft.	7.29	6.56	5.83
PP-PP-CV-10	10 ft.	9.99	8.99	7.99
PP-PP-CV-25	25 ft.	12.99	11.69	10.39
BNC Plug to Phono (RCA) Plug				
B-PP-C-10	10 ft.	11.69	10.52	9.35
B-PP-C-25	25 ft.	14.69	13.22	11.75
UHF Plug to Phono (RCA) Plug				
U-PP-C-10	10 ft.	11.69	10.52	9.35
U-PP-C-25	25 ft.	14.69	13.22	11.75

EIAJ Multi-Pin Cable Assemblies

EIAJ 8-Pin VTR & Monitor Cables				
E8P-E8P-5	5 ft.	26.99	25.64	24.29
E8P-E8P-10	10 ft.	29.99	28.49	26.99
E8P-E8P-25	25 ft.	39.99	37.99	35.99
E8P-E8P-50	50 ft.	52.99	50.34	47.69
E8P-E8P-100	100 ft.	99.99	94.99	89.99
Portable VTR to Monitor Cable				
E8P-E10P-5S	(Sony) 5 ft.	38.99	37.04	35.09
E8P-E10P-5J	(JVC & Panasonic) 5 ft.	38.99	37.04	35.09
EIAJ 10-Pin Camera Extension				
E10P-E10J-5	5 ft.	38.99	37.04	35.09
E10P-E10J-10	10 ft.	45.99	43.69	41.39
E10P-E10J-25	25 ft.	62.99	59.84	56.69
E10P-E10J-50	50 ft.	88.99	84.54	80.09
E10P-E10J-100	100 ft.	145.99	138.69	131.39
EIAJ 10-Pin Hook-Up Cable				
E10P-E10P-5	5 ft.	40.99	38.94	36.89
E10P-E10P-10	10 ft.	46.99	44.64	42.29
E10P-E10P-25	25 ft.	58.99	56.04	53.09
E10P-E10P-50	50 ft.	88.99	84.54	80.09
E10P-E10P-100	100 ft.	145.99	138.69	131.39
Camera Cable (JVC)				
E10P-E12P-10	10 ft.	51.99	49.39	46.79
E10P-E12P-10CL	10 ft.	51.99	49.39	46.79
B & W Camera Extension Cable (6-Pin)				
D6P-D6J-25	25 ft.	36.99	35.14	33.29
Color Camera Extension (8-Pin)				
D8P-D8J-25	25 ft.	39.99	37.99	35.99
BETA Camera Extension (14-Pin)				
B14P-B14J-25	25 ft.	89.99	85.49	80.99
Hitachi Camera Extension Cable (10 Pin)				
H10P-H10J-25	25 ft.	56.99	54.14	51.29
Professional 14 Pin Camera Cable				
E14P-E14J-25	25 ft.	109.99	104.49	98.99

Multi-Pin Adapters

E8J-BL	EIAJ 8 pin "GOOF" Plug	\$24.95
E8J-P	EIAJ 8 pin Dubbing Adapter	24.95
E14P-J	EIAJ 14 pin Adapter	39.95

- Video Connectors
- Bulk Video Cable
- Video Adapters
- Video Cables

VIDEO CONNECTORS

1-4 5-49 50 +

BNC

BP	BNC Plug for RG59/U Cable, Solder	\$ 3.99	\$ 3.59	\$ 3.19
BP-C	BNC Plug for RG59/U Cable, Crimp	3.59	3.23	2.87
BP-E	BNC Plug for RG59/U Cable, <i>Fast-Fit</i>	4.49	4.04	3.59
BP-C-8281	BNC Plug for 8281 Cable, Crimp	5.49	4.94	4.39
BP-E-8281	BNC Plug for 8281 Cable, <i>Fast-Fit</i>	5.49	4.94	4.39
BJ-CM	BNC Jack, Chassis Mount	1.99	1.79	1.59
B-BLCM	BNC Jack to Jack (Barrel), Chassis Mount	7.19	6.47	5.75
B-TM	BNC 75 Ohm Terminator	6.49	5.84	5.19

UHF

UP	UHF Plug & Adapter for RG59/U Cable, Solder	2.29	2.06	1.83
UP-C	UHF Plug for RG59/U Cable, Crimp	1.79	1.61	1.43
UP-E	UHF Plug for RG59/U Cable, <i>Fast-Fit</i>	2.99	2.69	2.39
UP-8281	UHF Plug & Adapter for 8281 Cable, Solder	2.99	2.69	2.39
UP-E-8281	UHF Plug for 8281 Cable, <i>Fast-Fit</i>	3.49	3.14	2.79
UJ-CM	UHF Jack, Chassis Mount	3.39	3.05	2.71
U-BLCM	UHF Jack to Jack (Barrel), Chassis Mount	4.49	4.04	3.59
U-TM	UHF 75 ohm Terminator	4.59	4.13	3.67

"F"

FP	"F" Plug for RG59/U Cable, Crimp	.49	.44	.39
FP-E	"F" Push-on Plug - RG59/U Cable, <i>Fast-Fit</i>	.99	.89	.79
FP-ES	"F" Plug for RG59/U Cable, <i>Fast-Fit</i>	1.49	1.34	1.19
FJ-CM	"F" Jack, Chassis Mount	1.09	.98	.87
F-BLCM	"F" Jack to Jack (Barrel) Chassis Mount	1.79	1.61	1.43
F-TM	"F" 75 Ohm Terminator	1.99	1.79	1.59

Phono (Video)

PP-V	Phono Plug for RG59/U Cable, Solder	1.29	1.16	1.03
PP-C	Phono Plug for RG59/U Cable, Crimp	.89	.80	.71
PJ-CM	Phono Jack, Chassis Mount	.69	.62	.55
P-BLCM	Phono Jack to Jack (Barrel), Chassis Mount	2.29	2.06	1.83
P-TM	Phono 75 Ohm Terminator	2.29	2.06	1.83

EIAJ Monitor and VCR Connectors

E8P	8 pin Plug, Cable End	6.99	6.29	5.59
E8J	8 pin Jack, Cable End	6.99	6.29	5.59
E8JCM	8 pin Jack, Chassis Mount	2.99	2.69	2.39
E8PCM	8 pin Plug, Chassis Mount	2.99	2.69	2.39

EIAJ VCR and Editor Remote Control Connectors

E20P	20 pin Plug, Cable End	13.29	11.96	10.63
E20JCM	20 pin Jack, Chassis Mount	4.99	4.49	3.99
E20J	20 pin Jack, Cable End	13.49	12.14	10.79
E20PCM	20 pin Plug, Chassis Mount	4.79	4.31	3.83
E33P	33 pin Plug, Cable End	19.99	17.99	15.99
E33JCM	33 pin Jack, Chassis Mount	15.99	14.39	12.79
E33J	33 pin Jack, Cable End	19.99	17.99	15.99
E33PCM	33 pin Plug, Chassis Mount	15.99	14.39	12.79
EX-33J	33 pin Shell Extension Jack Cable End	25.99	25.99	25.99
E34P	34 pin Plug, Cable End	16.29	14.66	13.03
E34JCM	34 pin Jack, Chassis Mount	6.99	6.29	5.59
E34J	34 pin Jack, Cable End	16.49	14.84	13.19
E34PCM	34 pin Plug, Chassis Mount	5.99	5.39	4.79
E45P	45 pin Plug, Cable End	16.79	15.11	13.43
E45JCM	45 pin Jack, Chassis Mount	7.49	6.74	5.99
E45J	45 pin Jack, Cable End	16.99	15.29	13.59
E45PCM	45 pin Plug, Chassis Mount	7.29	6.56	5.83
EX-33P	33 pin Shell Extension Plug, Cable End	25.99	25.99	25.99

Camera Connectors

E10P	10 pin Plug, Cable End	15.99	14.39	12.79
E10J	10 pin Jack, Cable End	14.99	13.49	11.99
E10JCM	10 pin Jack, Chassis Mount	9.99	8.99	7.99
E10PCM	10 pin Plug, Chassis Mount	14.99	13.49	11.99
H10P	10 pin Plug Push-On, Cable (Hitachi) End	15.99	14.39	12.79
H10J	10 pin Jack Push-On, Cable End (Hitachi)	14.99	13.49	11.99
E12P	12 pin Plug, Cable End (JVC)	18.99	17.09	15.19
E12J	12 pin Jack, Cable End (JVC)	16.99	15.29	13.59
E12JCM	12 pin Jack, Chassis Mount (JVC)	10.29	9.26	8.23

E14P	14 pin Plug, Cable End	34.00	32.40	26.80
E14J	14 pin Jack, Cable End	34.00	32.40	26.80
E14JCM	14 pin Jack, Chassis Mount	22.00	19.80	17.60
E14PCM	14 pin Plug, Chassis Mount	22.00	19.80	17.60
D6P	6 pin Plug, Cable End (B&W Cameras)	6.79	6.11	5.43
D6J	6 pin Jack, Cable End (B&W Cameras)	3.29	2.96	2.63
D6JCM	6 pin Jack, Chassis Mount (B&W Cameras)	3.49	3.14	2.79
D8P	8 pin Plug, Cable End (Hitachi, NEC)	4.59	4.13	3.67
D8J	8 pin Jack, Cable End (Hitachi, NEC)	3.59	3.23	2.87
D8JCM	8 pin Jack, Chassis Mount (Hitachi, NEC)	1.79	1.61	1.43
D7P-SL	7 pin Plug, Cable End (Akai)	7.59	6.83	6.07

Remote Control Connectors

D8P-R	8 pin Plug, Cable End	3.99	3.59	3.19
D8J-R	8 pin Jack, Cable End	3.79	3.41	3.03
D10P	10 pin Plug, Cable End	8.50	7.65	6.80
MP-R	Extended Mini Plug, Cable End	.99	.89	.79

DC Power Connectors

D4P	4 pin Plug, Cable End	5.79	5.21	4.63
D4J	4 pin Jack, Cable End	2.99	2.69	2.39
D4JCM	4 pin Jack, Chassis Mount	2.79	2.51	2.23
D8P-SL	8 pin Plug, Cable End (JVC)	11.99	10.79	9.59
DCP	Direct Current Plug 2.5 mm (Sony)	.99	.89	.79
DCP-A	Direct Current Plug 3mm (JVC, Panasonic)	.99	.89	.79
RM12BPG-3P	3 pin Plug, Cable End	11.99	10.79	9.59
RM12BPG-3S	3 pin Jack, Cable End	11.99	10.79	9.59
RM12BPG-4P	4 pin Plug, Cable End	11.99	10.79	9.59
RM12BPG-4S	4 pin Jack, Cable End	11.99	10.79	9.59
XLRP-4	4 pin XLR Plug, Cable End	6.29	5.66	5.03
XLRJ-4	4 pin XLR Jack, Cable End	8.29	7.46	6.63
XLRP-5	5 pin XLR Plug, Cable End	9.99	8.99	7.99
XLRJ-5	5 pin XLR Jack, Cable End	11.99	10.79	9.59
DCP12	12 pin Plug, Cable End (Sony)	9.50	8.55	7.60

BULK VIDEO CABLE

RG59/U Solid Center Conductor CVC-59

CVC-59-100	100 ft. reel	19.95
CVC-59-500	500 ft. reel	89.95
CVC-59-1000	1000 ft. reel	159.95

RG59/U Stranded Center Conductor CVC-59S

CVC-59S-100	100 ft. reel	21.95
CVC-59S-500	500 ft. reel	98.95
CVC-59S-1000	1000 ft. reel	169.95

Belden 8281 75 ohm Precision Broadcast Coax Cable

8281-500	500 ft.	305.00
8281-1000	1000 ft.	610.00

EIAJ 8 Pin VCR Cable CVC-8

CVC-8	1-499 ft.	.95 per ft.
	500-999 ft.	.85 per ft.
	1000 + ft.	.76 per ft.

EIAJ 10 Pin Camera Cable CVC10

CVC-10	1-499 ft.	1.35 per ft.
	500-999 ft.	1.21 per ft.
	1000 + ft.	1.08 per ft.

EIAJ 14 Pin Camera Cable CVC-14

CVC-14	1-499 ft.	1.95 per ft.
	500-999 ft.	1.75 per ft.
	1000 + ft.	1.56 per ft.

20 Pin Remote Control Cable CVC-20

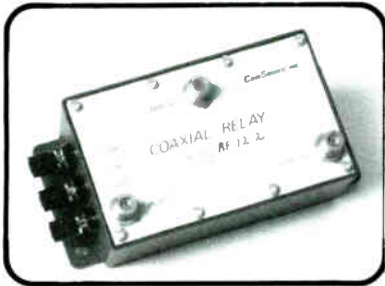
CVC-20	1-499 ft.	1.95 per ft.
	500-999 ft.	1.75 per ft.
	1000 + ft.	1.56 per ft.

COMPLETE CATALOG AVAILABLE

Prices and Specifications Subject to Change Without Notice.

AUTOMATIC SWITCHING IS A REALITY

WITH OUR MODULAR COAXIAL SWITCHING RELAYS



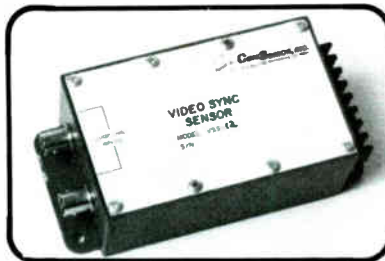
STANDARD COAXIAL RELAY: Now selective interconnecting allows maximum channel allocation, and reliable single channel timesharing with multiple programming sources becomes a reality! Our totally passive design eliminates third order distortion. Our highly reliable RF coaxial Reed assemblies are triggered by command switching voltage with PC board design that guarantees performance every time!



VIDEO SENSING RELAY: Solve many of your switching problems with confidence. Now you can insert back-up video signals, or channel preempting from a variety of sources. Match this one with our Standard relay (above) and you've got a totally automatic system! It's really a system you can build on.



RF/IF SENSING RELAY: Switch between primary and secondary inputs upon carrier or modulation signal completion or failure. Senses video modulated signals from 5 to 450 MHz from local, microwave, or satellite sources. Built to your specs, and match with our Standard Relay for totally automatic RF/IF and video switching that you can depend on.



CARRIER MODULATION SENSOR: This one will indicate the presence or failure of TV modulated carrier or TV modulation signal (on the carrier) with no third order distortion. As with all our relay units, you get high isolation and solid state dependability.



VIDEO SYNC SENSOR: This simple yet sophisticated sensor actually "sees" the presence or failure of the appointed video signal. Its speed will defy even the most sensitive detection with drop-out time of 225mS and lightning fast 20mS pick-up time; that you can build into your system and forget about!

POWER SUPPLY: To make your system complete, our 12 or 24Vdc rack mount power supply allows for mounting and powering several relays.

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- USED EQUIPMENT DIVISION, and
- TECHNICAL CONSULTING SERVICES!

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DATATEK CORP.

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Mountainside, NJ 07092
(201) 654-8100
Telex 833541 DATATEK MTSD

D-2000 SERIES ROUTING SWITCHERS

- Compatible matrix frames of 50 x 25, 25 x 25 and 25 x 20 used as building blocks for systems of up to 256 inputs, with up to 8 levels of control
- Easily field expandable—no need to specify initially the future matrix size
- Switcher is output oriented with each output bus having its own microprocessor control system, independent of every other output bus
- Serial data control system using RG-59/U coax—with opto-isolators in the control lines to avoid compromising reliability due to ground loop hum
- D-4300 series switching units can be furnished with compatible microprocessor controls, for use where small auxiliary switchers are needed for special purpose additional levels
- Non-proprietary components, available through electronics distributors, used throughout
- All plug-in modules interchangeable with other modules of same type. Switcher remains within specifications, without readjustment, when modules interchanged.

The Datatek D-2000 series of Video and Audio Routing Switchers use a variety of compatible matrix frames to make up systems of various sizes for video, audio, SMPTE time code and intercom.

The D-2000 series switchers are easily field expandable without down time, by adding matrix frames and interconnecting them with plug-in cables. There is no need to specify initially the future size of the switcher, provided the ultimate size is not greater than 256 inputs.

The switchers are output oriented both from a signal and a control standpoint. Output modules are either 25 x 1 or 50 x 1 and each output module has its own microprocessor control system which is completely independent of the control system on any other output bus. This provides maximum bus security since failure of a microprocessor or shorting a control line will affect only one bus and not the entire matrix.

Further, since each output bus has its own control system, the crosspoint tally fed back to the control panel is generated on the same module as that on which the crosspoint is located. A positive crosspoint tally status for the bus is generated, rather than a tally generated from a central control module serving many output busses.

Serial data is used over standard RG-59/U coaxial cable to connect the matrix frames to the control panels. This simplifies installation and reduces cost. To insure that ground loop hum does not compromise the reliability of the serial data control system, control panels are equipped with opto-isolators.

By combining a video matrix frame with one or more audio, time code, etc. matrix frames, multi level systems can be assembled for video, audio, stereo audio (left and right), SMPTE time code, intercom, tally, and machine assignment. The control system provides for up to 8 levels of control, any of which may be "follow video" or "breakaway". Where an auxiliary matrix of small size is needed, D-4300 series switching units can be equipped with compatible microprocessor control modules, and controlled as part of the D-2000 switcher. This is useful where a small video or audio auxiliary matrix is needed for special purpose additional levels for switching audio, tally, intercom, SMPTE time code, synclock, cursors, time base correctors, etc.

D-2000 Series Video and Audio Routing Switchers

The D-2000 Series Routing Switchers use a serial data control system and have expansion capability to 250 inputs x 250 outputs.

D-2000-25x20V Video Routing Switcher. Basic "Building Block" matrix frame capacity is 25 inputs x 20 output busses. Frame size is 7 inches.

D-2000-25x25V Video Routing Switcher. Basic "Building Block" matrix frame capacity is 25 inputs x 25 output busses. Frame size is 8-3/4 inches.

D-2000-50x25V Video Routing Switcher. Basic "Building Block" matrix frame capacity is 50 inputs x 25 output busses. Frame size is 10-1/2 inches.

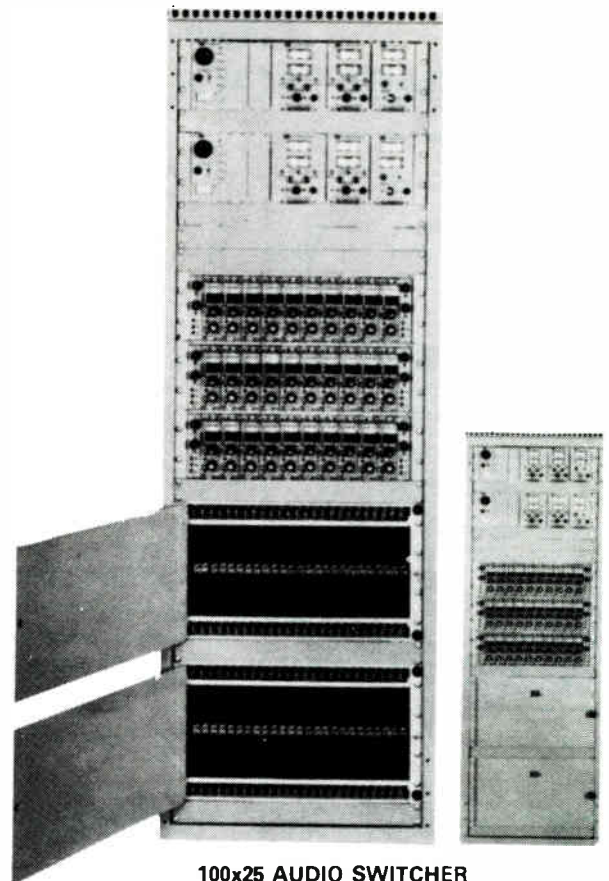
D-2000-25x20A Audio Routing Switcher. Basic "Building Block" matrix frame capacity is 25 inputs x 20 output busses. Frame size is 7 inches.

D-2000-25x25A Audio Routing Switcher. Basic "Building Block" matrix frame capacity is 25 inputs x 25 output busses. Frame size is 8-3/4 inches.

VIDEO-AUDIO ROUTING SWITCHERS

D-2000-50x25A

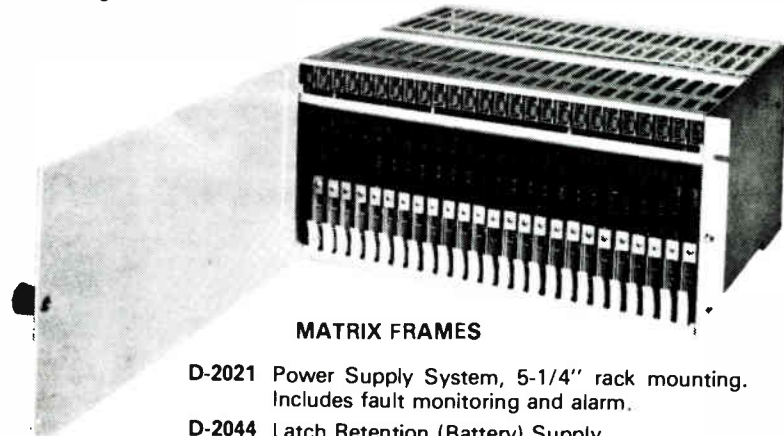
Audio Routing Switcher. Basic "Building Block" matrix frame capacity is 50 inputs x 25 output busses. Frame size is 10-1/2 inches.



100x25 AUDIO SWITCHER

There are no proprietary components used in the Datatek switching systems. All components are available through electronics distributors as standard items.

All plug-in modules are interchangeable with other modules of the same type, and the switcher will remain within specification, without adjustment, when modules are interchanged. If cable equalization is used, the cable equalizer would of course normally need to be reset. Removal or insertion of modules with power on will not disturb other signals, and will not blow fuses.



MATRIX FRAMES

D-2021 Power Supply System, 5-1/4" rack mounting. Includes fault monitoring and alarm.

D-2044 Latch Retention (Battery) Supply.

D-2045 Control Buffer Frame, 3-1/2", for use with X-Y Control Panels.

D-2014 Source Tally Relay Frame, 1-3/4"

D-2019 Parallel Interface Frame, 5-1/4"

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CONTROL PANELS



D-2047 Three Bus Lever Switch Control Panel



D-2029 Single Bus Touch Pad Control Panel

D-2000 Series Control Panels

Each Datatek control panel is equipped with its own microprocessor to communicate with an associated output bus microprocessor in the matrix frame. The serial data control system uses RG-59/U coaxial cable, with an optoisolator in each bus to prevent errors due to ground loop hum.

Control panels are available to operate either a single bus, or multiple busses. They are also available for audio-follow-video, audio or video breakaway, and for controlling multiple levels, either on a follow or breakaway basis. In addition, the control panels can be lever switch, touch pad keyboard, or pushbutton per input.

Modems and RS-232-C interfaces are available to operate single or multiple busses over standard telephone lines, or connected to automation systems.

Control Panels — Some of the D-2000 series control panels are listed below.

- D-2029** Single Bus Touch Pad Control Panel, 1-3/4" Rack Mounting, for video-only, audio-only, or audio-follow-video switching. With two LED displays, one for preset (selection) and one for line. With reset and take button.
- D-2030** Single Bus Touch Pad Control Panel, 1-3/4" Rack Mounting, for one video and two audio channels, with provisions for switching audio-follow-video or breakaway of one or both of the audio channels. Includes three LED displays, one each for video and audio channels 1 and 2. Includes switch level select switch, reset and take button.
- D-2031** Single Bus Touch Pad Control Panel, 1-3/4" Rack Mounting, for audio-follow-video or audio breakaway switching. With two LED displays, one for video source and one for audio source. Includes split-audio switch, reset and take button.
- D-2032** Portable Diagnostic Control Unit, for checking matrix status from front of rack. Includes LED displays and touch pad keyboard. May also be used as a single bus control panel.
- D-2033-25** Single Bus Pushbutton Control Panel, 1-3/4" Rack Mounting, with 25 illuminated pushbutton switches.
- D-2033-25S** Single Bus Control Panel, 1-3/4" Rack Mounting, with 25 illuminated pushbutton switches. Provision for split audio switching.
- D-2033-25P** Single Bus Control Panel, 1-3/4" Rack Mounting. Programmed to control any 25 specified inputs out of the matrix.
- D-2033-50** Single Bus Pushbutton Control Panel, 3-1/2" Rack Mounting, with 50 illuminated pushbutton switches.
- D-2033-50S** Same as above, but with additional switch for split audio switching.
- D-2034 S** Multi-Bus Touch Pad Control Panel, 3-1/2" Rack Mounting, for operation of the full matrix or a portion of the matrix, including provision for split audio operation. Includes two LED displays, one for output bus and one for input selected. With touchpad, reset and take button. Equipped with key-lock inhibit of the take switch to prevent accidental interference with individual bus control panels. Requires also D-2045 Control Buffer Frame.

- D-2037** Single Bus Control Unit, 2-digit lever switch input selection, no take button. Signal switches as lever switch changed. In miniature housing.
- D-2040** Single Bus Desk Top Control Panel, touch pad input selection with reset and take button, and LED status display.
- D-2041** Single Bus Desk Top Control Panel, lever switch input selection with take button.
- D-2042** Single Bus 2-Digit Lever Switch Control Panel, 1-3/4" Rack Mounting, with LED status display and take button.
- D-2042A** Single Bus 3-Digit Lever Switch Control Panel, 1-3/4" Rack Mounting, with LED status display and take button.
- D-2047** Three Bus 2-Digit Lever Switch Control Panel, 1-3/4" Rack Mounting.
- D-2049** Two Bus 2-Digit Lever Switch Control Panel, 1-3/4" Rack Mounting.
- D-2049A** Two Bus 3-Digit Lever Switch Control Panel, 1-3/4" Rack Mounting.
- D-2050** Supervisory CRT Terminal and X-Y Control Panel. Requires also D-2045 Control Buffer Frame.
- D-2036** Alpha-Numeric Single Bus Control Panel, 1-3/4" Mounting, 10 Alphas and 10 numerics/Alpha.
- D-2069A** Alpha-Numeric Single Bus Keypad Control Panel, 1-3/4" Rack Mounting, 12 Alphas and 99 numerics/Alpha.
- D-2098** Two Bus Keypad Control Panel, 3-1/2" rack mounting.
- D-2100** Single Bus Keypad Control Panel, 3-1/2" rack mounting.
- D-2103** Eight Bus Keypad Control Panel, 3-1/2" rack mounting, permits split audio, with nine LED displays.

Machine Assignment and Control System

The Datatek Machine Assignment and Control System is designed for operation in conjunction with the D-200 Video-Audio Routing Switcher.

- D-2000-25x25D** Bi-Directional Data Matrix, 8-3/4", for 25 Source Buffer Modules and 25 Destination Switch Modules.
- D-2000-50x25D** Bi-Directional Data Matrix, 10-1/2", for 50 Source Buffer Modules and 25 Destination Switch Modules.
- D-2204** Source Buffer Module (one needed for each machine interfaced into system).
- D-2205** 25x1 Destination Switch Module (one needed for each machine control panel).
- D-2206** 50x1 Destination Switch Module (one needed for each machine control panel).
- D-2207** Machine Interface Unit, 8 function.
- D-2208** Machine Interface Unit, 16 function.
- D-2213** Machine Control Panel Module. Provides: (A) RS 422 connection to 25x1 or 50x1 Destination Switch Module and (b) Connection to readouts and momentary normally open switches on console for up to 8 functions.

Control Panels—Price dependent on customer requirements. Customer can use existing switches if desired or can build own panels.

Because of options and system configuration affecting price, all prices are on a "Price on Application" basis.

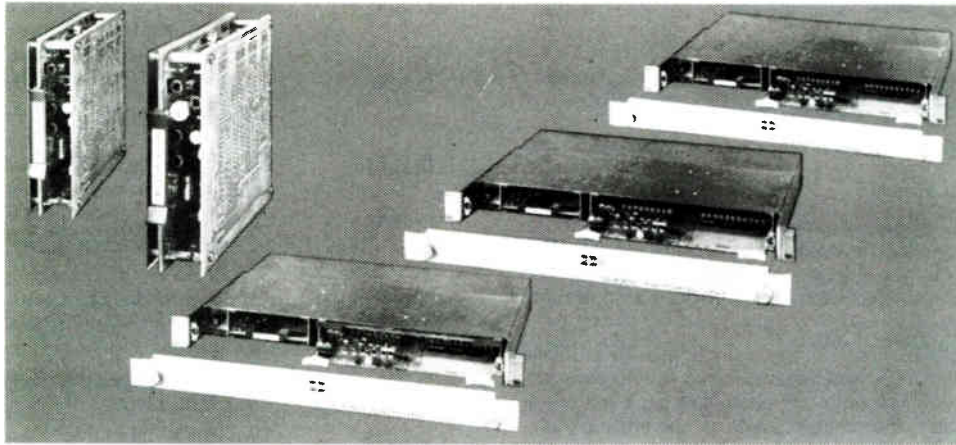
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VT-39

DATATEK CORP.

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Telex 833541 DATATEK MTSD

VIDEO-AUDIO SWITCHING UNITS



VIDEO-AUDIO SWITCHING UNITS

D-4300 Series Video and Audio Switching Units

- Video and Audio switcher "building blocks" of 6 x 1, 16 x 1 and 20 x 1
- Each building block equipped with self contained power supply
- Choice of video-only switching, audio-only switching, audio-follow-video and split audio operation
- Video and Audio inputs are high impedance bridging, permitting stacking units for multiple output bus applications
- Vertical Interval video switching
- Video switching units equipped with 4-section cable equalizer on output
- Differential Phase/Differential Gain performance of 0.15°/0.15%
- Video crosstalk 60 dB or better to 6.0 MHz
- Audio maximum output level +30 dBm, balanced
- Audio distortion 0.15% maximum, 20 Hz to 20 kHz
- Audio dynamic range in excess of 100 dB
- Audio inputs and outputs on connectors
- Balanced audio crosspoint, audio common mode gain -60 dB, 10 Hz -20 kHz
- Remote control panels using momentary switches with choice of LED or incandescent lamps for feedback tally
- Remote control cable is RG-59/U coax with BNC connectors
- Local control panels available
- Switching units are plug-in modules
- Optional tally relays available for source tallies, intercom, etc.

SWITCHING UNITS

D-4301A	6 x 1 Video Switching Module, bridging inputs, occupies 2 module widths in 10-module DF-603 Rack Frame. Less rack frame and remote control panel.	\$445.00
D-4310A	6 x 1 Video Switching Module, terminating inputs occupies 1 module width in DF-603 Rack Frame or DF-603H Rack Frame. Less rack frame and remote control panel.	\$430.00
D-4302A	6 x 1 Audio Switching Module, bridging inputs, occupies 1 module width in 10-module DF-603 Rack Frame or in 3-module width DF-603H Rack Frame. Less rack frame and remote control panel.	\$430.00
D-4304A	20 x 1 Video Switching Unit, bridging inputs, including 1-3/4" rack frame, less remote control panel.	\$935.00
D-4305A	20 x 1 Audio Switching Unit, bridging inputs, including 1-3/4" rack frame, less remote control panel.	\$935.00
D-4307A	16 x 1 Video-Audio Switching Unit, audio-follow-video switching, bridging inputs. Includes 1-3/4" rack frame, less remote control panel.	\$1305.00
DF-603	Rack Frame, 5-1/4"	\$175.00
DF-603H	Rack Frame, 1-3/4"	\$155.00

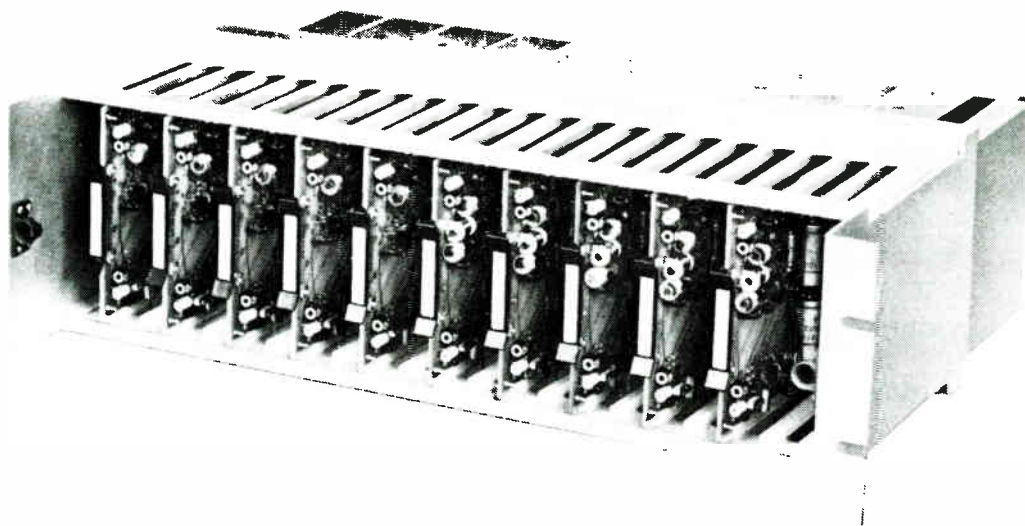
REMOTE CONTROL PANELS

D-4320A-6	Pushbutton Remote Control Panel, 6 inputs, for video only, audio-only or audio-follow-video switching. 1-3/4" rack mounting, less control cable (coax). Uses switches with LED tallies.	\$375.00
D-4322A-6	Pushbutton Remote Control Panel, 6 inputs, for video-only, audio-only or audio-follow-video switching. 1-3/4" rack mounting, less control cable (coax). Uses switches with lamps for tally, and clear plastic lenses for inserting legends.	\$385.00
D-4320A-6S	Pushbutton Remote Control Panel, 6 inputs, audio-follow-video or split-audio switching. 1-3/4" rack mounting. Uses switches with LED tallies.	\$395.00
D-4322A-6x2	Pushbutton Remote Control Panel, 6 inputs, 2 output buses, for controlling two of 6 x 1 type switching units. 1-3/4" rack mounting, less control cable (coax). Uses lamps for tally and clear plastic lenses for inserting legends.	\$475.00
D-4320A-16	Pushbutton Remote Control Panel, 16 inputs, for audio-follow-video switching. For use with D-4307A Switching Units. 1-3/4" rack mounting, less control cable (coax). Uses switches with LED tallies.	\$435.00
D-4322A-16	Pushbutton Remote Control Panel, 16 inputs, for video-only, audio-only or audio-follow-video switching. For use with D-4307A Switching Units. 1-3/4" rack mounting, less control cable (coax). Uses switches with lamp for tally, and clear plastic lenses for inserting legends.	\$460.00
D-4320A-20	Pushbutton Remote Control Panel, 20 inputs, for video-only, audio-only or audio-follow-video switching. For use with 20 x 1 Switching Units. 1-3/4" rack mounting, less control cable (coax). Uses switches with LED tallies.	\$455.00
D-4322A-20	Pushbutton Remote Control Panel, 20 inputs, for video-only, audio-only or audio-follow-video switching. For use with 20 x 1 Switching Units. 1-3/4" rack mounting, less control cable (coax). Uses switches with lamps for tally, and clear plastic lenses for inserting legends.	\$490.00
D-4320A-20S	Pushbutton Remote Control Panel, 20 inputs, for audio-follow-video or split-audio switching. For use with 20 x 1 Switching Units. 1-3/4" rack mounting. Requires 2 control cables (coax). Uses switches with LED tallies.	\$475.00

DATATEK CORP.

1121 Bristol Road
Mountainside, NJ 07092
(201) 654 8100
Telex 833 541 DATATEK MTSD

VIDEO DISTRIBUTION AMPLIFIER



D-603G VIDEO DISTRIBUTION AMPLIFIER

FEATURES

- High Impedance Differential Input provides High Return Loss and 50dB or better Longitudinal AC Hum and Noise Reduction
- Six Outputs, Direct Coupled Resistive Split, with High Isolation over Wide Bandwidth
- Front Access for in-position Adjustment of Gain, Output DC, Frequency Response and Transit Time
- Includes Cable Equalizer with Front Access in-position Adjustment for Cable Length
- Individual Power Supply

The Datatek D-603G Video Distribution Amplifier is a standard plug-in card module which, with its accompanying frame mounted rear assembly, D-603RA, provides six 75 ohm highly isolated, level matched, source terminated outputs.

Up to ten D-603G Video Distribution Amplifiers and their rear assemblies mount in a DF-603 5-1/4" Rack Frame for accommodation in a standard 19" equipment rack.

A very high impedance differential input provides a non-polarized long time constant AC coupling to the input signal and the low common mode gain reduces longitudinal hum and noise by 50dB or more up to 100KHz. This not only reduces the effects of ground loops but also those caused by transients from lighting circuits, motors, welders, etc. A compensated bridging loop through, in conjunction with the high input impedance, results in a high input return loss, power on or off, over a wide bandwidth, so reducing mis-match effects.

Front access is provided for screw driver adjustment of gain, output DC offset, frequency response, transit time and cable equalizing, all with the module in its normal operating position (not on a module extender).

The D-603G also provides cable equalizing up to 10dB at 10MHz. The four section slope equalizer is preset to match a particular cable type (specified when ordering) down to low frequencies and a single, front access, screw driver adjustment on the D-603G is set to equalize the particular length of cable involved.

Input and output test points, together with ground terminals to which scope probe ground clips may be attached, are provided at the front of the module. The output test point is low impedance and level corrected to correspond with a terminated output for correct response and level assessment. An LED is used to indicate when power is applied to the module.

The D-603RA Rear Assembly, into which the D-604 plugs, by way of a 22 contact edge connector, provides the input and output BNC connections, together with the module power connections. The rear assembly contains the power transformer, with fused primary, for operation on AC power line, avoiding the hazard of taking high voltage (117V or 234V) line supplies onto the module itself.

A small power cable from the D-603RA Rear Assembly plugs into one of ten power distribution outlets provided on the DF-603 Rack Frame, whether the supply be line or low voltage AC. This means that all connections to a D-603/D-603RA combination are by way of connectors. Additions or deletions to the complement of amplifiers in the frame may be made at any time, without wiring, and without interrupting primary supply to the frame or other modules.

The DF-603 5-1/4" Rack Frame accommodates up to ten D-603 Video or D-604 Pulse Distribution Amplifiers. An optional second power distribution system may be added to the DF-603 Frame should it be desired to operate up to six of the amplifiers on a second supply circuit, such as a priority or emergency supply system.

D-603G Video Distribution Amplifier with D-603 Rear Assembly **\$335.00**

D-603RA Power Supply and Connector Assembly **100.00**

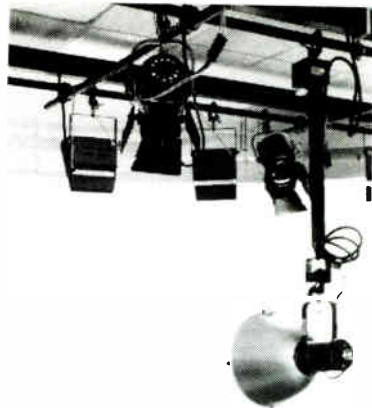
FRAMES

DF-603	5-1/4" Rack Frame, accepts 10 D-507G, D-518, D-603G, D-604, D-605, D-606, or D-607A modules, intermixed if desired	\$185.00
DF-603H	1-3/4" Rack Frame, accepts 3 D-507G, D-518, D-603G, D-604, D-605, D-606, or D-607A modules, intermixed if desired	\$155.00
DE-400A	Module Extender for D-507G, D-518, D-603G, D-604, D-605, and D-607A	\$30.00

SERVICES

Broadcast and Production Systems by professionals:

- ◆ Representing over 100 major suppliers.
- ◆ Systems Engineering and Installation.
- ◆ Lighting systems design for TV and Film.
- ◆ Broadcast Facility Design.
- ◆ Equipment appraisal.

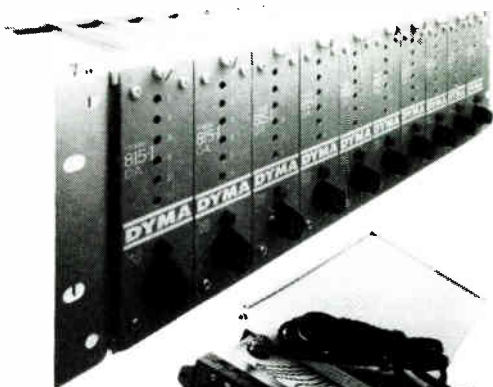


PRODUCTS

AUDIO DISTRIBUTION AMPLIFIERS

Highest Headroom, Greatest Density, Easiest Installation, Individually Powered.

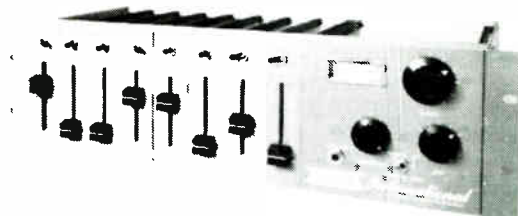
Model 815 - 1 in 10 out, common gain adj.	\$298.00
Model 815I - 1 in 6 out, individual gain adj.	\$298.00
Model 815M - Monitor Amp, 12 watts RMS	\$298.00
Model 815F - Rack Frame, 10 Modules	\$180.00



AUDIO CONSOLES

The International - - 8 Mixing Channels, Rack Mount, Switchable Mic or Line, DA outputs, + 30dBm output.

Model M-1 - - - -	16 switchable inputs into 1 mono output. Handle lots of inputs in small space.	\$2395
Model M-2 - - - -	8 inputs into 2 independent monaural mixers, ideal for editing suites.	\$2695
Model S - - - - -	8 stereo inputs into 1 stereo output.	\$3295



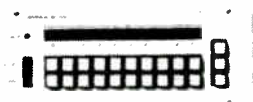
AC LINE SURGE PROTECTORS

Our convenient package is still the best. Combines line conditioning and "hash" filter in compact units. Protect sensitive solid state electronics. Thousands in use by major computer and word processor manufacturers. Most models \$26.95. 6 models to choose from.

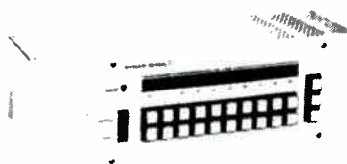




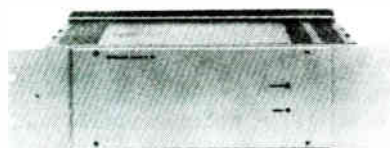
SVA-100B



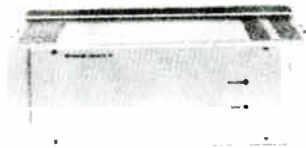
SAA-110A



SCA-120A



SVA-101B



SAA-111A



SCA-131A



SCA-122A

SERIES 10

The Series 10 Solid-State Video and Audio Switching Equipment provides 10-input/10-output high quality vertical interval monochrome or color video switching and on-air quality audio switching. Each 10 x 10 matrix is housed in a 5-1/4"H x 14-1/2"D x 19" rack mount chassis (13.34 x 36.83 x 48.26 cm) which includes power supply.

The control system is microprocessor-based and allows local and remote operation. Remote master and individual output bus control

panels are available to operate over a single coaxial cable control line. Up to four levels of switching, 1 video and 3 audios as an example, can be controlled locally and/or remotely. A total of 15 remote control panels may be used to control a system.

Models SVA-100B, SVA-101B, SAA-110A and SAA-111A include 10 Form A tally relays and facilities to control the slave matrices, Models SVA-102B and SAA-112A.

Notice: Series 10 equipment has been tested to show compliance with FCC Rules, Part 15, Subpart J, for Class A computing devices.

Video Switcher

SVA-100B. Self-contained, for local control. 10 inputs, 10 dual outputs with tally and regulated power supply. **\$4350.00**

Video Switcher

SVA-101B. Same as SVA-100B but for remote control operation only. Control by single coaxial comm. line. Requires remote control panel(s) option. **\$4060.00**

Video Switcher

SVA-102B. Same as SVA-101B but for slave control only. Controlled from switcher control bus only. (Model CC-1130A Control Bus Jumper Cable Assembly not included). Tally not provided. **\$3425.00**

Audio Switcher

SAA-110A. Self-contained, for local control. 10 input by 10 output with tally and regulated power supply. **\$4050.00**

Audio Switcher

SAA-111A. Same as SAA-110A but for remote control operation only. Control by single coaxial comm line. Requires remote control panel(s) option. **\$3760.00**

Audio Switcher

SAA-112A. Same as SAA-111A but for slave control only. Controlled from switcher control bus only. (Model CC-1130A Control Bus Jumper Cable Assembly not included). Tally not provided. **\$3125.00**

Master Remote Control Panel

SCA-120A. Rack mounting. For remotely controlling all 10 outputs of video and/or audio switchers. **\$900.00**

Master Remote Control Panel

SCA-122A. Desk top use. Same as SCA-120A except for housing. **\$900.00**

Single Bus Remote Control Panel

SCA-130A. Rack mounting. For remotely controlling 1 output of video and/or audio switchers. **\$675.00**

Single Bus Remote Control Panel

SCA-131A. Desk top use. Same as SCA-130A except for housing. **\$625.00**

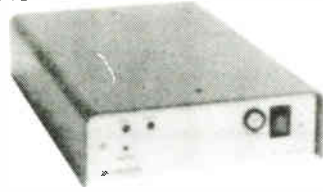
Switcher Control Bus Jumper Cable Assembly

CC-1130A. Switcher Control Bus Jumper Cable Assembly for control of slave matrices, Models SVA-102B and/or SAA-112A. 24 inches (61 cm) in length. **\$120.00**

Termination

TC-260A. 75 ohm BNC Termination Plug for terminating looping video inputs. **\$10.00**

5275 Market Street
San Diego, CA 92114
(619) 263-7711 TWX 910-335-2040



DA-1510A



BP-1502A



SW-1540A



FR-1500A



VS-12D

SERIES 1500 VIDEO DISTRIBUTION AMPLIFIERS

Series 1500 distribution and switching products may be used as self-contained, stand alone units for desk top or custom mounting. For rack mounting applications, units can be installed in the Model FR-1500A Rack Mounting Frame which occupies only 1 1/4 inches (4.45 cm) of standard 19-inch rack space. All units are equipped with BNC type signal connectors unless otherwise noted. Mating connectors are not included.

DA-1510A

Video Distribution Amplifier. Provides four isolated 75 ohm source terminated outputs from one high impedance looping input.

- Input: 75 ohm unbalanced, high impedance looping, 1 V p-p, BNC connectors
- Outputs: 4, 75 ohm source terminated, 1 V p-p, BNC connectors
- Gain: Adjustable + / -3 dB
- Frequency Response (ref. 1 MHz): 100 kHz-10 MHz: + / -0.5 dB; 30 MHz: +1, -2 dB
- Tilt: Less than 1% line or field
- Differential Gain: 0.25% at 5 MHz, 10-90% APL, 1 V p-p output
- Differential Phase: 0.25° at 5 MHz, 10-90% APL, 1 V p-p output
- Hum and Noise: 65 dB RMS below 1 V p-p, 10 MHz bandwidth
- Size: Module only, 1-11/16" H x 5-3/4" W x 9" D (4.32 x 14.61 x 22.86 cm); mounted in MB-1504A desk mount, 2" H x 6" W x 9-1/4" D (5.08 x 15.24 x 23.50 cm)
- Power: 115/230 VAC + / -10%, 50/60 Hz
- Net Weight: 2-1/2 pounds (1.13 kg)

DA-1510A **\$300.00**

FR-1500A

Rack Mounting Frame. Provides mounting for three (3) Series 1500 units in standard equipment racks. A captive screw fastener at the rear of the frame, and a guide pin at the front, secures each unit, allowing equipment to be used in mobile applications.

- Size: 1-3/4" H x 9-1/4" D x 19" rack mounting (4.45 x 29.21 x 48.26 cm)
- Net Weight: 2-1/2 pounds (1.13 kg)

\$100.00

BP-1502A

Blank Module. Fills one unused space in FR-1500A Frame • Net Weight: 1-1/4 pounds (0.57 kg) **\$60.00**

MB-1504A

Desk Mount Kit. For one Series 1500 unit. Includes rugged aluminum cover, rubber feet, and hardware.

- Net Weight: 13 ounces (0.37 kg) **\$30.00**

PULSE DISTRIBUTION AMPLIFIERS

PD-1515A Pulse Distribution Amplifier

Provides 4 isolated, source terminated outputs from 1 high impedance looping input. Regenerative input, linear output. Normal output with up to 1000 ft. (305 m) Belden 8281 input cable.

- Input: 2-4 V p-p negative pulses, 75 ohm unbalanced differential, high impedance bridging, BNC connectors
- Common Mode Rejection: Greater than 60 dB, 50-400 Hz, + / -30 V reference chassis ground
- Outputs: 2-4 V p-p negative pulses, 4 each 75 ohm source terminated, BNC connectors
- Output Return Loss: Greater than 35 dB at 5 MHz
- Output Isolation: Greater than 40 dB at 5 MHz
- Output

- Rise Time: 130 ns
- Gain: Adjustable to 2-4 V p-p
- Hum and Noise: 75 dB RMS below 4 V p-p
- Overshoot and Ringing: Less than 1.0%
- Tilt: Less than 1.0%
- Size: 1-11/16" H x 9" D x 5-3/4" W (4.32 x 22.86 x 16.61 cm); mounted in MB-1504A desk mount, 2" H x 9-1/4" D x 6" W (5.08 x 23.50 x 15.24 cm)
- Power: 115/230 V ac + / -10%, 50/60 Hz
- Net Weight: 3 lbs. (1.36 kg) **\$325.00**

EQUALIZERS

EQ-1530A Equalizer (Post Equalizing) **\$575.00**
EQ-1531A Equalizer (Post Equalizing) **700.00**
EQ-1532A Equalizer (Pre-Equalizer) **650.00**

PASSIVE VIDEO SWITCHERS

Multiple input to single output locally controlled terminating video switchers. Units have extra contacts for user wiring of audio-follow or external cue lights.

VS-6D Video Switcher

Video Switcher. Provides passive switching of from one to six inputs to a single output. Incorporates switch-controlled terminations. Equipped with separate auxiliary switch section for user wiring of unbalanced audio, balanced audio, external cue lights, or other secondary functions. For lighted pushbutton operation, order LK-1541A Lighting Kit shown below.

- Inputs: Six (all except operating channel terminated in 75 ohms)
- Output: One
- Connectors: BNC
- Size: 1-3/4" H x 6-1/2" D x 19" W (4.45 x 16.51 x 48.26 cm)
- Net Weight: 2-1/2" pounds (1.13 kg) **\$225.00**

VS-12D Video Switcher

Video Switcher. Same as VS-6D but with 12 inputs.

- Inputs: Twelve (all except operating channel terminated in 75 ohms)
- Output: One
- Connectors: BNC
- Size: 1-3/4" H x 6-1/2" D x 19" W (4.45 x 16.51 x 48.26 cm)
- Net Weight: 2-1/2 pounds (1.13 kg) **\$300.00**

LK-1541A Optional Lighting Kit

Lighting Kit. For use with passive switchers. Provides 6 volts DC at 100 mA to power lamps provided with switcher. Calculator style plug-in transformer with 6 foot (1.82 meters) cable.

- Connector: Miniature male, 3.5 mm (mates with Switchcraft No. 41 jack provided on rear of switcher)
- Primary Power: 115 VAC, 60 Hz
- Net Weight: 6 ounces (0.17 kg) **\$20.00**

SW-1540A 6-Input, 1-Output Passive Video Switcher

6-Input, 1-Output Passive Video Switcher. Switch controlled 75 ohm inputs. Separate auxiliary contacts included for user wiring of secondary switching functions. Lighted pushbuttons with use of LK-1541A Lighting Kit. Shown with optional MB-1504A.

- Inputs: 6 (all except input selected, 75 ohm terminated), BNC connectors
- Output: 1, BNC connector
- Switching: Break-before-make
- Size: Module only, 1-11/16" H x 9" D x 5-3/4" W (4.32 x 22.86 x 14.61 cm); mounted in MB-1504A desk mount, 2" H x 9-1/4" D x 6" W (5.08 x 23.50 x 15.24 cm)
- Net Weight: 2-1/2 lbs. (1.13 kg) **\$200.00**

DYNAIR ELECTRONICS, INC. BROADCAST DISTRIBUTION EQUIPMENT

5275 Market Street
San Diego, CA 92114
(619) 263-7711 TWX 910-335-2040

SERIES 5300 DISTRIBUTION EQUIPMENT

Series 5300 Distribution Equipment mounts in a 5-1/4" x 19" rack-mounting frame (13.34 x 48.26 cm). The frame has a total of twenty mounting spaces. Two power supply modules can be used to provide redundant power supply operation. All amplifier modules include "on-board" power regulators, fuses and blown fuse indicators. AC input power is 115/230 VAC ± 10%, 50/60 Hz.

FR-5300B FRAME

Module Mounting Frame. Provides twenty spaces for Series 5300 modules. All modules can be installed without soldering. (Frame shown with modules installed.)

Size: 5-1/4"H x 14-1/4"D x 19"W Net Weight: 9 pounds . . . \$400.00

PS-5305B Power Supply Module

Power Supply Module. Mounts in FR-5300B Frame and provides unregulated dc for amplifier modules. Requires four spaces in frame. Two power supplies can be installed for redundant operation. \$500.00

AD-5370B 5-OUTPUT AUDIO DISTRIBUTION AMPLIFIER MODULE

High performance audio distribution amplifier module. Indefinite short circuit protection. Can be used in same frame with other Series 5300 modules. \$325.00

DA-5310B DUAL 1 INPUT-2 OUTPUT VIDEO DISTRIBUTION AMPLIFIER MODULE

Video Distribution Amplifier Module for high performance video systems. Two identical amplifier sections on one module, each providing 1 terminating input to 2, 75 ohm outputs. Equalization available for up to 1000 ft. (305 m) of cable.

- DA-5310B/10A Video DA, Non Equalized \$450.00
- DA-5310B/11A Video DA, Equal., Belden 8281, Unbal. In. \$75.00
- DA-5310B/21A Video DA, Equal., WECO 16 PEVL, Bal. In. \$75.00
- DA-5310B/22A Video DA, Equal., WECO 760, Bal. In. \$75.00

DA-5320B 5-OUTPUT VIDEO AND SUBCARRIER DISTRIBUTION AMPLIFIER MODULE

Video Distribution Amplifier Module for high performance video systems. Sync-Tip reference maintains dc level with changing APL. Equalization available for up to 1000 ft. (305 m) of cable.

- DA-5320B/10A Video DA, Non-Equalized \$395.00
- DA-5320B/11A Video DA, Equal., Belden 8281, Unbal. In. \$460.00
- DA-5320B/21A Video DA, Equal., WECO 16, PEVL, Bal. In. \$460.00
- DA-5320B/22A Video DA, Equal., WECO 760, Bal. In. \$460.00

DA-5330B 10-OUTPUT VIDEO AND SUBCARRIER DISTRIBUTION AMPLIFIER MODULE

Video Distribution Amplifier Module for high performance video systems. Sync-Tip reference maintains dc level with changing APL. Equalization available for up to 1000 ft. (305 m) of cable.

- DA-5330B/10A Video DA, Non-Equalized \$400.00
- DA-5330B/11A Video DA, Equal., Belden 8281, Unbal. In. \$470.00
- DA-5330B/21A Video DA, Equal., WECO 16 PEVL, Bal. In. \$470.00
- DA-5330B/22A Video DA, Equal., WECO 760, Bal. In. \$470.00

DA-5340B 4-OUTPUT VIDEO DISTRIBUTION AMPLIFIER MODULE

4-Output Video Distribution Amplifier Module and Frame Adapter for high performance video systems. 1 high impedance looping input and 4,75 ohm outputs provided \$225.00

EQ-5350B POST-EQUALIZING AMPLIFIER MODULE

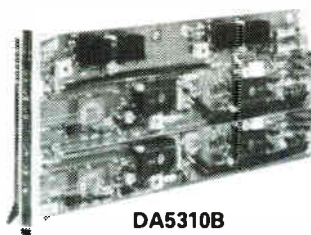
Post-Equalizing Amplifier Module. Provides up to 24dB of equalization at 8 MHz. Will equalize up to 3000 ft. (914.4m) of Belden type 8281 cable or 5000 ft. (1524 m) of WECO 16 PEVL. Provides 2,75 ohm outputs.

- EQ-5350B/51A Post-Equalizing Amp., Belden 8281, Unbal. In. \$550.00
- EQ-5350B/61A Post-Equalizing Amp., WECO 16 PEVL, Bal. In. 550.00

LA-5353B UNBALANCED TO BALANCED LINE AMPLIFIER MODULE

75 ohm unbalanced input, 124 ohm balanced line driving amplifier module. Available with pre-equalization for up to 2500 ft. (762 m) of WECO 16 PEVL cable to provide 7500 ft. (2286 m) equalized circuit when used with EQ-5350B/61A.

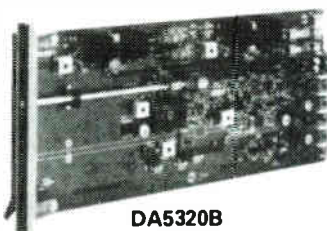
- LA-5353B/10A Line Amplifier, Non Equalized \$450.00
- LA-5353B/41A Line Amplifier, Equalized, WECO 16 PEVL 520.00



DA5310B



FR5300B



DA5320B



DA5330B
5300 Series

PD-5360B 5-OUTPUT PULSE DISTRIBUTION AMPLIFIER MODULE

Pulse Distribution Amplifier Module for high performance video systems. Regenerative input, linear output with controlled, adjustable, rise time. Front panel input pulse presence indicator. Normal output with up to 1000 ft. (305 m) Belden 8281 input cable. \$275.00

SERIES 5300 BLANK FILLER PANELS

- BP-5390A Blank Filler Panel. Mounts in FR-5300B Frame and fills one unused amplifier space. Net Weight: 4 oz. \$50.00
- BP-5391A Blank Filler Panel. Mounts in FR-5300B Frame and fills two unused amplifier spaces. Net Weight: 5 oz. \$60.00
- BP-5392A Blank Filler Panel. Mounts in FR-5300B Frame and fills four unused amplifier spaces. Net Weight: 6 oz. \$70.00

CC-5398A POWER SUPPLY SERVICE CABLE

Power Supply Service Cable. Allows power supply to be extended from frame for maintenance. \$175.00

CE-5396A MODULE EXTENDER

Module Extender for all Series 5300 modules (except power supply). Allows modules to be extended from frame for maintenance. Net Weight: 2lbs. \$250.00

CN-9860A CABLE MATING CONNECTOR

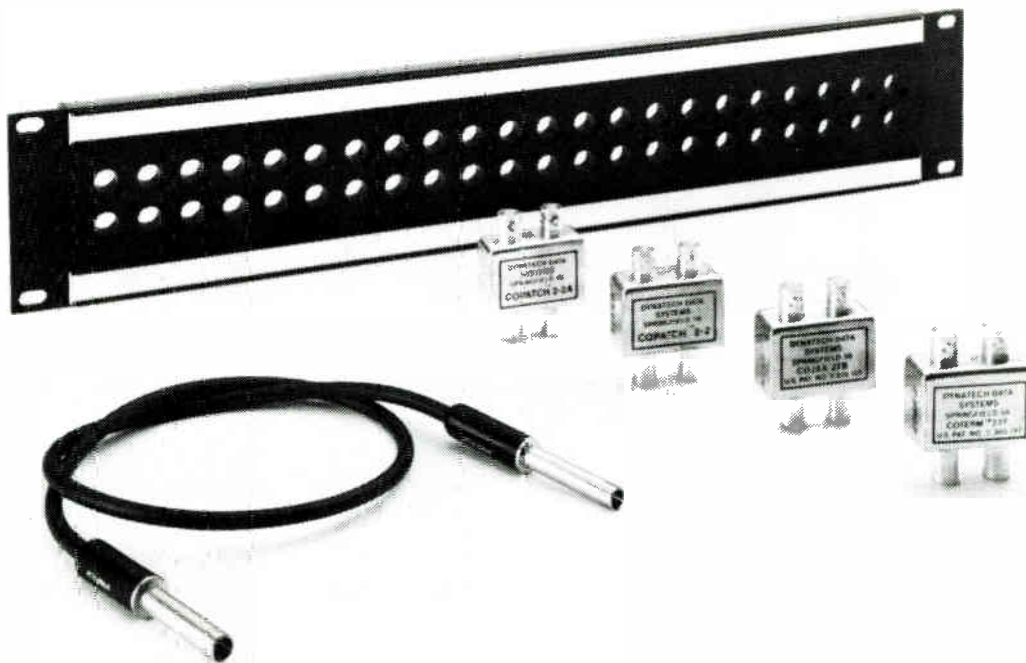
Cable Mating Connector. For use with Western Electric type 760 or equivalent 124 ohm balanced cable. Mates with Trompeter BJ-77 \$35.00

CN-9861A CABLE MATING CONNECTOR

Cable Mating Connector. For use with Western Electric type 16 PEVL or equivalent 124 ohm balanced cable. Mates with Trompeter BJ-77. \$35.00

- FA-5308A Frame Adapter, Power Supply, 18" Power Cord \$90.00
- FA-5309A Frame Adapter, Power Supply, 72" Power Cord 95.00
- FA-5315A Frame Adapter, Unbal. In. 75.00
- FA-5316A Frame Adapter, Bal. In. 125.00
- FA-5325A Frame Adapter, Unbal. In. 75.00
- FA-5326A Frame Adapter, Bal. In. 90.00
- FA-5335A Frame Adapter, Unbal. In. 110.00
- FA-5336A Frame Adapter, Bal. In. 130.00
- FA-5345A Frame Adapter, Unbal. In. 60.00
- FA-5355A Frame Adapter, Unbal. In. 75.00
- FA-5357A Frame Adapter, Loop In. 80.00
- FA-5358A Frame Adapter, Term In. 75.00
- FA-5375A Frame Adapter, Audio 75.00
- SP-5359A Transient Protection 75.00

Prices and Specifications Subject to Change Without Notice.



COAXIAL PATCHFIELDS AND ACCESSORIES

The system consists of a high density patchfield that incorporates 22 channels in a standard 19 inch wide rack panel—either 1 3/4 or 3 1/2 inches high. Each circuit is connected to a patented COTERM® 22T jack which provides normal-thru connection without the use of patch cords or looping plugs. Patch cords may be inserted to break the normal-thru signal path and program cross connections. Sources that are patched out are automatically terminated within the jacks. Test probes may be used to enter the jack to sample the signal without interruption of the live circuit.

The Dynatech Coaxial Patching System provides normal-thru connections and self-termination within the jacks, as well as cross patching and non-interrupting on-line monitoring of live circuits.

COTERM® 22T

(Normal-Thru, Self-Terminating) **\$38.00**

The COTERM 22T is a reliable, normal-thru patching and line terminating jack designed for rugged use and trouble-free service. It is available in 75 ohm impedance or optionally in 50 ohm impedance. It accepts standard BNC connectors on its rear terminals.

COJAX® 22B

(Normal-Thru) **\$34.00**

The COJAX 22B is identical to the COTERM 22T in dimensions, quality and serviceability. It is a normal-thru patching jack without the internal self-termination feature.

COPATCH® 2-2A

(Normally Terminating) **\$38.00**

The COPATCH 2-2A is a self-terminating jack without the normal-thru feature. It provides patchfield appearance of two standby source circuits. 75 or 50 ohm impedance.

COPATCH® 2-2

(Non-Terminating, Non-Normalling) **\$34.00**

The COPATCH 2-2 has neither the normal-thru or self-termination features. It provides two inputs to test equipment, trunk lines or other equipment.

All Coaxial Jacks may be interchanged for use in mixed patchfields.

COAXIAL PANELS

Panels are available in metal or phenolic either 1 3/4 or 3 1/2 inches high for standard rack mounting. Coterm, Cojax or Copatch jacks may be mounted interchangeably on all panels—each panel holds 22 jacks across the 19 inch width. 4 standard panels are available, consult factory for other sizes.

- Model 105-113-22 Aluminum 1 3/4" high x 19" wide **\$46.00**
- Model 105-114-22 Phenolic 1 3/4" high x 19" wide **65.00**
- Model 105-115-22 Aluminum 3 1/2" high x 19" wide **52.50**
- Model 105-112-22 Phenolic 3 1/2" high x 19" wide **73.50**

COAXIAL PATCH CORDS

Model 105-057—Standard Patch Cord constructed with soldered center pin and crimped sleeve shield connections to meet the highest standards of reliability. Standard lengths of 2, 3 and 4'; others available on special order.

PATCH CORDS, (Specify length—2, 3 and 4' standard)

- Model 105-057-Y (Patch plugs on both ends) **\$23.00***
- Model 105-057-BNC-Y (Patch plug on one end, male BNC on opposite end) **\$23.00***

VIDEO COAXIAL CABLE, (Specify Length)

- Model 105-112-MM-Y (MM = BNC male connectors on both ends) **\$23.00***

COAXIAL TEST PROBES

TEST PROBES, (Specify Length—6' standard)

- Model 105-5-Y (Test probe tip on one end, standard patch plug on opposite end) **\$23.00***
- Model 105-5A-Y (Test probe tip on one end, BNC male connector on opposite end) **\$23.00***
- Model 105-5B-Y (Test probe tip on one end, UHF male connector on opposite end) **\$23.00**

COAXIAL PLUGS

- Model 105-13—Dummy plug for opening normal-thru connections. **\$11.50**
- Model 105-14—Terminating plug for use with Cojax or Copatch 2-2 to terminate source in proper impedance. **\$17.00**

Y = length in feet; customer to specify.

*Plus \$.50 per foot over 6 feet.



RecordEx

RecordEx™ improves the picture quality of your portable recorder in the field. By processing small details prior to recording, it prevents their loss in successive generations.

The new FL RecordEx™ is an add-on device which compensates in advance for the usual picture degradation that 3/4" and 1/2" cassettes suffer in normal playback operation.

RecordEx™ goes in your signal path ahead of the VTR, after the camera. RecordEx™ crisps the small details in the picture without enhancing large outlines. As a result the playback image does not have the usual flat, pasty appearance with over-emphasized edges that conventional enhancers produce.

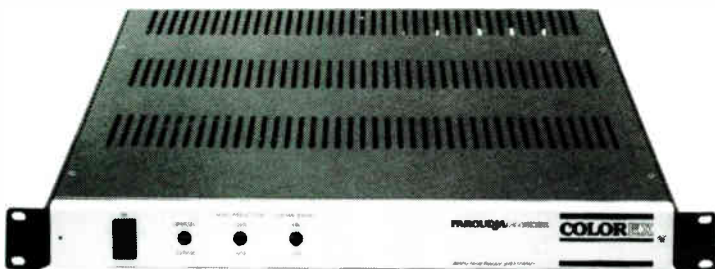
To get even further advantage from this unique signal process, RecordEx™ generates a pedestal around small image details, allowing your playback enhancer to reduce luminance and chroma noise without loss of detail. A sharper, crisper, more detailed image that does not look enhanced is the result.

In addition to its Record boost features, the new RecordEx™ is also capable of enhancing the Play-back signal from a cassette recorder. RecordEx™ is a fully compatible device that requires no modification of your camera, VTR, or playback setup. RecordEx™ is small (5" x 5" x 1.5"), weighs only 12 ounces, and fits conveniently on the side of your battery-operated VTR. It requires less than 1.2 watts from the VTR battery. RecordEx™ is available in Rack-Mount and Portable configurations, and is available for NTSC as well as for PAL/SECAM standards.

Model No.		Price
PRX-N	Portable RecordEx™ in a 5x5x1.5", 12 oz. Package for NTSC/PAL-M applications	\$995.00
PRX-P	Portable RecordEx™ in a 5x5x1.5", 12 oz. package for PAL/SECAM applications	1100.00
RM-RX-N	Rack Mount RecordEx™ 1-3/4" height. NTSC Video In, Video Out. 115V/160Hz AC	1300.00
RM-RX-P	Rack Mount RecordEx™ 1-3/4" height. PAL/SECAM Video In, Video Out. 220V/50Hz AC	1400.00

Accessories

3/4" or 1/2" RecordEx™ and Record One Demonstration Cassette (NTSC)	50.00
10-pin Interconnection Cable for PR-1 and PRX	110.00
14-pin Interconnection Cable for PR-1 and PRX	110.00
110V/60Hz or 220V/50Hz AC Adapter for PR-1 and PRX	75.00



ColorEx

The ColorEx is a chroma noise reducer and enhancer designed specifically to work with one inch professional VTRs and 3/4 inch format recorders used in ENG, EFP, or general purpose applications. With a standard NTSC input signal the ColorEx yields an enhanced NTSC output with up to 12 dB of chroma signal to noise ratio improvement.

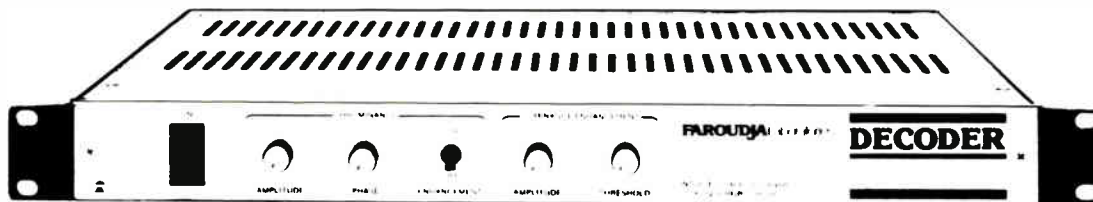
The ColorEx features include: 1) A noise reducer switchable between 6 dB or 12 dB of noise reduction. 2) a chroma enhancer which eliminates chroma ringing, chrominance/luminance delay errors, and apparent loss of chroma bandwidth associated with 3/4" VTRs. 3) An active comb filter separator which preserves the integrity of the luminance and chrominance bandwidth.

The front panel controls include: (a) A three position N/R selector switch with 0, 6 dB and 12 dB selections. (b) A Chroma Enhancing 2 position switch marked "operate/bypass".

Connections are made through standard BNC plugs on the rear panel. The NTSC source driver can accommodate up to three outputs. Selection of the level of noise reduction is dependant on the quality of the NTSC input signal. The ColorEx is housed in a rugged rack mount case only one module high.

Model No.		Price
CRX-N	Color Noise Reducer and Enhancer (NTSC) Video In, Video Out, 1-3/4" Rack Mount. 115V/60Hz AC	\$5995.00

946 Benicia Avenue
Sunnyvale, CA 94086
(408) 245-1492



MODEL CFD-2 NTSC DECODER w/CHROMA ENHANCER

The CFD-2 is a high quality NTSC to RGB comb filter decoder for use in critical applications where high resolution and absence of artifacts are required. Among these applications are large screen projection, precision color monitoring, tape-to-film transfer, computer generated information display, color keying and standard conversion.

The model CFD-2 uses a novel active comb filtering method which leads to a much more effective suppression of color subcarrier dot crawl problem present with standard comb filter designs. In addition, the resultant image has no visible loss of resolution. The luminance bandwidth extends to 10 MHz, making the CFD-2 the closest thing to true RGB possible. This comb filter approach results also into an inherent improvement in signal-to-noise ratio.

Features of the Faroudja Laboratories CFD-2 include also, a unique luminance enhancer to improve narrow band input signals, and chroma enhancement circuitry which eliminates ringing, chroma/luminance delay errors, and apparent loss of chroma bandwidth often associated with NTSC signals.

With a standard NTSC input signal, the CFD-2 Decoder provides on the back panel: Separate RGB signals, combed chroma and luminance, R-Y, B-Y, G-Y, and sync outputs. All sources drivers are capable of handling three outputs.

The CFD-2 is a moderately priced professional unit, housed in a rugged mount case only one module high.

SPECIFICATIONS

Faroudja Laboratories Decoder CFD-2

Inputs:

(75 ohms)
Video: 1V p-p NTSC
Subcarrier: 4V p-p 3.57945 MHz

Outputs:

(75 ohms)
R, G, B: 1V p-p
R-Y, B-Y, G-Y: 1V p-p
Luminance: 1V p-p
Chroma: 3.58 MHz, 1V p-p
Sync: 4V p-p

Performances,

luminance channel:

Bandwidth: ± 1 dB to 5 MHz, -3 dB at 8 MHz
2T sine-square pulse K factor: under 1.5%
Vertical tilt: under 2%
Signal to noise ratio: 60 dB
Subcarrier rejection: 32 dB

Performances,

chrominance channel:

Demodulated chroma bandwidth: 1.5 MHz
Demodulation quadrature: $90^\circ \pm 1^\circ$
DP: under 1.5%
DG: under 1.5%
Chroma-luminance delay error: less than 25 ns

Front panel controls

Chrominance channel

amplitude: ± 3 dB
phase: $\pm 20^\circ$
enhancement*: ON/OFF

Luminance enhancement

amplitude: 0 to +50% (rise time reduction)
threshold: 0 to 15 IRE units

Dimensions

Width: 19" (48.3 cm)
Height: 1.75" (4.5 cm)
Depth: 16" (40.6 cm)
Weight: 8.5 lbs (38.6 kg)
Power: 117 V AC, 60 Hz, 40 VA

*Chroma enhancement reduces chroma rise time by 50%, reduces by 6 dB chroma ringing and reduces chroma/luminance delay from ± 100 ns to 25ns

CFD-2\$5,995.00



49 Lexington St.
W. Newton, MA 02165
(617) 244-3223 Telex 922407

TIME BASE CORRECTORS



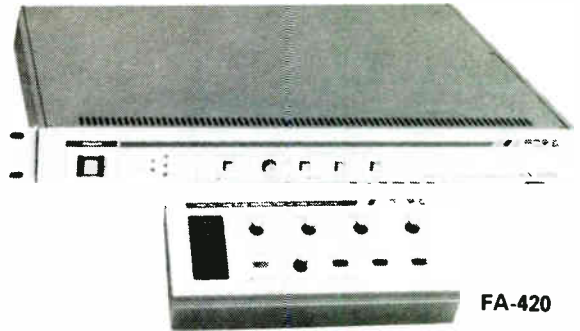
FA-400

FA-400 TBC With Freeze Frame

Features

- Full color frame memory function
- Compact, lightweight unit specially designed for professional video systems
- Outstanding timebase correction together with automatic/manual field 1 and field 2 freeze, and remote control capabilities
- Corrects errors in 1/2" and 3/4" VTRs, or any V-lock or non-V-lock source
- A full processing amp
- Optional remote control
- Includes a built-in RS-170A standard sync signal generator with gen-lock function

FA-400 TBC w/Freeze Frame \$5950.00
FA-420RU Remote Unit for FA-400/420 675.00



FA-420

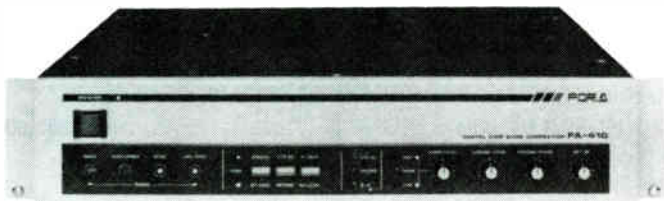
FA-420 TBC With Freeze Frame

Features

- Compact, lightweight unit
- Full feature digital time base correction
- Full color frame memory
- Capable of correcting errors in 1/2" and 3/4" VTRs, or any V-lock or non-V-lock source
- TBC processes color in either the HETERO or VTR SC modes
- Optional remote control unit allows full operation away from the FA-420
- Full processing amp allows control of video level, chroma level, chroma phase, set-up and freeze operation
- Comes with built-in digital DOC and a RS-170A standard sync signal generator with gen-lock function

FA-420 Digital Time Base Corrector

w/Freeze Frame \$7950.00
FA-420RU Remote Unit for FA-400/420 675.00



FA-410

FA-410 Digital Time Base Corrector

Features

- PAL/SECAM, NTSC standards
- 16H wide range time base correction for a large variety of popular VTRs (such as the 3/4" U-format, VHS and Betamax) in studio and production use today
- Designed especially for ENG and field production applications
- Component encoding of luminance and color difference signals
- Either external sync referenced or non-capstan servoed VTRs are corrected
- Portable small size and low weight
- Unbeatable low cost compared with other available equipment with less capability in many instances
- Digital luminance/chroma delay correction
- Composite and non-composite outputs
- Chroma noise reduction with comb filtering
- Built-in sync pulse generator
- LED input level display
- White clip function
- Optional digital DOC is available (standard for NTSC)
- Dimensions: 16.92"W x 3.46"H x 19.88"D (430 x 88 x 505mm) (19" rack type)

FA-410 Digital Time Base Corrector (NTSC)
w/Dropout Compensator \$7450.00
DT Option for Sony BVU-820 400.00



FA-430

FA-430 Digital Time Base Corrector/Image Processor

Features

- Full feature processing for 3/4" and 1/2" VTR formats
- Includes Time Base Correction, Image Enhancement, Digital Color Correction and Noise Reduction
- System consists of the basic 19" rack-mount main control unit and a compact remote controller containing controls for all correction functions
- Incorporates the major design and performance features of the Model FA-410
- Combines both H detail enhancement and selective noise reduction to provide pleasing pictures with appearance of greater bandwidth
- Color correction allows RGB correction to compensate for poorly aligned camera white & black levels as well as for camera-to-camera differences in shooting the same scene
- Special Black Stretch circuit that provides improved contrast in low light level scenes
- Allows directors to "paint" scenes to create special moods by changing overall picture hue
- Time Base Correction capabilities provide professional broadcast level performance
- Composite or non-composite video outputs, built-in sync pulse generator, and composite sync and VTR subcarrier outputs
- Dub-In, Dub-Out mode for editing and duplicating

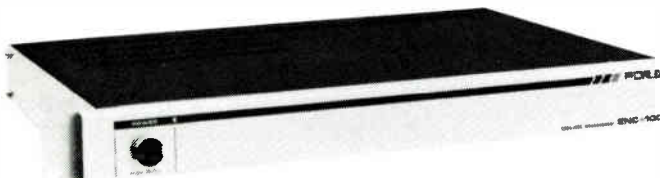
FA-430 Time Base Corrector & Image Processor \$12,500.00



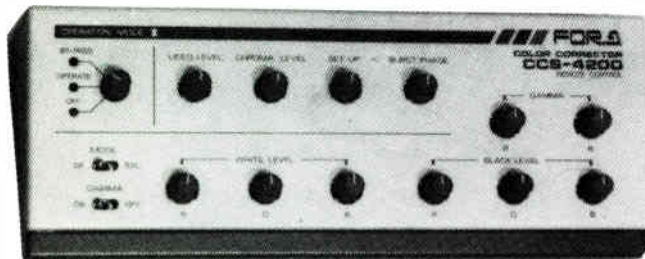
TSG-5000



DEC-100



ENC-100



CCS-4200



CCS-4300

CCS-4300 Color Corrector with Full Broadcast Processing Amp

Features

- Full broadcast specifications
- 19" Rackmounting processor & remote control unit
- Independent RGB controls for both white & black levels
- Vertical blanking set in 1H steps range 10H to 21H
- Designed for color balancing and leveling in production, post production and telecine operations

CCS-4300 Color Corrector \$5500.00

TSG-5000 Sync Pulse and Signal Generator

Features

- Highly advanced sync pulse and signal generator with excellent performance
- PAL, NTSC standards
- H drive, V drive, composite blanking, composite sync, burst flag and vertical sync/2 outputs (plus PAL pulse for PAL).
- Superior gen-lock capability for an external composite video signal
- Gen-lock to either composite video (black burst) or composite sync and subcarrier (plus PAL pulse for PAL)—mode of the gen-lock operation is indicated by LED lamp on the front panel
- When gen-lock operation is off, built-in sync generator will be operative
- Optional CB-5000 Color Bar Generator and BC-5000 Background Color Generator are available (both generators are plug-in module type)—remote control capability of hue, saturation and luminance for the background color
- Dimensions: 16.92"W x 3.46"H x 13.19"D (430 x 88 x 335 mm) (19" rack type)

TSG-5000 Sync Pulse and Signal Generator \$3400.00
Color Bar Generator 1100.00
Back Color Generator 700.00

ALC-4100 Automatic Level Controller

Features

- PAL, NTSC standards
- Correction of video output level differences
- Automatic gain control
- Separate control for video, sync and burst signals

ALC-4100 Automatic Level Controller \$3450.00

DEC-100 RGB Decoder

Features

- Converts standard NTSC video signals to RGB components, primarily used to provide Chroma key inputs on switchers or to mix with RGB Graphic Systems
- Converts composite video inputs from cameras and VTRs, etc. and provides RGB component signals as well as Sync outputs

DEC-100 RGB Decoder \$1900.00

ENC-100 Color Encoder

Features

- Especially designed to incorporate with the FVW-910, in conjunction with the CC-910, CS-710 and VTW-600 in conjunction with the CU-600, resulting in effective performance
- Encodes analogue or digital RGB signals input
- Special mixing is performed providing certain and distinct superimposition
- Both NTSC and PAL standards are available
- Dimensions: 16.92"W x 1.75"H x 12.6"D (430 x 44 x 320 mm)

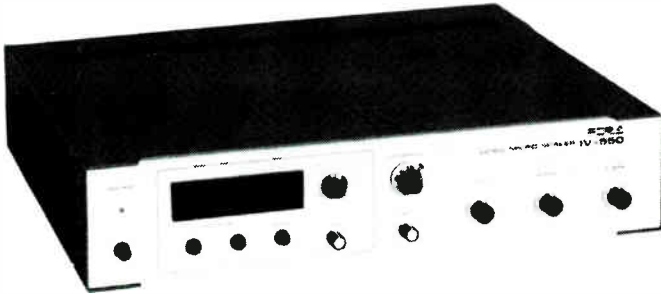
ENC-100 Color Encoder \$2000.00

CCS-4200 Color Corrector

Features

- Highly advanced color corrector for professional use
- PAL, NTSC standards
- Composed of the main process unit and remote control unit
- Variations in the color balance and video level caused by the surrounding conditions in ENG, EFP, etc. are finely corrected
- For correction of color tone differences, gamma, gain and black balance adjusters are provided
- For correction of video signal level, video level, chroma level, set-up and burst phase adjusters are provided
- Three operation modes: by-pass, operation, and off
- DIF/BAL mode switch: DIF is for adjusting live camera and VTR output; BAL is for adjusting film camera output
- Gamma on/off switch
- Inferior sync and burst signals improvement
- Each adjuster includes neutral center clip
- Dimensions: Main Process Unit 16.92"W x 1.75"H x 18.11"D (430 x 44.5 x 460 mm) (19" rack type)
- Remote Control Unit 9.84"W x 2.17"H x 3.86"D (250 x 55 x 98 mm)

CCS-4200 Color Corrector \$4500.00



IV-550



VS-1000



IV-570



VPA-1000

IV-550 Video Micro Scaler

Features

- Especially developed for use with the microscope
- Horizontal length of an object in a picture can be precisely measured by using one horizontal and two vertical lines whose positions are independently varied
- High resolution: maximum 1999 horizontally
- Measured data is displayed on both the picture scene and front panel of the unit
- Calibration adjuster sets the most suitable measurement length based upon size of the object in a picture
- Edge enhancer function provides clear picture quality, assisting in precise measurement
- Five different measurement units are selective (nm, um, mm, cm and m)
- Dimensions: 16.92"W x 3.46"H x 13.78"D (430 x 88 x 350 mm) (19" rack type)

IV-550 Video Micro Scaler\$3000.00

IV-570 Crossline Generator

Features

- Compact and easy operation design
- Essentially designed for observing, seizing, comparing or recognizing size, length or position of an object displayed in a picture
- One each of horizontal line and vertical line is displayed in either the straight line or dotted line display modes
- In either the straight/dot modes, each display line can be variably positioned on the monitor
- Also each display line can be set to the fixed position
- Graduations are included with horizontal and vertical straight lines
- Dimensions: 8.46"W x 1.73"H x 9.84"D (215 x 44 x 250 mm)

IV-570 Crossline Generator\$775.00

VS-1000 Video Scaler

Features

- Low cost measurement unit for human action and object motion analysis
- Two measurement modes: in the scale mode, single or double crosslines which are variably positioned independently are superimposed onto the picture; in the grating mode, number of line selected by 5-step rotary switches in both horizontal and vertical position are superimposed
- Size of the mask can be freely adjusted
- Comparison of sizes, distances and space of different picture element can be readily determined
- Dimensions: 16.92"W x 3.94"H x 13.78"D (430 x 100 x 350 mm) (19" rack type)

VS-1000 Video Scaler\$1200.00

VPA-1000 Video Position Analyzer

Features

- An excellent and accurate unit for researching and analyzing human actions and motions such as in sports, medical rehabilitation, etc.
- One each of horizontal line, vertical line and dot whose positions are independently varied are superimposed onto the picture, and position of the dot is expressed in XY coordinate value based upon position of the H and V lines, and displayed on both the picture and front panel of the unit
- The obtained data (XY coordinate values) can be fed to external equipment such as printer either automatically (every .5 second) or manually
- Slight differences in the regular movement of the object can be digitally analyzed
- Dimensions: 16.92"W x 3.46"H x 13.90"D (430 x 88 x 353 mm) (19" rack type)

VPA-1000 Video Position Analyzer\$2500.00

VC-81 Video Counter

Features

- Slim-line video terminal unit
- Up to 8 digits, which counts from 0 to 9, are superimposed onto picture
- Display character format is 7 x 9 dot matrix
- Each character includes edge for maximum legibility
- Operation is performed either manually through the front panel facilities, or remotely through BCD or TTL 5 V external input signals
- Start, stop, reset, matt control, V and H display position control facilities
- Wide applications such as program editing in broadcasting stations, time and score indications for sport events, traffic monitoring and control, data insertion in video research, security systems, etc.
- Dimensions: 16.92"W x 1.75"H x 11.81"D (430 x 44 x 300 mm) (19" rack type)

VC-81 Video Counter\$1025.00

VP-380 Video Pointer

Features

- Compactly designed instructional instrument allows to superimpose 4 different directions of arrow pointers and 4 different symbol pointers (O, °, + and □) onto a picture
- Each pointer can be positioned anywhere within 80% of the effective picture area by using the joystick controller
- Black/white pointer selection
- Flash function
- Excellent for educational, medical and research purposes. (Effective use if incorporated with the video measurement unit)
- Dimensions: 8.46"W x 1.75"H x 9.84"D (215 x 44.5 x 250 mm) (half 19" rack type)

VP-380 Video Pointer\$700.00

VG-40 Videogram

Waveform generator for up to 4 analogue inputs which are supplied from an electrocardiograph, seismograph, etc.

VG-40 Videogram\$4400.00

FM-60 Frame Memory

Features

- Excellent device for video research and video surveillance
- B/W video signal is memorized in real time and frozen instantly frame by frame, or field by field
- Compact and lightweight yet reliable performance with low cost
- Automatic freeze function with freely set time interval
- Any of Video Timers, Video Measurement Units, Video Surveillance Units are effectively incorporated
- Dimensions: 16.92"W x 1.75"H x 11.81"D (430 x 44 x 300 mm) (19" rack type)

FM-60 Frame Memory\$2000.00

IV-530 Contour Synthesizer

Features

- Unique device for analyzing X-ray and all types of difficult-to-interpret photographic data
- Differences in density within the image are converted into differences in contour (image enhancement), so that slight details of the picture will be easily discernible
- 21-step gradient switcher plus independent differential level control
- Negative/positive modes selection
- Dimensions: 16.92"W x 1.97"H x 14.17"D (430 x 50 x 360 mm) (19" rack type)

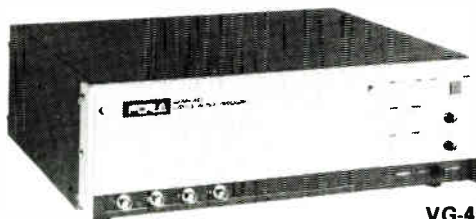
IV-530 Contour Synthesizer\$1500.00



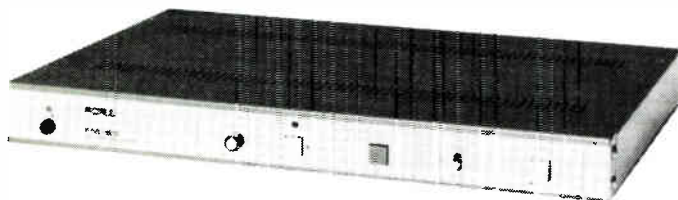
VC-81



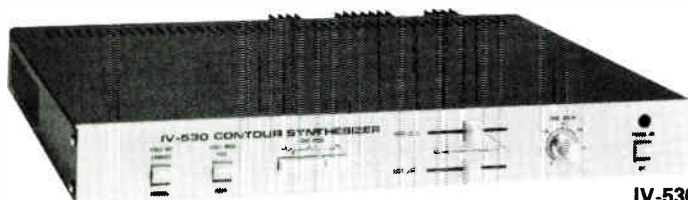
VP-380



VG-40



FM-60



IV-530



2985 Gateway Drive
Norcross, GA 30071
(404) 447-4422 Telex 804822

IMAGE CORRECTION PRODUCTS



RECORD 2 Image Correction

RECORD 2 is a stand alone detail booster with noise threshold control, and a passive filter separator. However, it may also be used to insert the Faroudja Pilot on the video tape for automatic playback control of The Y-688³² Total Error Corrector, PLAYBACK 1 or PLAYBACK 2. RECORD 2 is available in a portable or rack mount model.



RECORD 1 Image Correction

RECORD 1 is the top of the line detail booster designed as the first part of two part comprehensive automatic image correction system. It provides pre-record detail boost and inserts the Faroudja Pilot on the video tape for automatic playback control of the Y-688³² Total Error Corrector, PLAYBACK 1 or PLAYBACK 2. RECORD 1 features a full bandwidth comb filter separator for the ultimate in picture quality, and is available in a portable or rack mount model.

CONTROLS AND INDICATORS

- Power (On/Off): 2 position switch
- Faroudja Pilot (On/Auto/Off): 3 position switch. On: inserts Faroudja Pilot proportional to boost at all times; Auto: inserts Faroudja Pilot and boost when no previously recorded Pilot signal is detected. Auto position is on RECORD 2 only. Off: does not insert Faroudja Pilot or boost.
- Boost Level (Adjustable): From: 0-100 IRE 0% Boost; To: 0-10 IRE +200% Boost; 11-20 IRE +100% Boost; 21-100 IRE +5% Boost
- Noise Threshold (Adjustable): Inhibits boost 0-10 IRE
- Power On (Rack Mount only): Green LED

SPECIFICATIONS

- Signal to Noise Ratio: 65dB (*RECORD EX 60dB)
- Differential Phase: 1.5° (*RECORD EX 2.5°)
- Differential Gain: 1.5% (*RECORD EX 2.5%)
- Bandwidth: 5MHz +/-1dB (*RECORD EX 4.2 MHz +/-1dB)
- K Factor (2T): 1.5%-2% (*RECORD EX 2%-2.5%)
- Video In/Video Out: 1V peak to peak, 75 ohms
- Power (Rack Mount): 115VAC, 60Hz, 10W (Portable): 12VDC +/-2V, 160mA
- Ambient Temperature: 5°C to 45°C (41°F to 113°F)
- Ambient Humidity: 10% to 90%
- Weight (Rack Mount): 2.5kg (5.5 lbs.) (Portable): 0.7kg (1.5 lbs.)
- Dimensions (Rack Mount): 19"W x 1.75"H x 14"D (48.3 x 4.5 x 35.6 cm)

Specifications apply to RECORD EX, RECORD 2 and RECORD 1 except where asterisk (*) indicates RECORD EX specifications different than RECORD 2 and RECORD 1.

	RECORD EX	RECORD 2	RECORD 1
Boost Level Control	•	•	•
Noise Threshold Control	•	•	•
Rack Mount Model		•	•
Faroudja Pilot		•	•
Comb Filter Separator			•

RECORD 1 (Rack Mount)

Pre-record detail boost, insertion of Faroudja Pilot for automatic playback control and comb filter

2295.00

RECORD 2 (Rack Mount)

Pre-record detail boost and insertion of Faroudja Pilot for automatic playback control

1495.00

PLAYBACK 1 (Rack Mount) PB 1

Playback image improvement featuring: automatic or manual control of noise reduction, ringing suppression, and Y/C delay correction

\$5995.00

ACCESSORIES

14 pin cable for Record 1 and Record 2

\$165.00



2985 Gateway Drive
Norcross, GA 30071
(404) 447-4422 Telex 804822

TIME BASE CORRECTORS

CCD1H TIMING CORRECTOR

- Signal-to-noise: 60 dB NTSC, 58 dB PAL
- Differential Phase—1%
- Differential Gain—2%
- Window of Correction—1H
- Affordable Price
- NTSC or PAL

The CCD1H Timing Corrector removes skew and jitter from VTR playback. The Timing Corrector operates with any non-segmented helical scan VTR. Color or monochrome operation is selected automatically.

Patented circuit techniques in the CCD1H utilize digitally controlled charge coupled devices to provide superb signal transparency.

High quality, simplicity of operation and the lowest price in the industry make the CCD1H Timing Corrector ideal for use by educational institutions, cable TV, industry, hotel and motel channels and broadcasters in editing facilities.

\$3950.00

CCDHP TIME BASE CORRECTOR

- Full broadcast standard performance
- Horizontal enhancement and noise reduction standard
- Full proc amp controls
- Super transparency for all heterodyne, non-segmented VTR's
- Available in NTSC and PAL standards
- Input comb filter separator (NTSC)

The CCDHP time base corrector offers high performance and proven reliability at a low price.

High Performance patented circuit techniques utilize digitally controlled CCD's (Charge Couple Devices) to provide signal transparency exceeding the most advanced digital designs. Signal to noise ratio is 60 dB, K factor is 2% and differential phase is less than 0.5°. The CCDHP's bandwidth and transient response are designed to match the latest professional broadcast heterodyne VTR's.

Proven Reliability: The CCDHP time base corrector is the result of more than seven years research and development. Fortel has pioneered the use of CCD's for time correction and has delivered more units worldwide than all other manufacturers combined.

\$5495.00

CCDHPS TIME BASE CORRECTOR

The CCDHPS provides the same high performance and unequalled picture quality as the extremely popular and highly reliable CCDHP.

Features include a new Y/C Separator, developed by Faroudja Laboratories resulting in higher performance specifications.

- 60dB signal to noise ratio
- 0.5° differential phase



CCD1H



CCDHPS



CCDY/C

- 1.5% differential gain
- 1% K Factor
- 2.8 MHz bandwidth

The CCDHPS is designed to obtain the highest performance from the new professional grade U-Matic VTR's. Standard features include noise reduction, enhancement, preset and manual proc amp control and full sync drive capability.

\$6495.00

CCDY/C TIME BASE CORRECTOR™

The CCDY/C Time Base Corrector™ ... The perfect TBC for producing high quality video playback from 1/2" VHS and 3/4" VTRs. The CCDY/C processes Y/C component video using Dub signals, as well as standard NTSC composite video.

Features

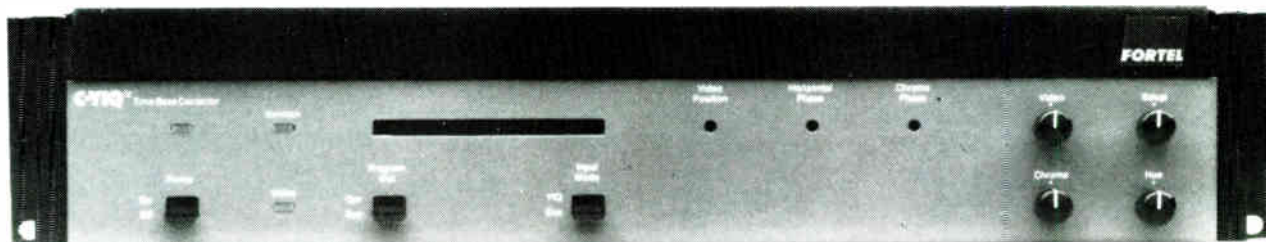
- Y/C (Luma—Chroma) component video input and output uses the Dub video input and output of Sony 3/4" and Panasonic 1/2" VHS and 3/4" VTRs for a dramatic improvement in picture quality
- Full function performance meets all FCC requirements and corrects time base error to RS170A specifications
- Y/C input and output combined with Y, R-Y, and B-Y internal component baseband processing provides edited copies, tape duplications, and video playback that is sharper, crisper, and more lifelike than encoded video playback
- Corrects wrong color-frame edits automatically
- 3dB of chroma noise reduction
- Full proc amp control
- Luminance noise reduction from 0 to 4dB
- Horizontal enhancement from 0 to 100% boost (limited to 20IRE)
- Use NTSC composite Video In for operation with all 1/2" VHS and 3/4" VTRs; add Dub input and/or output (composite Video In must remain connected) for automatic Y/C component processing

\$8995.00



2985 Gateway Drive
Norcross, GA 30071
(404) 447-4422 Telex 804822

TIME BASE CORRECTOR



FORTEL C-YIQ³² TBC

SPECIFICATIONS:

- Digital Sampling: Y Channel - 14.32 MHz, I Channel - 3.58 MHz, Q Channel - 3.58 MHz
- Window of Correction: 32 H
- Signal to Noise Ratio (p-p signal to rms noise, per channel at defined p-p input Y and chrominance levels) better than 57 dB
- Differential Phase: Encoded In/Encoded Out 1.5°, Dub In/Dub Out 0.5°
- Differential Gain: Encoded In/Encoded Out 1.5%, Dub In/Dub Out 0.5%
- Residual Jitter: ±7.5 Nanoseconds (Stable Input)
- Bandwidth: (-3dB), Luminance 4.5MHz, I Channel 1.5MHz, Q Channel 1.5MHz, Encoded 4.5MHz (Subcarrier Direct)
- K Factor (2T): Luminance (2%) 1%, I, Q Channel (1QT) 1%, Subcarrier Direct 1.5%, HET 3%
- Power: 87 - 130VAC, 50 or 60 Hz
- Ambient Temperature: 10°C to 40°C (50°F to 104°F)
- Ambient Humidity: 10% to 90%
- Weight: 18.2kg (40 lbs)
- Dimensions: 19"W x 3.5"H x 23.75"D (48.3 x 8.9 x 60.3cm), 21.5" Depth into Rack (54.6cm).

Inputs:

- YIQ In - Loop - Switchable rear panel termination
- Video In (Encoded) Subcarrier Feedback Only
- Genlock/Sync (Loop), Subcarrier (Loop), Search - Switch to Encoded mode if Recorder playing YIQ during search or jog mode

Outputs:

- YIQ Out - Loop - from YIQ In, Video 1 (Encoded) Relay bypass, Video 2 (Encoded) Active output only, VTR Advanced Sync, VTR Subcarrier

Controls and Indicators:

- Power: 2 Position switch (on or off)
- Program Out: 2 Position switch bypasses unit circuitry in program video path, monitor video path is always activated
- Input Mode: YIQ video input signal or encoded video input signal
- Video Gain: ±3dB
- Chroma Gain: ±3dB
- Setup +20 IRE
- Hue: ±30°
- Video Position: ±250 nsec (with respect to sync)
- Horizontal Phase: ±4 usec
- Chroma Phase: Greater than 360°
- Power On: Green LED
- Video: Green LED (indicates input video present)
- GenLock: Green LED (indicates GenLock present)

The Challenge: POWER to time base correct new 1/2" Type "M" VTR's pure YIQ signals without conversion to composite NTSC or PAL video

THE INNOVATION: C-YIQ³² Time Base Corrector™, another result of Fortel's ongoing research in component signal processing. The C-YIQ³² is the only TBC that uses pure YIQ signals to work with the new Type "M" format high speed 1/2" VTR's offered by RCA, Ampex and other world leaders in video — powerful evidence of Fortel's leadership. Because of its superior picture quality, the C-YIQ³² TBC was selected over all other TBC's for the first major Type "M" installation at WNEV-TV in Boston.

The C-YIQ³² Power Provides:

YIQ Component Processing — The C-YIQ³² is the only stand alone TBC that time base corrects full bandwidth, pure baseband YIQ component video signals. YIQ processing eliminates picture quality loss due to heterodyne processing or composite NTSC encoding and decoding.

Y-688 Output — The C-YIQ³² provides a 2 wire Y-688 "dub" output for dubbing to 3/4" U-Matic VTR's. Using Y-688 signals for dubbing produces pictures of better quality than a live encoded feed.

32 Line TBC — Field trials have shown that a 32 line window of correction is necessary to correct the large gyroscopic errors produced by the high speed, shoulder mounted Type "M" VTR's. The C-YIQ³² has two 32 line digital memories for separate time base correction of the luma (Y) and chroma (I, Q) components of the color video signal. Time base correcting the luma and chroma separately reduces luma/chroma crosstalk.

Search Mode Viewing — The TBC control input from a 1/2" Type "M" VTR to the C-YIQ³² TBC permits viewing in the search (jog) mode.

3.58 Feedback Operation — The C-YIQ³² can be used to time base correct 1/2" VHS and 3/4" U-Matic video with 3.58 Feedback for full bandwidth operation.

Color Correction — Fortel's CC-1 Color Corrector can use high quality Y-688 "dub" video from the C-YIQ³² to produce the optimum in color corrected pictures. The CC-1 had RGB output, full remote control and joystick control of individual vectors. Use the CC-1 to balance color out of blacks and whites and correct the color saturation, hue and luma level of the six color bar colors. The CC-1 also compresses and stretches blacks and whites. Unleash the **PURE POWER** of the YIQ format with the C-YIQ³² Time Base Corrector **\$14,995.00**



2985 Gateway Drive
Norcross, GA 30071
(404) 447-4422 Telex 804822

TOTAL ERROR CORRECTOR



Y-688³² Total Error Corrector The New Standard

The Y-688³²™ Total Error Corrector™ represents a major advance in the art of video signal correction.

First, the unique circuitry of the Y-688³² TEC accepts component or composite signals and performs all functions of time base correction and picture improvement in the component, Y-688, form. This method bypasses the root cause of most errors before they occur.

Second, new and improved image processing techniques are possible when the signal is in the Y-688 component form so that errors in the original color-under recording or introduced in later processing can be more completely eliminated.

The result of the above innovations is a first generation U-Matic playback that looks like 1" or 2" formats and 3rd generation tapes that look like conventional first time playback.

The Y-688³² Total Error Corrector. The New Standard in time base and video image correction!

Features

- 32 line super-wide instantaneous window Phase Comp™ one and two line digital look ahead velocity compensator and phase error corrector
- Complete image processing including horizontal and vertical enhancement, horizontal detail improvement
- Luminance noise reduction through advanced compression and combing techniques to 10db
- Chroma noise reduction to 10 db
- Chroma crispening
- Gyro-Trac™ automatic window re-centering for extraordinary errors without hue shift or horizontal movement
- Record 1™ Pilot tone compatible for automatic setting of image processing controls
- Chroma Amplitude Correction through two line look ahead providing 4.2db short term and 6db long term correction
- Accepts shuttle speeds up to ten times normal
- Unitec™ Construction features easy access to all components without board or unit removal from operating system

- Front panel image process bypass control with internal programmable jumpers allow anything from super transparent time base correction through extensive image reprocessing
- High efficiency, low power, low heat
- Accepts composite or component (Y-688) signals and outputs both types
- Adjustable H and V Blanking
- Automatic Chroma/Luminance delay compensation
- Adjustable video position
- Drop-out compensation based upon previous line information
- Single cable Gen-Lock Sync Generator
- Programmable jumpers and mode switches allows tailoring to specific system objectives
- Automatic color or monochrome operation
- Full Proc Amp
- Chroma combing

Applications

- Use Y-688³²™ for time base and image correction of U-Matic masters when dubbing to other U-Matics, VHS or Beta formats
- Edit, special effects, or A/B rolls through Y-688³² for third generation tapes that look like master tapes
- Use accessory adaptors or RGB switcher to do complete production in component format for final product approaching full bandwidth format
- Reprocess any color under signal to reduce luminance noise by 10db and chroma noise by up to 10db
- Use in conjunction with Record 1™ for completely automatic processing of the cleanest, sharpest pictures ever from U-Matic
- Use Y-688³² as alternative to digital picture processors costing thousands of dollars more
- Remove transmission noise and distortions from satellite feeds
- Use with latest scan track U-Matics for broadcast stable pictures in slow motion
- Do field production in U-Matic format and all post production through broadcast or distribution copies for lower program costs
- Use with microprocessor controllers and U-Matics for high quality, economical, automatic program delay or remote broadcast

UNITEC™ and Gyro-Trac™ are trademarks of Edutron, Incorporated
Y-688³² Total Error Corrector **\$15,995.00**



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CHROMA NOISE REDUCER



COLOR EX CHROMA NOISE REDUCER™

FEATURES

Chroma noise reduction up to 12dB in the Heterodyne (Het) mode and up to 6dB in the Direct (Dir) mode.

Up to 50% reduction in chroma ringing.

Chroma risetime improvement for sharper, crisper color transitions.

Automatic Y/C delay correction of ± 100 nsec.

Manual Y/C delay correction of up to 280 nsec.

Exclusive one-year warranty on parts and labor

Use COLOR EX with any NTSC composite video signal, time base corrected or uncorrected:

To virtually eliminate quad banding from 2-inch VTR's.

To reduce moiré and noise from 1-inch VTR's.

With 3/4-inch and 1/2-inch color-under VTR's to reduce chroma noise, improve chroma risetimes, and reduce ringing and Y/C delay.

To remove moiré noise and other interference patterns from satellite and microwave transmission paths.

COLOR EX Chroma Noise Reducer™ ... The better alternative to higher priced digital noise reducers (DNR's). COLOR EX uses a unique processing technique, developed by **FAROUDJA** Laboratories, to reduce chroma noise and improve the color content without affecting the luminance (luma) portion of the video signal. This exclusive processing technique reduces chroma noise without frame-to-frame or field-to-field averaging. The result is a crisp, clean video picture without the motion artifacts associated with DNR's.

COLOR EX works with any NTSC composite video signal, time base corrected or not, to reduce chroma noise and restore rich, vibrant color to your video picture. In addition, COLOR EX corrects problems inherent in different video sources. COLOR EX virtually eliminates quad banding from 2-inch VTR's, and removes annoying moiré and other interference patterns from satellite and microwave transmission paths. COLOR EX gives more complete and comprehensive improvement of chroma deficiencies from color-under VTR's (1/2-inch and 3/4-inch) than DNR's costing thousands of dollars more. In addition to chroma noise reduction, COLOR EX reduces chroma ringing by up to 50%, improves chroma risetimes for sharper, crisper color transitions, and corrects Y/C delay for improved luma/chroma registration.

While COLOR EX gives you powerful performance, operation is simple requiring only a video loop-through (video in/video out). Front panel controls are power (on/off), program (bypass/operate), input source selection, and Y/C delay control. Simply connect COLOR EX to the video source, turn it on, select the appropriate input source, and COLOR EX does the rest. Up to ± 100 nanoseconds of Y/C delay is automatically corrected, additional manual control can be used to correct more severe delay.

SPECIFICATIONS

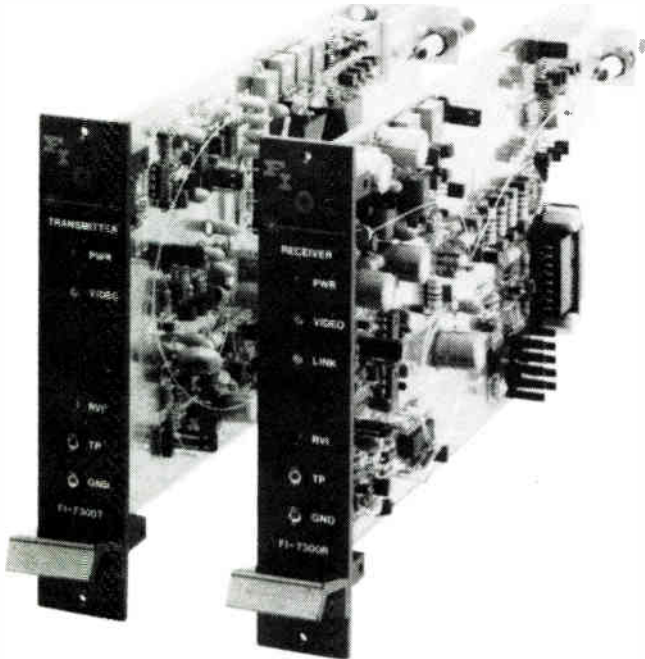
Signal-to-Noise Ratio		65dB
Differential Phase	(Direct)	1.5°
	(Heterodyne)	2.0°
Differential Gain	(Direct)	1.5%
	(Heterodyne)	2.0%
Bandwidth	(Full)	4.2MHz \pm 1.5dB
	(Narrow)	2MHz \pm 1.5dB
		2.7MHz \pm 6dB over 28dB @ 3.58MHz
K Factor	(Direct)	1.5%
	(Heterodyne)	2.5%
Tilt	(Direct)	1.5%
	(Heterodyne)	1.5%
Chroma Noise Reduction	(Direct)	6dB
	(Heterodyne only)	12dB
Chroma Ringing Reduction	(Heterodyne only)	50%
Chroma Risetime Reduction with 1us input risetime	(Heterodyne)	500ns
Chroma/Luma Delay Correction	(Automatic)	± 100 ns
	(Manual)	280ns
Power		117VACS, 60Hz, 40W
Ambient Temperature		5° to 45°C
Ambient Humidity		10% to 90%
Weight		5.0kg (11 lbs.)
Dimensions		48.3cm (19")W
		4.4cm (1.75")H
		55.9cm (22")D

\$5995.00

COLOR EX is a Trademark of FAROUDJA Laboratories and is licensed to FORTEL by FAROUDJA Laboratories



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Analog Fiber Optic Modules

video

MODELS FI-7300T And FI-7300R ANALOG FIBER OPTIC MODULES (Video)

The FI-7300 analog link consists of two modules; the transmitter (FI-7300T) and the receiver (FI-7300R). Each unit can be plugged into the FI-7000MF mainframe from which operating power is derived.

The FI-7300 link is intended for the transmission of high quality analog signals over large distances, with exceptionally low signal degradation.

The link can be used for the distribution of studio quality video signals through areas of high electromagnetic interference or where the advantages of the small size of optical fiber cable are significant.

Front panel indicators and test points provide easy monitoring of link performance.

Specifications

INPUT

Type

Common mode rejection, 60 Hz
Common mode range

Input return loss

OUTPUT

Number of outputs

Output impedance

Output return loss

Output to output isolation

Module to module isolation

S/N ratio

at -27 dBm of received optical power

DC on output

Loop-through
>40 dB
± 12 volts referenced
to chassis ground
>40 dB to 5 MHz

2 per receiver module
75 ohms ± 1%
>30 dB to 5 MHz
>30 dB to 5 MHz
>60 dB to 5 MHz

>60 dB weighted
<50 millivolts in AC-
coupled mode

DC restored

<50 millivolts, over
entire APL range

PERFORMANCE

Differential Distortion
(with composite signal and
transmitter input clamp
activated).

Phase

<0.5°

Gain

<1.0%

Frequency response:

10 Hz to 5.9 MHz

± 0.15 dB

2 T Pulse to bar

± 1%

Field tilt composite field square
wave

<1%

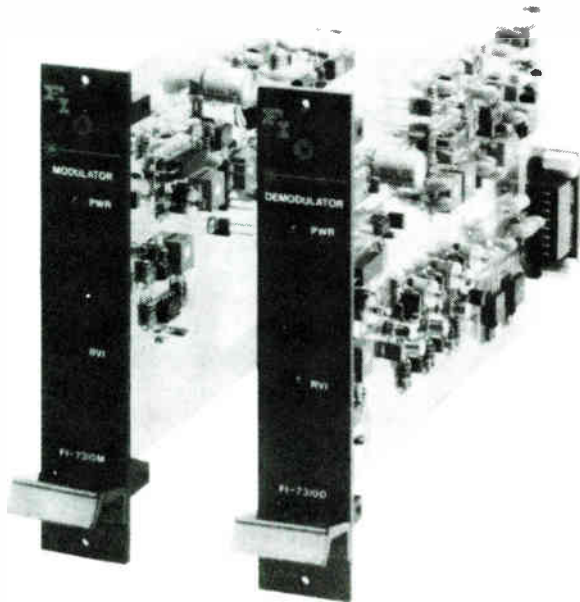
Line tilt

<1%

Relative Chrominance-to-
Luminance distortion (without
filter)

<15 nanoseconds

Prices and Specifications Subject to Change Without Notice.



Analog Fiber Optic Modules audio

MODELS FI-7310M And FI-7310D ANALOG FIBER OPTIC MODULES (Audio)

The FI-7310 voice analog link consists of two modules; the modulator (FI-7310M) and the demodulator (FI-7310D). Each unit can be plugged into the FI-7000MF mainframe from which operating power is derived.

The FI-7310 link is primarily intended for the transmission of a baseband video signal along with its associated audio over a single fiber.

The modulator FM modulates an RF subcarrier with the audio signal. The FM modulated subcarrier is then summed with the video in the transmitter module. The receiver module separates the audio FM signal from the video; the audio FM is then demodulated by the demodulator.

Specifications

INPUT

Type	Terminated. Line impedance of 600 ohms
Connector	Input 3 pin audio XLR male; Output 3 pin audio XLR female
Common mode rejection, 60 Hz	> 40 dB
Maximum common mode voltage	> ± 5 volts
Maximum 600 ohm level	+ 18 dBm

OUTPUT

Line impedance	600 ohms
Maximum line output Driving 600 ohms	+ 18 dBm

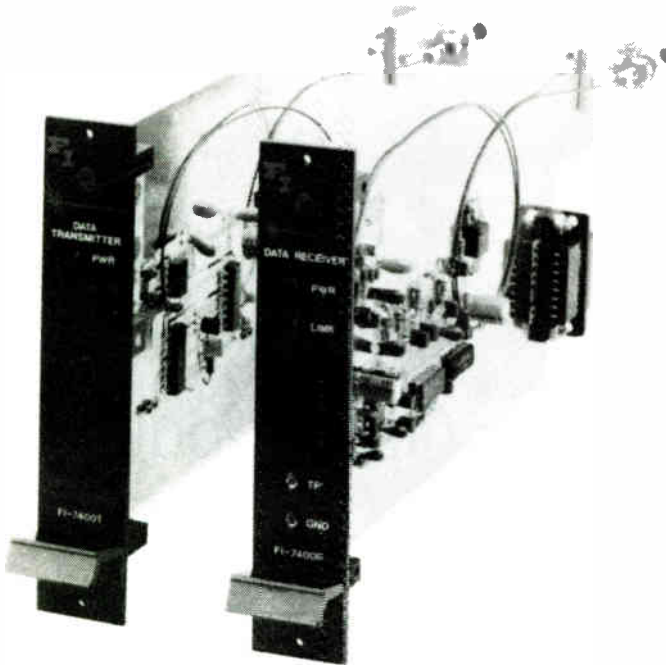
PERFORMANCE

Distortion (at maximum output level) THD, 15 Hz to 15 KHz	< 1%
Frequency response	30 Hz to 15 KHz
Crosstalk, video in audio	-57 dB
Signal-to-noise; (referenced to maximum audio output level, with no video input)	70 dB



Digital Fiber Optic Modules

data 0-10 Mb/s



- TTL Input Levels
- Data Rates from 0 to 10 Mb/s - NRZ
- Low Cost
- Low Bit Error Rate
- Single Supply
- Link Quality Monitor
- Long Distance (up to 5Km)
- Arbitrary Data Format
- Optical Port Connector

MODELS FI-7400T And FI-7400R DIGITAL FIBER OPTIC MODULES (data 0-10 Mb/s)

The FI-7400 digital fiber optic data link was designed for digital data transmission over single fiber channels. The modules can be plugged into the FI-7000MF mainframe from which operating power is derived.

Bipolar integrated circuits and a high radiance LED convert TTL level inputs to optical pulses at data rates from DC to 10

Mb/s NRZ. An internally coded mode of operation produces a 3-level coded optical signal for reception and decoding by the receiver. This 3-level optical signal places no restriction on data format over the data range of DC to 10 Mb/s NRZ while allowing for wide dynamic range and high sensitivity at the receiver.

Features

- TTL input levels
- Data rates from 0 to 10 Mb/s - NRZ
- Low Cost
- Low bit error rate
- Single supply
- Link quality monitor
- Long distance (up to 5Km)
- Arbitrary data format
- Optical port connector

Specifications

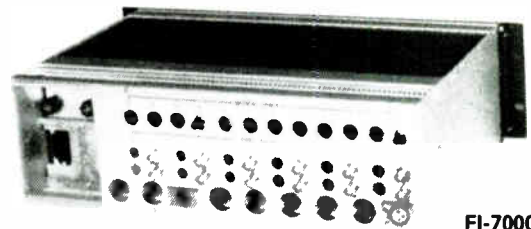
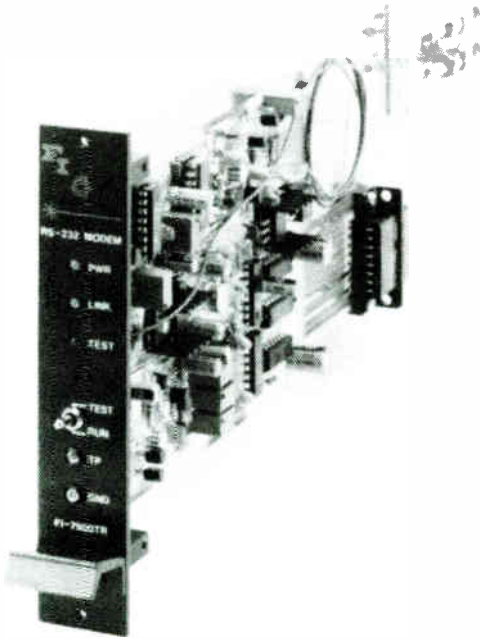
Data rate	0 to 10.0 Mb/sec
Input data	TTL NRZ or RZ
Output Data	TTL NRZ or RZ
Optical Rise/ Fall time	20 nsec max
Optical Output Power	30 uW min
Optical Input Power	.2 uW min for 10 ⁻⁶ BER
Electrical Risetime	20 n sec
Electrical Faltime	7 n sec
Jitter	25 n sec typ
Permitted Link Loss	22 dB (No margin)
Optical Wavelength	830 nm (nominal)
Operating temperature	0 to 40 C



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RS-232C Fiber Optic Module

data 0-56 Kbs



FI-7000MF

MODEL FI-7500TR RS-232C FIBER OPTIC MODULE (data 0-56 Kbs)

The FI-7500TR fiber optic modem is designed for full duplex asynchronous data transmission at rates of 0 to 56 Kb/s. Each modem module can be plugged into the FI-7000MF mainframe from which operating power is derived. The electrical connections for the data signals are made on the rear panel of the mainframe using a standard 25-pin RS-232C connector.

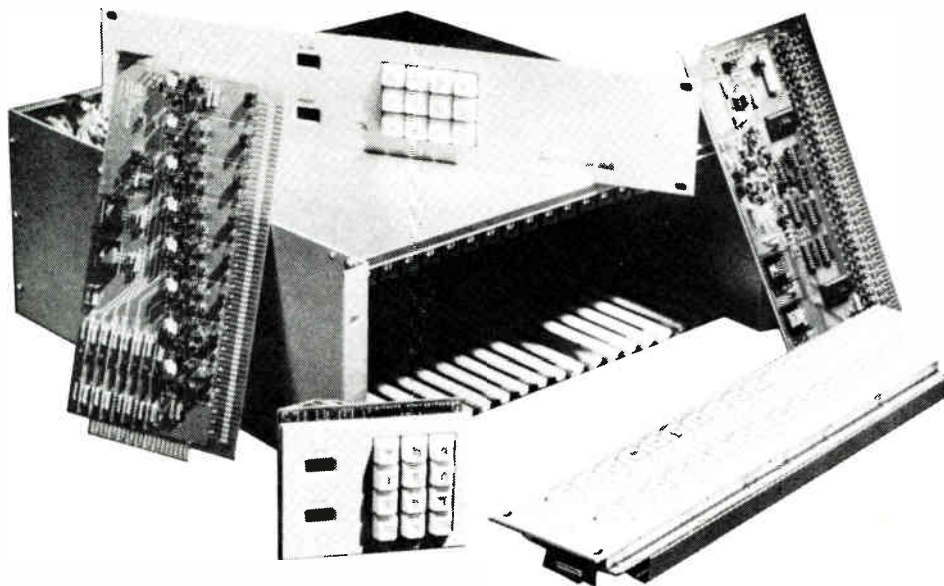
The FI-7500TR communicates in full duplex over a single fiber, thus offering a substantial saving in fiber costs.

FI-7000MF MAINFRAME

The FI-7000MF Mainframe is designed to be installed in a standard 19" (48.26 cm) rack. Mounting is included with each tray. Modules are installed in the mainframe as shown in the front view.

Specifications

Connector	25 pin RS-232C
Electrical Signal Input Output	EIA RS-232C
Data Rate	0 to 56 Kb sec
Transmission Medium	Single Fiber Optical Cable
Distance	3,000 meters (longer distances optional)
Error Rate	< 10 ⁻⁶
Optical wavelength	830 nm (Nominal)
Operating temperature	0 to 40° C



400 SERIES ROUTING SWITCHERS

FEATURES

- High performance • DC restored inputs • Vertical interval switching • Destination oriented matrices • Expandable • Built-in short term memory protection

OPTIONS

- Additional audio matrices • Tally relay systems • Special control systems • Dual power supplies • Expansion systems

The basic video switching matrix is arranged in a 32-input by 16-output format. A complete frame contains 21 printed circuit modules consisting of four input buffer amplifiers, sixteen crosspoint modules, and an interface module. Each buffer contains eight DC restorers together with other circuitry to drive eight 32 by 1 crosspoint modules. The latter also contain the line driving amplifiers. The interface module is used to "marry" the video matrix with other matrices, e.g., audio and tally.

The mounting frame employs exclusive Grass Valley Group zero insertion force connectors for mating the input buffer amplifiers to the crosspoint modules via the frame-mounted mother board. Modules are removed by a quarter turn screw on the front of each connector.

Since all video crosspoints for an output bus are contained on a single module, the system is thus destination oriented. A failure in a crosspoint module only affects one output bus; all other busses continue to operate normally. It is not necessary to switch the system off when removing modules.

The audio switching matrices are similar to video switching matrices; consisting of input buffer modules, crosspoint modules, and a single interface module. The buffer modules utilize differential input circuitry to provide up to 80 dB of common mode rejection at 60 Hz. Grass Valley group can supply systems with audio input and/or output transformers at extra cost — on special order.

It should be noted from the specifications that the audio system will operate at levels up to +24 dBm at 600 ohms or +30 dBm at 150 ohms — with full performance.

A tally relay matrix is available to provide contact closures corresponding to input sources. The system can be enabled on a bus by bus basis.

On special order, Grass Valley Group can provide matrices with relays corresponding to each crosspoint. The latter are particularly useful in distributing special control signals through a routing switcher.

The power supply system is unique. AC line current is first rectified to provide 48 volts direct current. This voltage is then converted to 15 volts DC by means of high efficiency DC to DC converters for distribution to the matrices. The latter also provide regulation.

The 48 volt rectifiers, as well as the DC to DC converters, are plug-in modules for ease of maintenance. Systems can be supplied with dual rectifiers fed from separate AC inputs for maximum system protection. A 400 Series routing switcher can also be fed directly from (nominal) 48 volt direct current sources.

System crosspoint status can be maintained by an optional battery system. Short term protection (nominally 1 minute) is inherent in the standard system as a result of the CMOS memory elements employed.

The flexible control concept employed in the 400 Series allows systems to be addressed in two basic ways; (1) on an individual bus-by-bus basis, and (2) by means of a single X-Y panel for control of all buses.

Several types of panels are offered for controlling individual output buses. These consist of panels with momentary illuminated push-buttons corresponding to input sources, panels employing thumb-wheel preset, LED status indicators and a take button, and 10-digit keyboards with LED status indication.

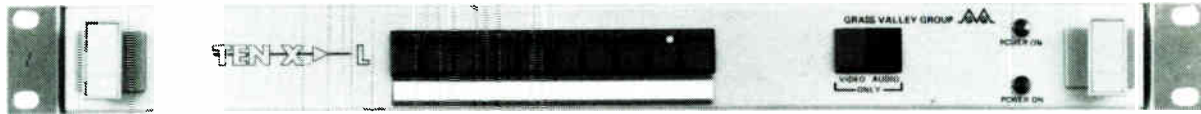
The X-Y control panel provides the means for both input selection and output assignment. This method of control operates via the input/output data port available on each matrix, as opposed to addressing the individual control bus connectors used with the panels described above. The data port also can be used for controlling systems via a computer.

A unique feature of the control system allows several panels to be paralleled on a single output bus, even panels of different types, e.g., keyboard and pushbutton. The only limitation to paralleling panels is the current available for lighting lamps.

Special control panels can be provided on a custom-built basis. Consult Grass Valley Group with your requirements.

Output expansion of a basic 32x16 system requires that input sources be distributed to each frame.

Grass Valley Group's modular approach to routing switcher requirements allows users to start with a small system and expand as needs change. It is not necessary to initially purchase additional frames, power supplies, or other equipment to accommodate future expansion.



TEN-XL



TEN-XT MONITORING STATION

**TEN-XL
 10 x 1 ROUTING SWITCHER**

Now when you buy a routing switcher, you can feel like a big spender without having to spend like one. And without short-changing your systems.

The TEN-XL provides the best price/performance value available in 10 x 1 program quality routing switchers. The best video and audio specs in the business are here, backed by high quality design and manufacturing standards, right down to the plug-in-from-the-front modular construction and optional dual power supplies with fault alarms.

FEATURES

Breakaway stereo audio comes with every unit and both local and remote control panels are available. The binary control system even makes it easy to fabricate your own control panels. Add the optional RS422/232 interface module and you can externally control the TEN-XL from production switchers, modems, machine control systems, or any other computer system.

Input source isolation problems are virtually eliminated by the use of differential inputs for both video and audio. No more ground loops caused by sources from different locations. No need to put humbuckers on remote feeds. Video inputs are DC restored and switching is done in the vertical interval (line 10).

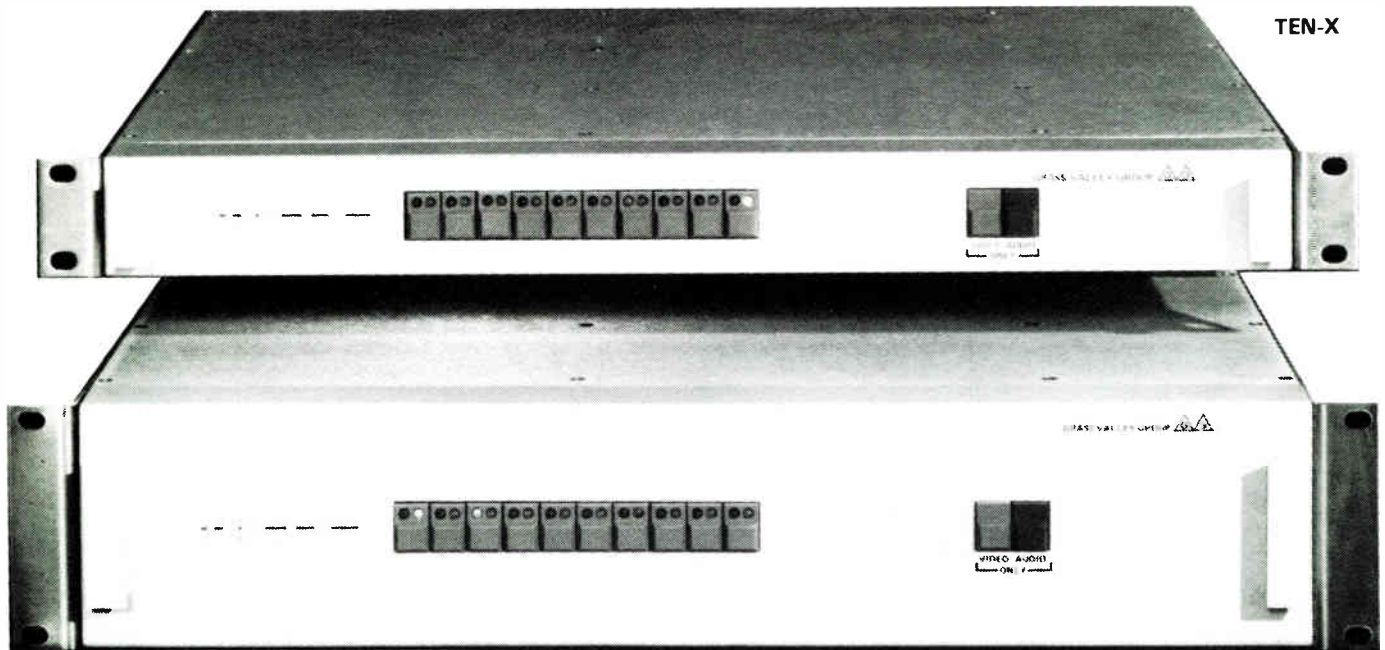
The built-in expansion capability lets the TEN-XL be a 19 x 1, 28 x 1 or more. Add two more frames plus looping control cable, and you have an RGB switcher for your component video system.

Plug in a relay module, and get tally follow for your DVE input switching, or source start capability. It even has a one-hour minimum crosspoint memory in case of power failure. After this interval, if power has not been restored, it reverts to input 1. The TEN-XL encompasses video, stereo audio, optional RS422/232 serial interface module, relay module, and dual power supply, all in a one rack unit frame. No other routing switcher incorporates so many features in so compact a space.

TEN-XT MONITORING STATION

The unique packaging of the new TEN-XT allows you to combine the capabilities of the TEN-XL with the Tektronix 1740 or 1750, as well as the 528 and 1420 waveform/vector monitors. Nested together, they give you the ultimate central quality control monitoring station. When used in transmission facilities, VTR and film chain bridges, the monitoring station puts all control at your fingertips. This makes the TEN-XT ideal as an input selector to VTRs or video monitors.

The marriage of these two important pieces of equipment into one functional unit is a logical extension of Grass Valley Group technology into a specialized, reliable monitoring station. Now the comprehensive routing switcher technology your work demands has been engineered into two remarkably small packages, at one remarkably small price.



TEN-X

TEN-X II

TEN-X™ Series Program Quality 10x1 Routing Switchers

Versatility: The TEN-X™ is a 10x1 routing switcher housed in a one-rack unit frame. It is available in video only, audio only, video-plus-audio or video-plus-relay module.

More versatility: The TEN-X™ II is a 10x1 routing switcher housed in a two-rack unit frame. The TEN-X II will permit the use of video, plus the addition of either three audio modules, three relay modules or any combination thereof.

As an option, the TEN-X II can house dual power supplies.

FEATURES

The TEN-X Series may be controlled locally or remotely. Two different types of local control panels are available; one for video-only (or audio-follow-video operation) and another for audio breakaway operation.

When configured for remote control operation, the local control panel is replaced by a blank front cover. Both AFV and audio breakaway remote control panels are available, or you may choose to build your own. Control is wire-per-crosspoint with switching accomplished using a momentary closure to ground. Tally information is returned on the same wires as switching control. The control/tally lines may be operated and read by external TTL logic, if required. The TEN-X operates by local and remote control panels simultaneously.

Video input signals are independently DC-restored, blanking to ground level. Switching is timed to line 10 of the vertical interval of the last selected source.

FET audio crosspoints ensure virtually silent audio switching. +24dBu maximum input/output level facilitates integration of the TEN-X into practically any broadcast audio environment.

Modular Construction: All modules plug into a common motherboard and the frame has no wiring harness. This results in ease of maintenance and reliability.

10x1 Video Crosspoint Module

Selects 1 of 10 video inputs and switches this signal to an output buss. All inputs are D.C. restored. Crosspoint switching occurs during line 10 of last video.

10x1 Audio Crosspoint Module

Selects 1 of 10 balanced audio inputs and routes this signal to a balanced output buss. The system gain is unity and accepts signal levels up to +24dBu (12.3 volts RMS amplitude).

10x1 Relay Module

Two isolated contacts per input are switched to two isolated common busses. This module is interchangeable with the 10x1 audio crosspoint module. It allows you to have a tally relay for activating external tally module devices, a bidirectional data switch or an audio relay crosspoint module capable of switching balanced audio sources.

Power Supply Module

Provides power for the 10x1 video, audio and relay modules. The power supply furnishes unregulated filtered +/-16V* direct current to the TEN-X frame power distribution busses. Power regulation is accomplished on the individual plug-in modules.

*Nominal for 115V or 220 VAC input.

Model Ten-X™ Routing Switchers Basic System

The Ten-X is a high performance 10x1 switcher housed in a one-RU rack mounting package. It is available in audio-only, video-only and video/audio configurations. The Ten-X may be controlled locally or remotely. Two different types of local control panels are available: one for video-only (or audio-follow-video operation) and another for audio breakaway operation. When configured for remote control operation, the local control panel is replaced by a blank front cover. Both AFV and audio breakaway remote control panels are available. Both local and remote control panels can be operated simultaneously.

TNX-10 10x1 Video-Only basic switcher for remote control use, 110-120V. Does not include remote control panel. Includes Blank Front Cover.	\$1080.00
TNX-11 10x1 Video/Audio basic switcher for remote control use, 110-120V. Does not include remote control panel. Includes Blank Front Cover.	1380.00
TNX-12 10x1 Audio-Only basic switcher for remote control use, 110-120V. Does not include remote control panel. Includes Blank Front Cover.	1025.00
TNX-20 10x1 Video-Only switcher with local standard control panel, 110-120V.	1230.00
TNX-21 10x1 Video/Audio switcher with local standard control panel, 110-120V.	1480.00
TNX-22 10x1 Video/Audio switcher with local breakaway control panel, 110-120V.	1500.00
TNX-23 10x1 Audio-Only switcher with local standard control panel, 110-120V.	1185.00
TNX-201 Standard Local Control Panel.	250.00
TNX-305 3"x4" Slot Mount standard remote control panel .	525.00
TNX-905 3"x4" Slot Mount standard remote control panel for Ten-X II .	550.00
TNX-211 Breakaway Local Control Panel.	275.00
TNX-301 Standard Remote Control Panel.	170.00
TNX-311 Breakaway Remote Control Panel.	215.00
TNX-401 25 Conductor Control Cable for remote control panel (specify length).	32.25 plus 2.50/meter
TNX-402 25 Conductor Remote Control Connector Kit.	22.00
TNX-501 Module Extender.	75.00
TNX-502 Video Crosspoint Module.	395.00
TNX-503 Audio Crosspoint Module.	325.00
TNX-504 Relay Module.	310.00
TNX-505 Power Supply Module, 110-120V.	185.00
TNX-600 One Rack Unit Frame with 110-120V power supply	680.00
TNX-601 One Rack Unit Blank Front Cover.	110.00

Ten-X with RS232/422 Control

TNX-50 Video-Only, no Control Panel .	\$2755.00
TNX-60 Video-Only, with STD Local CP .	2945.00
TNX-61 Video-Only with BKwy Local CP .	2970.00
TNX-301 STD Remote CP .	170.00
TNX-311 BKwy Remote CP .	215.00

TNX-401 Control Cable with Connectors .	32.25
	plus 2.50/meter
TNX-402 Connector Kit .	22.00
TNX-701 RS422/232 Module (spare) .	755.00

All 2 RU Frames above supplied with video crosspoint module single power supply, and RS-232/422 control module. Add up to 2 audio crosspoint and/or relay modules and dual power supply, as required.

Ten-X II

The Ten-X II is a 10x1 routing switcher housed in a 2 rack unit frame. The Ten-X II will permit the use of video, plus the addition of either three audio modules, three relay modules or any combination thereof. As an option, the Ten-X II can house dual power supplies by ordering an additional TNX-505 or TNX-505-2.

TNX-70 Two rack unit Video-Only routing switcher for remote control use, 110-120V. Does not include remote control panel.	\$1325.00
TNX-80 Two rack unit Video-Only routing switcher with single 110-120V power supply and local standard control panel.	1515.00
TNX-81 Two rack unit Video-Only routing switcher with single 110-120V power supply and local breakaway control panel.	1535.00
TNX-801 50 Conductor Control Cable for Ten-X II remote control panel (specify length).	52.00 plus 5.95/meter
TNX-802 50 Conductor Remote Control Connector Kit for Ten-X II.	40.00
TNX-901 Standard Remote Control Panel for Ten-X II switcher.	215.00
TNX-905 3"x4" Slot mount Remote CP for 2 R/U Switcher.	550.00
TNX-911 Breakaway Remote Control Panel for Ten-X II switcher.	260.00
TNX-602 Two rack unit Blank Front Cover.	150.00

TNX-100A

The TNX-100A Interfaces with the Grass Valley Group Model 100 Production Switcher via the Serial Interface Port to provide an Audio Follow/Breakaway Switching System.

TNX-100A Two rack unit routing switcher .	\$2945.00
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Including:

- 1 TNX-502 Video Crosspoint Module
- 1 TNX-503 Audio Crosspoint Module
- 1 TNX-505 Power Supply Module
- 1 TNX-701 RS422/232 Module with SMPTE TNX-100 Software 9-pin
- 1 9-Pin Interconnect Cable, 2 meters or 10 meters long (specify length)
- 1 Local Breakaway Control Panel

Spare Module

TNX-701 RS422/232 Module .	\$755.00
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Instruction Manuals

A90-086800-00 1 RU .	\$50.00
A90-086811-00 2 RU .	50.00
A90-086820-00 RS422/232 2 RU .	50.00

The Model 3400 Utility Video Distribution Amplifier has differential input circuitry which can reject common mode voltages up to +/-10V, six outputs and gain adjustment between -2 and +3dB. It is operated in an AC coupled mode.

The amplifier is designed for use in small systems that do not require cable equalization. It is intended to be used as a utility amplifier to cost-effectively distribute video in small facilities.

The Model 3401V Video Distribution Amplifier is a general purpose differential input, six-output, cable equalizing module. It is capable of equalizing up to 500 feet of Belden 8281/9231 or WE724 with appropriate equalizer cards. The amplifier has current mode input circuitry, which provides +/-30V common mode range, and may be operated in either an AC or DC coupled mode. In the DC mode a +/-150mV offset adjustment is provided for system balancing.

The Model 3402V-A Precision Video Distribution Amplifier has differential input circuitry, six outputs, and cable equalizing capability. It is capable of equalizing up to 1,000 feet of Belden 8281/9231 or WE724 with the appropriate equalizing cards. The amplifier has voltage mode input circuitry with a +/-4V common mode range. The amplifier is designed for use in large systems where extremely low distortion and precise timing are essential.

The Model 3403V Clamping Distribution Amplifier is a general purpose unit providing differential input, six outputs, clamping and cable equalizing capability. It is capable of equalizing up to 1,000 feet of Belden 8281/9231 or WE724 with appropriate equalizer cards. The amplifier has current mode input circuitry, which provides an extremely high common mode range of +/-30V.

The Model 3407 Subcarrier Distribution Amplifier is designed for installations where phase control and/or level stabilization of color subcarrier are required. The 3407 regenerates color SC on zero crossings and provides 360° of highly stable phase adjustment. Output level is adjustable for nominal 1V or 2V operation. Input circuitry is identical to Model 3401V.

The Model 3410 Pulse Distribution Amplifier regenerates and shapes tv pulses, and selectively provides stable delay adjustments from 400ns to 3.5ns. It is designed to operate with nominal pulse levels of 1V to 4V. The amplifier provides normal outputs when fed with as much as 1000 feet of Belden 8281/9231 or WE724 cable. The amplifier's current mode input amplifier is identical to the Model 3411V.

The Model 3411V Linear Pulse Distribution Amplifier provides differential input, cable equalizing capability, and optional pulse shaping. The unit is specifically designed for use in television systems where pulse timing is critical; that is, installations where the SC/H phase relationship must be accurate. The amplifier has a looping current mode differential input stage with +/-30V common mode range, as does the 3410, above.

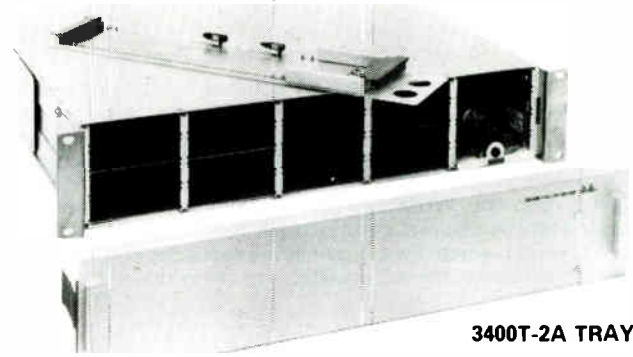
The Model 3421V Long Cable Equalizing Video Amplifier is a differential input three-stage device which can equalize up to 2,100 feet of Rg59b/u, 3,000 feet of Belden 8281, 3,900 feet of Rg 11/u or Rg 11A/u, or 5,400 feet of Belden 8213 cable with the appropriate plug-in equalizers.

The Model 3430V Video Delay Distribution Amplifier is a high performance video delay module with a differential input, six outputs, and optional cable equalization. It is capable of equalizing up to 500 feet of Belden 8281/9231 or WE724 with appropriate equalizer cards. The 3430V has a looping current mode differential input stage with +/-30V common mode range, and may be operated in either an AC or DC coupled mode. In the DC mode a +/-150mV offset adjustment is provided for system balancing.

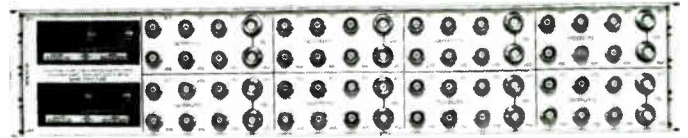
Variable Equalizer Models in the 3400 Series allow rapid adjustment with a single front card edge control. This makes the 3400 variable equalizer models good for mobile operations and situations where setup with unknown cable lengths is required.

3400 Series Distribution Amplifiers

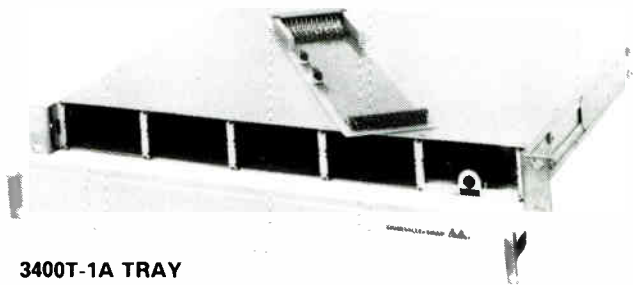
3400 Utility video distribution amplifier	\$255.00
3401V General purpose video distribution amplifier	375.00
3402V-A Precision video distribution amplifier	435.00



3400T-2A TRAY



3400T-2A TRAY REAR



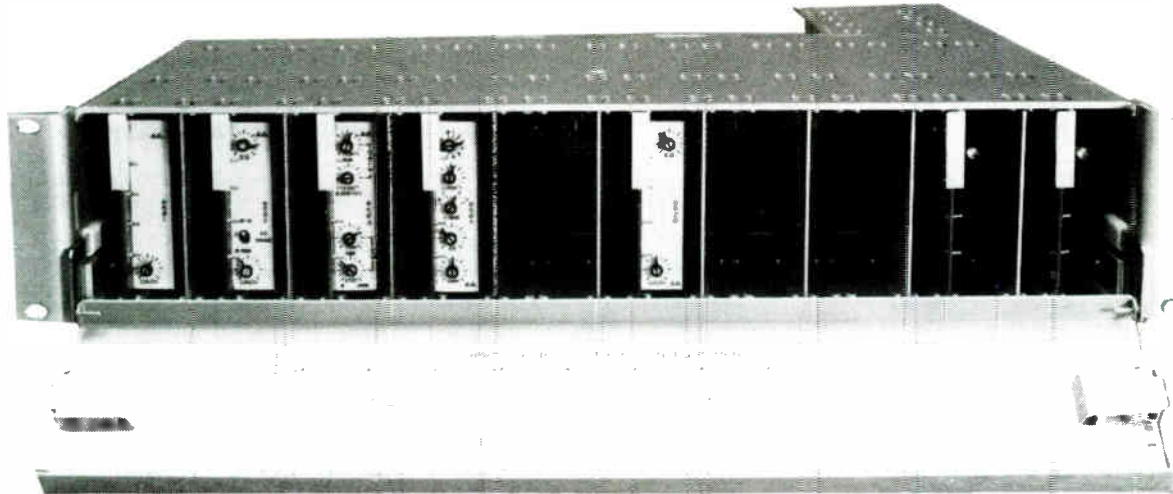
3400T-1A TRAY



3400T-1A TRAY REAR

3403V Clamping video distribution amplifier	\$535.00
3407 Subcarrier distribution amplifier	395.00
3410 Regenerating pulse distribution amplifier	395.00
3411V Linear pulse distribution amplifier	295.00
3411V-101 Pulse shaping filter	45.00
3421V Long cable equalization distribution amplifier	455.00
3430V-350 Video Delay Amplifier with up to 350ns of adjustable delay	\$775.00
3430V-550 Video Delay Amplifier with up to 550ns of adjustable delay	\$845.00
3430V-750 Video Delay Amplifier with up to 750ns of adjustable delay	\$895.00
3400T-1A 3400 DA tray (1 RU) housing up to four distribution amplifiers, power supply, module extender	\$800.00
3400T-2A 3400 DA tray (2 RU) housing up to eight distribution amplifiers, power supply, module extender	\$950.00
3400T-1B 3400 DA tray (1 RU) housing up to eight 3421V distribution amplifiers, power supply, module extender	\$800.00
3400-EX1 Module extender for 3400	\$75.00

Note: Two instruction manuals are supplied for each type of amplifier.



**8500 SERIES
 AUDIO/VIDEO DISTRIBUTION AMPLIFIERS**

The 8500 Series is a new range of video and audio distribution amplifiers. These new DA's feature both high performance and low cost as a result of innovative engineering coupled with advanced manufacturing techniques.

All 8500 Series models feature differential inputs with six outputs. Circuit building blocks such as input amplifiers, output amplifiers, and voltage regulators have been reduced to individual hybrid integrated circuits which provide improved performance, better unit-to-unit consistency, and ease of maintenance over conventional discrete designs.

Video DA's include the 8501, a basic non-equalizing DA; the 8502, an equalizing DA with dual range (0-500' and 500'-1000') variable equalizer; the 8503, an equalizing DA with precision stepped equalization (0, 100', 200', ... 1000') plus vernier trim (0-125'); the 8504, a delay DA capable of up to 300ns delay (up to 1.1µs with optional plug-ins); and the 8505, a field DA which combines long cable eq (up to 3000' of 8281) and a two speed clamp. The line also includes the 8520, a pulse DA.

The 8551 is a high performance voltage-mode audio DA. It has an active, balanced hi-z input (input Z > 40K ohms) and six active, balanced lo-z outputs (output Z < 50 ohms). The 8551 will accommodate signal levels to +24dBu; SNR is greater than 110dB.

8500 SERIES

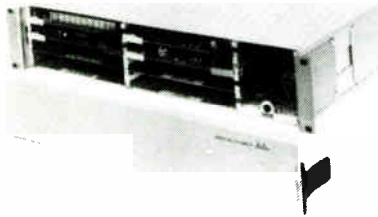
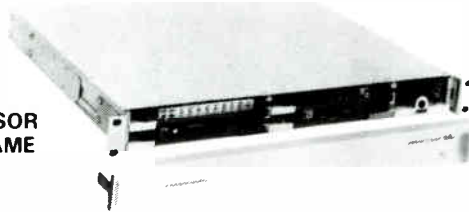
Model	Description	Price
8500T1-120	1 RU Video Tray (120V PS)	\$650.00
8500T1-240	1 RU Video Tray (240V PS)	650.00
8500T2-120	2 RU Video Tray (120V PS)	795.00
8500T2-240	2 RU Video Tray (240V PS)	795.00
8500PS-120	Backup PS for 8500T2-120	250.00
8500PS-240	Backup PS for 8500T2-240	250.00
8500EX	Extender Card	75.00
8501	Video DA	175.00
8502	Equalizing VDA (8281)	285.00
8502-RG59	Equalizing VDA (RG59)	285.00
8502-SPL	Equalizing VDA (Special)	285.00
8503	Precision VDA (8281)	395.00
8503-RG59	Precision VDA (RG59)	395.00
8504	Delay DA (w/8281 EQ)	450.00
8504-RG59	Delay DA (w/RG59 EQ)	450.00
8504-D300	300ns Delay Submodule	TBA

Model	Description	Price
8504-D500	500ns Delay Submodule	TBA
8504-D800	800ns Delay Submodule	TBA
8505	Field VDA (8281)	\$425.00
8505-RG11	Field VDA (RG11)	425.00
8505-SPL	Field VDA (Special Cable Types)	425.00
8520	Pulse DA	250.00
8520-EQ1	EQ Submodule (8281)	TBA
8520-EQ2	EQ Submodule (RG59)	TBA
8520-RGEN	Pulse Regen. Submodule	TBA
8550T1-120	1 RU Audio Tray (120V PS)	695.00
8550T1-240	1 RU Audio Tray (240V PS)	695.00
8550T2-120	2 RU Audio Tray (120V PS)	875.00
8550T2-240	2 RU Audio Tray (240V PS)	875.00
8550PS-120	Backup PS for 8550T2-120	350.00
8550PS-240	Backup PS for 8550T2-240	350.00
8551	Audio DA	275.00

3220-LC2 COMPLETE UNIT



**3240-10 VIDEO PROCESSOR
 IN ONE RACK UNIT FRAME**



3240-20 VIDEO PROCESSOR



3274A



**3274A RACK MOUNT
 REMOTE CONTROL PANEL**

Model 3220 Linearity Corrector

- 3220-LC1** Assembly in 1-RU tray, power supply, one 3220 module, AC line cord, remote connector, module extender, two instruction manuals **\$2025.00**
- 3220-LC2** Assembly in a 1-RU tray, power supply, two 3220 modules, AC line cord, remote connector, module extender, two instruction manuals **3020.00**
- 3220 NTSC Linearity Corrector Module** **995.00**

The Model 3220 Linearity Corrector compensates for differential gain and differential phase non-linearities of visual television transmitters or other video systems. Whether used alone, or as an accessory to the 3240 Video Processor, the Linearity Corrector features:

- Differential phase correction • Differential gain correction • Operate or bypass modes • Four adjustment steps in gain and phase • Threshold and slope step adjustments • Negligible adjustment interaction

Model 3240 Video Processing Amplifier

- 3240-10** Video Processor in 1-RU tray, AC power cord, module extender, two instruction manuals **\$4795.00**
- 3240-20** Video Processor in 2-RU tray, two AC power cords, module extender, two instruction manuals **4995.00**
- 3240-201** Pulse DA-1A module; Option-202 may not be used . . . **995.00**
- 3240-202** Pulse DA-2 module; Option-201 may not be used . . . **495.00**
- 3240-203** Video AGC module; Option-204 may not be used . . . **895.00**
- 3240-204** VIR AGC module; Option-203 may not be used . . . **995.00**
- 3240-205** 3220 Linearity Corrector; Options-206-207 may not be used **995.00**
- 3240-206** Relay bypass module; Option-205 may not be used . . **295.00**
- 3240-207** External Reference module; Option-205 may not be used **995.00**
- 3240-208** NTSC Pulse DA-3 **725.00**
- 3240-209** NTSC Color Bar Gen. Submodule **470.00**
- 3240-101** Fade-to-black control with 8 meters (26') connecting cable **465.00**
- 3240-102** Console type Remote Control panel with 8 meters (26') of connecting cable. Option-103 may not be used **525.00**
- 3240-103** Rack mounting Remote Control panel with 8 meters (26') of connecting cable. Option-102 may not be used **525.00**
- 3240-104** Delegate Remote Control panel with one meter (3.3') of connecting cable. Options-101 or -102 may also be used **695.00**
- 3240-105** Console type Remote Control parts kit with 8 meters (26') of connecting cable **275.00**

The Model 3240 Video Processing Amplifier is a high performance sync and blanking regenerative amplifier designed for signal processing in studio, master control, remote, and transmitter locations.

Features

- SC/H phasing • Full regeneration of sync and burst • Adjustable blanking width • Soft and hard clippers • Cable equalization option • Selectable line deletions: 10-21 • Sin² pulse edges • Color black output option • Optional accessories

The basic 3240-10 system is a fully functional processing amplifier, available in one rack unit (RU = 1.75") height. Controls are available on the card edge or at a remote control point.

The compact and rugged construction, coupled with low power consumption and wide supply voltage range, make it ideal for remote van applications. All active components are accessible from the front of the rack.

Conservative ratings, and a sealed air design that keeps contamination out, will assure years of trouble free service.

The expandable 3240-20 system in the two-RU frame contains four additional cells for accessories. The accessories are plug-in modules that complement the basic processor. The frame has been prewired to accept the accessories, and power is supplied from the 3200A Power Supply.

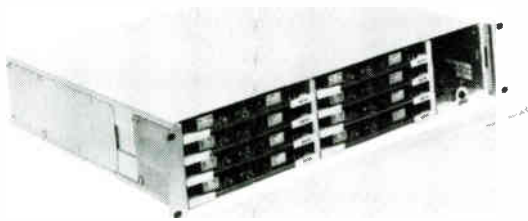
Model 3274A Borderline Generator

- 3274A-10** Borderline Generator in 1-RU tray, power supply, AC line cord, module extender, two instruction manuals, and a 1.75"H x 19"W (4.45 x 48.3cm) control panel with 8m (26') of control cable. **3274A-10** **\$3995.00**
- 3274A-11** Borderline Generator in 1 RU tray, power supply, AC line cord, module extender, two instruction manuals, and a 2.25"H x 6.95"W (5.72 x 17.6cm) control panel with 8m (26') of control cable. **3274A-11** **\$3995.00**
- 3274A-101** Nonsynchronous Detector submodule **255.00**
- 3274A-102** Matte Insert Colorizer module **925.00**

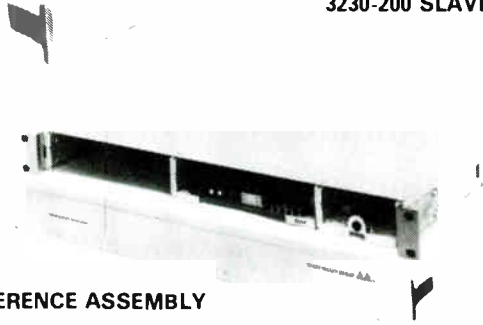
The Model 3274A Borderline Generator is a caption inserting device normally installed at the output of studio production switching systems.

Features

- External matte • Complete downstream keyer • Matted inserts • Three modes of caption enhancement • Insert fade-in and fade-out operation • Optional matte colorizer • Optional non-sync detector



3230-200 SLAVE FRAME



3230-100 REFERENCE ASSEMBLY

Model 3230 Isophasing System

3230-100 Reference Assembly in 1-RU tray, AC power cord, module extender, two instruction manuals. The system can drive up to four slave assemblies (3230-200) and up to 32 isophasing amplifiers (3230-201). **\$1495.00**

3230-200 Slave Tray with cells for eight 3230 modules, 3200 power supply, three 24" coax cables, and AC line cords. A maximum of four 3230-200's may be ordered with one 3230-100. **875.00**

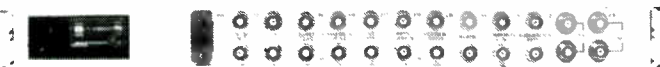
3230-201 3230 Isophasing Distribution Amplifier (one); maximum is eight per slave assembly, 32 per system. **855.00**

3230-205 Remote indicator panel for up to 16 isophasing DA's in two trays. Two maximum per system. Eight meters (26') of cable included. **385.00**

The Model 3230 Isophasing System provides automatic video delay as part of a precision distribution amplifier.

The 3230 distribution system automatically adjusts the timing of input signals for precision color phase timing at the input of a switching or mixing center.

The system will remove daily drifts and reduce the usual source timing requirements to coarse timing. The automatic timing does not effect the critical subcarrier horizontal relationship specified by RS170A.



3252A TRAY REAR

Model 3252A Genlocking Sync Pulse Generator

3252A-SG1 Dual sync system consisting of two 3252A Sync Generators with power supplies and Pulse DA-1A, 3257A Automatic Changeover Switch with power supply, module extender, remote connectors, and two instruction manuals. **\$12,740.00**

3252A-SG2 Dual sync system consisting of two 3252A Sync Generators with power supplies and Pulse DA-2, 3257A Automatic Changeover Switch with power supply, module extender, remote connectors, and two instruction manuals. **11,740.00**

3252A Single Sync Generator, power supply, module extender, remote connector, and two instruction manuals. **4250.00**

3252A-201 Pulse DA-1A module **995.00**

3252A-202 Pulse DA-2 module **495.00**

Note: One Pulse DA (DA-1A or DA-2) is required for operation.



3256A TRAY REAR



3257A TRAY REAR



3258 FRONT PANEL



3258 TRAY REAR

Model 3256A Non-Genlocking Sync Pulse Generator

3256A Tray with modules, power supply, AC line cord, remote connector, module extender, two instruction manuals. **\$1995.00**

3256-201 Pulse DA-1A with sin² pulses, two color black outputs and test output. **995.00**

3256-202 Pulse DA-2 with ramp shaped pulses, and two color black outputs. **495.00**

3256-213 Encoded Subcarrier module; converts the slave sync generator to a master sync generator. **365.00**

Note: One Pulse DA (DA-1A or DA-2) is required for operation.

Model 3257A Automatic Changeover Switch

3257A Rack mounted switching matrix, power supply, AC power cord, remote connector, module extender, and two instruction manuals. **\$2250.00**

The Model 3257A Automatic Changeover Switch can automatically transfer between the outputs of two sync generators when a "fault" output condition is detected.

Features

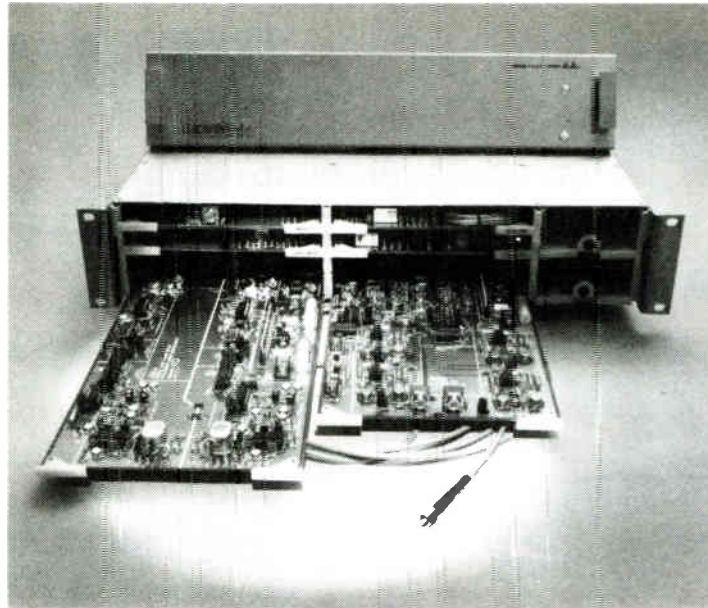
- Manual and automatic switching
- Sensing on output lines
- Mechanical and electrical transfer
- Visual and remote alarms
- Eight programmable detectors
- Unique switching application in a one-RU package.

Eight detectors in the module sense eight of the nine outputs. All detectors adjust between 2 or 4V pulses, and 1 or 2V subcarrier signals. One detector can sense a low level, steady state signal such as color black or encoded subcarrier. Any or all detectors may be switched off.

Model 3258 SC/H Phase Meter

3258 SC/H Phase Meter with power supply, module extender and two instruction manuals. **\$2995.00**

The Model 3258 SC/H Phase Meter is a measurement instrument specifically designed to aid in establishing and maintaining an SC/H phased video system. It has two video inputs plus a color frame pulse (VI) input, which are used to measure absolute SC/H phase of either video input, the difference between the two video inputs, and absolute SC/H phase of either video input with respect to an externally applied house reference color frame pulse (VI).



**3291 COMPLETE UNIT WITH
 DUAL CHANNEL AUDIO OPTION**

**Models 3290/3291 Wavelink®
 Fiber Optic Communications System**

The Model 3290 is the broadband transmission component of the Wavelink system. It provides a full wideband 10MHz channel to accommodate any signal requiring such a bandwidth, for instance high-quality video. Incoming coaxial cable can be equalized by the 3290 with the addition of an optional submodule. The 3290 consists of an LED or laser-based transmitter, a receiver employing an APD detector, and compact mounting trays built to accommodate transmit and receive modules with their power supplies. The mounting trays are available in one rack-unit (RU, 1.75 inches) or two rack-unit heights. One RU tray package houses up to three transmitter or receiver modules or one laser transmitting system. Two RU tray packages will house up to six transmitter or receiver modules, or two laser transmitting systems, plus two power supplies for back-up redundancy.

3291

The Model 3291 is the multichannel transmission component of the Wavelink system. Like the 3290, the 3291 consists of an LED or laser-based transmitter and an APD-based receiver. In addition to a 5.8MHz video channel, the 3291 includes the multiplexing capability for two optional subchannels of audio and/or data. The Model 3291 also provides adjustable equalization of incoming and outgoing coaxial signal cables as an option. All 3291 receiving systems and LED-based transmitting systems are housed in two rack-unit mounting trays. Each of the two rack-unit trays will accommodate three transmit or receive systems. Laser-based transmitting systems are housed in either one or two rack-unit trays, one laser transmitting system being accommodated by each rack-unit of height.

3291 Audio, Data, and Alarm Options

Each option consists of plug-in modulator and demodulator modules which are fully interchangeable with the other option modules. The modulator module plugs into the frame of the transmitting system, while the demodulator module is housed in the standard two rack-unit frame used in the receiving system. Audio options use a unique

FM-on-FM modulation scheme to enhance the signal-to-noise performance. The baseband audio signals are individually preemphasized and modulated at 100kHz; one channel is then frequency modulated on a 9.8MHz carrier, and the other (dual audio systems) on an 8MHz carrier.

For the data option, serial asynchronous data (up to 20kbits/second) is accepted at the data modulator via an RS232 interface. The data is bandlimited to 500kHz to limit the spectral width of the modulator output, and then FM modulated on a 9.8MHz carrier. The audio/data option combines the features of the single audio and data options. Audio specifications are the same as for the dual audio option, and the data specifications remain unchanged. The GV43 audio option supports transmission of two channels of audio on carriers of 5.8MHz and 6.4MHz for common carrier applications; and 6.2MHz and 6.8MHz for satellite link applications.

Before transmission, each option channel is summed with the video channel on the exciter or LED transmitter module, and the resulting waveform is frequency modulated on a carrier of 24MHz. At the receiver the FM signal is demodulated and separated into its video, audio, and/or data components. The demodulator modules perform further FM demodulation and baseband filtering to restore the original audio or data signals. For the dual audio and the audio/data options, the audio output amplifier may be configured for a 600 ohm (20 dBm) or low impedance (50 ohm) balanced output. For the single audio option a choice of 600 ohm, 150 ohm, or a low impedance (50 ohm) balanced output is provided. The data output is available via an RS232-compatible interface. An optional alarm provides relay closures if a video input at the transmitter becomes disconnected, an optical carrier is absent at the receiver, or a redundant power supply fails.

Repeaters

Laser-based 3290/91 repeaters allow transmission distances to be greatly extended.

MODELS 3290/3291 WAVELINK® (Cont'd)

3290 Transmitters, Repeaters and Receivers

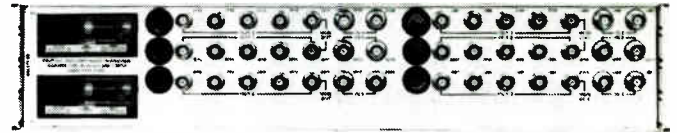
3290-201	830 NM LED Transmitter Module	\$ 1,200.00
3290-10L	830 NM Laser Transmitter	5,750.00
3290-301	1300 NM LED Transmitter Module	3,300.00
3290-10P	1300 NM Laser Transmitter, 1 RU	9,800.00
3290-20P	1300 NM Laser Transmitter, 2 RU	19,390.00
3290-1SP	1300 NM Single-Mode Laser Transmitter	12,300.00
3290-1RL	830 NM Laser Repeater	6,000.00
3290-1RLK	830 NM Laser Repeater w/Monitor Out	6,500.00
3290-1RP	1300 NM Laser Repeater	11,000.00
3290-1RPK	1300 NM Laser Repeater w/Monitor Out	11,500.00
3290-1RSP	1300 NM Single-Mode Laser Repeater	13,500.00
3290-1RSPK	1300 NM Single-Mode Laser Repeater w/Monitor	14,000.00
3290-202	830 NM APD Receiver Module	1,200.00
3290-302	1300 NM APD Receiver Module	2,300.00

3290 Options

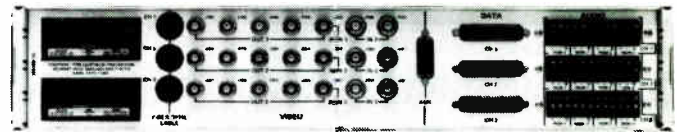
3290-10	1 RU LED Tray, 1 AC Power Supply	\$725.00
3290-20	2 RU LED Tray, 1 AC Power Supply	895.00
3290-21	2 RU LED Tray, 2 AC Power Supplies	1,140.00
3290-22	2 RU Laser Tray, 1 AC Power Supply	995.00
3290-PS1	AC Power Supply	245.00
3290-DCPS-12	12V DC Power Supply	600.00
3290-DCPS-24	24V DC Power Supply	600.00
3290-DCPS-48	48V DC Power Supply	600.00
3290-230	Alarm Card	450.00
3290-EX3	3290 Extender Card	100.00
3290-001	3 Meter Fiber Optic Test Cable w/Conn	65.00

3291 Transmitters, Repeaters and Receivers

3291-201	830 NM LED Transmitter Module	\$ 1,400.00
3291-10L	830 NM Laser Transmitter	5,950.00
3291-301	1300 NM LED Transmitter Module	3,500.00
3291-10P	1300 NM Laser Transmitter, 1 RU	10,000.00
3291-20P	1300 NM Laser Transmitter, 2 RU	19,790.00
3291-1SP	1300 NM Single-Mode Laser Transmitter	12,500.00
3291-1RL	830 NM Laser Repeater	6,000.00
3291-1RLK	830 NM Laser Repeater w/Monitor Out	6,500.00
3291-1RP	1300 NM Laser Repeater	11,000.00
3291-1RPK	1300 NM Laser Repeater w/Monitor Out	11,500.00
3291-1RSP	1300 NM Single-Mode Laser Repeater	13,500.00
3291-1RSPK	1300 NM Single-Mode Laser Repeater w/Monitor	14,000.00
3291-202	830 NM APD Receiver Module	1,400.00
3291-302	1300 NM APD Receiver Module	2,500.00



3290 2 RU TRAY REAR



3291 2 RU TRAY REAR

3291 Options

3291-20	2 RU LED Tray, 1 AC Power Supply	\$ 895.00
3291-21	2 RU LED Tray, 2 AC Power Supplies	1,140.00
3291-22	2 RU LED Laser Tray, 1 AC Power Supply	995.00
3291-PS1	AC Power Supply	245.00
3291-DCPS-12	12V DC Power Supply	600.00
3291-DCPS-24	24V DC Power Supply	600.00
3291-DCPS-48	48V DC Power Supply	600.00
3291-230	Alarm Card	450.00
3291-EX3	3291 Extender Card	100.00
3291-001	3 Meter Fiber Optic Test Cable w/Conn	65.00
3291-203	Single Audio Modulator	550.00
3291-204	Single Audio Demodulator	550.00
3291-205	Dual FM Audio Modulator	995.00
3291-206	Dual FM Audio Demodulator	995.00
3291-207	RS-232-C Data Modulator	500.00
3291-208	RS-232-C Data Demodulator	500.00
3291-209	Audio/Data Modulator	995.00
3291-210	Audio/Data Demodulator	995.00
3291-215	GV43 Dual Channel Audio Modulator	1,500.00
3291-216	GV43 Dual Channel Audio Demodulator	2,000.00
3291-115	Filter for GV43 Dual Audio Modulator	250.00
3291-116	Filter for GV43 Dual Audio Demodulator	250.00
3291-117	Filter Bypass	100.00

CLIFFORD B. HANNAY AND SON, INC.

600 East Main St.

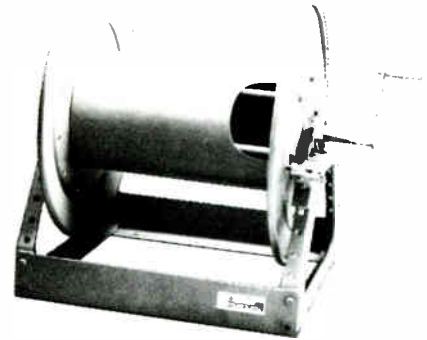
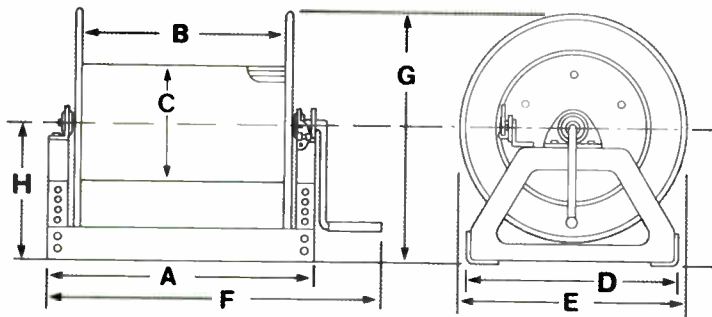
Westerlo, NY 12193

(518) 797-3791

REELS

Manual Rewind Reels For Cable Storage

Series C-3200



SERIES C-3200

Series C-3200 reels are designed for storage of long lengths of electric cable. A 4-1/2" x 5-1/2" opening in the reel drum is provided for insertion of the cable to initiate winding. Equipped with a spring-actuated pin lock.

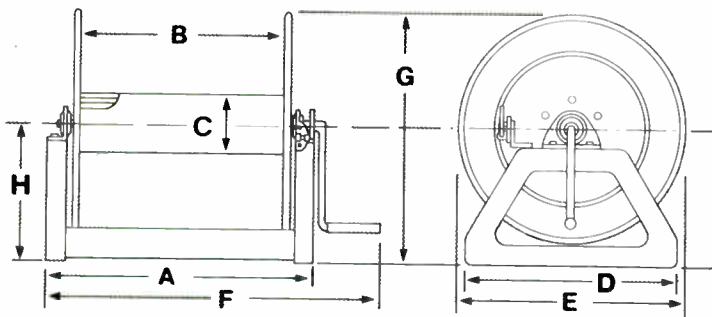
Rewind: Direct crank rewind. Crank attaches to reel axle and is removable.

Options: Upon request, reels can be supplied with "B" dimension other than shown and with disc sizes ("E" dimension) in other diameters.

Divider discs, as shown on Page 11, can be placed at almost any point on the drum you specify. Specify spacing of discs on your order.

See chart below for specifications.

Series C-1500



SERIES C-1500

Series C-1500 reels are designed for storage of shorter lengths of electric cable. A 7/8" x 1-3/4" opening in the reel drum is provided for insertion of the cable to initiate winding.

Rewind: Direct crank rewind. Crank is permanently attached to axle.

Options: Reels with "B" dimension other than those shown in the chart are available upon request.

Divider discs, as shown on Page 11, can be placed at any point on the drum you specify. Specify spacing of discs on your order.

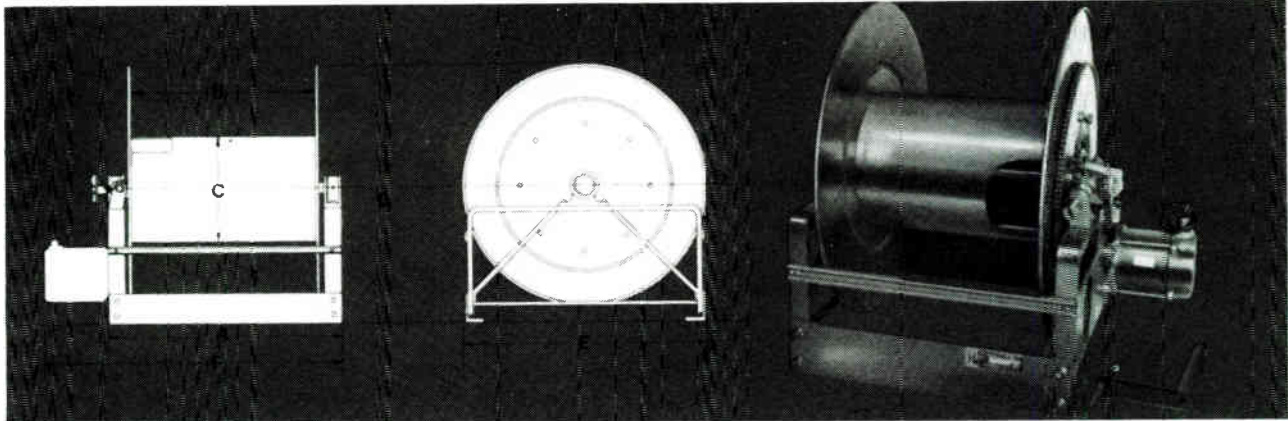
See chart below for specifications.

To Order: Specify complete Model Number. Give size, length, type and weight of cable. Indicate how reel will be installed and used.

Cable Capacity of Reel in Feet							Model Number	Reel Dimensions in Inches E, F, and G are Overall Dimensions								Approx. Wt. Lbs. Crank Rewind	
O.D.	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"		A	B	C	D	E	F	G	H	NET	SHIP
	1000	450	225	150	100		C3218-24-26	14 1/2	9 1/2	10 1/2	23 1/8	24	21 1/2	27	15	64	89
	2200	1000	500	325	200		C3228-24-26	25	20	10 1/2	23 1/8	24	32	27	15	80	105
	3000	1300	650	425	275		C3234-24-26	31	26	10 1/2	23 1/8	24	38	27	15	90	125
	4300	2000	975	650	425		C3246-24-26	43	38	10 1/2	23 1/8	24	50	27	15	126	158
	3900	1700	900	550	375		C3228-30-32	25	20	10 1/2	23 3/8	30	32	30 1/2	15 1/2	100	135
	5000	2300	1100	700	500		C3234-30-32	31	26	10 1/2	23 3/8	30	38	30 1/2	15 1/2	107	145
	3000	1350	675	400	375		C3224-32-34	20 1/2	15 1/2	10 1/2	23 3/8	32	27 1/2	32 1/2	16 1/4	90	125
	7500	3400	1700	1000	950		C3246-32-34	43	38	10 1/2	23 3/8	32	50	32 1/2	16 1/4	130	165
	1400	325	150	75			C1514-17-18	11	6	6 3/4	14	16 1/2	15 1/2	18	9 3/8	23	31
	2600	650	300	150			C1520-17-18	17	12	6 3/4	14	16 1/2	21 1/2	18	9 3/8	25	33
	4000	1000	450	225			C1526-17-18	23	18	6 3/4	14	16 1/2	27 1/2	18	9 3/8	27	37
	5000	1200	550	275			C1530-17-18	27	22	6 3/4	14	16 1/2	31 1/2	18	9 3/8	29	41

600 East Main St.
Westerlo, NY 12193
(518) 797-3791

SERIES C Manual and Power Rewind Reels for Cable Storage



These heavy-duty reels are designed for storage of all types of electric cable. A 4½" x 5½" opening in the drum permits end of cable to be inserted to initiate winding.

Rewind: Choose gear-drive crank rewind, or chain and sprocket drive powered by A.C. or D.C. electric motor, compressed air motor or hydraulic motor. (See Page 1.)

Options: Upon request, reels can be supplied with "B" dimension other than shown and with disc sizes ("E" dimension) in other diameters.

Divider discs, as shown on Page 11, can be placed at almost any point on the drum you specify. Specify spacing of discs on your order.

A 15½" diameter drum, in place of the standard to accommodate a bending radius of 7¾" or less, is available on all models. With this option the reel cable capacity is reduced.

To Order: Specify complete Model Number and include proper prefix for rewind wanted. Specify size, length, type and weight of cable. Specify A.C. or D.C., voltage and phase for electric rewind models. Specify standard or 15½" diameter drum. Give spacing for divider discs, if required. Indicate how reel will be installed and used.

Note: Be sure to specify all options you require when ordering.

Cable Capacity of Reel in Feet						Model Number *	Reel Dimensions in Inches E, F, and G are overall Dimensions									Approx. Wt. Lbs. Crank Rewind		
O.D.							A	B	C	E Crank/Elec.	E Air	E Hyd.	F Crank	F Elec.	F Air/Hyd.	G	Net	Shipping
¼"	½"	¾"	1"	1¼"	1½"													
3500	900	350	210	125	70	C24-19-21	20½	15½	10½	19	20½	19	21½	27½	24½	21	80	120
4800	1200	475	300	170	90	C28-19-21	25	20	10½	19	20½	19	26	32	29	21	84	124
6700	1600	675	380	250	170	C24-23-24	20½	15½	10½	23	24½	23	21½	27½	24½	24	90	130
8700	2000	890	500	325	210	C28-23-24	25	20	10½	23	24½	23	26	32	29	24	94	134
6000	1450	600	340	175	110	C20-25-26	16½	11½	10½	25	26½	25	17½	23½	20½	26	86	126
8000	1950	800	475	250	160	C24-25-26	20½	15½	10½	25	26½	25	21½	27½	24½	26	93	133
—	2500	1000	625	325	210	C28-25-26	25	20	10½	25	26½	25	26	32	29	26	100	140
7200	1700	700	400	225	175	C18-30-31	14½	9½	10½	30	31½	30	15½	21½	18½	31	96	136
—	2400	1100	575	350	260	C22-30-31	18½	13½	10½	30	31½	30	19½	25½	22½	31	100	140
—	3600	1500	900	550	375	C28-30-31	25	20	10½	30	31½	30	26	32	29	31	110	150

*** WHEN ORDERING POWER REWIND MODELS, PREFIX MODEL NO. WITH:**
A = AIR REWIND
E = ELECTRIC REWIND
HD = HYDRAULIC REWIND

ADD 10" to E dimension when crank is in rewind position.

NOTE: Weights shown in chart are for crank rewind models. **ADD** these amounts for power rewind models:

	NET	SHIP
ELECTRIC	40	45
AIR	25	30
HYDRAULIC	25	30

To Order: Specify Model Number and indicate if reel is to be equipped with handle. Specify Gauge/No. of Conductors, length and type of cable for factory installation.



Model C-10-17-19 Cable Storage Reel.

A compact, lightweight crank rewind reel, without collector rings, for cable storage. Rewind handle is permanently attached to disc.

Cable Capacity of Reel in Feet				Model Number	Reel Dimensions in Inches E, F and G are overall Dimensions					Approx. Wt. Lbs.	
O.D.					B	C	E Crank	F Crank	G	Net	Shipping
250	375	500	750								
1150	300	200	100	C10-17-19 W/Handle	5	6	18	10	20½	28	43
1150	300	200	100	C10-17-19 W/O Handle	5	6	18	10	17½	21	36

To Order: Specify Model Number and indicate with or without handle.

HARRIS CORPORATION

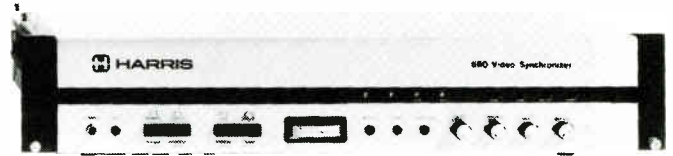
HARRIS VIDEO SYSTEMS OPERATION

967 Sterlin Road
Mountain View, CA 94043
(415) 969-9100

FRAME SYNCHRONIZERS/ TIME BASE CORRECTORS



HVS 632



HVS 690

HVS 690 Frame Synchronizer and Time Base Corrector STANDARD FEATURES:

- Freeze frame or freeze field for production versatility
- Dropout compensation to clean up bad tapes
- Line-by-line velocity compensation with look-ahead for high accuracy correction with direct signals
- Preset proc amp level controls for complete control over input video
- Hysteresis circuitry for smooth signal handling
- Transparent signal performance for perfect originals and clean, crisp dubs
- Industry standard components to speed maintenance
- 3.5 inch height to conserve rack space, or to make tabletop use more convenient
- Auto-freeze when incoming signal is lost to reduce output video disturbance
- Automatic mode switching between stable and unstable inputs to reduce operator set-up time
- Built-in TBC for heterodyne and direct signals for complete versatility with all formats

Part #	Product	Price
7-16154-01	HVS 690	\$14,500.00
1-10440-01	Quad Head Switch Amplifier	295.00
1-11203-00	FM Sampler for D.O.C.	95.00
1-18244-01	C-MOD (option)	350.00
1-18253-01	C-MOD (retrofit)*	500.00
7-11245-01	Fiberglass Shipping Case	275.00
5-14113-01	Operators Manual	50.00
5-14114-01	Maintenance Manual	75.00
1-18140-01	Spare Parts Kit	975.00

HVS 550VT Digital Time Base Corrector

The Harris 550VT operates with all capstan servo heterodyne video recorders, from the older, non-subcarrier feedback machines to the new highband VCRs. 3.58 feedback and process modes are both available to offer superb performance over a wide range of VTRs.

For easy editing, the 550VT will handle 10X shuttle speeds. And its full remote panel is small enough so that two can fit side-by-side in a 1-3/4" rack space.

The 550VT's 8-bit, 4xfsc architecture provides virtually-transparent signal performance, while its 16-line memory and Automatic Vertical Advance handles large gyro errors with ease. A built-in proc amp, plus RS-170A sync output circuitry, allow complete operator control of video signals and gen-lock of external equipment.

VARIABLE TRACKING OPTION FOR 540/550 TBCs

The new Variable Tracking (VT) option allows either TBC to be used with slow-motion heterodyne VTRs such as the Sony BVU 820 with its Dynamic Tracking mode. The 540VT and 550VT will dynamically track from 1x reverse play speed to 3x forward play speed and will hold color lock to $\pm 5x$ shuttle speed. In addition, the 540VT and 550VT will enable the VTR to present a stable picture in "Pause" as well as present a viewable picture in fast forward and rewind modes ($\pm 40x$ normal speed).

Part #	Product	Price
7-18000-02	HVS 540 (16L-feedback mode only)	\$6450.00
	HVS 540VT (16-L)	6950.00
	HVS 550VT (16-L)	8200.00
7-18478-01	Remote Control (540/550)	975.00
5-18043-01	Operators/Maintenance Manual (540/550)	75.00
	Interconnect harness compatible with the Sony BVU 820	250.00

HVS 632/DNR NTSC

Frame Synchronizer and Time Base Corrector

Frame Synchronizer and Time Base Corrector which offers superb performance with outstanding flexibility. It operates with time base stable direct color, and monochrome signals and also time base unstable heterodyne or monochrome signals. The unit is shipped as a stand-alone unit with manuals and rack slides.

- Stable or unstable inputs
- "Dual Mode" hot switching
- Smooth handling of odd field edits
- Compensation for lost video
- Picture freeze
- High noise immunity
- Exceptional write clock range
- RGB mode
- Digital interface
- Convenient front panel operation
- Easy maintenance

Part #	Product	Price
7-18482-01	HVS 632/DNR	\$21,800.00
7-13106-03	Compress/Positioner	4500.00
TBA	Spare Parts Kit	2500.00
5-16356-01	Maintenance Manual	125.00
5-16357-01	Operators Manual	50.00
7-16212-01	Remote Control	2000.00
7-16391-01	Digikey	4500.00
1-14745-01	Rackmount for C/P and/or Remote Control Panel	75.00
	HVS 632C (RGB)	24,800.00
	HVS 632/DNR Package (includes C/P, Digikey and Remote Control)	27,990.00

VT-74

Prices and Specifications Subject to Change Without Notice.



**HUGHES ELECTRONIC
DEVICES CORPORATION**
P.D. Box 1985
Grass Valley, CA 95945 USA
(916) 273-9524 Telex 364412

AUDIO/VIDEO DISTRIBUTION

ADA-200/ADA-201 Audio Distribution Amplifier

- Differential Input
- Balanced Outputs
- Six Outputs
- Ultra Low THD
- Wide Range
- Modular

The ADA-200 Audio Distribution Amplifier is a modular, high-performance amplifier designed to meet the rigorous requirements of the broadcast industry.

Each module has tandem output stages containing LF256H operational amps and MPS-U05 /U55 output transistors in tracking loops, providing very low THD and high output drive capacity. The amplifier response profile allows distribution of SMPTE time code without modifications. The ADA-200 can be used with ADF-200 or AVF-150 frames, and APS-155 power supplies.

ADA-200 \$245.00
ADA-201 245.00

ARA-202/ARA-203 Audio Distribution Amplifier

- Remote Gain
- Differential Input
- Balanced Outputs
- Six Outputs
- Wide Range
- Modular

The ARA-202 Remote Gain Audio Distribution Amplifier provides remote gain adjustment using a single 10 K potentiometer to ground. Internal jumpers provide ± 3 dB, ± 6 dB, or ± 9 dB remote ranges in addition to the local ± 3 dB adjustment. Differential input, and six balanced outputs with advanced, tandem tracking loops in the output stages, provide very low THD and transparent signal distribution. The ARA-202 may be used in any HEDCO Audio Distribution Frame and/or mixed with standard Audio Line Amplifiers.

ARA-202 \$325.00
ARA-203 325.00

VDA-100 Video

- Differential Looping Input
- Six Identical Outputs
- High Performance
- Multi-Purpose DA

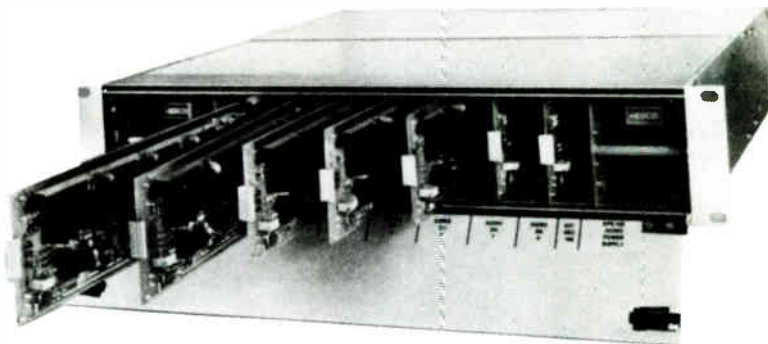
EDA-102 Equalizer

- Up to 1000 feet of 8281 Cable
- Four Pole Equalization
- Six Identical Outputs
- Operator-proof

The EDA-102 has a plug-in, four-pole cable submodule (CEQ-100) which allows four individual peaking circuits to compensate for various types of cable. The equalizing submodule has a security clip which prevents misadjustment of response on an installed EDA. Gain and DC adjustments are accessible for local operations.

The EDA-102 plugs into the standard VDF-100 or AFV-150 frame, and can be mixed with other video or pulse amplifiers in the same frame.

\$285.00



CDA-104 Clamper

- Back Porch Clamp
- Differential Looping Input
- Six Identical Outputs
- Optional Cable
- Equalizer

The CDA-104 clamping DA provides up to 45 dB of hum rejection with a fast forward clamp pulse derived from input composite video. For set-up, clamping may be bypassed with a front panel switch. The CEQ-100 cable equalization submodule may be added to the CDA-104 clamping DA to provide additional compensation for up to 1000 feet of 8281 cable. The front panel gain control provides level adjustments without affecting response or clamping. The CDA-104 can be mixed with other video or pulse DA's in the same frame.

\$325.00

Option: CEQ-100 1000 Foot Cable Equalizer

SCA-105 Subcarrier

- Differential Looping Input
- Phase Adjustable
- Six Identical Outputs
- Regenerated S/C

The SCA-105 provides regenerated, low distortion subcarrier, and 360° of subcarrier phase control.

The SCA-105 has a differential input with over 80 dB hum rejection at 60 Hz. Subcarrier is switched through one of four 90° phase shifters, and a three-pole filter that recovers only the fundamental frequency. Fine phase is adjusted prior to phase shifting and filtering.

The SCA-105 uses the standard VDF-100 or the AFV-150 frame.

\$270.00

LDA-108

- Linear Low Delay
- Six Identical Outputs
- AC Coupled Input
- Looping Input

A linear pulse DA with less than 20ns transition time from loop-thru input to six outputs. Designed to complement RS-170A pulse distribution, the LDA-108 has very low group delay. A pulse presence detector with LED indicators and remote line is optional.

Useable for 1V p-p video, 2V p-p subcarrier or 4V p-p pulses. The LDA-108 uses the standard VDF-100 or AFV-150 frame.

\$165.00

Options: PPD-100 Horiz. Sync Detector, PPD-101 Vert. Sync Detector

SDA-107 Sync Strip

- Sync from Video
- Sin² Transitions
- Six Identical Outputs
- Looping Input

The SDA-107 provides output sync at 4V p-p levels with 120ns sin² transitions from any video input.

Input signals are passed through a sync strip filter submodule (SSF-100) mounted on a PDA-108 module. Sync level detector (PPD-100) indicates low level signals with local LED's and remote closure to ground.

The SDA-107 series can be mixed with other video or pulse amplifiers in the same frame.

\$215.00

Versions: SDA-107 NTSC/Horiz., SDA-117 NTSC/Vert., SDA-127 PAL/Horiz.

Frames

Each 2RU frame is prewired for easy expansion. One power supply is required for each tray. An optional, "plug-in" redundant supply is available. Separate AC inputs and CB/ switches are standard.

ADF-200 Audio frame is prewired for eight audio DA's and two APS-155 audio power supplies. **\$550.00**

AVF-150 Audio/video frame is prewired for four audio DA's, four video DA's plus two APS-155 audio power supplies. **\$575.00**

VDF-100 Video frame is prewired for eight video DA's and two VPS-154 video power supplies. **\$575.00**

Module Extender

An optional module extender, Model DEX-160, is available to provide maintenance adjustments and ease of trouble shooting. The DEX-160 may be used with all audio, pulse, and video distribution amplifiers. **\$40.00**

Power Supplies

Two types of power modules are used in the distribution equipment: APS-155 with audio equipment, and VPS-154 with video units. Each supply provides regulated outputs from selectable 115V/60 Hz or 230V/50 Hz lines.

APS-155 \$245.00
VPS-154 245.00



**HUGHES ELECTRONIC
DEVICES CORPORATION**
P.O. Box 1985
Grass Valley, CA 95945 USA
(916) 273-9524 Telex 364412

**MRC-16/4V
MRD-16/4A**

- 16 or 8 Inputs
- Up to 4 Output Buses
- Up to 4 Channels
- Audio, Video, AFV
- Dual Power Supplies
- Vert. Interval Switch
- Diff Audio In/Out
- Meets AVR-1 Specs



RCP-105 CONTROL PANEL provides four buses of 16 LED/switches. Uses single wire per crosspoint lines and closure to ground contacts. The 2RU panel requires on cable per bus.



RCP-101 CONTROL PANEL provides 16 LED/switches for control of one bus. Single wire per crosspoint lines connect through the remote connectors and activate with closure to ground.

ORDERING INFORMATION

SIZE	VIDEO	AUDIO
8 Inputs/1 Out	MRC 8/1	MRD 8/1
8 Inputs/2 Out	MRC 8/2	MRD 8/2
8 Inputs/3 Out	MRC 8/3	MRD 8/3
8 Inputs/4 Out	MRC 8/4	MRD 8/4
16 Inputs/1 Out	MRC 16/1	MRD 16/1
16 Inputs/2 Out	MRC 16/2	MRD 16/2
16 Inputs/3 Out	MRC 16/3	MRD 16/3
16 Inputs/4 Out	MRC 16/4	MRD 16/4

CONTROL PANELS

- RCP-101 Panel, 16 Inputs, 1 Bus
- RCP-105 Panel, 16 Inputs, 4 Buses
- CAB-2 Cable for RCP-101, RCP-105

OPTIONS

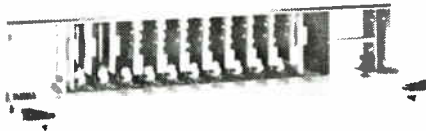
- REX-161 Extender Module
- VPS-154 Redundant Video P.S.
- APS-155 Redundant Audio P.S.

**MRI-24/2V
MRJ-24/2A**

- 16 or 24 Inputs
- 1 or 2 Buses Out
- Audio/Video/AFV
- Multiple Levels
- 2 RU Frames
- Plug In Modules
- Meets AVR-1 Specs

ORDERING INFORMATION

SIZE	VIDEO	AUDIO
16 Inputs/1 Out	MRI 16/1	MRJ 16/1
24 Inputs/1 Out	MRI 24/1	MRJ 24/1
16 Inputs/2 Out	MRI 16/2	MRJ 16/2
24 Inputs/2 Out	MRI 24/2	MRJ 24/2



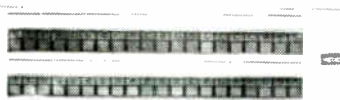
MRC/MRD 16/4 Audio/Video Routing Switchers are modular and bus oriented. The MRC/MRD switchers provide premium switching quality in either Audio, Video or AFV configurations. The MRC Video switcher features vertical interval switching based on last video plus video transparency. The MRD Audio switcher features differential inputs and outputs and operation at levels up to +240dBm.



MRC REAR PANEL is equipped with loop thru inputs and two outputs per bus. The frame is prewired for all 4 buses and has parallel control connectors for use with either the RCP-101 or RCP-105 panels. The 2 RU frame is fully equipped for dual power supplies.



MRD REAR PANEL is equipped with RDI block terminals for ease of rack wiring. Parallel control connectors allow additional levels of audio or multiple control panels. The MRD frame is wired for two ABM-8's, eight ACM-8's, 2 control logic, and two APS-155 modules.



RCP-109 CONTROL PANEL is equipped with 40 LED/switches to control one bus. Two RU panel mounts in standard 19 inch rack. May be used for video, audio or AFV control.

ORDERING INFORMATION

SIZE	VIDEO	AUDIO
24 Inputs/1 Out	MRE 24/1	MRF 24/1
32 Inputs/1 Out	MRE 32/1	MRF 32/1
40 Inputs/1 Out	MRE 40/1	MRF 40/1
24 Inputs/2 Out	MRE 24/2	MRF 24/2
32 Inputs/2 Out	MRE 32/2	MRF 32/2
40 Inputs/2 Out	MRE 40/2	MRF 40/2



MRI/MRJ 24/2 AUDIO AND VIDEO Routing Switchers provide one or two buses which are individually controlled by remote panels. The combined buffer, crosspoint, output amplifier modules completely isolate the buses and are front panel accessible. Each switcher is compact and provides auxiliary bus switching using single wire per crosspoint control.



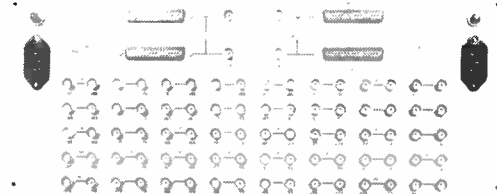
MRI REAR PANEL is prewired for 24 BNC looping inputs and dual outputs on both buses. Frame space for one VPS-154 power supply and six VSM900 video switcher modules. Dual control connectors for each bus allows looping of control to additional frames.

ROUTING SWITCHERS

**MRE-40/2V
MRF-40/2A**

- 24 to 40 Inputs
- 1 or 2 Buses Out
- Audio/Video/AFV
- Multiple Levels
- 4 RU Frames
- Dual Power Supplies
- Meets AVR-1 Specs

MRE/MRF 40/2 AUDIO AND VIDEO Routing Switchers provide one or two buses which can select from either 24, 32, or 40 buffered inputs. Each bus uses standard crosspoint and buffer modules in 8 input increments. AFV systems may be configured with up to three levels of audio. Excellent audio and video transparency using standard components.



MRE REAR PANEL is prewired for 40 BNC looping inputs and dual outputs on both buses. Frame space for up to four VPS-154 power supplies, two logic, five VBM8 buffers, and ten VCM8 crosspoint modules. Dual control connectors on each bus for looping to additional frames.

MRF REAR PANEL is prewired for 40 audio differential inputs and two differential audio outputs per bus. Frame space for up to four APS-155 power supplies, two logic, five ABM8 buffers, and ten ACM8 crosspoint modules. Dual control connectors and separate AC inputs.

RCP-111 CONTROL PANEL is equipped with 24 LED/switches to control one bus. Single RU panel mounts in standard 19 inch rack and provides single wire per crosspoint control.

CONTROL PANELS

- RCP-109 Panel, 40 Inputs, 1 Bus
- RCP-110 Panel, 32 Inputs, 1 Bus
- RCP-111 Panel, 24 Inputs, 1 Bus
- CAB-4 Cable for RCP-109, RCP-110
- CAB-3/4 Cable for RCP-111

OPTIONS

- REX-161 Extender Module
- VPS-154 Redundant Video P.S.
- APS-155 Redundant Audio P.S.



RCP-111 CONTROL PANEL is equipped with 24 LED/switches to control one bus. Single RU panel mounts in standard 19 inch rack and provides video, audio or AFV control with LED status display. HEDCO remote panels contain a minimum of electronics for operations.

OPTIONS

- REX-162 Extender Module

CONTROL PANEL

- RCP-111 Panel, 24 Inputs, 1 Bus
- CAB-3 Cable for RCP-111

MRJ REAR PANEL is prewired for 24 audio differential inputs and two differential outputs per bus. Frame space for one APS-155 power supply and six ASM900 audio switcher modules. Also has dual control connectors for each bus for AFV operation or for use with multiple panels.



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ROUTING SWITCHERS

SRB 8/1 V

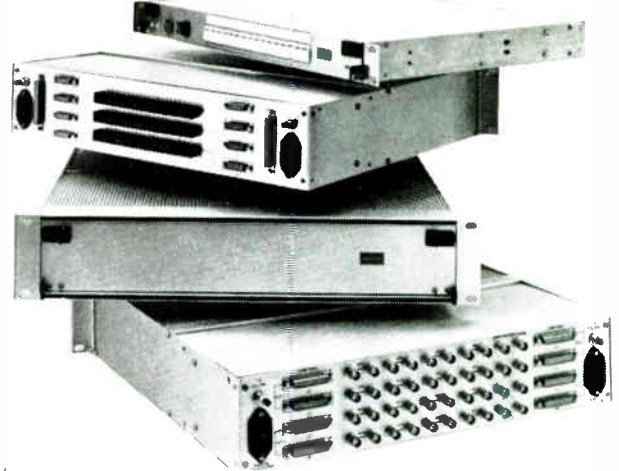
- 8 Video Inputs
- Broadcast Quality
- LED Indicators
- Single RU Frame
- Remote Option
- Meets AVR-1 Specs



SRB-8/1 VIDEO ONLY Routing Switcher is our plain vanilla unit. Frame houses one VSM-9 and one VPS-153 module with front panel access for maintenance. Local front panel displays video status on LED's. Compact rack mounting with excellent performance.



REAR PANEL shows loop thru BNC video inputs which exhibit greater than 50dB return loss. Dual video outputs have better than 0.1° diff θ . 0.1% diff G and 0.1dB response. Equipped with captive AC cord and remote plug for parallel control.



ORDERING INFORMATION

SRB-8/1 8 input, Video Only

OPTIONS

- RCP-100** Remote 8/1 Panel
- CAB-1** Cable for RCP-100
- SRX-162** Extender Module
- LCP-100** Local Control Panel



RCP-100 REMOTE PANEL has 8 LED/switches mounted in 19 inch single RU panel. Single wire per crosspoint control.

SRB-182 AFV

- 8 Video Inputs
- 8 Audio Inputs
- AFV Operation Only
- One RU Frame
- Remote Option
- Meets AVR-1 Specs



The **SRB-182 AFV** Switcher frame construction is identical to the SRB 8/1 above except for the rear panel. Audio Follow Video operation is standard and controlled locally by LED/switches mounted on the front panel. Audio response of 0.1dB from two outputs with < 0.1% THD at levels up to +24dBm over the range of 20 Hz to 20 kHz.



REAR PANEL of the SRB-182 AFV Switcher shows loop thru BNC video inputs and dual video outputs. Audio inputs and outputs are thru an RDI terminal block for ease of wiring. Equipped with captive AC cord and remote plug for parallel AFV control.

ORDERING INFORMATION

SRB-182AFV Complete 8 Input AFV

OPTIONS

- RCP-100** Remote 8/1 Panel
- CAB-1** Cable for RCP-100
- SRX-162** Extender Module
- LCP-100** Local Control Panel

SRB-281

- Dual Audio
- 8 Input Groups
- Separate Control
- Diff Audio In/Out
- Two Remote Panels
- Meets AVR-1 Specs



SRB-281 DUAL AUDIO Switcher provides two independent 8 input, dual output audio switchers in a single RU frame. Frame houses one VPS-150 power supply and two ASM-9 audio modules with fold down front panel access. LED/switches provide local control and status. Excellent audio transparency in both channels.



REAR PANEL Of the SRB-281 shows an independent set of RDI terminal blocks for each audio group. Remote operation for each group is controlled by single wire per crosspoint contact to ground, through the rear mounted connectors. Equipped with a captive AC cord and fuse protection. All audio input and output connections are balanced.

ORDERING INFORMATION

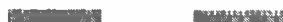
SRB-281 Dual Audio, 8 + 8 Inputs

SRB-181 Equipped as one channel

OPTIONS

- LCP-100** Local Control Panel
- RCP-102** or Remote Dual 8 + 8 Panel
- RCP-100 (2 ea.)** Remote 8/1 Panel
- CAB-1 (2 ea.)** Cable for above
- SRX-162** Extender Module

RCP-102 REMOTE PANEL has two sets of 8 LED/switches mounted in 19 inch single RU panel. Requires two CAB-1 cables.



SRB-481

- Dual Video
- 8 Input Groups
- Separate Control
- Vertical Interval
- Two Remote Panels
- Meets AVR-1 Specs

ORDERING INFORMATION

SRB-481 Dual Video, 8 + 8 Inputs

SRB-381 Equipped as one channel

OPTIONS

- RCP-102** or Remote Dual 8 + 8 Panel
- RCP-100 (2 ea.)** Remote 8/1 Panel
- CAB-1 (2 ea.)** Cable for above
- SRX-162** Extender Module
- LCP-100** Local Control Panel
- LCP-102** Local Control Panel



SRB-481 DUAL VIDEO Switcher provides two independent 8 input, dual output video switchers in a single RU frame. Frame houses one VPS-151 power supply and two VSM-9 video modules with fold down front panel access. Independent vertical interval switching on last video.



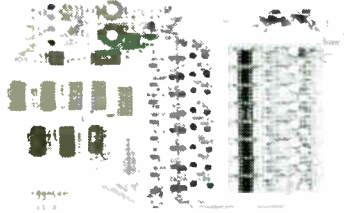
REAR PANEL of the SRB-481 shows an independent set of BNC looping inputs and dual outputs for each video group. Contact closure to ground on a single wire per crosspoint through the individual rear mounted connectors provides parallel remote control. Equipped with a captive AC cord and fuse protection.



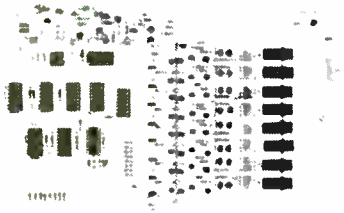
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ROUTING SWITCHERS

COMMON MODULES



ASM-900 Audio Switch Module contains 8 high impedance input buffers, 8 transistor switches, and dual balanced outputs. Levels of +24dBm and 0.1% THD with 0.1dB response over 20 to 20 kHz.



VSM-900 Video Switch Module contains 8 high impedance input buffers, 8 transistor switches, and dual 75 ohm 0.1% outputs. Switcher exhibits 0.1° diff, 0.1% diff G and 0.1B response.



VPS-152 Power Supply provides ± 24 VDC and ± 12 VDC with fold back current limiting for single rack unit frames. Line inputs can be strapped for 115V/60Hz or 230V/50Hz.

SRA 16/1 AFV

- 16 or 8 Inputs
- Video, Audio, AFV
- Built-in Breakaway
- Dual LED Indicators
- Single RU Frame
- Meets AVR-1 Specs

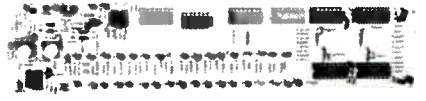
ORDERING INFORMATION
SRA 16/1AFV Complete 16 Input AFV

- SRA 16/1A Only 16 Audio Inputs
- SRA 16/1V Only 16 Video Inputs
- SRA 8/1AFV Only 8 Inputs AFV
- SRA 8/1A Only 8 Audio Inputs
- SRA 8/1V Only 8 Video Inputs

- OPTIONS**
- RCP-121 Remote 16/1AFV Panel
 - CAB-2 Cable for RCP-121
 - SRX-162 Extender Module
 - LCP-101 Local Control Panel
 - LCP-121 Local Control Panel with audio breakaway



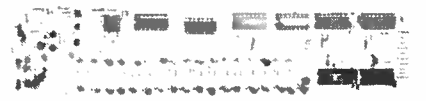
ABM-8 Audio Buffer Module contains 8 individual differential balanced inputs with 80dB CMR at up to +24dBm input levels. Individual buffers with DC offset adjustments drive isolated motherboard paths to crosspoint modules.



ACM-8 Audio Crosspoint Module contains 8 T-style transistor crosspoints, audio output driver and bus control logic. Dual output driver has true 600 ohm impedance at up to +24dBm with THD 0.1% and 0.1dB responsive to 20 kHz.



VBM-8 Video Buffer Module contains 8 individually powered high impedance buffers. Each buffer drives a motherboard path and provides constant level video for up to eight crosspoint modules. Fully compensated for loop thru inputs.



VCM-8 Video Crosspoint Module contains 8 T-style transistor crosspoints, video output driver, and bus control logic. Dual outputs are gain adjustable 3dB and have < 0.1% diff G, < 0.1% diff θ , and 0.1dB response. Wire per crosspoint unit control logic.



SRA-16/1 AFV Routing Switcher offers breakaway audio or video with local or optional remote control. Frame houses 2 each VSM-900, 2 each ASM-900 and single VPS-152 modules, with fold down front panel access. Local front panel displays individual audio and video status with red/green LED's. Hold down breakaway feature prevents accidental operations.



REAR PANEL shows loop thru BNC video inputs and dual video output. Audio connector is a quick disconnect style yet provides access for differential inputs and outputs. Captive AC cord. Remote control connector provides full access to all features.



RCP-121 provides identical remote control of audio and video as the local panel plus parallel LED status indicators. Rack mounting, single RU construction.

SRE 16/1 AFV

- 16 or 8 Inputs
- Video/Dual Audio
- Built-in Breakaway
- Dual LED Indicators
- Two RU Frame
- Prewired Frame
- Meets AVR-1 Specs

ORDERING INFORMATION
SRE-16/1AFV Dual AFV, 16 Inputs
SRE-8/1AFV Only 8 Inputs, Dual AFV

- OPTIONS**
- RCP-121 Remote 16/1 AFV Panel
 - CAB-4 Cable for RCP-121
 - SRX-162 Extender Module
 - LCP-221 Local Control Panel



SRE-16/1 STEREO AFV Routing Switcher offers two levels of audio follow video with local or optional remote control. Frame houses 2 each VSM-9, 4 each ASM-9 and single APS-155 modules, with fold down front panel access. Local front panel displays audio and video status with red/green LED's. Breakaway stereo audio controlled as single selection.



REAR PANEL shows loop thru BNC video inputs and RJ terminal blocks used for audio inputs and outputs. Plug in power connector and remote connectors are quick disconnect style. Remote connector provides full access to all features.

Use the RCP-121 Remote Control Panel to provide Remote Breakaway or AFV operations. LED indicators provide parallel status information.

MODELS	Input Groups	Outputs	Video	Audio	AFV	AFV warranty	Size (RU)	Special	See Page
SRA	16, 8	1	●	●			1		3
SRB-8/1	8	1	●					1	4
SRB-182	8	1	●	●	●		1		4
SRB-281	Dual 8	1, 2		●	●	◇	1		5
SRB-481	Dual 8	1, 2	●		●		1		5
SRE	16, 8	1	●		Dual		2		3
SRG	256,***,8	2	●		●	◇	12		††
SRH	256,***,8	2			●	●	◇	12	††
SRU-16/1	16, 8	1	●					2	Delay 6
SRU-YRGB	8	3, 4	●					2	RGB 7
MRA	8	1-8	●	●	◇		2		8
MRB	8	1-8	●	●	◇		2		8
MRC	16, 8	1-4	●	●	◇		2		9
MRD	16, 8	1-4		●	●	◇	2		9
MRE	40, 32, 24, 16, 8	1, 2	●		●	◇	4		10
MRF	16, 8	1, 2		●	●	◇	4		10
MRI	24, 16, 8	1, 2	●		●	◇	2		11
MRJ	24, 16, 8	1, 2		●	●	◇	2		11

Custom panels will be quoted upon request.

● Standard Feature
 ● Standard Option
 ◇ Specialized Option
 †† Described Elsewhere

Specifications subject to change without notification.

SRU-16/1 DELAY

- 16 or 8 Video Inputs
- 25 to 125ns Input Delay
- 25 to 125ns Input Delay
- 65 to 165ns BG Out Delay
- BG Switching/Timing
- Compliments UltiMatte®

SRU-16/1 DELAY switcher provides either 16 or 8 input transfer delays and a delayed switched output. Delays are adjustable over a 100ns range to compensate for cabling and BG transit time through the UltiMatte. The two RU frame contains 2 each VSM-900 Video Switch module, 2 each VDM-9 Video Delay Module, and one VPS-154 Power Supply.



BACK PANEL shows the 16 looping BNC inputs plus delayed and non-delayed switched output. Delayed outputs are positioned below the looping inputs. The control connector provides the interface to the RCP-101 Control Panel.



RCP-101 CONTROL PANEL provides 16 LED/switches for control of the switched output. Panel is single RU high and mounts in standard 19 inch racks.

SPECIFICATIONS

- Refer to HEDCO AVR-1 Specs except for:
- Frequency Response: 100K to 5MHz, ± 0.2 dB
- Differential Phase: $< 0.2^\circ$ (10 to 90 APL)
- Differential Gain: $< 0.2\%$ (10 to 90 APL)

ORDER INFORMATION

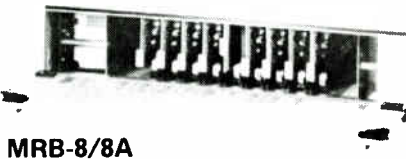
- SRU-16/1 DELAY Complete 16 Input with 16 Input Delays plus BG Delay
- SRU-8/1 DELAY Equipped as 8 Input with 8 Input Delays plus BG Delay
- RCP-101 Control Panel for 16 Inputs
- CAB-2 Cable for RCP-101

OPTION

- SRX-162 Extender Module

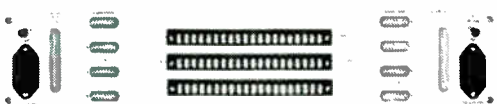
MRA-8/8V

- 8 Inputs
- Up to 8 Output Buses
- Up to 4 Channels
- Audio, Video, AFV
- Dual Power Supplies
- Vert. Interval Switch
- Diff Audio In/Out
- Meets AVR-1 Specs



MRB-8/8A

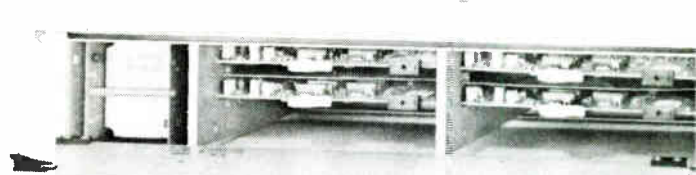
MRA/MRB 8/8 AUDIO And VIDEO Routing Switchers provide 8 buses which can select from 8 buffered inputs. Each bus including control logic, transparent switches and output amplifier is contained on one module. A separate buffer module feeds signals through a motherboard to each crosspoint module. Frame has space for redundant power supply and all modules are removable from the front.



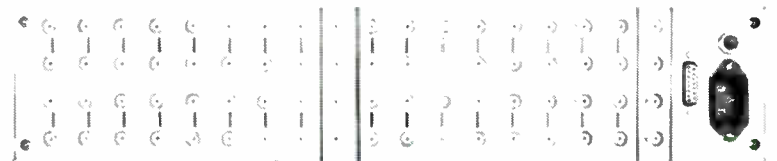
MRA REAR PANEL shows the eight looping inputs and dual outputs on each bus. Frame space for two redundant VPS-154 power supplies, one VBM8 buffer module and eight VCM8 crosspoint modules. Individual connectors for looping and bus control. Separate AC inputs.

SRU-YRGB

- YRGB or RGB Switching
- Single Control Panel
- Dual Outputs per Bus
- Two RU Frame
- Compliments UltiMatte®
- Meets AVR-1 Specs



SRU-YRGB Video Switcher consists of four individual 8 input, one bus VSM-900 switchers in a two RU frame. Outputs are simultaneously controlled by one RCP-100 panel to provide Y, R, G, B switching. Dual outputs on each bus allow monitoring and direct feeds. Unit may be used for 3 channel RGB switching by removal of one VSM-900 module.



BACK PANEL shows four groups of 8 loop thru BNC inputs for Luminance (Y), Red (R), Green (G), and Blue (B). Each channel has dual outputs. Equipped with a standard AC connector and a 1 Amp Circuit Breaker/Switch.



RCP-100 CONTROL PANEL provides 8 LED/switches for singular control of all channels. Panel is single RU high and mounts in a standard 19 inch rack.

ORDERING INFORMATION

- SRU-YRGB 4 Channel YRGB Video Switcher
- SRU-RGB 3 Channel RGB Video Switcher
- RCP-100 Control Panel for 8 Inputs
- CAB-1 Cable for RCP-100
- OPTION
- SRX-162 Extender Module



MRB REAR PANEL shows the RD1 terminal blocks for audio differential inputs and outputs. Frame contains space for two APS-155 power supplies, one ABM8 buffer and eight ACM8 crosspoint modules. Individual connectors for bus control plus looping connectors. Separate AC inputs.

RCP-104 CONTROL PANEL controls up to eight buses using individual rotary pushbuttons plus take pushbuttons for selections. Panel is standard 19 inch width and required only one RU of space. LED indicators.

ORDERING INFORMATION

SIZE	VIDEO	AUDIO
8 Inputs/1 Out	MRA 8/1	MRB 8/1
8 Inputs/2 Out	MRA 8/2	MRB 8/2
8 Inputs/3 Out	MRA 8/3	MRB 8/3
8 Inputs/4 Out	MRA 8/4	MRB 8/4
8 Inputs/5 Out	MRA 8/5	MRB 8/5
8 Inputs/6 Out	MRA 8/6	MRB 8/6
8 Inputs/7 Out	MRA 8/7	MRB 8/7
8 Inputs/8 Out	MRA 8/8	MRB 8/8

RCP-100 CONTROL PANEL is equipped with LED/switches for control of 8 inputs on one bus. Up to eight panels may be used at separate locations for video, audio or AFV operations. Single wire per crosspoint.

CONTROL PANELS

- RCP-100 Panel, 8 Inputs, 1 Bus
- RCP-102 Panel, Dual 8 In for 2 Buses
- RCP-104 Panel, TW/Take for 8 Buses
- CAB-1 Cable for RCP-100, RCP-102
- CAB-3 Cable for RCP-104 (2 RQD)

OPTIONS

- REX-161 Extender Module
- VPS-154 Redundant Video P.S.
- APS-155 Redundant Audio P.S.



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ROUTING SWITCHERS

IRS 48 x 48 AUDIO/VIDEO INTERMEDIATE SIZE ROUTING SWITCHER IRS 24 x 24 VIDEO AND 3 CHANNEL AUDIO INTERMEDIATE ROUTING SWITCHER

IRS 48 x 48/IRS 24 x 24 FEATURES

- No Fans or Blowers are required. Thermal design provides for efficient heat removal. All integrated circuits are state-of-the-art, require very little power and are mounted in high quality I.C. sockets. All components are Off-Shelf and most Dual Sourced, available from an electronic parts house near your location.
- All modules are identified by matrix card slot for the Computer Software, not by individual module. Permits total type interchange.
- Back-Plane Inputs and Outputs (Signal I/O) modules are direct plug-in, with no intervening cables or wires to cause signal degradation or timing changes which complicate future maintenance problems.
- Each module has close tolerance on-board voltage regulators for maximum isolation characteristics. The input to each regulator is fused and its output is protected by automatic thermal shutdown and current limit.
- The Video Buffer has Differential Inputs to assure a high degree of common mode or Hum Rejection.
- The Video channels use Vertical Interval Switching featuring Back Porch Clamping to assure bounce-free switching between signals with widely different APLs. No SC traps are used. The circuit is designed to clamp only when there is a difference in DC levels, thus helping to maintain excellent system transparency.
- Audio Input is Balanced Differential for either balanced or unbalanced sources, has input impedance greater than 50K ohms and operates at levels up to +24dBm.
- Dunker circuit gives "pop free" on-line Audio switching.

IRS 48 x 48

System can start as small as 12 x 12, single channel, and expand to 48 Inputs by 96 Outputs with up to four channels of Audio, Video and Time Code in any combination.

The IRS is available as individual Video, Audio 1, Audio 2, and/or Time Code Matrices with a maximum capacity of 48 inputs by 48 outputs in just 17 rack units, (29.75").

IRS 24 x 24

Can start as small as 12 x 12, single channel, and expand to 24 Inputs by 24 Outputs with up to three channels of Audio.

IRS CONTROL PANELS

This series of control panels can be used on all HEDCO microprocessor based routing switchers. Control is via shielded twisted pair (balanced) using RS 422 protocol, MPU 6803 based.

RCP-301: Basic single bus control panel. Keypad entry, Audio follow Video.

RCP-302: Single bus control panel. Keypad entry, separate Audio and Video selection.

RCP-303: X-Y control panel. Keypad entry for control of all buses. Audio follow Video.

RCP-304: Single bus control panel. Keypad entry, separate Video and two channel Audio selection.

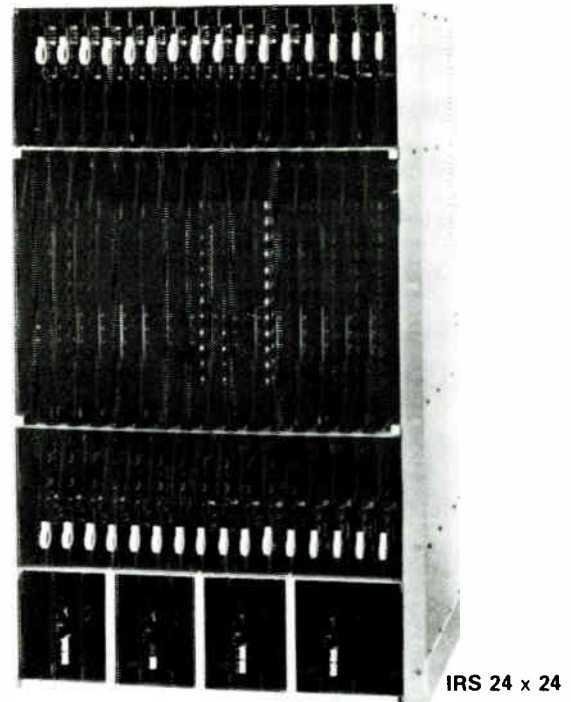
RCP-311: 1 R.U., 16 pushbutton "shot box" panel. Buttons can be easily programmed to access any 16 inputs of 24, all levels.

RCP-306: X-Y control panel. Keypad entry for control of all buses. Separate Video and two channel Audio selection.

RCP-307: Single bus control panel. Keypad entry, separate Video and three channels of Audio.

RCP-310: 2 R.U. 48 pushbuttons. (IRS 48 x 48 only)

RCP-305: 1 R.U. 24 pushbuttons. (IRS 24 x 24 only)



IRS 24 x 24

IRS FRAMES

Both Models' Switchers are contained in 17 rack units 29.75".

IRS MODULES

IVI-611 Video Input Buffer

- Back porch clamp
- Differential inputs
- Equalization for 200' of 8281 or equivalent cable
- On board power supply regulation
- 6 buffers per module

IXP-144 Audio or Video Crosspoint

- 12 x 12 array
- Crosspoints are transistor arrays in IC sockets
- Vertical interval switching (refer to house sync)
- On board power supply regulation

IYO-612 Video Output Amplifier

- On board power regulation
- 6 output amplifiers per module
- Two separate full level outputs per amplifier
- Output gain unity, ± 3 dB adjustable

IAI-601 Audio Input Buffer

- Accepts balanced or unbalanced audio lines
- Differential inputs
- S/N ratio > 90dB
- On board power regulation
- 6 buffers per module

IAO-602 Audio Output Amplifier

- 600 ohms or 150 ohms outputs
- 6 output amplifiers per module
- Two separate full level outputs per amplifier
- +24dBm max. at 600 ohms; +27dBm max. at 150 ohms

ICL-412 Computer

- One required for each 12 buses
- On board diagnostics
- Non-volatile E² RAM for unlimited memory retention
- MPU 6803 based at 76.8 Kbaud

ICI-401 Bus Interface

- One required for each 12 buses
- Uses RS-422 bi-directional controls
- Change module for RS-232-C

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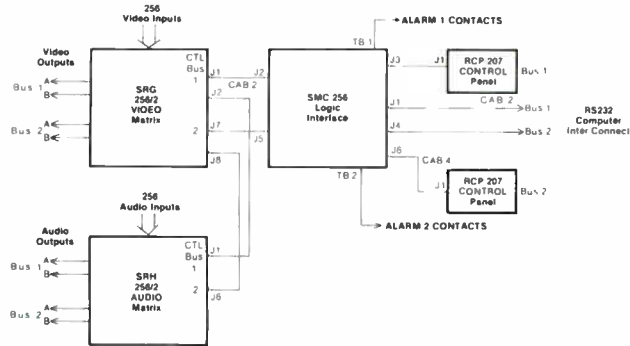
**SRG-128/4 VIDEO / SRH-128/4 AUDIO
SRG-256/2 VIDEO / SRH-256/2 AUDIO
LARGE INPUT MONITORING SWITCHERS**

SRG-256/2: 256 input, 2 bus video switcher.
SRH-256/2: 256 input, 2 bus audio switcher.
SRG-128/4: 128 input, 4 bus video switcher.
SRH-128/4: 128 input, 4 bus audio switcher.
Includes **SMC-256** Logic Interface — One for 256 inputs,
Two for 128 inputs.

SRG/H 256/2 AUDIO/VIDEO SWITCHER

Features

- Automatic Scan Alarm
- Remote Computer Control
- Modular Input Configurations
- Input Skip Program



SMC-256 Logic Interface

The SMC-256 Logic Interface uses two MC6803 Microprocessors which are programmed to execute all commands from the RCP-207 panels plus operations via the RS232-C computer link. Communication using the remote computer link is via standard ASCII parallel code. Two completely separate computers are housed in a one RU frame, each with NOVRAM™ memory for "SKIP" retention during power failures plus external alarm contacts.

VDS-182 Buffer Crosspoint

The VDS-182 Buffer Crosspoint module contains selection logic, eight buffers, two sets of eight crosspoints and a card select crosspoint. Standard transistor arrays are used for switching and buffer functions.

VOA-182 Output Amplifier

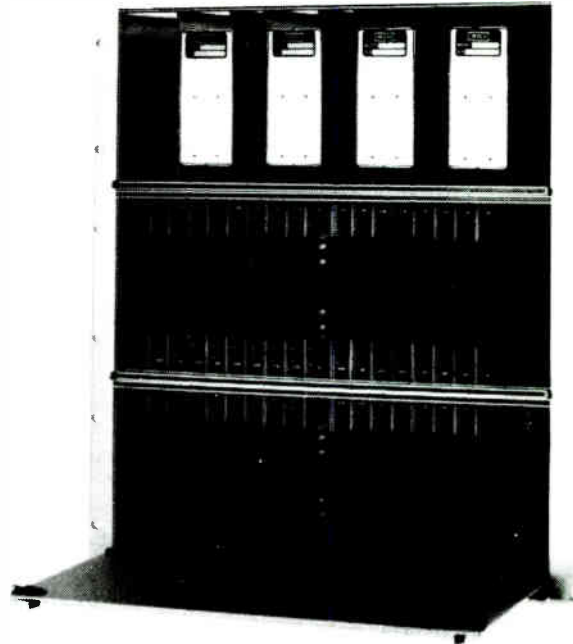
The VOA-182 Output Amplifier contains two independent output amplifiers and signal detectors. Each section uses standard components and logic elements for ease of maintenance.

RCP-207 Control Panel Local Functions (optional)

Take: Activate bus to keyboard entry.

Audio Only: Causes audio SRH switcher to follow independently.

Skip: Allows any input to be bypassed in SCAN or SCAN ALARM.



LARGE INPUT MONITORING SWITCHER

Reset: Stop operations and switch to input one.

Scan: Sequentially switch each input to an output bus at scan rate.

Scan Alarm: Scan while monitoring for video or audio present. Reverts to HOLD when signal loss is detected.

Hold: Manual or Automatic selection causes steady display of last input.

Continue: Continue in SCAN or SCAN ALARM.

Options

RCP-207: Remote panel — Two for 256 inputs, Four for 128 inputs.

VPS-156: Redundant Power Supply, Video + 15V.

APS-256: Redundant Power Supply, Audio + 28V. Cabling: One of each type listed is required for each bus. Specify length.

CAB-2: RS-232 Computer cable. Up to 50m. Matrix to Logic Interface cable. Up to 10m.

CAB-4: Remote panel to Logic Interface cable. Up to 20m.

NOVRAM is a trademark of XICOR, INC.



THE MATCHBOX

The MATCHBOX is the ideal way to correctly interconnect "HiFi" or Semi-Pro (IHF standard) equipment with professional studio gear. The Matchbox is a bi-directional unit, with four independent amplifiers providing full stereo input and output interface. Two amplifiers convert a stereo IHF HI-Z unbalanced source to LO-Z balanced outputs at studio level. A second pair of amplifiers converts a stereo balanced studio line source to unbalanced IHF outputs to feed the inputs of an IHF device. All circuitry is active and direct-coupled for absolute sonic transparency. The Matchbox is compact and lightweight, allowing it to be permanently mounted to most cassette recorders, tuners, portable mixers, etc.

- Gain is adjustable to +20dB
- +26 dBm maximum output level
- .008% distortion, 90dB S/N
- All active direct coupled circuitry
- Does not load or ground studio lines

- Self contained regulated power supply
- Provides extra AC outlet for convenience
- Made with high quality U.S.A. components

MATCHBOX Specifications:

General

- Power input: 115 VAC, 4 watts
- Fuse: .1 amp, internal
- Dimensions: 6.25" x 3.75" x 2.25"
- Weight: 2 lbs.
- Adjustments: Studio Output level adjustable via front panel access holes

Electrical

	IHF Input to STUDIO Output	STUDIO Input to IHF Output
• Input Level:	-10dBv to 0dBv, nominal	0dBm to +8dBm, nominal
• Input Imped:	25K ohms, unbalanced	10K ohms, balanced
• Gain/Loss	+6dB to +20dB, adjustable	-14dB, fixed
• Output Level:	0 to +8dBm nom, +26dBm max	-10dBv nom, +20dBv max
• Output Load:	600 ohms or greater, bal	2K ohms or greater, unbal
• Freq Response:	DC-20 kHz, +/-0.25dB	DC-20 kHz, +/-0.25dB
• Distortion:	.008% at any level	.008% at any level
• Noise Level:	85dB below +4dBm output	75dB below -10dBv output
• Number of Channels:	2, "Left" and "Right"	2, "Left and "Right"

The Matchbox \$195.00



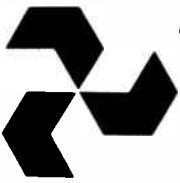
UNIVERSAL TURNTABLE CONTROLLER

The Universal Turntable Controller is a control interface unit for use in conjunction with Technics (SP10, SP15, SP25, SL1200 MKII) and Russco direct drive professional turntables.

The "UTC" adds remote control facilities to these turntables. It converts the turntable's "single button" control logic so that separate Start and Stop switches can be used to operate the turntable. The UTC also provides outputs to drive 24VDC tally lamps for Run and Stop mode indication. The turntable's start-stop switch can still be used for cueing records, and the Universal Turntable Controller will always remain "in sync". It easily connects to the turntable with just three wires, and may be controlled by either momentary switches or CMOS circuitry. One UTC will control two turntables.

- Works with most console remote control facilities, or use "outboard" switches
- Tally lamp outputs accommodate illuminated pushbuttons
- No contact bounce or false operation
- CMOS circuitry is RF immune...no relays
- Self contained regulated power supply
- One UTC controls two turntables

Universal Turntable Controller \$180.00



HORIZON international

3837 E. Wier Ave., Suite 1
Phoenix, AZ 85040
(602) 437-3800 Telex 322043

MASTER CONTROL SYSTEM

AUTOMATION/MASTER CONTROL SYSTEM

FEATURES

- Timecode based system
- Dual computers with failsafe capacity
- Interfaces to traffic department computer
- Interfaces to single and multiple deck machines
- Accountability for log changes
- Generates as run log and discrepancy report
- Decodes satellite channel cue tones
- Uses WWV as clock reference
- Automatic and manual operation
- Runs back-up tapes simultaneously
- Security code access to the system
- Discrepancy generated for every log change
- System will operate with or without a master control switcher
- Printouts including list of tapes needed for the day's log

The Master Automation System offers a new and unique solution pertaining to automating master control. The MAS-100 acts as a central manager of information and a coordinator of activities for the equipment used in the master control operation.

As the hub of a data network that includes the traffic computer, single and multiple deck machines, and other equipment used in master control the MAS-100 oversees and monitors the on air operation. This includes receiving a station log from the traffic computer, performing the breaks as specified, and generating an as run log with a discrepancy report.

The MAS-100 operates in an automatic mode in which all the operator has to do is load tapes. At this point the MAS-100 takes over and follows the below procedure:

- Detect tape has been loaded
- Read the userbit identification label
- Verify that the tape is needed for the day's log. If the tape is not needed then go to step 12
- Look up segment start time in MAS-100 tape database
- Cue the tape to the timecode preroll point from the database
- Turn the video head or scanner off (minimizes wear on tape)
- Turn the video head or scanner on and recue the tape one minute before it is to be rolled
- Roll the tape at the specified log time minus amount of preroll
- Switch the tape on air
- Switch to next source upon completion
- Verify if tape is needed again. If so then go to step 4
- Eject cassette or rewind reel

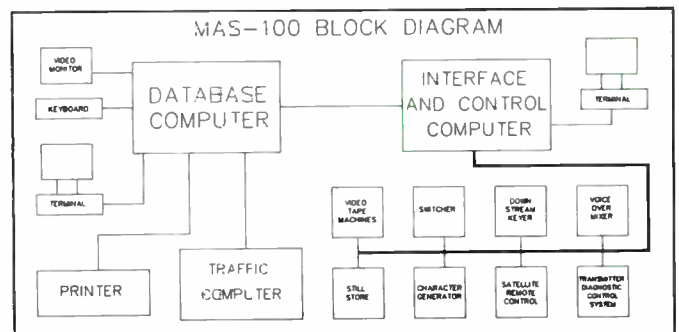
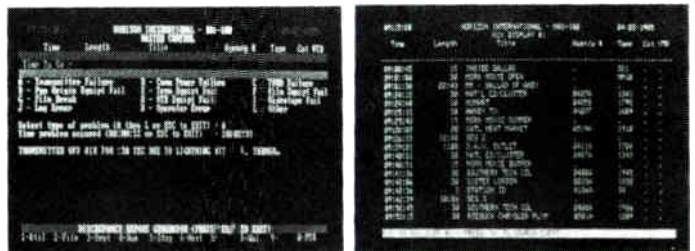
Normally the MAS-100 will use the specified log time to start a break. During live events when the break times are unknown the MAS-100 has the ability to use satellite channel cue tones to initiate the station break or be operated manually in which the operator must instruct the system when to start the break. Even though the break is started manually the MAS-100 automatically performs and logs the times of the entire break as it was performed.

The MAS-100 interfaces to equipment via a serial network. This enables the system to control single deck machines as well as the new multiple deck machines being manufactured today. A customer now has a choice to run the master control operation with a set of lower cost single deck machines for both program and commercial material or the multiple deck machine for commercials and several of



single deck machines for programs. Besides interfacing with tape machines the MAS-100 is capable of communicating with and controlling character generator/electronic still store equipment, satellite control equipment, switchers, down stream keyers, and audio voice over mixers. A down stream keyer and audio voice over mixer can be used in conjunction with a small routing switcher in place of a costly master control switcher.

Accountability is a key aspect of the MAS-100. Whenever a change is made to the log by an authorized person, the system records the person's name, the log change as well as the time the change was made. This information is printed in the day's discrepancy report. Also if there are any changes to the log due to equipment failure or other reasons the MAS-100 will insist the operator include a discrepancy for every occurrence.



BLOCK DIAGRAM/MAS-100

ICM VIDEO

A DIVISION OF INTERNATIONAL
CRYSTAL MFG. COMPANY, INC.

10 N. Lee

P.O. Box 26330

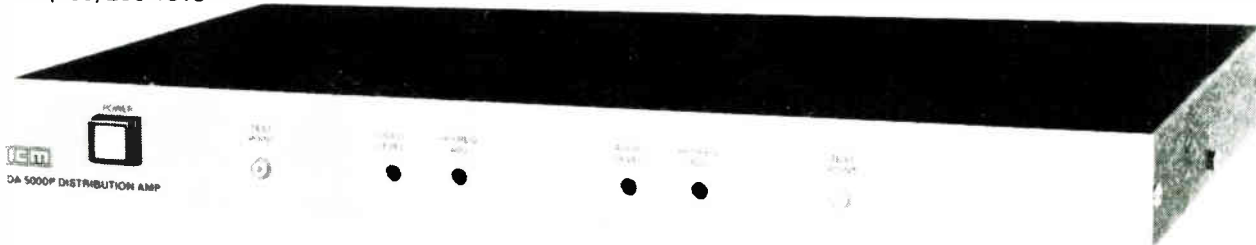
Oklahoma City, OK 73126

(405) 232-5808 Telex 747-147

TWX 910-831-3177 Cable INCRYSTAL

Nights — Weekends (405) 236-1818

DISTRIBUTION AMPLIFIER



DA-5000P DISTRIBUTION AMPLIFIER

Features:

- Combination video and audio distribution in single cabinet
- Ten video and ten audio outputs
- Rackmountable, 1.75" high
- Gain and high frequency front panel screwdriver adjustments
- Front panel monitoring test points
- 110/220 VAC, NTSC or PAL operation

The DA-5000P is a versatile distribution amplifier combining audio and video into one cabinet. Ten matched, isolated video outputs are provided from a single video input, and ten matched, isolated audio outputs are provided from a single audio input. The inputs are looping or bridged so that additional DA's can be stacked to provide more outputs.

The front panel has screwdriver adjustments on both video and audio channels for overall level and high frequency compensation. Test points on the front allow oscilloscope monitoring of one of the video outputs and one of the audio outputs.

The video section handles NTSC and PAL signals equally well. The DA-5000P is supplied to operate on 110VAC, but a simple internal wiring change will allow it to operate on 220 VAC, 50Hz for PAL countries.

The DA-5000P, with rack mount hardware included, provides more outputs per rack inch than any other DA. Its cost per output is extremely moderate. Its clean, stable operation and long term reliability make the DA-5000P an unbeatable choice.

Specifications:

Video:

Bandwidth	10MHz
Linearity	Better than 1%
Tilt	Less than 1%
S/N Ratio	56dB
Differential Phase	Less than 1/2°
Differential Gain	Less than 1%
Gain	Up to 6dB (front adjustment)
Hi Freq. Comp.	Up to 1500 ft. RG-59/U
Isolation Between Outputs	40dB
Connectors Used	BNC

Audio:

Bandwidth	50kHz
THD .....	.05%
S/N Ratio	70dB
Gain	Up to 6dB (front adjustment)
Isolation Between Outputs	60dB
Input	High impedance, unbalanced
Outputs	600 ohm, unbalanced
Connectors Used	RCA phono

General:

Power Requirement	110VAC, 60Hz (220VAC, 50Hz capable)
Power Consumption	6 watts
Operating Temperature	10°C to 50°C
Dimensions	17"W x 12"D x 1.75"H
Shipping Weight	10 lbs.
Accessories Included	Rack mount hardware

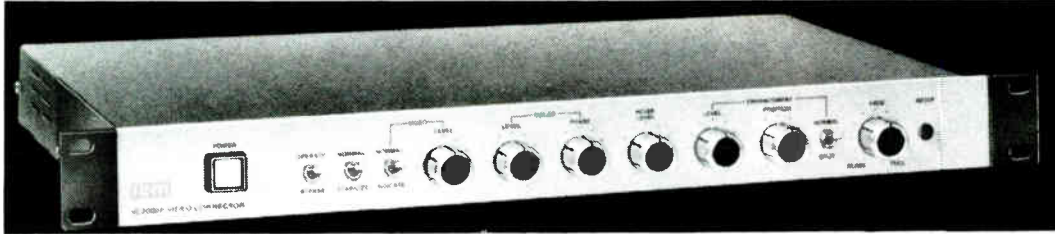
DA-5000P **\$595.00**

ICM VIDEO

A DIVISION OF INTERNATIONAL
CRYSTAL MFG. COMPANY, INC.

10 N. Lee
P.O. Box 26330
Oklahoma City, OK 73126
(405) 232-5808 Telex 747-147
TWX 910-831-3177 Cable INCRYSTAL
Nights — Weekends (405) 236-1818

VIDEO CORRECTOR



VC-2000P PROFESSIONAL VIDEO CORRECTOR

Features:

- Ideally suited to 1/2" and 3/4" videotape correction
- Useful as a remote camera control unit
- Automatic regeneration of all sync signals
- Image enhancement and noise reduction
- Fade to black control
- Four output video/stereo audio DA
- Optional plug in RF Modulator
- Copyguard Stabilizer
- Rack mountable

The VC-2000P is an advanced video corrector at an extremely moderate price. The unit automatically generates new sync and blanking signals, both horizontal and vertical, plus new color burst signals. The insertion of new synchronizing signals plus back porch clamping permit the VC-2000P to solve a variety of stability problems. Jitter, flicker, bending, and rolling are automatically corrected in most cases.

The "Bypass-Operate" switch allows instant comparison of processed and unprocessed signals. The "Stabilize" switch automatically removes copyguard encoding when activated. The "Indicate" switch activates a zebra stripe 100 IRE peak video indicator.

The zebra stripe indications in the picture permit unskilled operators to set the video level correctly without special test equipment.

The "Video Level," color "Level," and "Phase" (color hue) allow the correct setting of these parameters, even on video shot in low light. These controls are a great aid in matching scenes with different brightness, contrast, color, and hue when editing video tapes.

When used as a remote camera control unit, the level and phase controls make camera matching and correct setup very practical.

The "Noise Level" control aids in removing grainy background noise. The enhancement "Level" control provides pleasing and often dramatic improvement to picture sharpness and clarity. The two controls together eliminate much of the degradation that occurs when duplicating video tapes.

The enhancement "Position" and "Normal/Split" switch give a split screen presentation of the picture with the top half enhanced and the bottom half not enhanced. The "Position" control moves the split up

and down to permit a close, instant analysis of the improvements gained by enhancement. The signal may even be recorded this way so that the same analysis can be performed on the playback of the test recording.

The "Fade" control permits fade to black; an especially useful effect in editing and remote camera control. When fully faded to black proper sync, burst, and setup level are maintained at the video outputs.

The "Setup" control is a screwdriver adjustment to allow correction of signals with non-standard black levels. Internally the VC-2000P has horizontal and vertical blanking width adjustments.

The VC-2000P also has a built-in 4 output video distribution amplifier with a 4 output stereo audio distribution amp.

Specifications:

Bandwidth:	5MHz, ± 3 dB
S/N Ratio:	60dB
S/N Improvement-Luminance:	Up to 6dB with "Noise Level"
Tilt:	Less than 1%
Differential Gain:	1-1/2%
Differential Phase:	1-1/2°
Video Gain:	0% to 300% of input level
Chroma Gain:	50% to 150% of input level
Burst Phase (Hue) Range:	130° ($\pm 65^\circ$)
Enhance Gain:	14dB at 2MHz
Setup Control Range:	-15, +20 IRE from 7.5 IRE
Number of Outputs:	4 video, 4 stereo audio
Isolation Between Outputs:	40dB video, 60dB audio
Operating Temperature:	+10°C to +50°C
RF Channels (with optional RF):	Channels 3 and 4, switchable
Connectors Used:	Video-BNC, Audio-RCA, RF-F
Power Requirement:	117VAC, 60Hz, 9 watts
Dimensions:	17"W x 1-3/4"H x 12-3/4"D
Shipping Weight:	11 lbs.
Accessories Included:	Rack mount hardware

Ordering Information:

For optional RF modulator, order model RFC-34.

\$695.00

ICM VIDEO

A DIVISION OF INTERNATIONAL
CRYSTAL MFG. COMPANY, INC.

10 N. Lee
P.O. Box 26330
Oklahoma City, OK 73126
(405) 232-5808 Telex 747-147
TWX 910-831-3177 Cable INCRYSTAL
Nights — Weekends (405) 236-1818

VIDEO PROCESSORS

VC-2500P AUTOMATIC VIDEO PROCESSOR

- Ideal for use where unattended, automatic video correction is needed
- Automatic level adjustment of video signal
- Automatically regenerates synchronizing signals
- Clamp circuit removes hum and flicker
- Four video and audio outputs
- Available in NTSC (American) or PAL (European) models
- Ideal for driving RF modulators
- Video tape duplicating

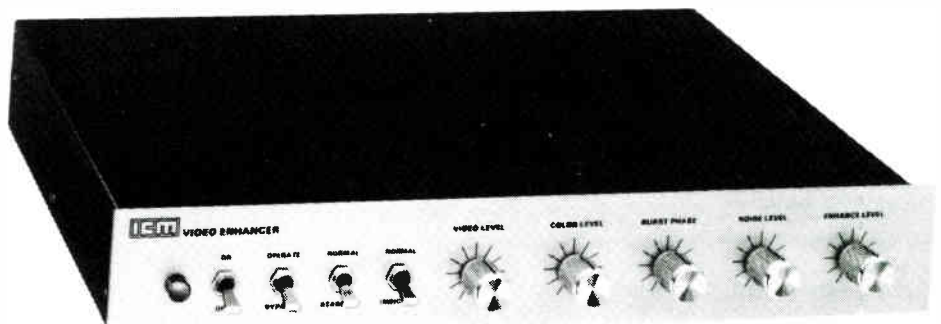
Ideal for applications where it is necessary to provide technically correct levels and stable video at all times, automatically and unattended. Corrects most of the stability problems encountered with video. Problems (e.g. jitter, satellite receiver flicker, bending and rolling) are corrected automatically. When the AGC circuit is switched on, the processor samples incoming video sync level and uses that reference to set video level to the correct standard of 1 volt peak to peak into 75 ohms automatically. The "Stabilize" switch automatically solves all videotape copyguard problems when switched on. Additionally built-in is one input, four outputs audio distribution amplifier and a one input, four corrected outputs video distribution amplifier.

VC-2500P Dimensions:
17"W x 1 3/4"H x 12 3/4"D

VC-2500P \$495.00



VC-2500P



VE-200C

VE-200C VIDEO ENHANCER

Features

- Connects to standard TV sets (with optional RF modulator)
- Automatic regeneration of all sync signals
- Copyguard stabilizer
- Four audio and video outputs
- Image enhancement and noise reduction
- Fade to black capability
- Available in NTSC (American)

The VE-200C is an advanced video processor that uses the same technical processes for the video signal that expensive commercial

processors use. This process of regenerating to proper standards all the video synchronizing signals will automatically correct most of the technical problems encountered when dealing with video. Stability problems such as jitter, flicker, bending, rolling and loss of color are automatically corrected. The "Stabilize" switch automatically solves copyguard problems when activated. Additionally, the front panel controls permit correct adjustment and consistency in contrast, brightness, color and hue on all signals.

VE-200C Dimensions:
11 1/8"W x 1 3/4"H x 9 1/2"D

VE-200C \$550.00

IKEGAMI ELECTRONICS, INC.

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

SIGNAL DISTRIBUTION AMPLIFIERS

VTN-110A Modular Signal Distribution Amplifier

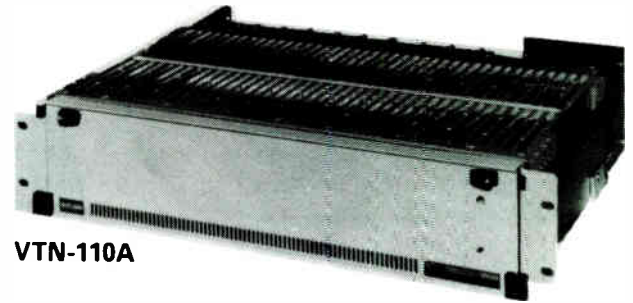
- Standard 19" rack mount-only 4" high • Hybrid Integrated Circuit Design for stable and reliable operation
- Plug-in modules for VDA, PDA, and EQA • Up to ten modules may be utilized • For each module: one input (looping), four outputs • Low power consumption (65 to 150 ma per module) • Standard BNC-type connectors

PLUG-IN MODULES

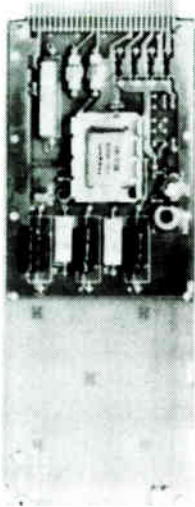
VDA-VIDEO DISTRIBUTION AMP

SDA-PULSE DISTRIBUTION AMP

VEQ-VIDEO EQUALIZER

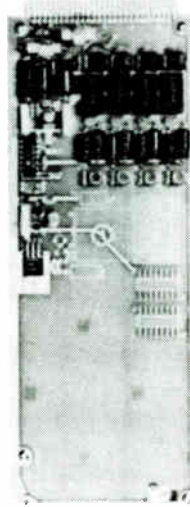


VTN-110A



VDA 104A

- Single IC construction
- One input, four outputs
- DC coupled for good LF response



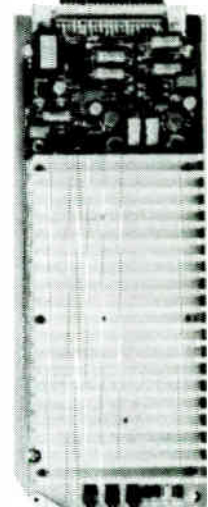
SDA 104A

- High speed IC construction
- One input, four outputs
- Input level: 1 or 4 volts



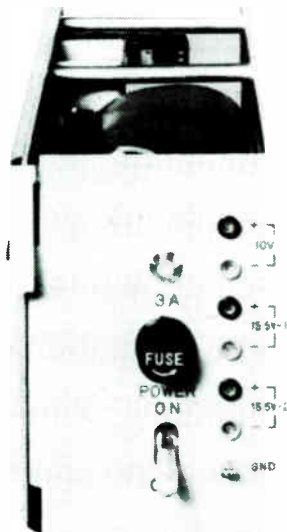
VEQ 106A

- Cable compensation to 750 feet
- Response to 7 MHz within 0.5dB
- Noise better than 1.0mV



ZRE-101A

- Regulator
- 0.5 amp output
- Current limit circuit
- Supplies power for up to five modules



ZRC-101A

Power Supply

- Two amp outputs
- AC input $\pm 10\%$

Specifications:

	VDA	SDA	VEQ
Ambient Temperature	10°C to 50°C	10°C to 50°C	0°C to 45°C
Input Impedance	4K Ω +	4K Ω +	4K Ω +
Differential Gain	$\pm 0.15\%$	—	Within 1%
Differential Phase	$\pm 0.15^\circ$	—	1°
Response	10MHz (-0.2dB)	—	8MHz (-1dB)
Output Impedance	75 Ω	75 Ω	75 Ω
Power Requirement	$\pm 10V$ (75ma)	$\pm 10V$ (65ma)	$\pm 10V$ (150ma)
Hum	5mV or less	-60dB	1mV
Crosstalk	-40dB @ 4MHz	-46dB	-54dB @ 100KHz -40dB @ 3MHz
Noise	0.5mV or less pp	0.5mV pp	1mV pp
Rise Time	0.035 μ sec. (0.03 μ sec. input)	0.1 $\pm 0.03\mu$ sec.	0.07 μ sec. or less @ 250KHz
Overshoot	Within 1%	Within 1%	Less than 3% @ 11MHz or less Less than 10% @ 11MHz or more
Sag	Within 1%	Within 1%	Within 1%

Prices and Specifications Subject to Change Without Notice.

VT-87

IMAGE VIDEO, LTD.

705 Progress Ave., Unit 46
Scarborough, Ont., Canada M1H 2X1
(416) 438-3940 Telex 065-25392

UNIVERSAL SERIAL DATA READER



7100 UNIVERSAL SERIAL DATA READER

The lack of a reliable method of monitoring serial interface data is a major problem in troubleshooting complex multi-processor control systems.

A solution to this problem is the Image Video UNIVERSAL SERIAL DATA READER (U.S.D.R.). The U.S.D.R. is capable of reading and displaying serial data in real time by simply looping into the suspected problem line. The unit is set to the predefined parameters of that line and that data may be viewed in either hexadecimal or binary format as preferred. Triggering is valid on detection of a unique word (HEX byte) and may be checksum qualified if necessary.

Operation

Three operational modes are alternately selected by the MODE key.

Mode 1 Setup



MODE 1

MODE 1 causes the displayed setup data to be latched into the U.S.D.R.'s control routine.

The required hexadecimal (unique word) trigger byte is entered by pressing the TRIG key followed by two digits.

A requirement when reading checksum qualified data is the frame length byte. Press the LEN key and enter the number of bytes per frame (including the unique word and checksum bytes). For operator convenience this number is expressed in decimal format, three to ninety-nine being valid.

The offset byte is used to set the KEY byte (starting point for the data display). Press the OFFSET key and enter the number of bytes offset from the trigger byte. Again this number is expressed in decimal format, zero to the frame length being valid.

MODE 2 Hex Status

This mode displays the hexadecimal status of four bytes of data from the line with the KEY byte appearing in readouts seven and six and KEY + 1, KEY + 2, KEY + 3 bytes appearing in readouts five through zero respectively. The most significant nibble appears in the lefthand display of each of the four pairs. For proper interpretation of the display none of the error tallies should be on.

MODE 3 Binary Status

Mode 3 shows the binary status of one byte of data from the line at the KEY byte. The eight displays show the status of the eight bits of the KEY byte with the most significant bit appearing in readout seven and the least significant bit in readout zero. For proper interpretation of the display none of the error tallies should be on.

Error Indication

Four error tallies are provided to alert the operator to possible false data detection; FRAME error, OVERRUN error, PARITY error, and CHECKSUM error.

DIP switches select O/E parity, inhibit parity, and select one of eight baud rates.

IMAGE VIDEO, LTD.

705 Progress Ave., Unit 46
Scarborough, Ont., Canada M1H 2X1
(416) 438-3940 Telex 065-25392

Control Panel Features

- Coax Cable Control Line
- Audio Cable Control Line Optional
- Multipanels per Line
- Large selection of control panel configurations
- Audio and Video may be selected married or unmarried on some panels
- Multilevel unmarried control panels available
- Standard 8 bit word serial communications
- Alpha numeric entry and display available on some panels
- Single or multi destination control panels available on some models
- Will operate the switcher up to 2000 feet using coax
- Multi source electronic components used, no hybrids, custom I.C.'s or mask programmable ROMs
- Custom panel requirements easily accommodated
- Milled plate aluminum used on front panels
- All front panels are brushed, deep etched and clear anodized
- Legends custom engraved and filled black



IV CP-1/X

The CP-1/X is either a full matrix or restricted Keypad control panel. The "X" designation indicates full matrix control panel. If a digit is substituted for "X" then this digit identifies the total number of destinations which the panel controls. These destinations must be specified when ordering, but may be changed later by recoding a PROM. The panel is complete with 7 segment LED readouts for BUSS, VIDEO PRESET, AUDIO PRESET, VIDEO STATUS and AUDIO STATUS. Selection of new source may be 1 of 4 modes; Audio follow Video, Audio only, Video only or Audio/Video unmarried. The unit is built in a desk top configuration.

IV CP-1/CX

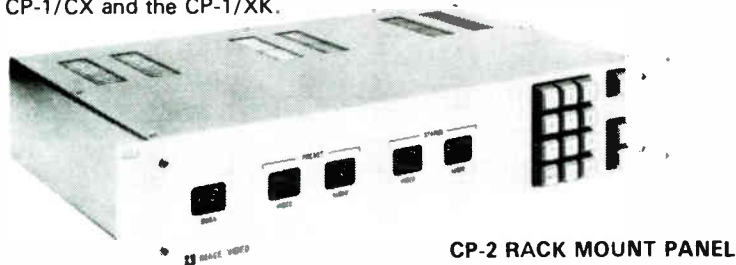
This panel is similar to the CP-1/X, except the Keypad is coded for alpha input selection instead of numeric.

IV CP-1/XK

This panel is similar to the CP-1/X, except the TAKE function is disabled by the use of a lock and key.

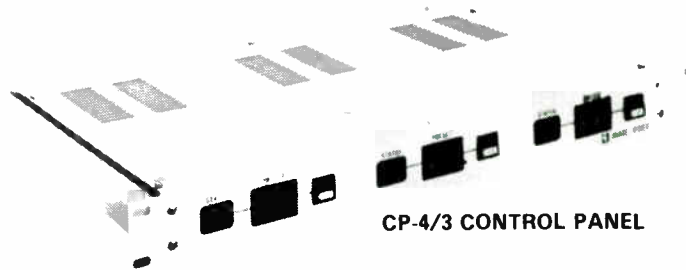
IV CP-1/CXK

This panel is similar to the CP-1/X and also includes the features of the CP-1/CX and the CP-1/XK.



The CP2/X, XK, CX, CXK, are similar to the CP-1 but rack mounted. In addition, the CP-2 Panel can be restricted to any nine destinations, selected by DIP switches (provided) or may control the full matrix.

ROUTING SWITCHER CONTROL PANELS



IV CP-3/1

Single thumbwheel control panel with access to all inputs on one destination. Complete with TAKE pushbutton and 7-segment LED status readout. Simultaneous audio and video selection. Desk top mounted box.

IV CP-4/X

Rack mounted control panel. Thumbwheel input selection with TAKE pushbutton and numeric status display. Simultaneous audio and video selection.

A number (1 through 9) substituted for X indicates the total number of destinations the panel controls. Separate thumbwheel selection and status readout for each destination.

IV CP-5/X

Shadow pushbuttons with gold contacts and relegendable caps. Mounted in a brushed anodized aluminum panel. Pushbuttons available in multiples of 10 to a maximum of 50.

IV CP-6/X

Same as CP-5/X but with Clare Pendar S180 series illuminated pushbuttons.

IV CP-7

Salvo panel capable of 10 presets. MASTER TAKE pushbutton for simultaneous take of preset inputs. Status, and preset numeric displays. Simultaneous or separate audio and video.

IV CP-7/C

Same as IV CP-7 but with coded (alphanumeric) keypad.



IV CP-8/4

Controls one destination only. Has four overrides and four breakaway levels. Alphanumeric thumbwheel selection and alphanumeric display.

IV CP-9/1, IV CP-9/2

Similar to IV CP-4/1, IV CP-4/2 but with alphanumeric thumbwheel and numeric status display

IV CP-10

Alpha thumbwheel with unmarried audio-video operation. Six overrides and numeric status. Single destination control.

IV CP-11

Six destination control panel. Married audio/video operation only. Alphanumeric display. Preset function and alpha coded keypad.

IV CP-12

Alphanumeric coded keypad and status display. Six overrides. Simultaneous audio/video, or separate audio and video functions.

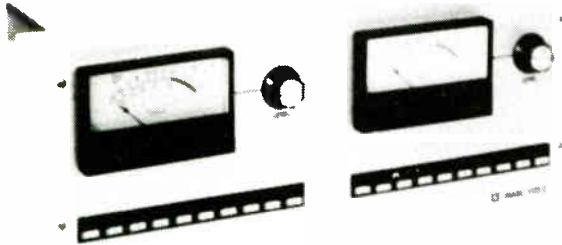
IMAGE VIDEO, LTD.

705 Progress Ave., Unit 46
 Scarborough, Ont., Canada M1H 2X1
 (416) 438-3940 Telex 065-25392

BROADCAST ROUTING SWITCHERS

6000 Broadcast Routing Switcher

Custom Control Panel



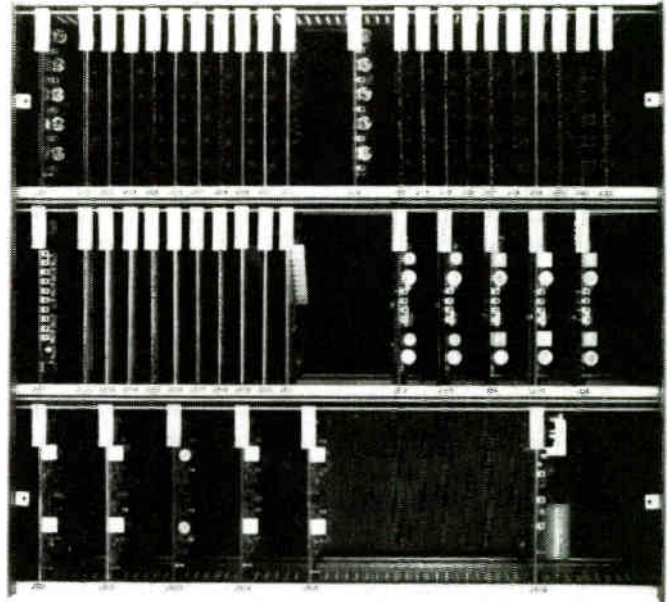
Features

- Solid state vertical interval switching.
- Compact expandable modular construction used throughout.
- Excellent video and audio specifications for full color broadcast use.
- Video only, audio only, audio follow married or unmarried control available.
- Crosspoint retention during power interruption optional.
- Tally LED on each video crosspoint indicates exact switcher status at all times.
- Conservatively rated, overload protected power supplies for trouble free operation.
- One pushbutton per crosspoint or thumb-wheel control panels available.

Description

The 6000 Series Switchers are specifically designed for small and medium audio/video routing systems. These versatile switchers are ideally suited as high quality electronic patch panels, delegate switchers or in any application where remote controlled switching is needed.

Compact 5 x 1 or 10 x 1 crosspoint modules plug directly into the motherboard assembly which also accommodates the input and output amplifier modules. This flexible configuration allows up to 24 outputs per 19-inch rack.



Switcher Matrices

SPECIFICATIONS

ELECTRICAL

Power 120/240 V. RMS \pm 10% 50/60Hz

VIDEO

Input

Input Signal Level 1V P.P.
 Input Impedance Bridging 75 ohms
 Return Loss \geq 46 db to 5 MHz
 Number of Inputs As required

Output

Level 1V P.P.
 Number of Outputs Per Bus 2
 Impedance 75 ohms
 Isolation $>$ 40 db to 5 MHz
 Level Difference $<$ 1%
 DC on Output $<$.05V
 Frequency Response \pm 0.1 db to 5 MHz
 \pm 1.5 db to 10 MHz
 60 db below 1V P.P.
 Hum . Unity
 Gain Range \pm 1 db
 Time Fall $<$ 5%
 Field Fall $<$ 5%
 Differential Gain (10-90% APL) $<$ 5%
 Differential Phase (10-90% APL) $<$ 5°
 Switching Time $<$ 5°
 Switching Timing 0.1 . SEC
 Crosstalk Vertical Interval
 Noise (RMS) 60 db to 3.58 MHz
 $>$ 70 db below 1V P.P.

AUDIO

Input

Input Signal Level \pm 8 dbm nominal
 Input Impedance Bridging 60C ohms
 Balanced

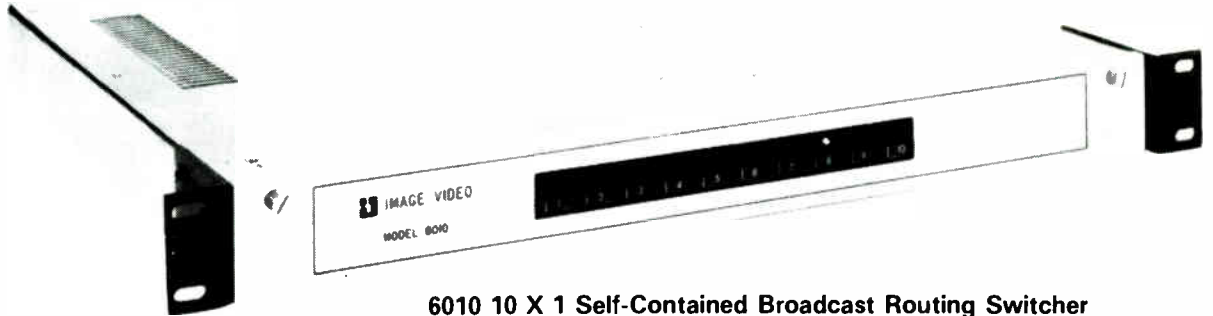
Output

Number of Outputs Per Bus 2
 Impedance 500 ohms Balanced
 Frequency Response $<$ 3 db
 30 HZ to 20 KHZ
 Total Harmonic Distortion $<$ 5%
 30 HZ to 20 KHZ
 Hum and Noise \leq + 18 DBM
 Gain $>$ 70 db below + 8 DBM
 Crosstalk Unity
 $>$ 70 db at 15 KHZ

IMAGE VIDEO, LTD.

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BROADCAST ROUTING SWITCHER



6010 10 X 1 Self-Contained Broadcast Routing Switcher

Description:

The 6010 self contained switcher is a high quality 10 x 1 suitable for use throughout the television or radio plant, from production to monitoring applications. The flexible configuration and control system frees the Engineer from handbuilt or customized equipment procurement.

Configuration:

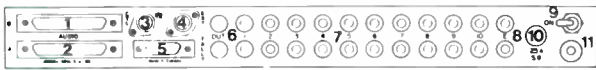
- Basic switcher is 10 x 1, video only, mono or stereo audio only or AFV with mono or stereo audio in one rack unit.
- One or both audio channels may be replaced with time code or control bus.
- Basic switcher may be expanded to 20 x 1 or more with additional 6010's and one control interconnection.
- Remote control via shielded audio pair may be factory installed or field installed later (no soldering or adjustments required).
- Tally is optionally available (one open collector per input).
- Parallel BCD control optionally available for automation interface.

Features:

- Relegendable pushbuttons with gold contacts and LED indicators.
- Two outputs per bus, video and audio.
- Loop through video inputs.
- Bridging audio inputs.
- Vertical interval switching.
- Hinged front panel for easy access to plug-in modules.
- Low power consumption.
- Second audio channel may be retrofitted.
- All electronic switching.

Technical Specifications

Electrical	Power	120/240VAC ± 10%, 50/60Hz, 12VA
Video Input	Input Signal Level	1VP-P
	Input Impedance	Bridging 75ohms, Loop through
	Return Loss	> 46db to 4.2MHz
	Number of Inputs	10 + Extension
Video Output	Level	1VP-P
	Number of Outputs	2
	Impedance	75 ohms
	Isolation	> 36db to 4.2MHz
	Level Difference	< 1%
	Frequency Response	< 0.1db to 5MHz + 0.5db to 10MHz 65db below 1 VP-P
	Hum (P P)	Unity
	Gain	± 1db
	Output Gain Range	± 2%
	Line Tilt	± 2%
	Field Tilt	< 2%
	Differential Gain (10:90% APL)	< 25%
	Differential Phase (10:90% APL)	< 25%
	Switching Timing	Vertical Interval
	Crosstalk	60db to 4.2MHz
	Noise (RMS)	70db below 1 VP-P
Audio Input	Input Signal Level	+ 8dbm nominal + 24dbm MAX
	Common Mode Rejection	< 60db at 60Hz
	Input Impedance	> 20K Balanced
	Number of Inputs	10 + Extension
Audio Output	Number of Outputs	2
	Impedance	600 ohms Balanced
	Frequency Response	+ 0-3 db 20Hz-20KHz
	Total Harmonic Distortion	< 2% 20Hz-20KHz @ + 24dbm
	Maximum Output Level	+ 24dbm
	Hum and Noise	> 78db below + 8dbm
	Gain	Unity
	Gain Range	± 3 db
	Crosstalk	> 70db @ 20KHz
Physical Dimensions	Height	1 3/4"
	Width	19" Rackmount:
	Depth	15" including connectors
	Video connectors	BNC
	Audio connectors	D Sub-miniature
	Remote control connectors	2-3 Pin DIN
	Tally connector	D Sub-miniature



Rear Panel Facilities

- | | | |
|-------------------------------------|--------------------------------------------------|-------------------------|
| 1. Audio channel 2 in/out connector | 4. Extension control connector for bus extension | 8. Extension input loop |
| 2. Audio channel 1 in/out connector | 5. Tally out / BCD control in connector | 9. Power switch |
| 3. Remote control connector | 6. Two video outputs | 10. Fuse |
| | 7. Ten video input loops | 11. Power cord |

Prices and Specifications Subject to Change Without Notice.

VT-91

IMAGE VIDEO, LTD.

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ROUTING SWITCHER

9100 SERIES ROUTING SWITCHER

FEATURES

Video

- Outputs of individual 16 x 4 cards are disabled when not required so that crosstalk for 256 x 256 is same as for 16 x 1
- All module interconnections are made via 75 ohms coax for controlled transmission characteristics
- System is easily timed because of short internal bus systems
- Vertical interval switching controlled by a single feed of sync or composite video to the controller
- All plug-in boards have overcurrent protection so that a short circuit failure only affects the board concerned
- All addressed boards (i.e. crosspoints and controller) identify their position in the matrix by backplane wiring — no adjustments or prom changing required
- Output cable equalization
- Input cable equalization
- True confidence tally

Audio

- Balanced throughout — drivers, crosspoints, intermodule transmission lines and outputs
- + 24dBm input and output levels with 600 ohms output impedance
- 50 ohms output impedance optional
- Audio-follow-video or full breakaway of audio/time code
- Multiple level audio available
- Extended bandwidth audio (100kHz)
- Click/transient free switching
- Over current protection
- True confidence tally

Control

- Accommodate all 6100/6200 series control panel types and options
- Battery retention of status during power fail (in controller module)

Power

- Modular plug-in power supplies
- Power supply backup system with built-in failure alarm system, continuous operation with one failed supply
- Simple, rugged, fan-cooled supplies offer reliable operation
- Over-temperature protection/alarm system prevents failure of system due to cooling failure

A new generation of routing switchers designed for medium to large routing systems. Its modular construction facilitates easy expansion up to 256 inputs with an unlimited number of outputs. Any combination of video, audio, and time code matrices are available.

All controls are microprocessor based with processors located in both the control panels and the matrix controller. Battery retention of status during power failure is provided and control panels are available in button per crosspoint, X-Y, thumbwheel, keypad, or combinations of these. RS232 and IEEE-488 control ports can be supplied when computer interface is desired.

Video Configuration

Input Distribution Amplifiers restore DC and provide input cable equalization up to 1000 feet. The input feed is then split into four 75 ohm outputs. 75 ohm coaxial cable is used for all inter-module connections. This provides controlled transmission characteristics.



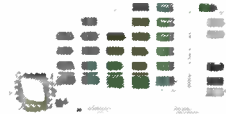
MODEL 9100



VIDEO CROSSPOINT FRAME



AUDIO CROSSPOINT FRAME



CONTROL PANEL

Each video crosspoint frame is arranged in a 16-input by 64-output format. A crosspoint frame consists of sixteen 16 x 4 cards each with output buffers for 75 ohm cable. There is also a control buffer card. All addressed crosspoint cards identify their position in the matrix by backplane wiring thus eliminating DIP switch adjustments or PROM changing. Crosspoint cards may be removed and reinserted without switching off the system.

The combiner frame consists of sixteen 16 x 1 combiner cards. This, in conjunction with the crosspoint frames, makes up a 256 x 16 format. Output equalization adjustment is provided for up to 1000 feet of cable.

Audio Configuration

Each audio crosspoint frame consists of two 16-input buffer cards which drive sixteen 32 x 8 crosspoint cards. This results in a 32 x 128 frame format. There is also a control card in each frame for interfacing to the microprocessor controller. Differential input circuitry provides 82dB of common mode rejection at 60Hz.

The audio combiner cards each contain two 8 x 1 combiners. The frame consists of sixteen combiner cards to accommodate expansion up to 256 inputs by an unlimited number of outputs. Extended audio bandwidth (100kHz) allows use of time code channels.

Control Configuration

Control panels communicate with a system controller. The switcher modules are then controlled by a parallel control bus via the control card in each frame. Redundant control is possible by paralleling two control modules on the control bus in a master/slave configuration.

A wide variety of microprocessor based control systems are available including button per crosspoint, X-Y, thumbwheel, keypad, or combinations of these. All systems may be equipped with interrogation, numeric only or alphanumeric display on the control panels, CRT status displays, and rack mount alphanumeric displays.

Image Video designs control panels to meet the requirements of the particular customer. We can custom design one for your special application.

SPECIFICATIONS

Electrical

Power..... 120/240 VAC 50/60Hz

Video

Input Signal Level..... 1V P-P
 Input Impedance..... Bridging 75ohms
 Return Loss..... > 46db to 5 MHz
 Number of Inputs..... 256

Output Level..... 1V P-P
 Number of Outputs per Bus..... 2
 Impedance..... 75 ohms
 Isolation..... > 40db to 5 MHz
 Level Difference..... < 1%

Frequency Response..... < 0.1db to 5 MHz
 + 0.5db to 10MHz
 Hum..... 60db below 1V P-P
 Gain..... Unity
 Gain Range..... ± 1db
 Line Tilt..... < .25%
 Field Tilt..... < .25%
 Differential Gain (10-90% APL)..... < .25%
 Differential Phase (10-90% APL)..... < .25°
 Switching Timing..... Vertical Interval
 Crosstalk..... > 60db to 4.2 MHz
 Noise (RMS)..... > 70db below 1V P-P
 Path Length Differential..... ± 1 degree

Audio

Input Input Signa Level..... + 24dbm MAX
 Input Impedance..... > 30K Balanced
 Common Mode Rejection..... > 82db at 60Hz
 Output Number of Outputs per Bus..... 3
 Impedance..... 600 ohms + 2% Balanced
 Frequency Response..... + 0.3db 20Hz to 20KHz
 Total Harmonic Distortion < .02% 20Hz to 20KHz, + 18dbm
 < 2% 20Hz to 20KHz, + 24dbm
 Max Signal/Noise Ratio..... > 96db
 Output Gain Range..... Unity + 3db
 Crosstalk..... > 75db @ 15KHz

Prices and Specifications Subject to Change Without Notice.

IMAGE VIDEO, LTD.

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MACHINE CONTROL SYSTEMS

4100 Machine Assignment System

- Handles up to 160 Machines • Up to 24 Control Panels • Up to 25 Machines per Panel • Up to 35 levels of switching • Master start of preset functions • Tally of Remote/Local control • Communication via coaxial cable • Plug-in modules for flexibility and easy maintenance • Status generator and printer facility

System Controller

The organization is built around the System Controller which is made up of two sections; the Assignment Controller, and the Machine Controller. Each section contains a microprocessor and they communicate with each other via a multi-conductor cable in parallel format.

The Assignment panels all contain a microprocessor and communicate with the Assignment Controller via coaxial cable. The Assignment Controller handles the assignment of control panels and machine interfaces.

The control panels also all have a microprocessor and communicate with the Machine Controller via coaxial cable. The Machine Controller handles communications between the control panels and the machine interfaces.

Machine Assignment Panel

The machine assignment panel permits the assignment of any control panel to control any machine (VTR, Telecine) through the machine interface unit. It effectively interconnects the various control panels and the machine interfaces.

Assignment is made by simply entering the machine number and then the control panel number. Pressing ASSIGN completes the assignment. A machine cannot be assigned to more than one control panel. The communications link between a machine and a control panel is broken by entering the machine number and pressing CANCEL.

The machine and control panel numbers are three characters and do not have to be in any specific order.

Machine Interface

The machine interface is a two rack unit assembly capable of remotely controlling the functions of a machine. It consists of five Relay Tally Boards, a DIP Switch Board, a Line Driver Tally Board, and a Microprocessor Board.

Each Relay Tally Board is capable of seven levels of relays and seven return tallies. Pushbutton functions, e.g. Fastforward, are associated with each relay.

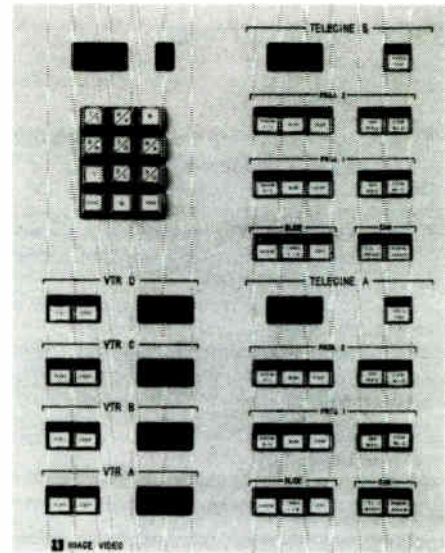
The Microprocessor Board communicates with the outside world and operates the relays etc.

The DIP Switch Board has DIP Switches for machine number assignment, relay close time, and baud rate etc.

The Line Driver Tally Board controls the remote tallies and confirms the presence of the power supplies.

Five 38-pin connectors at the rear of the frame interfaces between the relay boards and the actual machines being controlled.

VTR interfaces normally consist of 7 levels of control and Telecines normally have 21 levels. However, up to 35 levels may be controlled. The control is buffered via floating (form C type) relay contacts and the tally from the machine with an optical isolator.



Machine Assignment Panel



Machine Assignment System

Control Panel

This desk mount panel provides control of the machines assigned to it. The number of machines to be controlled varies depending on specific customer requirements. The standard configuration is 3 VTRs with 7 levels of control and 2 Telecines with 21 levels of control each. Special control panels with up to 25 machines and 35 functions per machine may be specially ordered.

A three character alphanumeric display shows which machine is assigned to the bus. The machine numbers do not have to follow any specific order and there can be a total of 160 machines in a system. The numbers assigned to the machines should be specified at the time of ordering. A blank machine number indicates that no machine is assigned.

Operations may be preset on all of the busses of the control panel and with one button, the MASTER START, all the selected functions will be taken. Functions are preset by holding down the PRESET button and depressing the desired functions. Preset functions can be cleared by holding down the PRESET button and depressing the function button again. Presets can also be cleared when they are initiated by the MASTER START button.

A coaxial cable is used to interconnect the control panel and the System Controller. Clare Pendar or Shadow type pushbuttons are available.

IMAGE VIDEO, LTD.

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MASTER CONTROL

AUTOMATED MASTER CONTROL—MODEL 8100

Off The Shelf Broadcast Automation

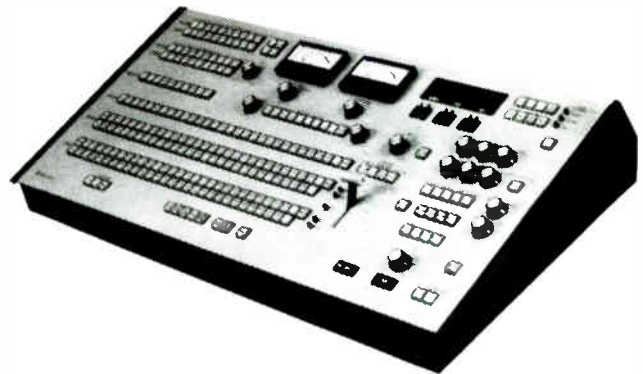
Image Video now offers the world's first really practical automated master control system for broadcast applications.

The System is built around two components—a full capability master control (on-air) switcher with the most advanced features in the industry, and a state-of-the-art, plug-in automation system. The Automation Package has been kept to a minimal size with full function through the use of a Z-80® microprocessor. The Automation System simply plugs into the switcher matrix—no further hardware is required. So the master control switcher can be bought and used manually until volume makes the Automation System desirable.

The Design is based on six years experience in producing custom systems for major television and radio stations world-wide. All of the most advanced functions to date have been incorporated—you no longer have to sacrifice one function to get another. And because the Image Video Automation System is based on proven engineering, standard components and off the shelf hardware, your total package price is extremely competitive with units offering far less capability.

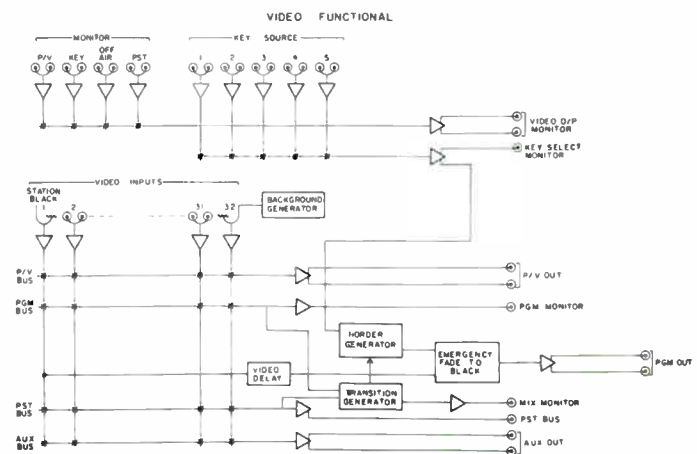
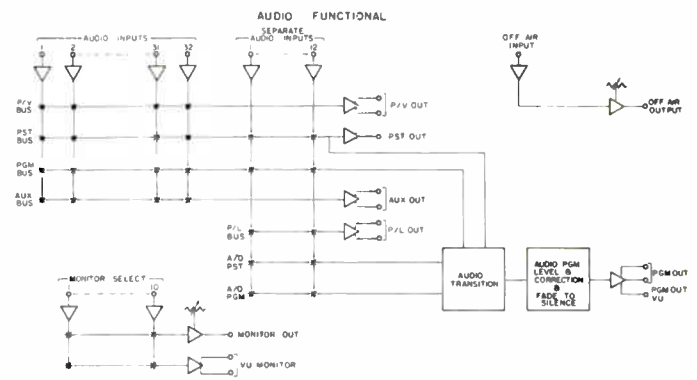
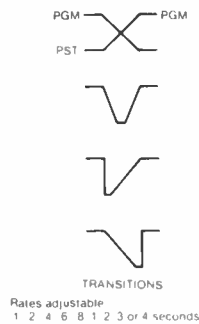
The System can interface with business systems for direct entry of accounting, traffic and other functions. Floppy discs are used for storage of daily programming and can be programmed with standard equipment off-line. A full 24 hours' events can be handled.

A printer is easily connected and back up processor is available.



Highlight Features:

- Electronic Digital Clock Timer indicates real time, elapsed time and countdown in 12 or 24 hour time modes. Provides for automatic time freeze as program events occur
- Automatic Pre Roll allows for stabilization of related equipment with adjustment increments of .01 seconds to 10 seconds maximum for each of the 30 inputs. Individual pre roll settings are achieved via a touch pad and protected against power loss.
- 4 Audio/Video Transition Modes
- Adjustable Transition Rates
- Start Facility on all Audio Inputs Available
- 40 Audio and 30 Video Inputs
- Audio/Video Married or Separate Operation
- Manual Fader Control
- Emergency Fade to Black for Video and Audio
- Audio and Video Preview Bus
- Separate Key Input Bus
- Colour Defeat Function
- Border Generator
- Matte Generator and Background Generator
- 5 Input Key Source Select and Monochrome Keyer
- 10 Separate Audio Inputs
- Continuously Variable Audio Over/Under Ratio
- Audio Level Correction Facility
- Comprehensive Audio Monitoring Facilities
- 48K of Ram for Data Storage
- 16K of ROM for Program Storage
- Dual 8" Floppy Discs for Off-Line Storage
- CRT Terminal For Data Entry and Status Display
- Line Printer for "As Aired Log" Available
- Optional 2nd CRT Entry and Display System and a Stand Alone Entry Disc Package



Z-80 is a registered trademark of Zilog Corporation

IMAGE VIDEO, LTD.

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MODEL 8200 FEATURES

ELECTRONIC DIGITAL CLOCK TIMER
 Indicates real time, elapsed time, and
 countdown in 12 or 24 hour time modes.
 Provides for automatic time freeze as pro-
 gramme video events occur. Initiates transi-
 tion to new source.

AUTOMATIC PRE-ROLL
 Allows for stabilization of related equip-
 ment with adjustment increments of .01
 seconds to 10 seconds maximum for each
 of 30 inputs.

4 AUDIO/VIDEO TRANSITION RATES
 (PROM based)
 Crossover, V-Fade, Cut-down and fade-up,
 fade down and cut-up.

START FACILITY ON ALL AUDIO INPUTS
 AVAILABLE

30 AUDIO/VIDEO INPUTS PLUS BLACK,
BACKGROUND, SILENCE, and Audio
 Follow pushbutton.

5 DSK SOURCES AND LUMINANCE
KEYER

4 VIDEO MONITOR INPUTS

SEPARATE DSK INPUT BUS
EMERGENCY FADE-TO-BLACK and
SILENCE

BORDER GENERATOR
 Matte, outline, border, drop shadow, key in-
 vert, border white, and fast or slow mix.

12 SEPARATE AUDIO/AUDIO
OVER/PRELISTEN INPUTS

10 AUDIO MONITOR INPUTS
PPM METERS FOR AUDIO MONITOR AND
PROGRAM LEVEL (PAL only)

CONTINUOUSLY VARIABLE (SLIDER)
AUDIO OVER/UNDER RATIO

AUDIO LEVEL CORRECTION FACILITY
COMPREHENSIVE AUDIO MONITORING
FACILITY

ANNOUNCEMENT LEVEL CONTROL
REHEARSAL MODE

Allows production setup without affecting
 on-air program

12 PATTERNS AVAILABLE ON PATTERN
SELECTOR (PAL only)

RGB KEYS (PAL only)

FULLY COMPUTERIZED SYSTEM

Permits increased reliability with four
 separate microprocessor control with in-
 dividual memories.

Separate electronics and control systems
 for preset and program. System is func-
 tional even if panel control of the pro-
 gram bus fails; events can be taken on
 air by manual fader or Take pushbutton.

COMPUTER INTERFACE AVAILABLE
 For control and monitoring devices e.g.
 another control panel, log printer, modem
 for remote control (telephone initiated
 preset selection and transition etc.),
 machine control.

SELF-DIAGNOSTICS BY
MICROPROCESSORS

PROGRAMMABLE MODES OF TAKE
OPERATION

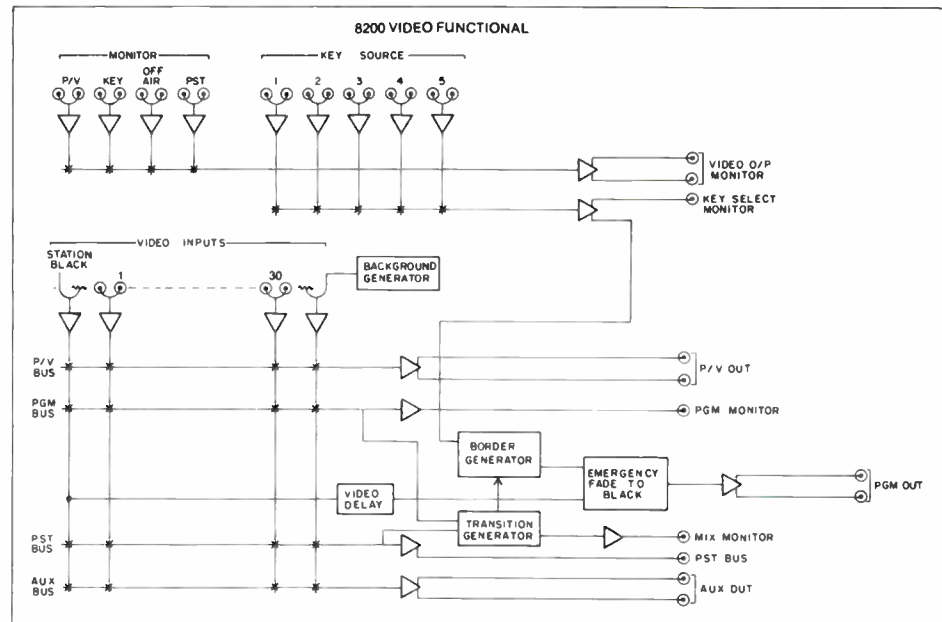
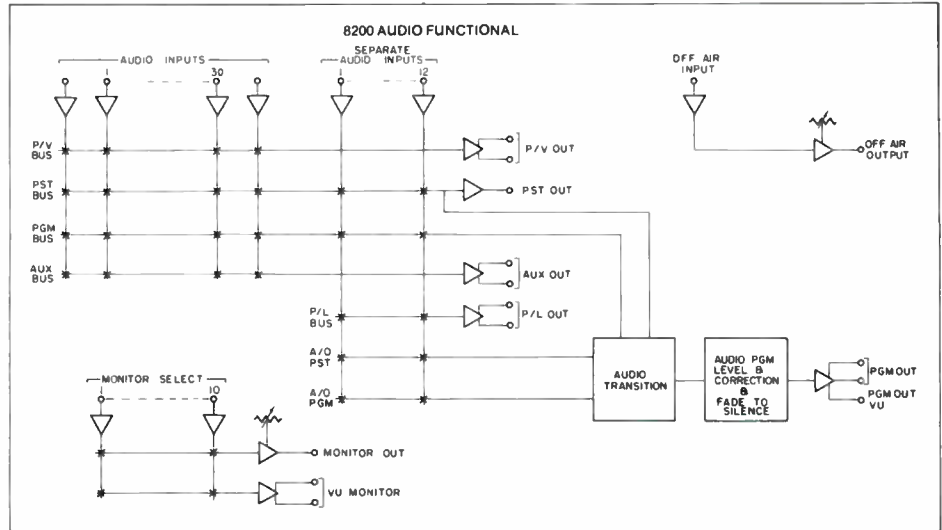
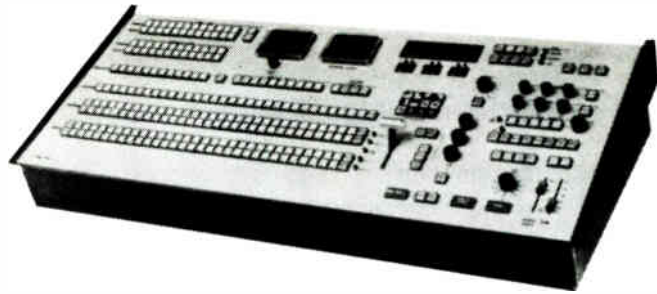
PROGRAMMABLE MODES OF AUDIO
OPERATION

STEREO AUDIO OPTIONALLY AVAILABLE

INTELLIGENT START-UP AFTER POWER
FAILURE

Maintains status after short power failure.
 Comes up black and silence after long
 power failure.

MASTER CONTROL



Electrical Power	120/240 VAC ± 10%, 50/60 Hz	Audio	Number of Inputs 30 Standard, 12 Separate Input Signal Level + 8 dBm nominal + 18 dBm test + 24 dBm maximum
Video	Number of Inputs 30 (standard) Input Signal Level 1V p-p Composite Input Impedance Bridging 75 Ohms Differential Gain 1%, 10 to 90% APL Differential Phase 1°, 10 to 90% APL Crosstalk -56db @ subcarrier - all inputs and buses hostile except input and bus under test.	Input Impedance 30K balanced Frequency Response ± 0.5 dB, 20 Hz to 20KHz Harmonic Distortion 0.1% at + 18 dBm Crosstalk 70 dB to 15KHz Signal to Noise Ratio Better than -90 dB relative to + 18 dBm Monitor Amplifier 10W output	
Frequency Response	± 0.1 dB to 5 MHz		
Signal to Noise Ratio	± 0.3 dB to 8 MHz		
Ratio	70 dB rms to 1V p-p		
Electronics Frame	..... 21 rack units		

Prices and Specifications Subject to Change Without Notice.

IMAGE VIDEO, LTD.

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MONITORING PANELS

7105 Silence Monitor

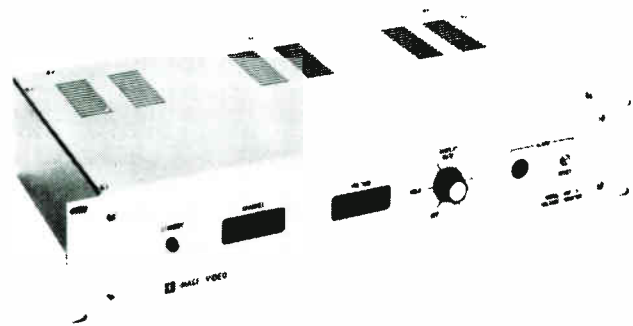
Features

- Expandable two to ten channels in single rack unit enclosure
- Immediate alarm warning indicator
- Audible and visual alarm (after preset time lapse)
- Remote alarm outputs
- Cancelling/non-cancelling resettable audible alarm
- Simple setup procedure
- Low cost
- 110/220V operation

Specifications

- Number of Detectors Multiples of 2, up to 10 max
- Audio Input Impedance 600 ohms balanced, bridging
- Acceptable Input Level +24dBm to -68dBm
- Trip Threshold Range Adjustable from -20dBm through -68dBm
- Detection to Alarm Time Delay 0 sec through 2 mins, 35 sec in 5 sec increments
- Remote Alarm Outputs 1 per detector, Open-collector active low 150mA, 30V max
- Size 1-3/4" high, 19" wide, 15" deep

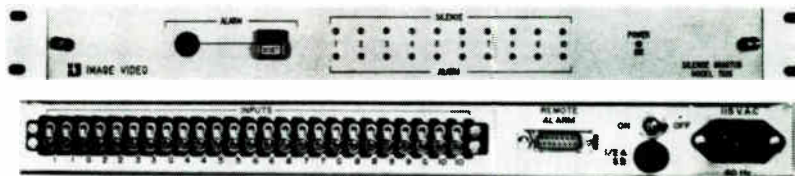
VMP-1 Voltage Monitor Panel



- Monitors up to 128 DC voltages
- Digital circuitry throughout
- Adjustable display rate
- Software adjusted alarm tolerances
- Continuous and automatic monitoring

Options

- 01 Basic unit c/w AC power supply, local alarm and remote alarm connectors, seven segment LED display
- 02 Eight character alphanumeric display c/w supporting circuitry.
- 03 Battery backup for above
- 04 Printer dump circuitry to allow hard copy of information displayed
- 05 CRT interface to continuously display data on BW monitor



The Image Video Audio Silence Monitor automatically monitors up to ten audio inputs and issues audible and visual alarms if any input falls below a preset level. It is a compact, low cost, single rack unit product incorporating many unique features and is particularly suited for use in isolated, non-supervised areas.

Operation

Each silence detector channel can be set to trip at any level from -20dBm through -68dBm. Individual alarm delays are switch settable from 0 seconds through 2 minutes, 35 seconds. As the audio level falls below the detector threshold, the amber warning LED of the channel lights. If this condition persists for a period determined by that channel's delay setting, the red alarm LED lights, the remote output goes low and an audible warning is issued.

Remote alarm outputs are provided for each channel. These outputs will sink up to 150mA at up to 30V and are open-collector, active-low enable. They may be used for a variety of purposes as the customer desires. The remote alarms may be individually disabled.

The audible alarm can be manually reset. However, a simple strap feature permits automatic reset when the alarm disappears. Conversely, the automatic reset can be inhibited so that the operator will know that silence occurred when no one was in attendance.

The Image Video Voltage Monitor is a microprocessor based unit capable of monitoring up to 128 individual D.C. voltage sources both continuously and automatically. Circuitry is digital throughout, eliminating the need for adjustment and improving reliability.

Alarm tolerances are set via a software (PROM) adjustment and may contain both upper and lower limits. A channel failure is announced through a local sonic alarm and silenced with a pushbutton. Both alarm and reset functions are remotored through a rear panel connector.

The standard unit is equipped with LED type seven segment displays, indicating channel number and voltage. Display rate is adjusted by a front panel control.

Several enhancements are available as factory installed options.

Operation

Normal (Standby) Mode. In this mode, the DISPLAY RATE control is rotated fully CCW and CHANNEL and VOLTAGE displays are blanked. The green STBY lamp indicates that the microprocessor is scanning all of the channels.

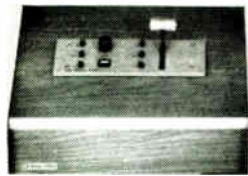
Alarm Mode. If for any reason an input voltage falls outside its tolerance range, the red displays illuminate indicating the channel that failed and its present voltage. Simultaneously the remote and local alarms are switched on. If more than one channel failure exists each faulty channel is displayed in turn at a fixed rate which may be overridden by the DISPLAY RATE control.

The audible alarm can be cancelled at any time by the ALARM RESET pushbutton, however, the displays will remain active until a no-fault condition is restored.

Examine Mode. The Voltage Monitor may also be used as a maintenance tool, even if no alarms are present. A slight CW rotation of the DISPLAY RATE control allows the displayed channel's voltage to be shown permanently. A further CW rotation allows the channels to be sequentially stepped at a variable rate. It should be noted that at all times, no matter what operational mode is selected, ALL channel voltages are ALWAYS MEASURED.

IMAGE VIDEO LTD.

705 Progress Ave., Unit 46
 Scarborough, Ont., Canada M1H 2X1
 (416) 438-3940 Telex 065-25392



MODEL 7001C

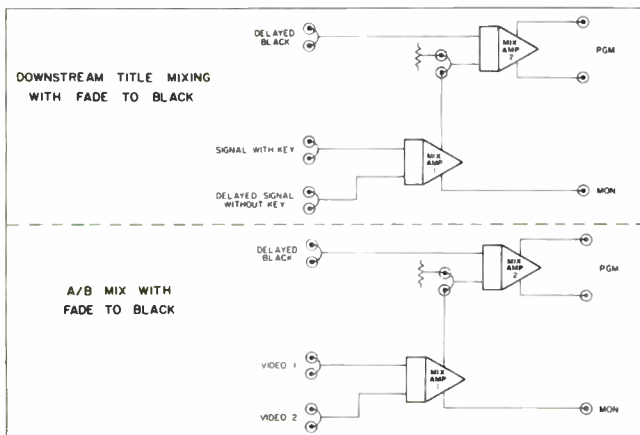
MODEL 7001C — DUAL VIDEO MIX AMP

Features

- Two separate video mixing amplifiers housed in a single rack unit
- Remote control panel
- Mix amps may be independently operated or cascaded
- Operates on synchronous video source — no external sync requirements
- Control and tally output on same connector on rear panel
- Standard AUTO-MIX permits variable rate and automatic mix on amp 1
- Easily conformed to existing system
- Audio-follow-video option available
- Manual fader on amp 2

The Dual Video Mix Amp — Model 7001C incorporates two independent video mixing amplifiers housed in a single rack unit and controlled from a remote panel.

The Model 7001C meets all broadcast specifications and is ideal for use in downstream title mixing and A/B mixing applications.



TYPICAL APPLICATIONS

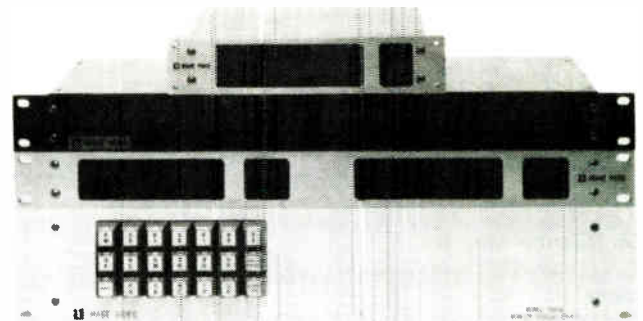
SPECIFICATIONS

Video Inputs	Four, 1V p-p, 75 ohms terminating
Video Outputs	Four, 1V p-p, (2 outputs per amp)
Frequency Response	±0.2dB to 5MHz, ±0.5dB to 8MHz
Diff. Phase	< 1.5° (10-90% APL)
Diff. Gain	< 1.5° (10-90% APL)
Crosstalk	> 55dB at 3.58MHz
Tilt (Vert & Horiz)	< 1%
Signal to Noise	> 60dB
Path Length	.25ns (through one amplifier)
Path Length Differential	< 1°
Tally Output	Open Collector pull down
Electrical	117/230V, 50/60Hz
Electronics Frame	.1 rack unit (1-3/4" x 19" x 10")
Control Panel	7" x 3" x 3-1/2"
Video Connector	BNC
Control and Tally Connector	D-Sub miniature

MODEL 7707 — UNIVERSAL UNDER MONITOR DISPLAY

The basic system consists of 2 components: the monitor display driver and the monitor status display.

AUDIO/VIDEO COMPONENTS



MODEL 7707K DRIVER AND DISPLAY UNITS

FEATURES

Driver Frame

- Two rack units high
- Will drive up to 9 displays
- Connects to displays by 37 pin flat ribbon cable
- Connects directly to the Routing Switcher or to an RS232 interface unit (7707 only)
- On Air Tally inputs connected by 25 pin D type connector—the user supplies the contact closures only
- Internal Power Supply
- Alphanumeric Keypad for message update (7707K only)

Display Unit

- Single rack unit high
- Available in both rack and wall-mounted design
- Rack mounted units are available in a number of formats to accommodate the picture monitor layout: displays can be located in the center, to the left or right side, or two displays per panel

There are two types of systems available — the model 7707 and the model 7707K. Both systems use the same kinds of monitor status displays; only the display drivers are different.

The model 7707 system can be driven directly from Image Video routing or master control switchers or with an optional RS232 interface, can be driven directly from any routing or master control switcher that has a tally output. Each driver frame can handle up to nine display units and multiple drivers may be connected via the control inputs to accommodate requirements for more than nine displays.

The model 7707K system has a built-in alphanumeric keypad used to update message data on the display units. Up to nine display units may be driven from one 7707K driver, however, multiple drivers may be connected together to facilitate additional display units. Only one of these drivers requires a keypad. Each display output is internally assigned a display number (1 to 225) via a dip switch.

MODELS 601, 602 10X1 PASSIVE ROUTING SWITCHERS

Video Model 601 AFV Switcher

Transparent signal path ensures the integrity of the audio/video signal.

Video signal is fed through the switcher with excellent crosstalk specs and high stability with no noise interference. And, there is unity transmission gain. Input video is via isolated BNC connectors and is terminated with built-in 75 ohms 1% resistors. Selected input is indicated by an orange strip on input pushbuttons.

Crosstalk	Better than 40dB at 4.2MHz (All other inputs hostile)
Physical Dimensions	19" x 1-3/4" x 4"

Model 602 Dual Audio Switcher

Each audio input is terminated with built-in 600 ohms resistors. The inputs and outputs are brought to the panel via two 25-pin D-type connectors for wiring convenience. There is no degradation of the input signal.

Crosstalk	Better than 70dB at 20kHz (All other inputs hostile)
Physical Dimensions	19" x 1-3/4" x 4"

Ordering Information

For 10 x 1 audio follow video	Model 601
For 10 x 1 dual audio	Model 602



992



952



982

982 ROUTING SWITCHER

DESCRIPTION

The Model 982 AFV Routing Switcher is based upon refinement of the CMOS logic family and is characterized by extremely low power requirements, high noise immunity, and controlled rise and fall times.

FEATURES

- Vertical interval switching
- Ten inputs with two video and four audio outputs per bus
- Modular construction/bus expandable
- Employs latest COS/MOS logic
- Self-contained using only 1 3/4" rack space

MATRIX

The matrix requires only 1-3/4" of standard 19" rack space, is self-contained, and has a dual voltage power supply and vertical trigger generator dedicated only to this matrix. The vertical interval switching pulses are derived from video.

Available with 952 dual audio and/or 992 remote control with 25' cable.

982 ROUTING SWITCHER (SC) \$ 950.00
Audio Follow Video; 10 X 1 Vertical Interval Switcher; Loop Thru Video Inputs; Remote Controllable; Additional Audio Channels for Stereo; Auto Sequencer; Stackable to form up to 10 X 10 Matrix.

982 OPTIONS:

972 Two Additional Audio Channels (SC) **590.00**
952 Automatic Sequencer with Manual Remote (SC) **400.00**
992 Remote Controller with 25 ft. Cable (SC) **225.00**
Additional Cable up to 250 ft. **2.00/ft.**

SPECIFICATIONS

Audio

Inputs:
Impedance: balanced bridging
Level: 0dBm, +/- 15dBm

Outputs:
Program: 2
Impedance: 600 ohms balanced
Level: 15dBm max.

Performance:
Harmonic Distortion: less than .25%, 20Hz to 20KHz at 0dBm output
Frequency Response: +/- 0.1dB, 10Hz to 30KHz
Crosstalk: less than or equal to -60dB
Signal to Noise Ratio: less than or equal to -65dBm below +0dBm
Gain: Unity +/- 2dB

Mechanical/Power
Video Connectors: BNC
Audio Connectors: Micro Blue Ribbons
Dimensions: 1.75 x 19 x 13
Power Required: 115 volts AC +/- 10% 50-60 Hz
Temperature Range: 0-50° C

Video

Inputs:
Impedance: 75 ohms, bridging
Return Loss: 35dB minimum

Outputs:
Impedance: 75 ohms, source terminated
Number: 2
Return Loss: 35dB minimum

Performance:
Frequency Response: DC to 8MHz +/- .25dB
Differential Phase: less than 1°
Differential Gain: less than 1%
Tilt (line or field rate): less than 1%
Crosstalk: less than -52dB at 3.58 mHz (4.43 PAL)
Signal/Noise Ratio: less than 60dB to 5mHz

1100 SERIES AFV ROUTING SWITCHER

FEATURES:

- Vertical interval switching
- Two video outputs, two audio outputs on each bus
- Color timed system
- Field expandable
- BCD control
- Modular construction
- COS/MOS logic
- Front-panel plug-accessibility
- Microprocessor control option
- Computer adaptable

Description:

The 1100 Series Routing Switcher is a third generation design providing inherently simple and extremely reliable operation based on a decade of experience.

One 7" matrix module contains the input buffers, crosspoints, latch and output DA for a 20 by 1 balanced audio or wide band video switcher.

This system has been field tested in many installations around the country and has proven not only completely reliable, but also mechanically rugged and free from major service problems.

Since inputs and outputs are in different planes, crosstalk is greatly reduced.

All cards are interchangeable and matrices are direct coupled, eliminating the introduction of tilt.

Audio is switched balanced negating the effects of transients and spurious crosstalk in the system, and uses high impedance bridging units.

The 1100 system offers maximum flexibility by its availability with many different control options including pushbuttons, touchtone pad, keyboard, thumbwheel preset and take, microprocessor control, and special controls. Audio, AFV, audio and video, or almost any combination audio and video can be switched in any manner required by the user.

Pushbutton Controllers

The standard pushbutton controller (Model 1190) has up to 20 illuminated pushbuttons in a 1-3/4" rack mount panel. For audio breakaway in AFV routing switchers the Model 1192 with 10, 15 or 20 inputs, is available with a 3-1/2" panel with two rows of buttons and breakaway audio switch is available.

Thumbwheel Controllers

Thumbwheel controllers are particularly useful in larger systems or when large scale expansion is planned as they can accommodate up to 100 inputs, with modification when the system is expanded. For certain applications thumbwheels alone are available (Model 1193). For operational ease, the standard thumbwheel configuration includes an LED status window and Take button (Model 1195). This allows presetting an input and switching directly to it on the vertical interval. Panels are available in rack mount and multiple output configurations and with audio breakaway. (Models 1194 and 1196).



Keyboard Control

Touchpad keyboards with LED status windows are available in a desk top configuration or in rack mount panels. Touchpads allow pre-setting inputs and switching on the vertical interval. Audio breakaway is not available.

Microprocessor Controller

The Model 681 microprocessor controller is a very cost-effective means of controlling large systems. A central computer and terminal allow selection of any input to any output with audio breakaway. An 80 event memory, sequenced by an internal clock, allows presetting changes in router status for up to 7 days. The memory has backup battery protection to restore crosspoint status in the event of power interruption. Additional control terminals are available as options.

1100 Series Routing Switchers (from 10 x 5 to 20 x 20)

Audio Follow Video	from \$3,250.00 to \$15,200.00
Video or Audio only	from \$2,500.00 to \$9,200.00

Controllers

1190-10	Pushbutton Controller with 10 Inputs	\$ 340.00
1190-15	Pushbutton Controller with 15 Inputs	420.00
1190-20	Pushbutton Controller with 20 Inputs	505.00
1192-10	Pushbutton Controller with Audio Breakaway; 10 Inputs	675.00
1192-15	Pushbutton Controller with Audio Breakaway; 15 Inputs	840.00
1192	Pushbutton Controller with Audio Breakaway; 20 Inputs	1,010.00
1193	Thumbwheel Controller	105.00
1194	Dual Thumbwheel Controller with Audio Breakaway	170.00
1195	Thumbwheel Controller with LED Status; Preset and Take	280.00
1196	Dual Thumbwheel Controller with LED Status; Preset and Take	560.00
1181	Keypad Controller Desk Mount	435.00
1181R	Keypad Controller Rack Mount	485.00
681	Microprocessor Controller	5,600.00
683	Additional CRT for Microprocessor Controller	1,120.00
B-6000	Controller Interface card for 681	850.00
	Additional Cable (per Output Bus)	2.50/ft.
	Spare Parts Kit	500.00
	Cable Length 50'	Standard

MASTER CONTROL SWITCHER

**INTER
GROUP**
VIDEO SYSTEMS

"Creativity You Can Depend On"

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Gainesville, FL 32602
(904) 373-6783 (800) 874-7590
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MODEL 831

831 Master Control Switcher

FEATURES

- Ten AFV Inputs including Blackburst/Colorizer
- Five Breakaway Audio Inputs with Auto Cart Start
- Audio Over/Under
- Auto Transition Audio/Video Mixer, Cut or 3 Mix Rates
- Downstream Keyer with 4 Input Selector, Colorizer and Key Edging
- Non-Sync Detectors with Mix Transition Inhibit
- Program VU Meter and Level Adjust
- Audition and Program Monitor Amplifiers with Gain Controls
- Time Display (Count-up Event Timer)

The Model 831 Master Control Switcher with audio follow video utilizes state-of-the-art circuitry and construction techniques to maximize operation convenience, flexibility and accuracy.

The Model 831 utilizes a 10 in and 2 output AFV matrix which allows for direct cuts on the Program bus at any time. The Preset/Audition bus allows auditioning of any of the inputs and presetting of the next event. The auto transition system allows for cuts and for audio and

video mix transitions between the Preset and Program busses. Mix transitions at one-half, one and two second rates may be preselected but will be inhibited if a non-synchronous source is selected. A downstream key edger with 4 input selector, colorizer and outline, shadow and border edging is standard.

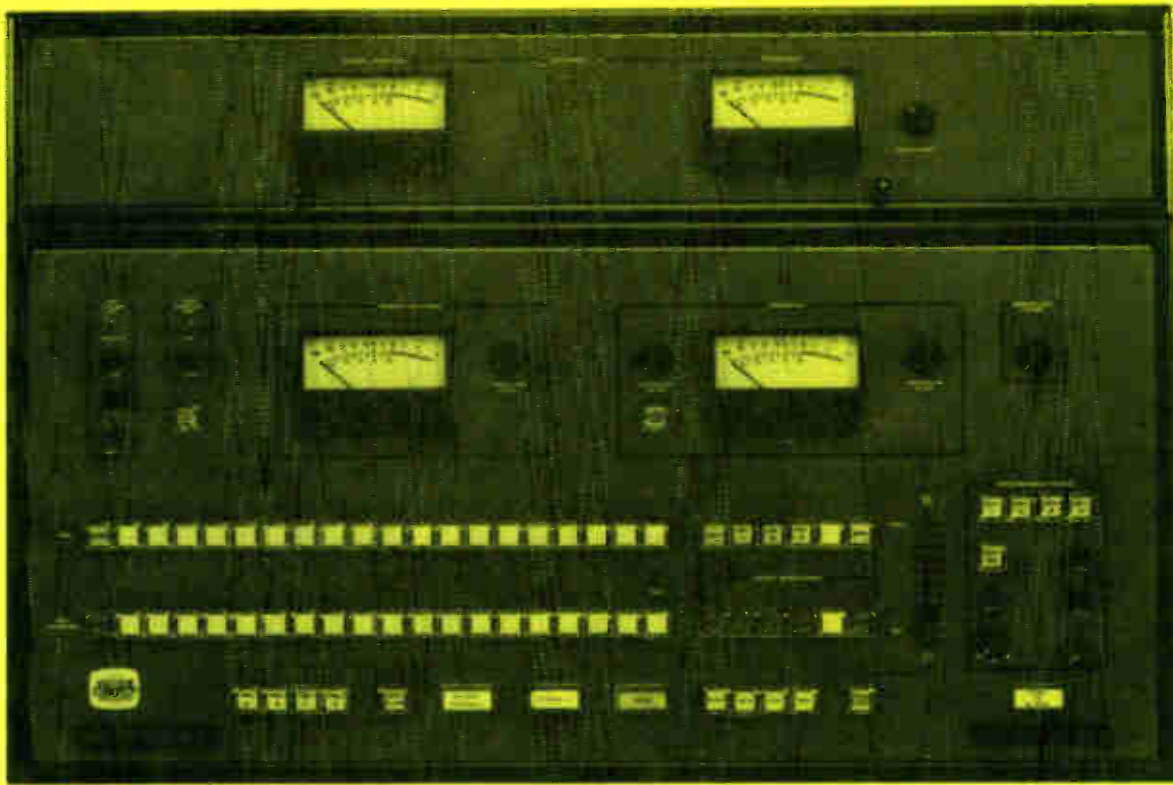
Both switching busses provide 5 breakaway audio inputs with auto cart start which may be used with any 600 ohm source. A variable ratio audio mix between Program and Preset is provided when audio over/under is activated. A Program VU meter, Program level control and Program and Audition 5 watt monitor amplifiers are standard.

831 Master Control Switcher \$11,700.00

831 OPTIONS

Additional Cable \$10.00/ft.
Additional Manual 75.00
Spare Parts Kit 400.00

MASTER CONTROL SWITCHER



MODEL 899-20 WITH STEREO OPTION

899 Master Control Switcher

- 10 to 30 inputs including Color Black
- Equalizing Input Amplifiers with +/- 15° Phase Adjust
- 5 Breakaway Audio Inputs with Auto Cart Start
- Audio Over/Under
- Auto Transition Audio/Video Mixer, cut or 3 mix rates
- Downstream Keyer with 4 Input Selector, Colorizer and Key Edging
- Non-Sync Detector with Mix Transition Inhibit
- Program VU Meter and Level Adjust
- Audition and Program Monitor Amplifiers with Gain Controls
- Live/Air Input Selector to Program Monitor Amplifier
- Audition VU Meter
- Time Display
- Tally System
- Master Fade to Black/Pulse Processing

The Model 899 Master Control Switcher combines the Model 1100 series routing switcher matrix with state-of-the-art electronics to provide both a master control switcher and a routing switcher matrix. Based on the 1100 series router matrix, the 899 uses two output buses for its audio follow video matrix. The additional output buses (3 minimum) may be used for preview or routing using standard 1100 series controllers. Equalizing amplifiers simplify color timing of the system. The 899 is also available in various input sizes from 15 to 30 inputs.

The Program bus allows for direct cuts at any time. The Preset/Audition bus allows auditioning of any of the inputs and presetting of the next event. The auto transition system allows for cuts and for audio and video mix transitions between the Preset and Program buses. Mix transitions of one-half, one and two second rates may be preselected, but will be inhibited if a non-synchronous source is selected. A downstream key edger with four input selector, colorizer and outline, shadow and border edging is standard.

Both switching busses provide 5 breakaway audio inputs with auto cart start which may be used with any 600 ohm source. A variable ratio audio mix between Program and Preset is provided when audio over/under is activated. A program VU meter and program level control and program and audition 5 watt monitor amplifiers with gain controls on the panel are standard.

OPTIONS

- Model 810 Booth Mic Pre-Amplifier: Provides booth mic level setting prior to air
- Model 868 Machine Control Logic
- Model 883 Video Tape Machine Control*
- Model 884 Film Island Control
- Computer Interface to operate the 899, consult factory

899-10 Master Control Switcher with 10 Inputs	\$13,900.00
899-15 Master Control Switcher with 15 Inputs	15,900.00
899-20 Master Control Switcher with 20 Inputs	20,100.00
899-25 Master Control Switcher with 25 Inputs	25,750.00
899-30 Master Control Switcher with 30 Inputs	28,575.00

800 SERIES OPTIONS:

810 Booth Preamp	675.00
825 Auxiliary Bus with Controller (limit 3)	2,050.00
825-S Stereo Auxiliary Bus with Controller (limit 3)	2,700.00
868 Machine Control Logic	2,890.00
883 Video Tape Machine Controller*	510.00
884 Film Island Controller	675.00
862 Stereo Audio Option	5,250.00
Additional Manual	125.00
Spare Parts Kit	650.00
Additional Cable	20.00/ft.

*Requires 868 Machine Control Logic Unit



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**5010 RACK FRAME/
 5030 EXTENDER/5050 (VIDEO)/
 7050 (AUDIO) POWER SUPPLY**

FEATURES

- Rugged, modular construction holds up to eight (8) plug-in modules (including power supply)
- Universal power supply
- Dual voltage

Description

The Model 5010 3-1/2" rack frame accommodates eight (8) plug-in modules including the power supply. The Model 5050 Video Power Supply provides a source for the distribution of pre-regulated +10V and -10VDC to an entire rack frame of seven (7) modules. The Model 7050 Audio Power Supply provides a source for the distribution of pre-regulated +15VDC and -15VDC to an entire rack frame of seven (7) modules. Both the 5050 and 7050 power supplies are plug-in modules which utilize rugged, heavy-duty components in a straightforward and reliable design. They supply voltage limited low ripple power from compact convection cooled modules.

5010	\$200.00
5030	40.00
5050	200.00
7050	200.00

**5130
 VIDEO DISTRIBUTION AMPLIFIER**

FEATURES

- Specifically designed for NTSC and PAL standard color video systems
- Six (6) isolated outputs
- Flat frequency response
- Minimum chroma-luminance delay (less than 10 ns) minimal phase and gain distortion
- Self-regulation of incoming DC voltage
- Uses one (1) module space in 501 rack frame

5130	\$175.00
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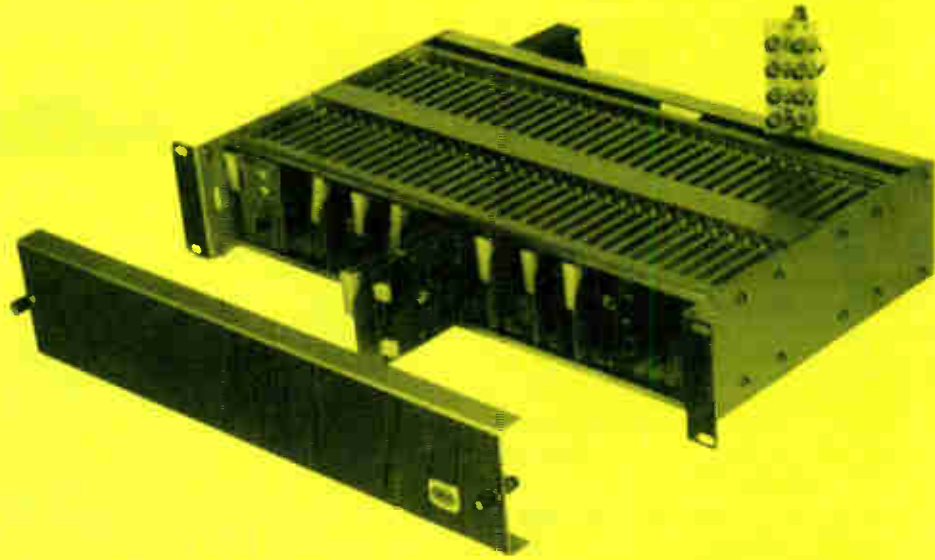
**5160
 VIDEO EQUALIZATION AMPLIFIER**

FEATURES

- Six (6) isolated outputs
- Continuously variable equalization and ± 15 phase adjustment at 3.58MHz
- Feedback, sample and hold clamp circuit for stable DC reference
- Common mode rejection greater than 60dB at 60Hz
- Self-regulation of incoming DC voltages
- Uses one (1) module space in 5010 rack frame

5160	\$250.00
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**TERMINAL PROCESSING/
 SIGNAL GENERATING EQUIPMENT**



**5190
 PULSE DISTRIBUTION AMPLIFIER
 5220 QUAD PULSE DELAY
 DISTRIBUTION AMPLIFIER**

FEATURES

- Four (4) outputs, each individually driven
- Total regeneration of pulses allow any of the outputs to be operated unterminated
- Circuits or regenerative devices sensitive to hum or other low frequency disturbances are not utilized
- Shaped rise times (less than 100 ns)
- Self-regulation of incoming DC voltages
- Uses one (1) module space in 5010 rack frame

5190	\$185.00
5220	225.00

5290 COLOR BLACK GENERATOR

FEATURES

- Produces Black Burst signal for use as a color black or to drive devices which genlock to a black burst signal
- Adjustments for burst phase and level, sync level and setup
- Uses one (1) module space in 5010 rack frame

5290	\$505.00
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**5225 SUBCARRIER
 DISTRIBUTION AMPLIFIER**

FEATURES

- Subcarrier output level independent of input level
- Two step continuously variable 0-170° and 170-340° phase control
- Self-regulation of incoming DC voltage
- Uses one (1) module space in 5010 rack frame

5225	\$285.00
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**5600 SMPTE
 COLOR BAR GENERATOR**

FEATURES

- Meets RS 189A specifications including new SMPTE Monitor Alignment signal
- Front panel controls switchable to full field or split field color bars or monitor alignment
- Digitally synthesized I and Q signals
- Filtered I and Q bands
- Composite output delay for ease of system timing
- Self regulation of incoming DC voltage
- Uses two (2) module spaces in 5010 rack frame

5600	\$750.00
------------	----------

5690 SYNC GENERATOR

FEATURES

- TCSO 14.3MHz Crystal Oscillator
- Digitally derived pulses
- Self-regulation of incoming DC voltages
- Uses one (1) module space in rack frame
- Meets RS170A standard

5690	\$590.00
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**7070
 AUDIO DISTRIBUTION AMPLIFIER**

FEATURES

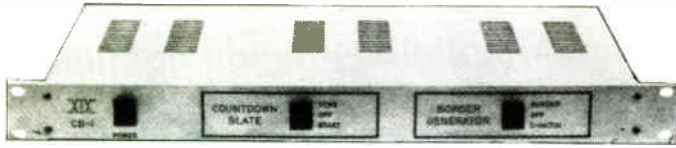
- 20dBm maximum output level
- Six (6) outputs, 600 ohms balanced
- Flat frequency response
- Self-regulation of incoming DC voltage
- Uses one (1) module space in 5010 rack frame

7070 Audio D/A 6 Output	\$225.00
7200 Monitor Amp	265.00

*Requires 7050 (Audio) Power Supply

INTERPHASE

2060 Menold Dr.
Allison Park, PA 15101
(412) 367-3775



CB-1

CB-1 ELECTRONIC SLATE BORDER GENERATOR

BORDER GENERATOR FEATURES

- Safe Action/Title Display with Center Crosshairs
- Internal Keyer — Selectable Hard or Soft Key
- Crosshatch Display
- Custom Patterns Available
- Remote Controllable — SPDT Switch Required
- Digitally Generated Patterns for Stability and Accuracy
- 1 Line Vertical, .15 μ s. Horizontal Resolution
- 2, 75 ohm 1%, Outputs

COUNTDOWN GENERATOR FEATURES

- Selectable Size Numbers 7 to 112 Lines
- Audio Output — Beeps Over Tone
- Internal Keyer
- Remote Controllable — SPST Switch Required
- Relay Closure on "Zero"
- No Pulses Required — Locks to Input Video
- Countdown Position Adjustable over Entire H & V Picture
- 1, 75 ohm 1%, Output

The CB-1 provides two useful post-production accessories in one compact package.

The Electronic Countdown Slate provides a digitally generated, 7 segment style countdown from 10 to 3. Both size and positioning are adjustable. The CB-1 derives its timing from input Video. It contains an internal Video Keyer that can be used to key the countdown over the program or to add its key signal to a character generator's.

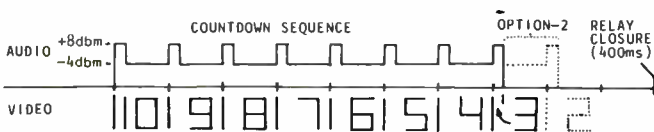
The CB-1 audio output is a 400Hz tone that rises in level 12dB, for 200ms after each number transition. The Tone automatically starts when the slate is activated and turns off .2 sec. after the "3". With the slate function switch in the Tone position, a low distortion, steady 400Hz tone is available for reference or utility use.

The Countdown Video and tone disappear 200 ms. after the "3". A relay is activated at "0". Its contacts are available on a rear mounted terminal strip and can be used to activate a switcher or other device.

The Border Generator utilizes a phased-locked-loop, locked to the input video, to clock a read only memory that generates the video pattern. This translates into long-term stability and accuracy.

Two patterns are selectable by the front panel switch or remote control: 1. Safe Border/Safe Title/Center Crosshairs 2. Safe Border/Safe Title/With Crosshatch. The crosshatch display is useful for monitor alignment or graphic positioning. User defined custom patterns are available, or they can be developed in-house with access to an EPROM programmer.

The Key Level is adjustable from 0 to 110 IEEU units. An internal jumper can select a Hard or Soft Key mode. In the Hard Key mode, the pattern is keyed regardless of the program video level. In the Soft Key mode, the pattern is keyed only where the program luminance is lower than the pattern's luminance. This mode provides a non-obtrusive display ideal for line monitor use.



DIGITAL GENERATOR/SWITCHERS



S-20

S-202 10x1

DUAL AUDIO/REMOTE CONTROL SWITCHER

FEATURES

- One Video — Two Audio Channels
- Tally Contacts Standard
- Gold Contact Switches with LED Indicators
- Can be Configured as a 19 x 1 Switcher
- Modules Removable from the Front of the Unit
- Occupies only 1 RU of Panel Space
- Power Switch, Test Points, and Adjustments Accessible From the Front of the Unit
- Interface to SMPTE (RP-113) Digital Machine Control Optional
- 10 BNC Video, 2 x 10 Audio Inputs
- 2 Video Outputs, 2 x 2 Audio
- RF Equals +0/-3dB, 20Hz to 20kHz
- 10 Hours Data Retention in Cases of Power Loss

The Interphase S-202 is the 10 x 1 switcher with everything. Dual audio, multiple panel remote control, audio breakaway, tally contacts and the specifications to back it all up.

Remote control is accomplished via serial digital data. Up to four remote control panels can be connected to one S-202 utilizing normal shielded audio cable. Cmos circuitry is utilized throughout the unit for low power consumption and high reliability. Memory backup is provided for the event of a power failure.

S-20 AUDIO FOLLOW VIDEO PASSIVE SWITCHER

FEATURES

- 10 Audio/Video Inputs
- BNC Video Connectors
- No Power Requirements
- Balanced Audio Switching
- Title Strip to Identify Sources
- Gold Contact, Premium Switches Utilized for Trouble Free Operation
- All Unselected Video Sources Terminated with 75 ohms \pm 1%
- All Unselected Audio Sources Terminated with 600 ohms
- Colored Switch Lens to Identify Selected Source
- Compact Size — 1.73" x 19" x 6" Mounts in Standard EIA Rack

INTERPHASE

2060 Menold Dr.
Allison Park, PA 15101
(412) 367-3775

M-400 MACHINE CONTROL SYSTEM FEATURES

- Up to 250 Machines
- Up to 24 Functions per Machine
- Up to 24 Tallies per Machine
- No Switching Matrix Required
- Custom Control Panels
- Up to 8 Control Panels
- Up to 10 Machines per Panel
- SMPTE (RP-113) Compatible
- No Central Assignment Controller Required

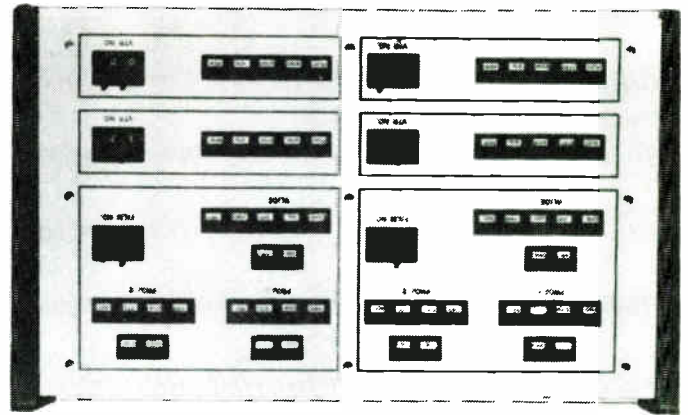
The Interphase M-400 Machine Control System was developed to merge the existing older equipment in a typical Broadcast facility with the new, RS-422, digitally controlled equipment of today and tomorrow. It accomplishes this with a minimum of hardware.

The M-400 is designed to conform to the Multi-Point operational configuration of SMPTE RP-113. It can consist of from 1 to 8 control panels and from 1 to 250 machines, communicating via a common RS-422 digital communications bus.

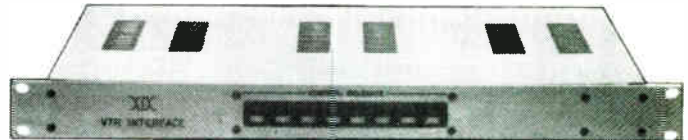
The Machine assignment problem is addressed by a shared responsibility between the machine operator and the control panel operator. A machine is delegated to a particular Control Panel location by selecting one of the eight assignment buttons on the Machine Interface. The assignment is completed when that machine number is selected on one of the leverwheel switches of the delegated Control Panel. There is no central assignment controller to contend with. In fact, a large system can be re-configured into several smaller systems by simply moving some cables. The fact that no "overhead" equipment is required, makes the M-400 cost-effective for small systems.

The M-400 system uses one looped RS-422 bus for all machines and control panels. Only one Control Panel will be in control of the bus at any time. Control of the bus is transferred between control panels utilizing the "ESCAPE" provision of RP-113. While in control of the bus, a Control Panel will Poll each machine assigned to it and update its status. If a command is initiated the panel will initiate a command sequence message. When polling is completed, control of the bus is transferred to the next Control Panel and the sequence is repeated.

MACHINE CONTROL SYSTEM



MACHINE CONTROL PANEL



VTR INTERFACE

Control Panels

The Control Panels are normally built to the customers specifications. The standard control panel shown consists of four VTR controls of five functions and two film controls of 19 functions. Control panels can be supplied ranging from a single rack unit for one VTR with 2-8 functions to a desk mount unit with 10 VTRs with eight functions.

Machine Interface

The Machine Interface is available in two basic versions: an eight function unit, suitable for VTRs and a 24 function unit suitable for film chains. Both units mount in a 19" EIA rack and contain eight front panel Control Delegate switches. The 24 function unit has relay (form A) outputs and opto-isolator tally inputs. The eight function also has relay outputs, opto-isolator inputs and an additional RS-422 Port to communicate with those devices that use RS-422 but are not RP-113 compatible. It will, of course, interface with devices that are RP-113 compatible, depending on the software supplied.

JAVELIN ELECTRONICS, INC.

19831 Magellan Dr.
P.O. Box 2033
Torrance, CA 90510
(213) 327-7440
Telex 19-4860 JAVELIN TRNC

MONITORS/SWITCHERS

MONITORS

All models provide 600 lines resolution. Corrected for use with all video recorders. Have front mounted controls for brightness, contrast, vertical and horizontal hold. Switchable looping input.

VM9C 117VAC 60 Hz **\$179.00**
VM9CX 220-240VAC 50 Hz (CCIR) **186.00**

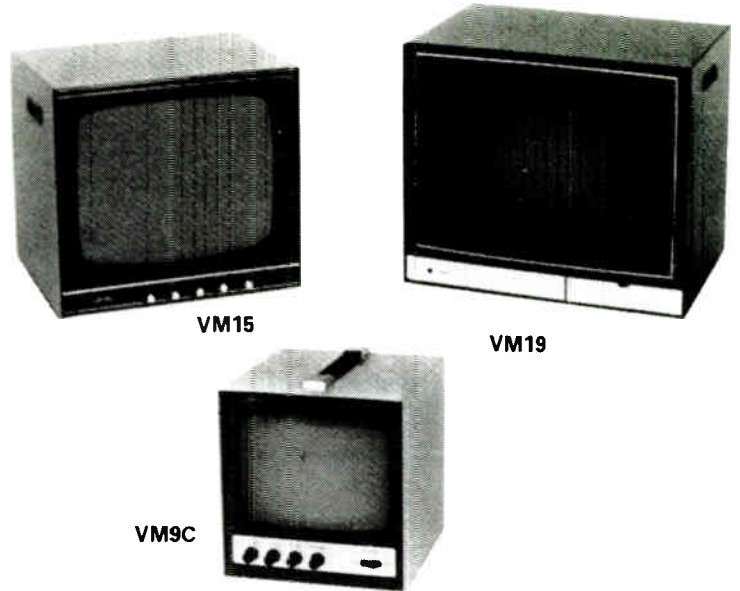
Viewing area 39 sq.in. Available in single or dual rack mount configurations.

VM15 117VAC 60 Hz **\$310.00**
VM15X 220-240VAC 50 Hz (CCIR) **324.00**

Viewing area 118 sq.in. Available in single rack mount configuration. Has built in audio pre-amp and speaker. U.L. listed.

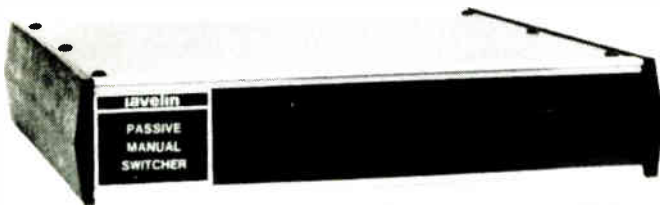
VM19 117VAC 60 Hz **\$391.00**
VM19X 220-240VAC 50 Hz (CCIR) **399.00**

Viewing area 172 sq. in. UL listed.



VIDEO SWITCHERS

Provide a means of routing a number of cameras to a single video display (monitor) or recorder.



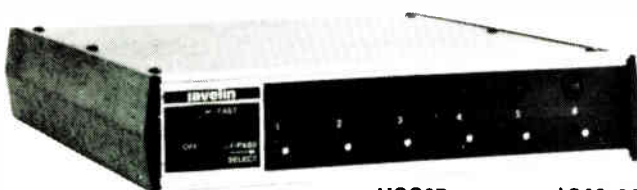
LMS6D \$116.00

Manual Switchers

Passive Manual-MS and LMS Series—Economical, reliable low signal loss mechanical switchers. Available in 4 and 6 position with terminating or looping inputs.

Active Manual-MS-L and LMS-L Series—Feather touch electronic switching. Illuminated. Low power micro-CMOS circuitry. Javelin V-Phase available. Looping and terminating versions. Modular circuit board construction for quick field service or system expansion at minimal cost.

Positions available: 2, 4, 6, 8, 10, 12, 16, 20, 24, 28, 32. Available in 117VAC 60 Hz or 220-240VAC 50 Hz (CCIR).



HSS6D \$249.00

Sequential Switchers™

All Javelin Sequential Switchers feature low power CMOS circuitry on two position modular board for quick field service or system expansion at minimal cost. Individual dwell pot per camera position, plus overall dwell pot on front panel for varied camera viewing times. Javelin V-Phase available. Looping and terminating versions.

Homing Sequential HSS-Terminating LIHSS-Looping—Provide for single monitor output. Front mounted switches provide camera by-pass, auto sequence and camera hold.

Bridging Sequential BSS-Terminating LIBSS-Looping—Two monitor outputs. Displays sequencing cameras on monitor #1 while selected camera is viewed on monitor #2. Looping series permits independent dual station control. Same switch features as Homing Sequential.

Auto Alarming Sequential—All Javelin Homing and Bridging switchers available in auto alarm versions.

- AHSS — Auto Alarm Homing (Terminating)
- LAHSS — Auto Alarm Homing (Looping)
- ABSS — Auto Alarm Bridging (Terminating)
- LABSS — Auto Alarm Bridging (Looping)

Will automatically switch to camera covering an intruded area when area alarms are tripped. N. O. and N. C. relay contacts to operate other remote devices—recorders, phone dialers, etc.

All Sequential Switchers available in desk top or rack mount cabinets.

Positions available: 2, 4, 6, 8, 10, 12, 16, 20, 24, 28, 32. All Sequential Switchers available in 117VAC 60 Hz or 220-240VAC 50 Hz (CCIR).

JAVELIN ELECTRONICS, INC.

19831 Magellan Dr.
P.O. Box 2033
Torrance, CA 90510
(213) 327-7440
Telex 19-4860 JAVELIN TRNC



OMNI-100™ /SUPER SWITCHER™

Omni-100 is Javelin's new total system controller. Plug-in modular components can be combined as required to fit any requirements from a simple 2 camera video-only system to complete control of a 100 camera/100 alarm integrated system with pan/tilt and motorized lenses. All video switching is performed on a single microprocessor-based Master Control. The same Master Control can be used to completely integrate a full alarm network simply by adding Alarm Gathering Panels as required.

An auxiliary Accessory Control Keyboard can be added at any time to provide complete pan/tilt, zoom, focus and iris control of up to 100 cameras. The Accessory Control System (ACS) also includes built-in remote control of any six on/off functions (room lights, camera power, etc.) per camera position.

A Remote Transmitter and Receiver relays control signals over long line twisted pair wire.

The video switching system is available separately as SuperSwitcher, and can be expanded into a full control system simply by adding components.

SWITCHING FUNCTIONS:

- Manual
- Looping
- Sequential
- Auto Alarming
- Bridging
- Remote

FEATURES:

- Expandable to 100 cameras and 100 alarms
- Variable speed automatic sequencing
- Adjustable dwell on individual cameras
- Bypass and restore functions (video and alarm)
- Forward and back search function
- Automatic find bypass search function
- Full control of pan, tilt, zoom, focus and iris AutoPan control
- Memory-stored preset positions
- Manual or alarm activated home return
- 6 keyboard controlled on/off functions per camera position
- Remote control of room lights, locks, housings, etc.
- Interface with automatic alarm response - autodialer, etc.

SWITCHER

System Components

JO-101 MASTER CONTROL—Pressure sensitive touch pads allow the operator to select which type of switching the system will do, and program those functions. Two LED digital displays indicate which camera is being monitored and read sequence time in seconds during sequencing selection. The Master Control unit interfaces with the Video Gathering Panel via a plug in ribbon cable. SuperSwitcher and OMNI-100 provide the user with switcher versatility unheard of in the security marketplace. **\$349.00**

JO-102AC AUXILIARY KEYBOARD — Attaches directly to the JO-101MC Master Control to provide accessory control for the entire system. Pan/tilt or scanner control; zoom, focus and iris control; and remote control of six functions per camera position are operated from pressure sensitive touchpads on the JO-102AC ACS keyboard. **\$185.00**

JO-103RT REMOTE TRANSMITTER—Converts signals from the video alarm gathering panels to long line twisted pair transmission, enabling remote operation of the system. This configuration eliminates costly coaxial cable previously associated with non-remote switchers. **\$422.00**

JO-104RR REMOTE RECEIVER —Reverts signals from Remote Transmitter. **\$422.00**

JO-105VP VIDEO GATHERING PANEL—The Video Gathering Panel is a 10 position switching module providing input for as few as one camera and as many as 10. Up to 10 Video Gathering Panels may be utilized in the system for a maximum capacity of 100 video inputs. No matter how many panels are used, all are controlled by one Master Control. Looping or terminating switching functions are accomplished individually via a switch at each position on the Video Gathering Panel. **\$286.00**

JO-106AP ALARM GATHERING PANEL—The Alarm Gathering Panel is similar to the Video Gathering Panel in that individual panels handle up to 10 alarm inputs and 10 panels may be utilized providing up to 100 alarm inputs. Fire, smoke, seismic, door and window, infrared or any other sensor with a normally open or closed contact may be connected to the system. Alarms are set and re-set by Master Control and may be sequenced or bypassed. **\$270.00**

JO-107MP MULTIPLEXER PANELS — Each Multiplexer Panel will relay pan, tilt, zoom, focus and iris control signals as well as 6 remotely controlled on/off signals from the ACS keyboard to up to 10 individual camera locations. Up to 10 Multiplexer panels can be controlled from a single Master Control, for a total system capacity of 100 cameras. **\$500.00**

JO-4PS, JO-16PS POWER SUPPLY — Several power supplies are available for the SuperSwitcher system. Because of the variety of configurations the system may take, the power requirements will differ. By offering a range of supplies, the appropriate supply may be chosen optimizing energy efficiency and representing a cost saving. **\$235.00 - \$565.00**

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VIDEO SIGNAL EQUIPMENT

VIDEO SIGNAL EQUIPMENT

J312T Series Time and Date Generator

Provides flicker-free display of year, month, day, hour, minutes and seconds. May be added to any video system. All functions, including 300 year clock, preprogrammed. Includes own stand-by power supply. 220-240VAC 50 Hz available.



J312T

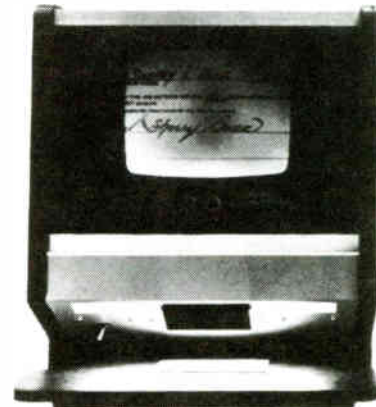
J411-Real Time Video Transmission System—Transmits video over #22 or #24 gauge wire or telephone wire. Basic system will transmit up to 4000 feet. Repeaters available for each additional 4000 foot interval.



J411 System

JVAS100-Video Authentication System

Transmits information from a central file to any work station. For signature verification the teller signals the name and account number to the operator via intercom. When the file card is placed on the base tray of the console, it is displayed instantly on the teller's remote monitor. In a typical system two tellers share a centrally located 9" monitor. For other applications monitors are available in 15" and 19" formats. The addition of a time lapse video recorder with a time/date generator allows transmissions to be recorded and stored for easy review.



JVAS-100 Video Authentication System

JVA-D-1-Video Line Amplifier—Amplifies signal and compensates for high frequency roll-off for coaxial runs up to 3400 feet over RG-59/U cable.

JDA-D-2-Video Distribution Amplifier—Provides a four-line output from a single video source for driving up to 40 monitors. Each line may drive a group of up to 10 monitors in any direction desired.

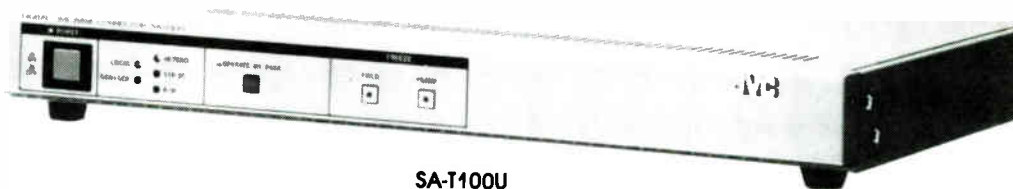
220-240VAC 50 Hz (CCIR) available.



JDA-D-2

FEATURES

- 8-Bit Digital Sampling At A Sampling Rate 4 Times the Subcarrier Frequency
- High Performance Comb Filter for Improved Resolution and S/N
- Full Frame Memory for Ultra-Wideband Time Base Correction
- Compact and Lightweight
- Automatic Freeze
- Built-In Drop-Out Compensator
- Built-In Color Picture Frame and Field Freeze Functions
- VTR Subcarrier Feedback for Wide-Bandwidth Performance
- Heterodyne Color Processing
- Built-In Sync Signal Generator with Genlock



SA-T100U

SA-T100U DIGITAL TIME BASE CORRECTOR

The video signal produced by any VCR contains a certain amount of instability commonly called "jitter". This is due to the fact that the VCR uses mechanical components, and a relatively fragile recording medium: magnetic tape. Ordinary video monitors have no trouble reproducing the signal. It can even be recorded and edited by other VCRs. But no matter how precise the VCR, none can produce a signal free from this instability. And if the signal is to be mixed with another video signal — as is the case if dissolves and other special effects are to be performed — it must be perfectly stable.

A time base corrector is a digital device which temporarily stores the video signal (or part of it) and then releases it at a steady, precise rate, free from the error caused by the moving and rotating parts of the VCR. In addition to simply eliminating the jitter, some TBCs also provide other features like drop-out compensation, and special effects (freeze frame, etc.).

Full Frame Memory, Freeze Frame/Field. Wide variations in the Input signal can be corrected with the SA-T100U because of its full frame memory. If the input signal is interrupted, the SA-T100U will automatically freeze the picture until the

incoming signal is restored. In addition to this, the SA-T100U offers the user the ability to manually freeze a frame or field with pushbutton controls on the front panel. The frozen picture is displayed in full color.

Compact, Lightweight. The SA-T100U is only 1-3/4" tall and can be mounted in a standard EIA rack. Mounting hardware is included. And because of its size, it is ideal for both studio and mobile operations.

Built-In Drop-Out Compensator. For VCR's which provide an RF-DOC output (like JVC's CR-850U) the SA-T100U can provide digital dropout compensation. The fully digital drop-out compensator is far superior to the circuits found in most VCRs.

Subcarrier Feedback. For wide bandwidth performance, the SA-T100U can be connected to VCRs which accept external subcarrier (SC) and sync signals. Since most 3/4" professional VCRs have this capability, maximum performance can be obtained.

Heterodyne Processing. For use with JVC's professional VHS models (BP-5300U, BR-6400U, BR-8600U) the SA-T100U can be connected using the "heterodyne" mode. This mode does not require the "SC" input on the VCR, thus expanding the flexibility of the TBC.

Built-In SSG. An RS-170A sync signal generator required by some A-B roll editing controllers is included in the SA-T100U. Included also is a genlock function which locks the SSG with another stable sync signal.

Suggested List Price TBA

SPECIFICATIONS

Input Signal:

Video: NTSC composite video, 1V p-p, 75 ohms

Reference Signal: Black burst 0.45V p-p or NTSC composite video 1V p-p, 75 ohms or loop through

DOC (input R.F.): 0.2 to 2.0Vp-p, 75 ohms

Output Signal:

Video: NTSC composite video, 1V p-p, 75 ohms

Advance Sync: 4V p-p, 75 ohms

VTR-SC: 2V p-p, 75 ohms

S/N Ratio:

58dB

Frequency Response:

VTR SC and Monochrome: 4.2MHz ±0.5dB

Hetero Y: -2.5MHz, C:-1.5MHz

Gen-Lock Phase:

H: ±2 sec.

SC: ±180°

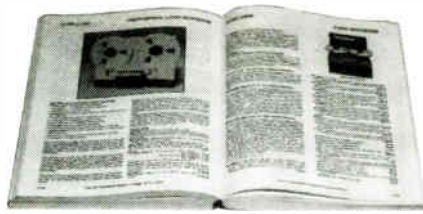
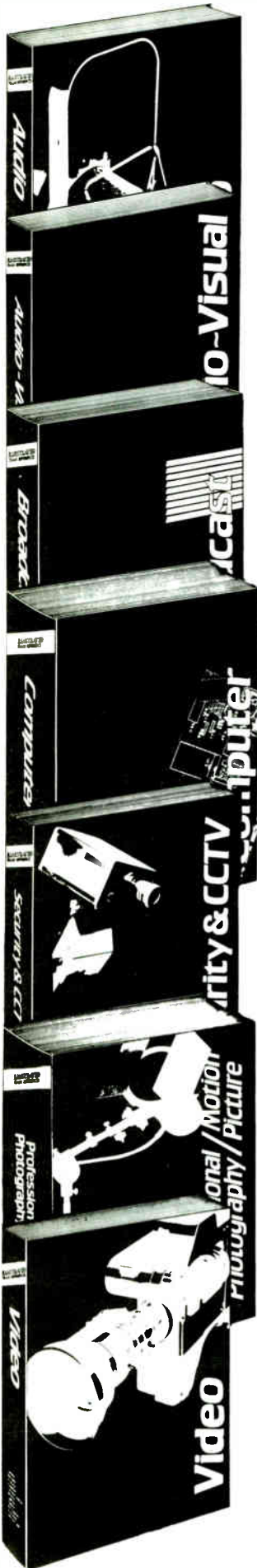
Dimensions:

17"W x 1-3/4"H x 19-3/4"D
(430 x 44 x 500mm)

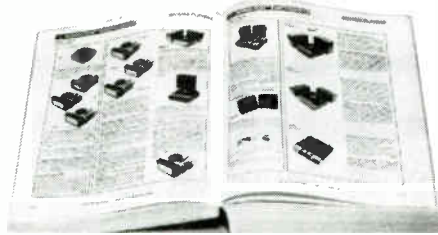
Power Supply:

100/117V AC, 50/60Hz

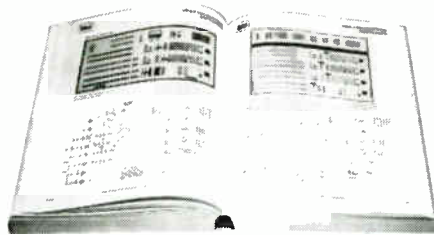
ILLUSTRATED TRADE REFERENCES



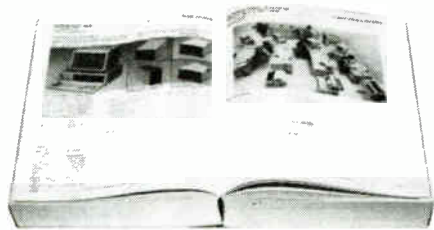
PROFESSIONAL AUDIO & COMMERCIAL/INDUSTRIAL SOUND EQUIPMENT Buyers Guide — 1280 pages of Studio & Remote Audio Recording Equipment & Systems for stage, concert, auditorium, arena, stadium, hall, church, industry, business, commercial, school, hospital & hotel sound reinforcement, background music, paging, intercommunications, telephone & telecommunications systems & equipment. **\$95.00**



AUDIO-VISUAL & EDUCATIONAL/TRAINING COMPUTER EQUIPMENT Buyers Guide — 1280 pages of projectors, screens, recorders, learning aids, carrels, stands, tables, lecterns & equipment for multi-image & sound. Computers, disk drives, furniture, graphics, magnetic media, modems, monitors, networks, paper/forms, printers, power supplies, terminals & software. **\$95.00**



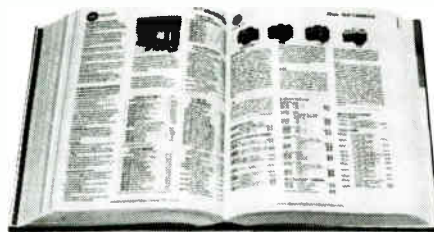
BROADCAST EQUIPMENT & SERVICES Buyers Guide — 1280 pages of Studio, Remote & Location Equipment & Systems for television, commercial & tape production, broadcast television, radio, cable, pay & satellite TV, special effects, animation & music video. **\$95.00**



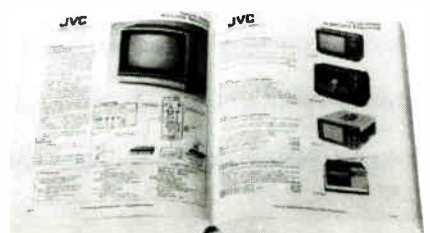
COMPUTER EQUIPMENT Buyers Guide — For Professional, Scientific, Business, Industrial & Commercial Applications. 1280 pages of micros, minis, disk drives, furniture, graphics, digitizers, plotters, boards, cables, cases, consultants, diagnostic & test keyboards, magnetic media, maintenance, modems, monitors, networks, paper/forms, power/protection, printers, software, supplies, tape drives, telecommunications, terminals. **\$95.00**



SECURITY & CCTV EQUIPMENT Buyers Guide — For Industrial, Professional, Commercial & Business Applications. 1280 pages of controls, annunciators, power supplies, dialers, closed circuit TV, wire, cable & equipment for remote monitoring, space protection & central station. **\$95.00**



PROFESSIONAL PHOTOGRAPHY/MOTION PICTURE Buyers Guide — Professionals in Photography, Motion Picture, Multi-Image, Audio-Visual, Film Production & Post Production — 1280 pages of studio, remote & location equipment systems & supplies for Still, Cine, AV & Film Production. **\$95.00**



INDUSTRIAL & PROFESSIONAL VIDEO EQUIPMENT Buyers Guide — 1280 pages of cameras, recorders, production & terminal equipment, monitors, lighting, telecine, RF equipment, enclosures, wire & cable. **\$95.00**

BILL DANIELS COMPANY, Inc.

9101 BOND • P.O. BOX 2056
SHAWNEE MISSION, KANSAS 66201



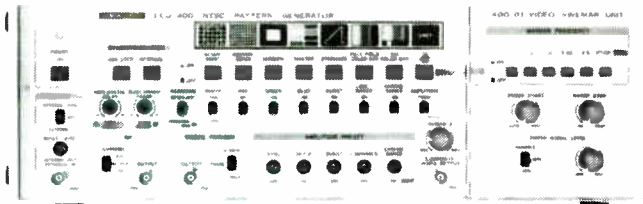
CALL
TOLL FREE

1-800-255-6038
IN KANSAS: 1-913-482-9900

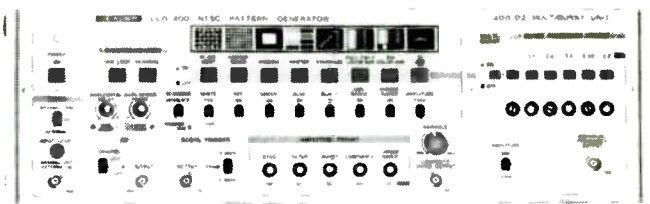
LEADER INSTRUMENTS CORP.

380 Oser Avenue
Hauppauge, NY 11788
(516) 231-6900 TWX 510-227-9669

VIDEO TEST INSTRUMENTS



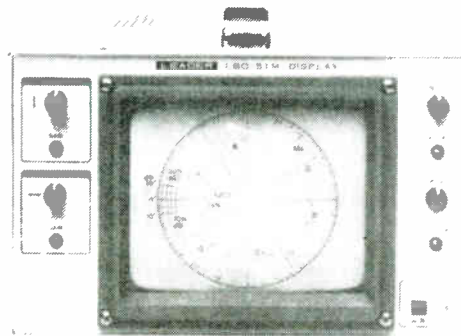
LCG-400M



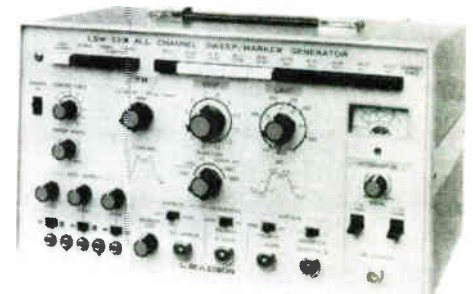
LCG-400S



LCG-396



LBO-51MV



LSW-333

LCG-400 NTSC VIDEO SYNC/TEST GENERATORS

The LCG-400 provides both gen-lock and internal synchronization with the full range of video signals needed for testing and adjusting monitors, cameras, VTR's and overall performances of color and B & W TV systems. It is available with either multiburst (LCG-400M) or sweepmarker (LCG-400S) generators. The LCG-400 will sync with all standard composite video and black burst signals including those from quad head and helical scan VTR's. Patterns include EIA and full field color bars, 5-step modulated stair case, 8 color rasters, cross hatch and dot convergence, circle and corner marker with on/off control of chroma and luminance. Both interlace and progressive scanning are provided. Outputs include composite video, subcarrier, black burst, selectable vertical or horizontal drive, and CH 3/4 RF. Units are supplied for either bench-top or rack mounting (rails included).

LCG-400M \$1990.00
LCG-400S 1990.00

LCG-396 NTSC COLOR BAR PATTERN GENERATOR

The LCG-396 is a versatile NTSC video generator suitable for testing, servicing and evaluating a broad range of video systems including video tape recorders, CATV and MATV systems, video monitors and television receivers. It provides 11 test patterns including the standard NTSC color bars for measuring and adjusting color purity, white balance, luminance, chrominance, and convergence. Outputs include composite video, H or V scope trigger, subcarrier and RF (CH5 or 4). Other features include variable chroma, luminance and set-up levels, and selectable interlaced or progressive scanning. Also available as an option are RGB outputs on the rear panel for testing color computer display systems and video game color circuitry. The LCG-396 is supplied with a comprehensive user's manual including detailed VTR, TV and monitor application data.

LCG-396 \$995.00

LBO-51MV DISPLAY MONITOR

For special low-cost applications—and as a direct replacement for the Tektronix 602A or 1424 X-Y Display Monitors—the Leader LBO-51MV delivers outstanding performance. It is driven by R-Y and B-Y video signals, from a precision chroma decoder or a Tektronix 650 HR series picture monitor equipped with R-Y and B-Y outputs. The LBO-51MV has the added capability of displaying individual VITS and VIRS lines* when used with Leader's LBO-5860 waveform monitor.

The unit's CRT display area is 8 x 10 cm. Combines 3 MHz bandwidth on X and Y axes, with 4 MHz on Z axis. Phase shift between X and Y axes is less than 3° at 1 MHz (R-Y and B-Y signals are approximately 600 kHz).

In its standard configuration, the LBO-51MV is supplied with front panel controls for power, intensity, focus, and horizontal and vertical positions. Screwdriver adjustments are provided for vertical and horizontal (X and Y) gain, astigmatization, and trace rotation.

The absolute accuracy of the LBO-51MV display is dependent upon the accuracy of the precision chroma decoder being used to drive it.

*VITS and VIRS lines may be observed only when the signal delay inherent to the chroma decoder being used is not excessive (10 to 15 µ Sec).

LBO-51MV \$995.00

LSW-333 ALL-CHANNEL SWEEP/MARKER GENERATOR

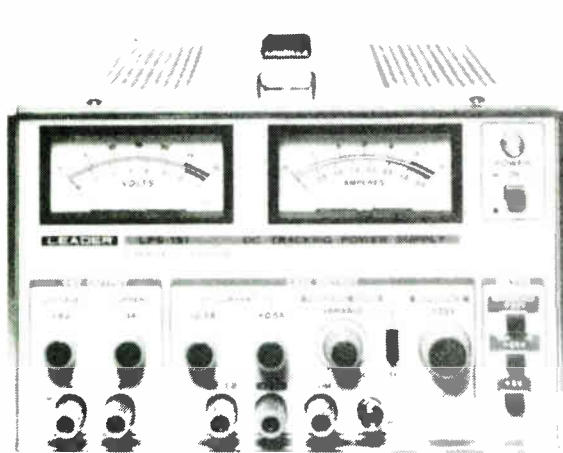
The LSW-333 is a complete test and alignment instrument for the RF and IF tuned circuits of VHF and UHF television receivers and FM radios. It is used in production testing and aligning, and in servicing. Front-panel displays of ideal IF and chroma response curves with marker positions permit fast and precise alignment in accordance with manufacturers' recommendations. The LSW-333 has three bias supplies, selectable marker tilt (vertical or horizontal), and vertical and horizontal polarity reversal.

LSW-333 \$775.00

LEADER INSTRUMENTS CORP.

380 Oser Avenue
Hauppauge, NY 11788
(516) 231-6900 TWX 510-227-9669

POWER SUPPLIES



LPS-151



LPS-152

The LPS-151 and LPS-152 are Triple Output DC Power Supplies with individual voltage and current meters, automatic overload recovery and auto tracking. The output voltages are adjustable, 0 to 6 Volts, 0 to +25 Volts and 0 to -25 Volts on both models making them ideal for computer subassembly, circuit board, semiconductor and system burn-in test applications. All three outputs have independent adjustable current limiting with an auto recovery feature which allows the output voltage to return to normal when the short or overload condition is removed. Both units also feature a tracking output mode which allows an adjustable ratio of positive vs. negative voltage between the 25 Volt outputs. The adjustment range is from 100% - 100% to 50% - 100%. Ripple is less than 3 mV p-p and output stability is rated at less than 3 mV for $\pm 10\%$ input line voltage variation and 0 to 100%. Both power supplies carry Leader's full Two Year Warranty.

SPECIFICATIONS

OUTPUT

Voltage

0 to +6V adjustable.
0 to +25V adjustable.
0 to -25V adjustable.

Current

LPS-151 0 to 6V output — 3.0A max.
 $\pm 25V$ outputs — 0.5A max.
LPS-152 0 to 6V output — 5.0A max.
 $\pm 25V$ outputs — 1.0A max.

Current Limiter

All outputs separately adjustable from 0A to fully loaded at rated max. current with automatic recovery.

REGULATION

Load

< 0.01% +3mV to 0 to 100% load variation.

Line

< 0.01% +3mV for $\pm 10\%$ input line voltage.

Ripple

< 3mV p-p.

METER

Voltage Ranges

0 to 7V, 0 to +30V, 0 to -30V.

Current Ranges

LPS-151 — 0 to 3.5A, 0 to 0.6A.
LPS-152 — 0 to 6A, 0 to 1.2A.

Accuracy

5% f.s.

GENERAL

Tracking Voltage Mode

Positive vs. negative voltage will track at 50% to 100% for ± 25 Volt outputs.

Overload Protection

Voltage shutdown, automatic recovery.

ENVIRONMENTAL

Operating Temperature

0° to +40°C operating at 100% load.

Storage Temperature

-20° to +70°C.

Humidity

30% to 85% relative.

POWER REQUIREMENTS

100, 120, 200, 220, 240, $\pm 10\%$; VAC.

LPS-151 approx. 120 VA;

LPS-152 approx. 220 VA.

PHYSICAL

Size (W x H x D)

LPS-151: 8-1/2" x 5-1/4" x 13"
(215 x 132 x 332mm)

LPS-152: 8-1/2" x 5-1/4" x 14-1/8"
(215 x 132 x 360mm)

Weight

LPS-151: 13-1/2 lbs. (6.1kg)

LPS-152: 15-3/4 lbs. (7.2kg)

LPS-151 \$395.00
LPS-152 495.00

LEADER INSTRUMENTS CORP.

380 Oser Avenue
Hauppauge, NY 11788
(516) 231-6900 TWX 510-227-9669

FREQUENCY COUNTERS/ TRANSISTOR TESTERS



LDC-823S



LTC-905



LDC-824S

Laboratory Frequency Counters

Leader Frequency Counters provide accurate, reliable frequency and period measurements for a wide variety of laboratory, communications and bench applications. LSI and MSI technology results in cost-effective instrumentation for today's stringent requirements.

Large, florescent displays make these instruments particularly well-suited to production testing and other applications where a large, bright readout is essential.

All four units are housed in well-shielded metal cases which virtually eliminates errors caused by nearby R.F. fields.

In addition to frequency readout, period measurements can also be made. Normally, a sampling rate of ten seconds can be expected for direct frequency readouts when the test signal frequency is very low and resolution to 0.01 Hz or greater is required. The period function can be used to reduce sampling time and to increase the accuracy of the measurement while increasing the resolution significantly. In the period mode, the time duration of one period is measured, averaged over the gate time. A reading of 16.09 milliseconds, for instance, can be converted to 62.15 Hz using the relationship $f = 1/t$. The period mode is particularly useful when performing high resolution frequency adjustments because the counter readout permits constant observation of any change in frequency.

LDC-823S 250 MHz Counter

The LDC-823S has a standard time base accuracy of 1 ppm from 10 Hz to 250 MHz. It is also available with an ovenized time base which gives 0.03 ppm stability.

LDC-822 80 MHz Counter

The seven digit, 80 MHz LDC-822 is the simplest and least expensive bench-type counter from Leader. It has a time base accuracy of 5 ppm, offering high performance at a cost effective price.

LDC-831 150 MHz Counter

The LDC-831 is a 4 1/2 digit 150 MHz battery-powered counter. Its small size and portability make it ideal for field service applications, an optional AC adaptor converts it to bench use. Simple controls and a large, bright LED display make it easy to operate.

LDC-824S 520 MHz counter

The LDC-824S has a standard time base accuracy of 1 ppm (0.03 ppm optional) over its 10 Hz to 520 MHz frequency range.

LDC-825 1 GHz Counter

The LDC-825 has the widest frequency range of any Leader counter; 10 Hz to 1 GHz. It also has the highest time base accuracy (+/-0.03 ppm), making it the ideal counter for critical, high-frequency requirements. Two input impedances, 1 M ohms (10 Hz to 80 MHz) and 50 ohms (50 MHz to 1 GHz) are available for precise matching to the device under test.

TRANSISTOR TESTERS

LTC-905 Semiconductor Curve Tracer

The LTC-905 permits displaying the characteristic curves of all types of semiconductors (NPN, PNP, triacs, SCR's, FET's, MOSFET's, zener, signal, and rectifier diodes, etc.) on virtually any oscilloscope. Used in labs, classrooms, and for production-line testing, the LTC-905 will measure (both in-and out-of-circuit) gain (beta), cutoff, leakage, and output admittance. The LTC-905 provides 8 selectable collector sweep voltages from 10 to 100 Volts along with a full set of step-generator currents and voltages.

LTC-905 \$255.00

LTC-906 Transistor Checker

The LTC-906 is a portable, multi-purpose transistor checker widely used in laboratories, schools, servicing, and for production troubleshooting. In the automatic mode, activating a single switch initiates a programed test that automatically identifies emitter, base, collector, and type of device (NPN, PNP, FET, diode, or other) with an audible and visual good-or-bad indication...both in-and out-of-circuit. In the DC parameter mode, out-of-circuit measurements can be made of leakage current, h_{fe} , V_{be} and V_d . Powered by a single 9 V battery, it easily fits in a technician's tool kit.

LTC-906 \$220.00

LTC-906A Transistor Checker

The LTC-906A is identical to the LTC-906 in features, functions and specifications but is housed in a larger bench-top package. The larger physical dimensions allows for a more convenient front panel layout and is less susceptible to theft making it ideal when the instrument is used in unsecure areas.

LTC-906A \$249.00

ACCESSORIES

LP-11Y In circuit Probe for LTC-906, 906A \$19.00

LPS-169A AC Adaptor for LTC-906 (9V DC) 9.00

LDC-825	1 GHz, 8 digit, 0.03 ppm	\$1295.00
LDC-824S	520 MHz, 8 digit, 1 ppm	550.00
LDC-824S-01	520 MHz, 8 digit, 0.03 ppm	875.00
LDC-823S	250 MHz, 8 digit, 1 ppm	450.00
LDC-823S-01	250 MHz, 8 digit, 0.03 ppm	775.00
LDC-822	80 MHz, 7 digit, 5 ppm	320.00
LDC-831	150 MHz, Battery Portable	210.00

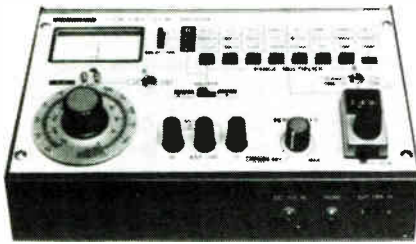
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VT-113

LEADER INSTRUMENTS CORP.

380 Oser Avenue
Hauppauge, NY 11788
(516) 231-6900 TWX 510-227-9669

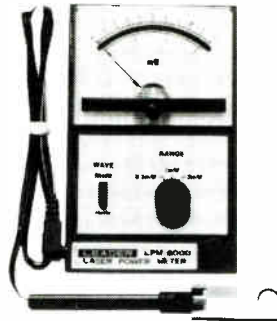
METERS AND BRIDGES



LCR-740



LHM-80A



LPM-8000



LCR-745



LDM-853A

LCR-740 LCR BRIDGE

The LCR-740 is a versatile instrument for accurately measuring inductance, capacitance, resistance, and loss factor of electronic components. This compact unit provides a basic accuracy of 0.5% and resolutions of 0.1 μ H, 1pF or 0.001 ohm. Its broad measurement ranges make it ideal for use in component design, inspection and selection. It has also found wide use in educational institutions as an aid to teaching the characteristics of inductive, capacitive and resistive components.

LCR-740 \$365.00

LDM-853A-3-1/2" DIGITAL MULTIMETER

The LDM-853A is a rugged, compact AC or battery-powered DMM that is at home both in the field and in the lab. Its automatic zeroing and bright green LED display (which reduces eye fatigue) make it ideal for applications where constant monitoring of varying inputs is required. The LDM-853A can measure up to 2A, both AC and DC, as well as ohms, DC volts and AC volts. An AC adaptor is supplied, as are four each "C" cells for field operation.

LDM-853A \$185.00

LHM-80A HIGH VOLTAGE METER/PROBE

The LHM-80A permits easy and safe measurement of voltages up to 40,000 VDC. It is widely used for checking CRT accelerating voltages, testing and servicing X-ray machines, and other high voltage equipment. Completely self-contained (no batteries or external power required), it is made of high-impact polystyrene with a special corona safety shield. Full-scale accuracy is \pm 3%. It is supplied with ground wire and heavy-duty cap.

LHM-80A \$50.00

LCR-745G - DIGITAL LCR METER W/GPIB

Digital LCR Meter with GPIB interface can be used in remotely controlled test systems conforming to the IEEE-488 Standard.

Wide measurement ranges, from 0.001 Ω to 19.99M Ω for resistance, 0.1 μ H to 199.9H for inductance, and 0.1 pF to 1999 μ F for capacitance. Quality (Q) and Dissipation (D) factor measurements are also possible, along with a zero offset function to compensate for stray capacitance and residual resistance and inductance. Two test frequencies, 1 kHz and 120 Hz are available. Combining all of these features with GPIB capability will make the LCR-745G ideal for high volume quality control.

LCR-745G \$2495.00

LEM-73A FET BENCH MULTIMETER

The LEM-73A is a sensitive, versatile electronic multimeter for general purpose laboratory applications. Its high input resistance permits measuring high impedance circuits with minimum loading. DC and AC voltages can be measured from 30mV to 1,000 V; DC and AC currents from 30 μ A to 300mA. Resistance, using either high (1.5V) or low (100 mV) test voltages may be measured from 0.2 ohms to 500 M ohms. dB scales are also provided for sound level measurements in 600 ohms audio systems. AC operated.

LEM-73A \$208.00

LCR-745 DIGITAL LCR METER

The LCR-745 is a CPU controlled digital LCR Meter with automatic and manual ranging. Direct resistance, capacitance, and inductance measurements of components and equivalent series and parallel circuits can be made, with Quality (Q) and Dissipation factor (D) displayed simultaneously with inductance and capacitance. The unit's wide automatic measurement range greatly reduces the time associated with performing these component measurements compared with a manual LCR bridge. This makes the LCR-745 an ideal instrument for incoming inspection or final production test of components where ease of operation and high throughput are necessary.

An offset function is available which can be used to cancel any residual resistance, capacitance or inductance of the test leads or fixtures being used. In addition, the offset function can be used to normalize the value of a component under test to zero. The deviation (including polarity) from this normalized value of succeeding components will be displayed, simplifying testing.

Two test frequencies, 120 Hz and 1 kHz are available, facilitating the testing of electrolytic capacitors. In addition, an external DC bias in the range of 0 + 30 V can be applied; an internal bias of + 1.5 V is available. Basic measurement accuracy is \pm 0.35%.

LCR-745 \$1395.00

LCR-745-04 - DIGITAL LCR COMPARATOR SYSTEM

The LCR-745-04 is a complete LCR comparator system. It allows fast incoming inspection or production test of precision components, even by non-technical personnel. Upper and lower limits for inductance, capacitance or resistance and dissipation or quality are set on the comparator's front panel mounted switches. If the value of the component under test falls within these limits, a visible and audible "go" signal is given. Otherwise, a "no-go" indication is accompanied by the display of the actual deviation from the referenced value, including polarity, for precise quality control.

LCR-745-04 \$2300.00

LCR-745-01 - DIGITAL LCR METER w/BCD OUTPUT

The LCR-745-01 adds BCD output capability to the standard LCR-745. The BCD option is ideal for recording the values of the components under test, remote readout or input to a computer for further analysis.

LCR-745-01 \$1750.00

LPM-8000 LASER POWER METER

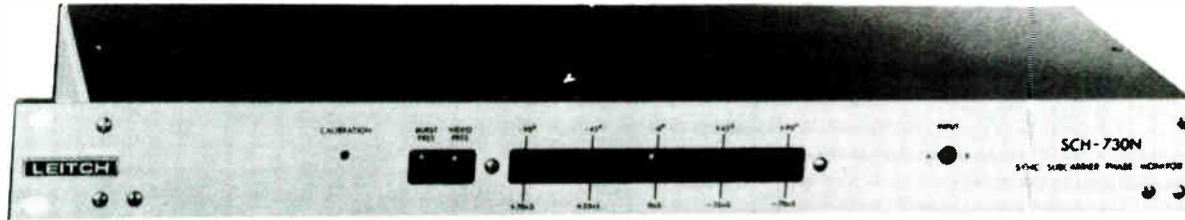
Two wavelength and three power measuring ranges are available on the LPM-8000, giving this instrument the versatility to be used in servicing the equipment of many laser disk manufacturers. This Laser Power Meter, which consists of a main body and a separate sensor connected by cable, boasts small size, light weight, and battery operation for portability. The LPM-8000 is a time and cost saving device since the service technician will be able to instantly verify power output from the laser device of disk players.

LPM-8000 \$225.00

LEITCH VIDEO OF AMERICA, INC.

825K Greenbrier Circle
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PHASE MONITOR/ VERTICAL INTERVAL PROCESSOR



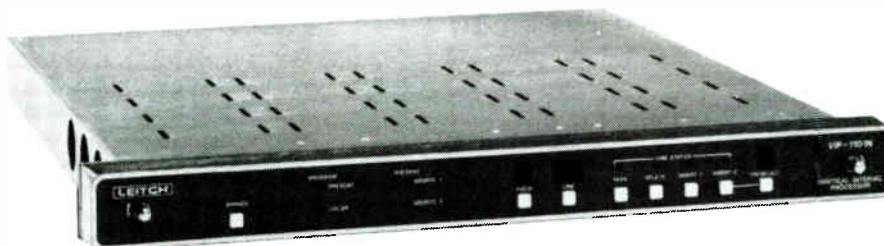
SYNC/SUBCARRIER PHASE MONITOR SCH-730N

The SCH-730N Sync/Subcarrier Phase Monitor is a self-contained metering device which develops a LED display corresponding to the relationship between the phase of subcarrier, as represented by burst in a composite video signal, and the sync of that signal.

The unit permits fast, accurate measurement, adjustment and continuous monitoring of SCH. Since it does not require an external reference signal, it can be used at any point in a video system.

Correct SCH, according to current practice, is achieved when the positive or negative slope zero crossings of subcarrier, of which burst is a representative sample, are coincident with the 50% point of the leading edge of horizontal sync. The acceptable tolerance is $\pm 40^\circ$ of subcarrier or ± 31 ns of H phase.

- SCH-730N** NTSC Sync/Subcarrier Phase Monitor, includes Instruction Manual **\$1145.00**
SCH-731N Same as above, with H Timing Indication **1450.00**
Extra Instruction Manual **20.00**



VIP-1101N VERTICAL INTERVAL PROCESSOR

Model VIP-1101N NTSC Vertical Interval Processor (two VI source inputs standard)
Complete with detachable power cord and instruction manual **\$3900.00**

Options

- Model 1101IP Input Preselect (module) **\$800.00**
Model 1101ME Module Extender **85.00**
Extra Instruction Manual **60.00**

Features

- Digitally generated sync, burst and black
- RS170A SCH always maintained
- RS170A or narrow H blanking selectable
- Microprocessor control
- Comprehensive self-diagnostics, including set-up and timing modes
- Digital front panel status display

- Automatic failure by-pass
- Transient-free switching
- RS232C remote control interface
- Digital power-down memory
- Digitally temperature compensated, high stability crystal oscillator
- Programmable signal-loss handling
- Differential video inputs
- High efficiency switching power supply

The VIP-1101N NTSC Vertical Interval Processor is a stand-alone device which, unlike traditional VITS insertion equipment, does not generate any insertion test signals. It offers, instead, an unprecedented degree of capability and flexibility in the handling of multiple, external insertion signal sources. The application of microprocessor control and digital technology in general, together with the latest analog circuit components, results in a unit with previously unavailable features and high quality video specifications.

LEITCH VIDEO OF AMERICA, INC.

825k Greenbrier Circle
Chesapeake, VA 23320
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NTSC MASTER SYNC PULSE GENERATOR

SPG-102N

The SPG-102N Master Sync Pulse Generator is the successor to the reliable and time-proven SPG-100N. Many refinements and additional options make this the ideal master generator for virtually any pulse system concept. Modular construction and the fully wired mounting frame guarantee maximum flexibility in the selection of a standard and optional module complement. Optional modules can easily be added later to satisfy system requirements or user preference.

Digital Timing Circuits

Ensure extreme accuracy and reliability. Gating for all pulses and the color subcarrier is derived from the 14.31818 MHz reference oscillator. Pulse widths and timing relationships are adjustable in 70 nsec increments.

Synchronous Counters

Eliminate phase drift of the subcarrier relative to the leading edge of sync. The sync generator features improved temperature stability and exceeds the performance specifications of EIA Standard RS-170. Time base errors are less than 1 nsec. Pre-aged and tested master oscillator crystals assure accurate calibration and very low long term frequency drift.

Master Color Standard 100CS

The optional Master Color Standard 100CS is a very high stability reference source oscillator. Its inclusion is recommended when the SPG-102N is used as the main system generator.

Automatic Digital Sync Lock

Circuits permit genlock and chroma lock with an external composite video signal input. Color lock is maintained by using the incoming burst only to phase lock the 14.31818 MHz reference oscillator from which all timing information is derived. The relative phase of the incoming sync signal is monitored to ensure phase coincidence. Electronic switching is used to automatically revert to the local, independent mode of operation should there be a degradation or complete loss of the input video signal.

Optional Frequency Converter/Resolver

A Frequency Converter/Resolver module is available and can be used in place of the 100CS Master Color Standard to lock the generator to the 5 MHz signal of an external Cesium or Rubidium standard.

Additional Features

A new vertical timer incorporates switchable 1 or 2 line advance and selectable vertical blanking width of 19, 20 or 21 lines.

A Color Frame Ident pulse at a 15 Hz rate and with a definite frame to subcarrier relationship is provided. The choice of ident pulse position has been expanded and is selectable by means of small U-link jumpers.



Test Signals

The mounting frame is pre-wired to accept optional dual output Bar/Dot/Grating and NTSC Encoded Color Bar test signal modules. A dual output Color Black signal module must be included with the test signal modules.

IC Regulators

On each module provide DC regulation with current limiting short circuit protection.

NTSC SYNCHRONIZING PULSE GENERATORS

SPG-102N Master Generator with Color Sync Lock, includes Instruction Manual \$3780.00

OPTIONS

100CS	Master Color Standard	655.00
100FC	Frequency Converter and Resolver (5 MHz input)	555.00
100LD	Pulse Shaper and Line Driver	255.00
100SD	Color Sync Driver	225.00
100ME	Module Extender	65.00
102PM	Pulse Monitor	190.00
102RP	Remote Control Panel	1100.00
102RC	Resolver Control	525.00
200BD	Bar and Dot Generator	240.00
	(100SD required for composite output)	
200CB1/CB2	Color Bar Generator (2 modules)	710.00
	(100SD required for composite output)	
	Extra Instruction Manual	55.00
SPG-120N	NTSC Sync Generator	2295.00
	Extra Instruction Manual	55.00
SPG-130N	NTSC Sync Generator	2730.00

OPTIONS

130TA	Timing Assignment	\$ 410.00
130BD	Color Black Output	275.00
130SI	Source Ident	375.00
100ME	Module Extender	65.00
	Extra Instruction Manual	55.00
ACO-131	NTSC/PAL Automatic Changeover Unit	2260.00

OPTIONS

131PM	Pulse Monitor (2 modules)	\$ 440.00
131RP	Remote Control Panel	455.00
100ME	Module Extender	65.00
	Extra Instruction Manual	35.00

LEITCH VIDEO OF AMERICA, INC.

825k Greenbrier Circle
Chesapeake, VA 23320
(804) 424-7920 Telex II 710-882-4342

VIDEO PROCESSING AMPLIFIER

VPA-331N

NTSC Video Processing Amplifier

FEATURES

- RS170A front panel SC/H indication
- H & V blanking width adjustable
- Selectable VIT retention
- Video gain control
- Chroma gain control
- Fade to black • Soft white clip • Hard white clip • Soft black clip
- Hard or soft clamping
- Input video lock
- External reference lock
- Video and/or chroma AGC
- Total bypass
- Auxiliary video input
- Differential input (optional)
- Equalizing (optional)
- Cue dot (optional)

The VPA-331N is a complete, broadcast quality Video Processing Amplifier requiring only one unit of rack space. It is an alternate version of the successful VPA-330N, featuring front panel controls for video and chroma levels, burst phase, set up and fade-to-black. An auxiliary video input has been added for a stand-by signal. The VPA automatically switches to this signal if this function is enabled and the main program input fails.

The VPA incorporates a high-stability color sync pulse generator capable of maintaining the EIA RS170A pulse and SC/H phase specifications. In order to allow a wide range of operational flexibility, the VPA has independent adjustments for the various signal parameters. Horizontal and vertical blanking, for instance, can be adjusted to suit specific in-plant applications. Once established, the settings are accurately maintained.

The H sync to subcarrier phase relationship (SC/H) is established relative to the selected lock signal. The VPA front panel and the optional 330RP-2 Auxiliary Remote Control Panel have "Correct SC/H" indicators as a convenience for setting and monitoring.

SPECIFICATIONS

Electrical

Power

Voltage 115/230 VAC \pm 10%
Frequency 50/60 Hz
Power consumption ... 25 VA max.

Video Input

Level 1 Vpp \pm 6dB composite video
Impedance 75 ohm, terminating
Return loss > 40dB to 4.2MHz

Auxiliary Video Input

Level 1 Vpp \pm 6dB composite video

External Reference

Level composite video with 40 IRE units sync & burst \pm 6dB
Impedance 75 ohm, bridging
Return loss > 40dB to 4.2MHz

Black Output

Number of outputs ... 1
Level 40 IRE units sync & burst, 7.5 IRE units set-up
Timing synchronous with program output
Impedance 75 ohm
Return loss > 37dB to 4.2MHz

Video Outputs

Number of outputs ... 2 (program & preview)
Total bypass input to program output
Impedance 75 ohm
Return loss > 34dB to 4.2MHz
Output isolation > 40dB to 4.2MHz

Video Path

Video gain range \pm 2.5dB
Chroma gain range ... \pm 2.5dB
Frequency response .. \pm 0.1dB to 5MHz
Line tilt < 0.5%
Field tilt < 0.5%
Differential phase < 0.2°
Differential gain < 0.5%
S/N ratio > 60dB to 4.2MHz (pp signal to rms noise)
Hum > 54dB below 1 Vpp

Blanking Interval Regeneration

Sync level 40 IRE Units, adjustable
Burst level 40 IRE Units, adjustable
Set-up 7.5 IRE units, adjustable
H timing range \pm 1 μ s
H timing resolution ... < 10 ns
H lock jitter < 5 ns
Pulse widths per RS170A, adjustable
H blanking start nominal \pm 5 μ s
H blanking finish nominal -1.0 + 0.5 μ s
V blanking lines 10-21 on either field may be blanked or retained.

Burst phase

Range 360°
Resolution < 0.1°
Jitter < 0.2°
Burst lock frequency .. 3.579545MHz \pm 30Hz

Temperature Range

Performance 5° -40°C ambient
Operating 0° -50°C ambient

Mechanical

Mounting Frame

Height 1.75" (44mm)
Width 19" (483mm)
Depth from mounting surface ... 17.5" (445mm)
Net weight 19 lbs. (8.6kg)

VPA-331N

NTSC Video Processing Amplifier complete with detachable power cord and instruction manual. \$4800.00

VPA-330N

NTSC Video Processing Amplifier \$4400.00

OPTIONS

330RP-1

Main Remote Control Panel \$660.00

330RP-2

Aux. Remote Control Panel
Input video and reference video status indications (present, color, locked). Lock mode selection (input video, reference video, automatic). Output SC/H status indication. AGC on/off. Burst kill \$640.00

330RP-3

Cue Dot Control Panel
Selection and tally of steady and flashing cue dot modes.
Initiation and tally of auto-timed cue dot sequence. Cancel button \$500.00

The VPA-331N can be equipped with either one of the following optional modules:

330PE

Processor Equalizer
Differential input with 40 dB of common mode hum rejection.
Equalization for up to 1500 ft. (450m) of Belden 8281 or equivalent coaxial cable \$305.00

330CD

Cue Dot Generator
Remotely controllable steady and flashing mode cue dot. Requires 330RP-3 Cue Dot Remote Control Panel.
Horizontal and vertical positioning of cue dot. Non-additive mixing of cue dot with processed video.
Auto-timed cue dot sequence selection. \$240.00

100ME

Module Extender \$65.00

Extra Instruction Manual 65.00

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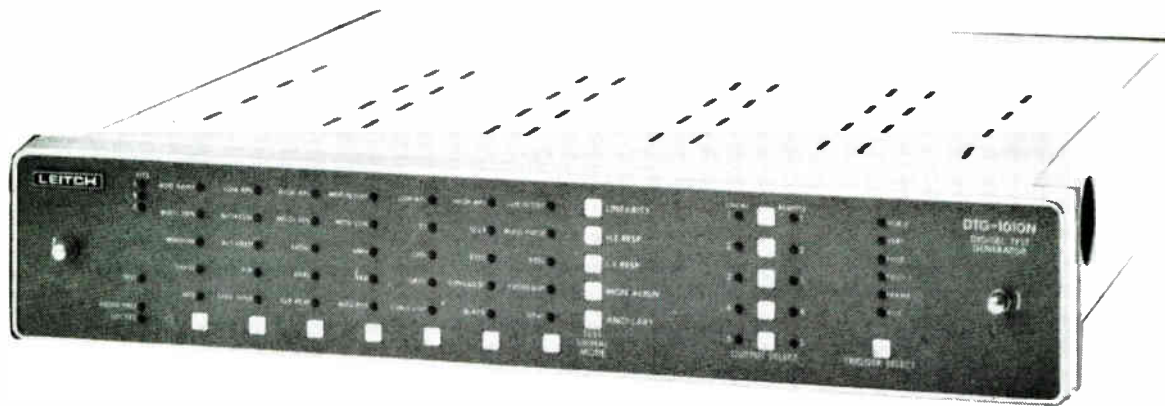
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VT-117

LEITCH VIDEO OF AMERICA, INC.

825k Greenbrier Circle
Chesapeake, VA 23320
(804) 424-7920 Telex II 710-882-4342

TEST GENERATOR



DTG-1010N NTSC Digital Test Generator

This generator is the successor to the DTG-1000N. It retains all of the latter's capabilities and offers a number of new features and improvements.

The DTG-1010N has a high efficiency switching power supply which operates on line voltage inputs from 90 to 135 VAC, 50/60 Hz. The new power supply also results in a 25% weight reduction of the unit.

The generator's subcarrier frequency stability with crystal aging is less than 1 Hz/month, and with temperature variations it is less than 2 Hz/10°C. A facility has been added so that burst can be switched on or off.

Two new test signals are now available:

- a) Modulated Pedestal for chroma noise measurements, and
- b) Sync without Set-up for transmitter power calibration

H blanking has been narrowed to 10.6µs and vertical blanking width is selectable as 20 or 21 lines.

DTG-1010N
NTSC Digital Test Generator with detachable power cord and instruction manual \$10,500.00

DTG-1100N
NTSC Digital Test Generator \$5295.00

CTG-240N
NTSC Calibration Test Generator 6950.00

CBG-230N
NTSC Encoded Color Bar Generator 2200.00

OPTIONS

1000ME
Module Extender \$225.00

1010RP
Remote Control Panel
Height: 1.75" (44mm)
Width: 19" (483mm)
Depth from mtg surface: 2.5" (64mm)
Net weight: 2.4 lbs. (1.1kg) 730.00

100ME
Module Extender (CBG-230N/CTG-240N) 65.00

230GD
Grating & Dot Generator (CBG-230N) 285.00

Extra Instruction Manual (CBG-230N) 50.00

Extra Instruction Manual (CTG-240N) 55.00

Extra Instruction Manual (1100N/1010N) 65.00

TEST SIGNAL TYPES

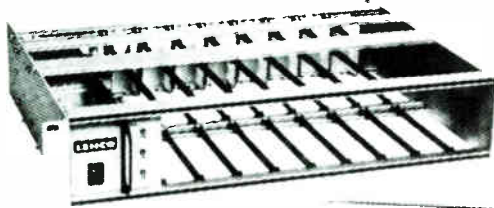
Linearity Mode	Modulated Ramp dto. Low APL dto. High APL Modulated Staircase (10 step) dto. Low APL dto. High APL Staircase (10 step) Composite (full field)
HF Response Mode	Multiburst 100% Multiburst 100% with luminance Multiburst 50% Multiburst 50% with luminance Multipulse 2T Pulse and Bar Modulated 12.5T Pulse and Bar Combination (full field)
LF Response Mode	Window Alternate Window 240 Hz Square Wave 60 Hz Square Wave 30 Hz Square Wave 2 second bounce 8 second bounce Sync and Burst
Monitor Alignment Mode	SMPTA Alignment Color Bars EIA Color Bars Full Field Color Bars with luminance Red Grating Grating and Dots Cross Dot Timing Vector
Ancillary Mode	MTS (Multiple Test Signal) Safe Title Area Color Response Modulated Pedestal Staircase (5 step) Black Gray Luminance Ramp



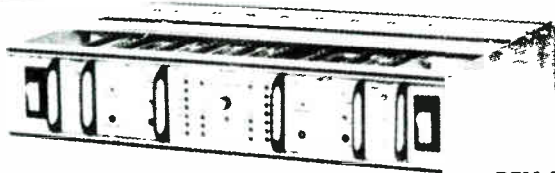
LENCO, INC., ELECTRONICS DIVISION

300 North Maryland St.
Jackson, MO 63755
(314) 243-3147 (800) 325-8494
TWX 910-760-1382

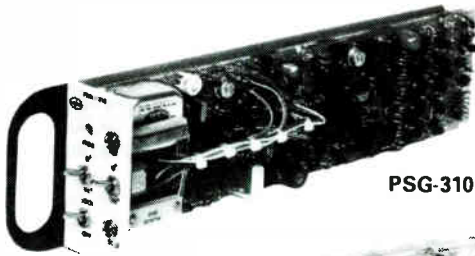
TERMINAL EQUIPMENT



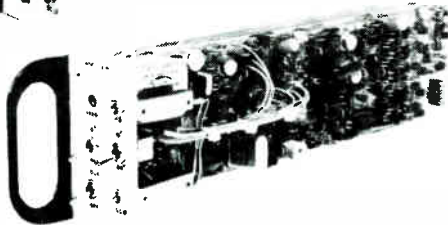
PFM-300B



PFM-301



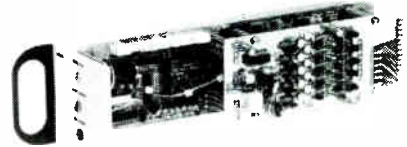
PSG-310



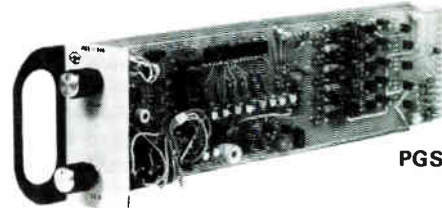
PSG-311



PMG-312



PFT-314



PGS-315



PFI-316

PFM-300B FRAME AND POWER SUPPLY

The PFM-300B Frame is the heart of the 300 System. It consists of a power transformer, the PPS-302B Power Supply, and nine cells with connectors mounted on a "mother board". The PPS-302B supplies the power busses in the frame with ± 15 VDC and +8VDC.

\$780.00

PFM-300/1 300 System frame with 2 power supplies

\$885.00

PFM-301

Unlike the PFM-300B, the PFM-301 is a system frame with a dual power transformer and power supply. It is designed to house two PMG-312 Master Sync Generators and one PCO-318 Changeover unit only.

\$1375.00

ACCESSORIES:

PPS-302— Spare Power Supply for PFM-300 Frame	\$130.00
PBL-305— 300 Series Blank Panel— Single Width	13.00
PBL-306— 300 Series Blank Panel— Double Width	14.00
PEX-308— 300 Series Extender Board	65.00
PEX-309— 300 Series Extender for Double Width Units	120.00

PSG-310 DIGITAL COLOR SYNC GENERATOR W/RS-170 GENLOCK

The PSG-310 Digital Color Sync Generator exemplifies the latest in design techniques of digital engineering. The unique circuit allows us to offer an ultra-stable and trouble free generator, with exclusive features not normally found in broadcast quality equipment. **\$1125.00**

OPTION 1: Variable Blanking Width Assembly

155.00

PSG-311 DIGITAL COLOR SYNC GENERATOR

The PSG-311 Digital Color Sync Generator incorporates the same unique design techniques that are found in the PSG-310 Sync Generator. The only exception is in the Genlock circuitry. The PSG-311 was engineered to operate with helical VTR's or other equipment that supplies unstable time base signals. **\$1125.00**

PMG-312 MASTER SYNC GENERATOR

The PMG-312 is a professional Master Color Sync Generator designed to meet the most demanding specifications for performance and stability. The design criterion was to provide a high quality master color sync generator that includes all the features desired by the discerning engineer. Utilization of the latest state of the art techniques are incorporated in the PMG-312. **\$2500.00**

PFT-314 FRAME TIMING MODULE

The PFT-314 basically has the same system responsibility as its sister unit, the PGS-315 Generator Substitute unit. That is, its primary function is to receive an external signal and supply the PFM-300 Frame mother board with all the six drive signals. The PFT-314 has major differences: The input signal is a Composite Reference Signal (CRS) instead of individual drive signals; provides a complete set of output signals for use external to the frame; has advance timing capabilities instead of just delay, and subcarrier is phase locked to H Sync. **\$995.00**

PGS-315 SYNC GENERATOR SUBSTITUTE

The PGS-315 Sync Generator Substitute module is a valuable member of the overall 300 System concept. It has the primary function of replacing the PSG-310 or PSG-311 Sync Generators when external drive sources are available to the PFM-300 Frame. The PGS-315 accepts Sync, Blanking, H-Drive, V-Drive and Subcarrier from an external source, processes these signals and distributes them to the proper busses in the frame. The identical digital delay circuits, as described in the PSD-340 System Delay Module, are also in the PGS-315 module, providing the system timing capabilities for the frame. Because the PGS-315 is not a generator, although in this application it is performing the same function, the pulses supplied to the frame are absolutely jitter free and can be perfectly timed. **\$550.00**

PFI-316 FRAME INTERFACE

The PFI-316 Frame Interface module is a unique and inexpensive way of allowing an external generator to supply signals to the PFM-300 Frame. It has the primary function of replacing the PSG-310 or PSG-311 when external drive pulses are available to the PFM-300 Frame. The PFI-316 accepts SYNC, BLANKING, H-DRIVE, V-DRIVE, SUBCARRIER, and BURST FLAG from an external source for proper distribution to the mother board busses in the frame. There are no delay circuits in the PFI-316. Its function is simply to apply the proper level and impedance of each signal to the Frame. **\$375.00**

\$375.00

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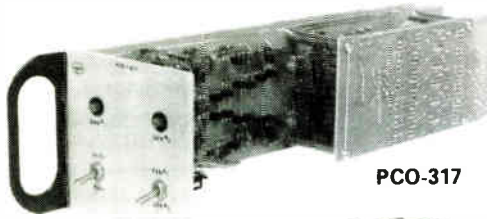
VT-119



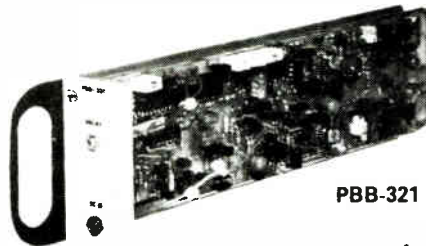
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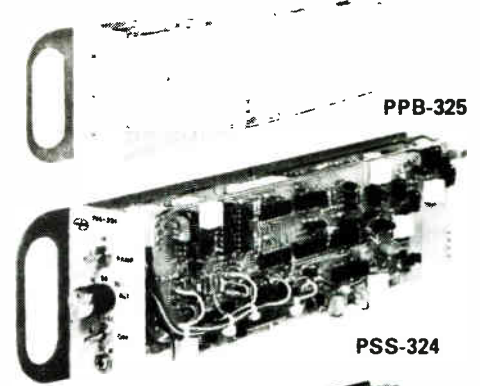
TERMINAL EQUIPMENT



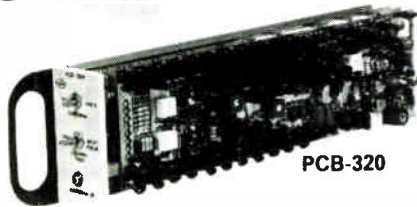
PCO-317



PBB-321



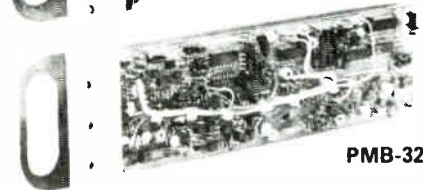
PSS-324



PCB-320



PBD-322



PMB-323



PFB-329

The 300 System (continued)

PCO-317 AUTOMATIC SYNC CHANGEOVER SWITCH

The PCO-317 Automatic Sync Changeover Switch is a remarkable state of the art device designed to instantly recognize the failure of any synchronizing signals and immediately switch to an alternate source. Signal sensing circuits monitor each input for the level and timing of the sync, blanking, horizontal drive, vertical drive, burst flag, and subcarrier signals. Upon loss of the primary generator, the PCO-317 will supply the frame busses with the alternate source only if their signals are acceptable to the changeover module's parameters. It will not switch to a faulty generator. **\$585.00**

PCO-318—Automatic Sync Generator Changeover w/Black Burst (for PFM-301 frame only) (not shown) **\$880.00**

Option 1 Black Burst Generator, (for PCO-318 only). **\$250.00**
Option 2 Remote Control for PCO-318 **200.00**

PCB-320 ENCODED COLOR BAR GENERATOR

The PCB-320 Encoded Color Bar Generator is a precision test signal generator engineered to conform to the EIA-RS-189-A and NTSC specifications. Reflecting the progressive concept of the 300 System, the PCB-320 includes the new SMPTE Alignment Color Bar Test Signal with chroma and black set signals. The encoder is a true NTSC standard as evidenced by the precise filtering of the I and Q channels shown by the waveform.

One of the exclusive features of the PCB-320 is the single control composite video delay circuit which, for the first time, allows system timing of test signals. **\$1050.00**

PBB-321 BLACK BURST GENERATOR

The Lenco PBB-321 Black Burst Generator is a precision professional broadcast quality Black Burst Generator that provides a "Color Black" video signal composed of composite sync, set-up and color burst. This signal is used as the black reference input to switching systems, cameras or may be used as a signal source to genlock remote sync generators to "House" sync. **\$595.00**

PBD-322 BAR DOT/VISUAL REFERENCE GENERATOR

The PBD-322 Bar Dot/Visual Reference Generator is one of the 300 System's most technically advanced signal generators. It is two separate and independent generators providing the standard dot grading signals, and a new linearity test signal, including a "safe title" signal.

The Bar Dot Generator digitally produces EIA standard horizontal and vertical bars, cross hatch, and dot signals used in the testing for convergence of color monitors and camera sweep circuits. Horizontal and vertical position controls, plus pattern selection, are located on the front panel. **\$875.00**

PMB-323 MULTIBURST/SWEEP GENERATOR

The PMB-323 Multiburst and Sweep Generator is a combination of two precision test signal generators which are required for overall system frequency response measurements. A front panel switch provides for selection of either the Multiburst Signal, the Sweep Signal, or both (on alternate lines). Other switches allow for the selection of full or reduced amplitude and burst on-off. The Multiburst frequencies are preset to EIA standards but burst frequencies can be adjusted to 10 MHz if required. Stability of both amplitude and frequency is assured by a precision function generator operating within a feedback loop. The burst levels are fixed and cannot change as are the sync and setup levels. The Sweep Generator provides a linear sweep at a horizontal rate from 0.5 MHz to approximately 12 MHz with overall flatness of 0.2 dB. Fixed markers are provided at 2.0 MHz intervals. **\$995.00**

PSS-324 STAIRSTEP/RAMP GENERATOR

The PSS-324 Stairstep/Ramp Generator provides a precision test signal for measuring differential phase and gain, luminance linearity, and burst phase error of a video system. An exclusive feature of the generator is a negative signal for all combinations of test signals. This is a very important function for the testing of differential phase and gain in the burst region. Strict conformity to the standards of IEEE 206 is adhered to, as well as a true video bounce test that conforms to standard APL definitions. **\$1100.00**

PPB-325 SIN² PULSE WINDOW GENERATOR

The Lenco Model PPB-325 Sin² Pulse Window Generator is another in the series of fine, precision, state of the art signal generators. Unique engineering and packaging techniques have provided the following nine precision test signals in a one module width plug-in unit: Modulated 12.5T and 20T, T, 2T, or T/2 pulses, window or bar signals and the exclusive "pluge" pulse. The PPB-325, with a combination of front panel switches and internal strapping options, can provide almost any combination of the nine signals. This feature was designed to allow the user to determine the proper test signals which are best suited for his particular system application. **\$1295.00**

PFB-329 BLACK BURST/BACKGROUND GENERATOR

The Black Burst section of the PFB-329 provides a "Color Black" video signal composed of composite sync, set-up, and color burst. This signal is used as the black input to switching systems, or may be used as a signal source to genlock remote sync generators to "House" sync.

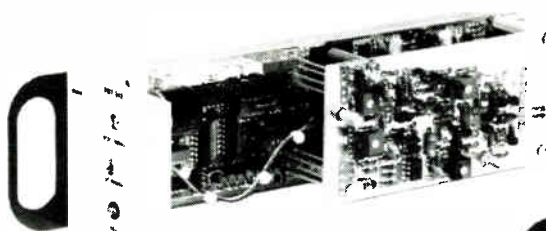
The Color Background section produces a solid field of color and, when connected to the input of a special effects generator or video insert keyer, provides color backgrounds for titles and other inserts. A standard feature of all 300 System generators is a composite delay which provides for delaying the output signal up to 1.5 μs to assist in system timing. **\$680.00**



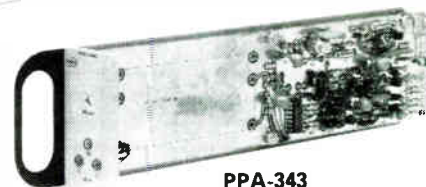
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PSD-340



PBT-342



PPA-343



PFO-344



PSA-346

The 300 System (continued)

PSD-340 SYSTEM DELAY MODULE

The PSD-340 System Delay Module has completely changed the traditional system timing techniques as they are now used. This unique system concept obsoletes the use of pulse and subcarrier distribution amplifiers, as well as excessive cable or other external delay devices used in system timing. The PSD-340 will supply all drive signals to any video source, including subcarrier, with the unique capability of timing these signals to your system requirements. This jitter free device can be compared with having an individual genlock sync generator driving each camera, switcher, VTR, etc. **\$550.00**

**PST-341 SYSTEM TIMING MODULE
W/OPTIONAL BLACK BURST OUTPUT**

The PST-341 System Timing Module is a new generation of system timing equipment added to the "300 SYSTEM". It not only has delay, but advance as well. The PST-341 requires the Composite Reference Signal (CRS), from the PMG-312 Master Sync Generator via the PFM-300 Frame mother board. This Composite Reference Signal supplies Master Sync Generator timing information to the PST-341 for the purpose of system distribution and timing. **\$995.00**

PBT-342 BLACK BURST TIMING

The PBT-342 Blackburst Timing Module not only has delay, but advance as well. The PBT-342 requires the Composite Reference Signal (CRS) from the PMG-312 Master Sync Generator via the PFM-300 Frame mother board. This Composite Reference Signal supplies Master Sync Generator timing information to the PBT-342 for the purpose of system distribution and timing of blackburst required devices. **\$995.00**

PPA-343 PULSE DISTRIBUTION AMPLIFIER

The PPA-343 Pulse Distribution Amplifier is an important module in the overall concept of the 300 System. Although the PSD-340 System Delay Module is the modern method of pulse distribution and system timing, there are still many applications where the standard methods of individual pulse distribution are required. **\$285.00**

OPTION 1: Pulse Delay Assembly for PPA-343 **160.00**

PFO-344 FAN-OUT PULSE DISTRIBUTION AMPLIFIER

The PFO-344 is a universal fan-out amplifier consisting of six separate and independent DA cells. Each cell has one input and one output with unity gain. Each cell can be programmed by changing connector positions to select any combination of drive pulses. The pulses are made available on the frame mother board by any of the 300 Series sync generators or an interface module. **\$375.00**

PSA-346 SUBCARRIER DISTRIBUTION AMPLIFIER

The PSA-346 Subcarrier Distribution Amplifier was designed to supplement the versatile 300 System's unique concept and incorporates the same state of the art design techniques found in all of the 300 System modules. The PSA-346 is a precision, ultra-stable, regenerative subcarrier amplifier whose advanced circuitry provides a pure, distortion free 3.58 MHz sine wave. **\$395.00**

PVA-350 VIDEO DISTRIBUTION AMPLIFIER

The PVA-350 Video Distribution Amplifier reflects a new concept in engineering techniques, bringing to the 300 System a versatile state of the art video amplifier with outstanding performance characteristics. The PVA-350 is flat to 15 MHz, has a unique automatic DC offset control, and offers low noise, excellent stability, and virtually no distortion. A differential amplifier on the input is standard in the PVA-350, and provides 70 dB of common mode rejection. **\$290.00**

OPTION 1: Feedback Clamp Assembly **110.00**

OPTION 2: Cable Equalizer Assembly **85.00**

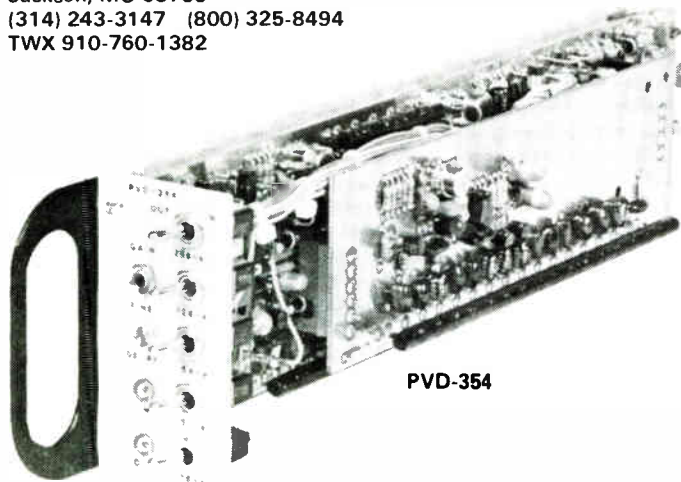
OPTION 3: Sync Adding Assembly **60.00**



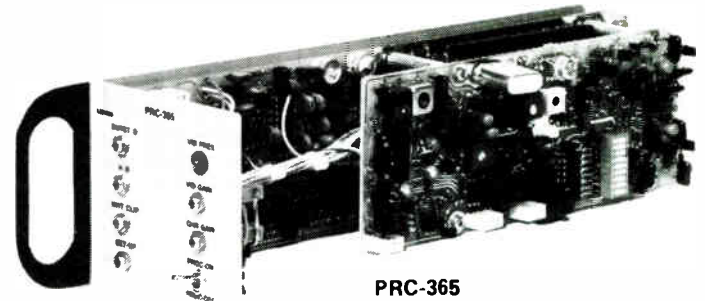
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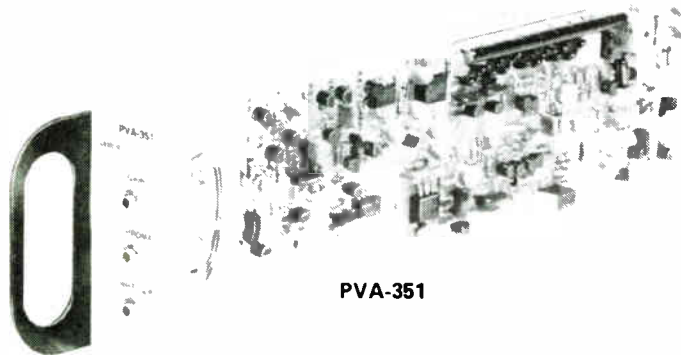
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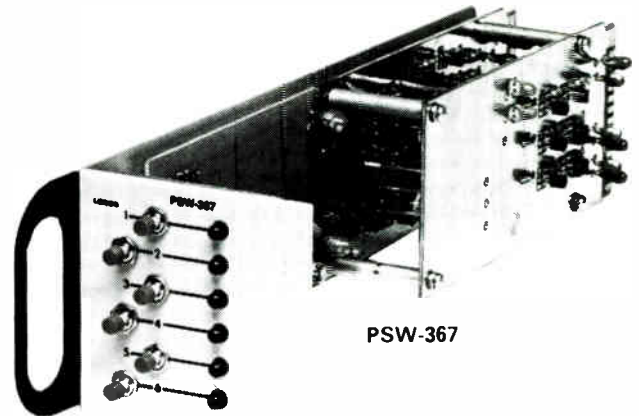
PVD-354



PRC-365



PVA-351



PSW-367

THE 300 SYSTEM (continued)

PVA-351 WHITE CLIP VIDEO AMPLIFIER

The PVA-351 Video White Clip Distribution Amplifier has a differential high impedance looping input that is standard and provides more than 60 dB of common mode rejection for reduced ground loop hum pickup. Gain is front panel adjustable over a +/-6 dB range. Frequency response is flat to 10 MHz. The PVA-351 offers low noise and excellent stability with virtually no signal degradation. Four 75 ohms source terminated DC coupled outputs are provided with excellent low frequency transient response and 40 dB of isolation.

\$365.00

PVD-354 VARIABLE DELAY VIDEO AMPLIFIER

The PVD-354 Variable Delay Amplifier is a precision device that has widespread system applications when quality and accuracy of video timing is desired. Most passive video display devices have a very sharp frequency roll-off above 5 MHz and show an insertion loss of about 6 dB. This requires the use of a video distribution amplifier with enough gain to bring the signal up to normal. The PVD-354, however, is a wideband device that has no insertion loss, and will provide up to 537 μ S of equalized video delay, with infinite resolution of delay setting. An option to the PVD-354 is a plug-in board that will provide a maximum of 1.051 μ S of video delay.

\$950.00

PRC-365 PROCESSING AMPLIFIER w/SYNC GENERATOR

The PRC-365 is a high performance video processing device. It is designed for use in studios, master control facilities or transmitter locations. It features standard or helical lock, differential video input, luminance only black clip, a soft white clip, internal digital sync generator, vertical interval line select, front panel controlled pedestal, genlock capability and a front panel LED that indicates the presence or absence of video. The PRC-365 requires only the PFM-300 Frame and Power Supply for operation.

\$1890.00

PSW-367 6 x 1 TEST SET SWITCHER

The PSW-367 6 x 1 Test Switcher was designed to provide a unique and economical method of selecting the various output signals from the test signal generators that may be installed in the PFM-300 Frame. In addition to the six test module signals, provisions have been included to allow the PSW-367 to switch to either the "Gen-lock Video" or one other external video source. The PSW-367 will switch during the vertical interval and the LED display will constantly monitor the switch status.

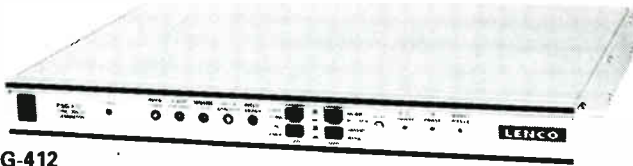
\$550.00



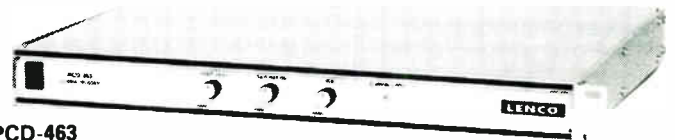
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TERMINAL EQUIPMENT



PSG-412



PCD-463



PVS-430



PCE-466P

THE 400 SYSTEM

PSG-412 Master Sync Generator

The PSG-412 is a Master Sync Generator with genlock. This unit meets the proposed RS-170A specifications. It maintains an accurate SC/H phase condition. There are 2 outputs of each drive pulse plus blackburst, video, CRS, burst flag & color field identification. CFI is programmed for field 1 line 10. An ovenized crystal is used to maintain an accurate internal timebase. All pulse widths are adjustable except VD and field ID. Vertical blanking is selectable between line 17 thru 21. Also converts the genlock video to RS-170A by inserting a regenerated blackburst signal. **\$3450.00**

PSG-412P Master Sync Generator

The PSG-412P is a Master Sync Generator that meets the PAL B, G & I standards. It uses an ovenized crystal to maintain a very accurate time base. The PSG-412P outputs two each of the following pulses: HD, VD, sync, blanking, burst flag, subcarrier, black burst, PAL pulse, a 13.5 MHz sine wave and color field identification. All pulse widths except HD, VD, and CFI are adjustable. Vertical blanking is selectable between lines 20 to 25. The PSG-412P maintains an accurate SC/H condition. **\$3575.00**

PCO-418 Automatic Generator Changeover

The PCO-418 Automatic Generator Changeover Switch instantly recognizes the failure of any of nine pulses and immediately switches to an alternate generator. There are nine LEDs metering each generator. A nine position DIP switch allows the lock-out of any of the nine generator pulses. A front panel switch selects GEN-1 or GEN-2 or Auto. The unit switches on failure of HD, VD, SY, SC, BL, CRS, BF, BB and CFI. **\$1975.00**

PCO-418P Automatic Generator Changeover

The PCO-418P Automatic Generator Changeover Switch instantly recognizes the failure of any of nine pulses and immediately switches to an alternate generator. The unit meets the PAL B, G & I standards. There are nine LEDs metering each generator. A nine position DIP switch allows the lock-out of any of the nine pulses. A front panel switch selects GEN-1, GEN-2 or Auto. The unit switches on failure of HD, VD, SY, SC, BL, BF, PAL pulse, black burst or CFI (Field Reference Pulse). **\$2175.00**

VNM-428 Video Noise Meter

The VNM-428 is a Video Noise Meter that offers the in-service capability of making accurate real time signal-to-noise measurements. It has a built-in calibrator that insures an accuracy of 1% through its range of 28.5 dB to 76 dB. The signal-to-noise ratio is shown directly on a large LED display. The VNM-428 can be calibrated to read directly in either the EIA or PAL-M system standards. **\$1925.00**

PVS-430 Videoscope

The PVS-430 provides a true method for certifying the correct SC/H Phase relationship. The PVS-430 will measure very accurately the SC/H phase relationship and compare the video input of a switcher or

mixer for precise and accurate system timing. In an editing system, the Videoscope provides a useful method of determining off-tape SC/H Phase. **\$3150.00**

PCD-463 Chroma Decoder

The PCD-463 is a Chroma Decoder with two line comb filtering. The input is any stable NTSC video and has two outputs each of 1V p-p RGB. One output of 4V p-p sync is available on the rear panel. The unit genlocks to the input video signal. The front panel controls are video level, saturation, hue and blanking position. It is self-contained with internal power supply. **\$2475.00**

PCE-466 Color Encoder

The PCE-466 Encoder produces an NTSC/EIA color signal from either a three or four channel video source. The fourth, or luminance channel, is optional. The encoder requires red, green, blue, sync, SC & blanking input. Split field color bars meeting RS-189A are standard. Full field or split bars are selectable internally. Front panel switches allow the selection of operate, color bars, black burst or mono. All inputs are 75 ohm loop-through. Two video outputs. **\$2980.00**

PCE-466P Color Encoder

The PCE-466P produces a PAL color signal from either a three or four channel video source. The fourth or luminance channel is optional. The encoder meets the PAL B, G & I standards. It requires the following input signals: red, green, blue, sync, subcarrier, blanking and burst gate. Color bars and reversed bars for setting decoder chroma gain are standard. The front panel switches select operate, color bars, black burst and mono. All inputs are 75 ohm loop-through. There are two video outputs. **\$3280.00**

PSW-467 Vertical Interval Bridging Switcher

The PSW-467 is a 12 x 1 vertical interval bridging switcher. It is designed to efficiently and economically route or delegate video signals. **\$1000.00**

PAF-467 Audio Follow Bridging Switcher

The PAF-467 is a 12 x 1 Audio Follow Video Switcher designed as a companion to the PSW-467 Video Switcher. **\$840.00**

PSR-467 Remote Control

The PSR-467 Remote Control is a self-contained rackmounted unit that can be located up to 1000 feet from the switcher location. It requires no external power source because it receives its power from the PSW-467 or PSW-468 Video Switcher. **\$550.00**

PSR-4673 Remote Control P.C. Board Assembly Only — Electronics Only **\$275.00**

PSW-468 Remote Vertical Interval Video Switcher

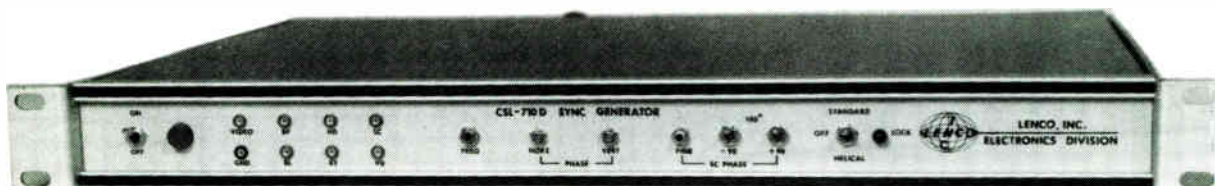
The PSW-468 is a 12 x 1 remotely controlled, vertical interval video switcher. This switcher has no push buttons. All input switching is controlled by the companion PSR-467 remote control unit or PSW-467 vertical interval switcher. **\$875.00**

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MODEL CSL-710



MODEL CCE-850

700 SERIES EQUIPMENT

Model CSL-710

The CSL-710 Digital Color Sync Generator is a professional broadcast piece of equipment that meets several applications. The generator has a complete complement of NTSC pulses meeting EIA RS-170 specifications.

Two genlock modes of operation are provided by the CSL-710. The Standard genlock mode for RS-170, and Helical genlock mode for unstable time base signals. The genlock circuit has a unique noise immunity circuit which makes the generator highly insensitive to noise or extreme changes in input levels. The incoming video is sensed by an extremely fast video presence detector, processed and locks the generator automatically to the 50% point of the sync pulse. The Helical genlock mode will lock to most helical scan video tape recorders. It will lock to the unstable time base signal and ignore the fact that information is missing during the head drop out period of the VTR. In the Helical mode, it does not require a coherent burst input to achieve lock. Input level for genlock is automatically compensated to maintain genlock on various input signal levels.

A temperature compensated crystal oscillator operating at 14.318180 MHz provides the stable master frequency source from which all pulses and subcarrier are derived. All pulse widths and levels are fixed per EIA standards.

Two sets of output are provided on the rear panel including Horizontal Drive, Vertical Drive, Blanking, Sync, Subcarrier and Burst Flag. The modern design front panel provides test points for pulse measurements. Adjustments for Horizontal Frequency, Horizontal and Vertical Phase and Subcarrier Phase as well as the selection of Standard or Helical genlock is located on the front panel. The unit is self contained, operating on 100 to 130 VAC and drawing only 24 watts.

CSL-710	Digital Color Sync Generator w/ Genlock	\$1525.00
MOD-1	Special Scan Rates	1875.00

800 SERIES EQUIPMENT

Model CCE-850

The CCE-850 is a complete NTSC compatible color encoder with a built-in color reference bar signal. The system is a self contained unit measuring only 1-3/4 inches high and 17 inches wide. It can be used as a table top unit or mounted in a standard 19" equipment rack.

It is a wide band high resolution encoder primarily for the use with RGB color graphic generated information from a computer processor unit. The unit will encode most of the scan and resolution rasters presently offered by computer terminals. The output of the CCE-850 can be fed to any standard NTSC color monitor or video tape recorder.

The required signal input is RGB with or without the presence of sync. An external sync input is available if the computer RGB signal is non-composite (without sync.). The unit does not require an external GEN locking sync generator to interface with the RGB graphics computer. An automatic sync input detector selects between video sync or external sync to generate blanking and burst. A video gating circuit automatically matches black levels and inserts new blanking. Blanking regeneration automatically adjusts to line lengths and field lengths to closely simulate NTSC specification.

In addition to the two composite NTSC type outputs, in order to reduce system timing problems, the CCE-850 features a very short signal delay (250ns).

An image detail control on the front panel allows the operator to continuously compensate for high frequency losses in the system. A color reference pattern is switch selectable to aid in the adjustment of the NTSC color monitor.

Front panel controls are AC On/Off, Brightness, Color, Contrast, Detail, and Color Reference. Rear panel connections are high impedance looping RGB and sync input, two NTSC type composite video outputs source terminated 75 ohms.

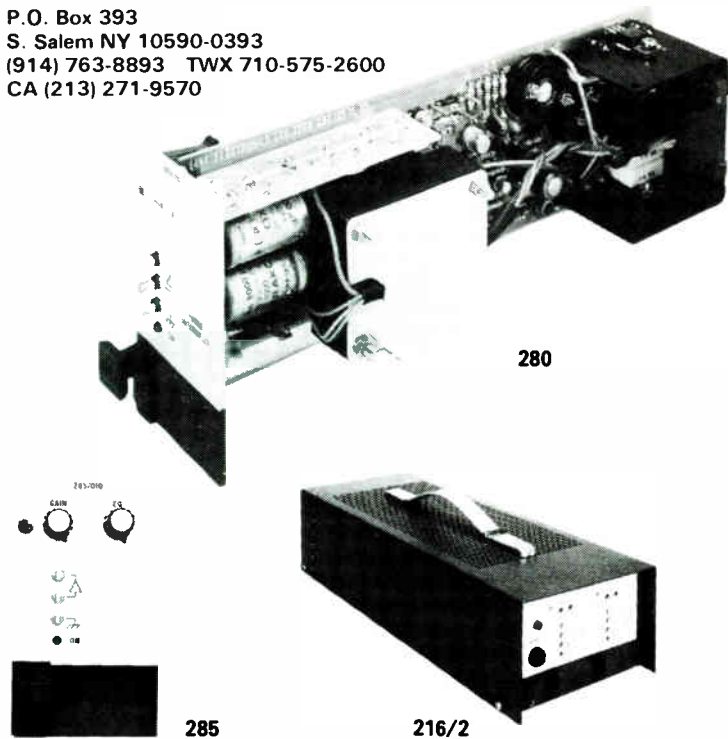
The unit operates on 115/230 volts AC, 50/60 Hz. Power approximately 10 watts.

CCE-850	RGB to NTSC Computer Encoder	\$1900.00
CCE-8501	Adapts to 10µS Sync Pulse	190.00

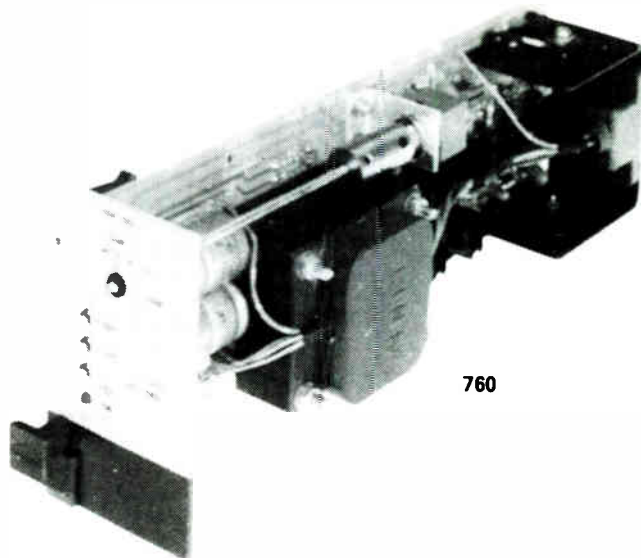
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DISTRIBUTION AMPLIFIERS



Video Distribution Amplifiers Type 280

The Video distribution amplifier type 280 is contained on a single 3-1/2" high module. This module contains mains transformer, power supply and active circuits. A plug-in daughter board type 281 contains equalizing and gain setting components. This board can readily be changed from one VDA type 280 to another. The gain and equalization characteristics will then be transferred to the new module. One 280 module can thus serve as a spare for a variety of 280/281 combinations.

FEATURES

- Single unit—handles video or up to four volt pulses without adjustment
- Multipurpose—fixed or variable gain, fixed or variable equalization, pre or post cable equalization
- Gain and equalization set by plug-in board
- Balanced input for rejection of unwanted common mode signals
- Low power consumption for long and trouble-free life.

286	Rack frame to accommodate up to eight distribution amplifiers w/one main	\$258.00
287	w/two mains	323.00
280	Distribution amplifier module (Less 281)	232.00
281	Daughter board for 280—All options	32.00
283	Rear video connector assembly for 280	65.00
204	Extender board for 280 Series	108.00
282	Six "Knobs" equalizing distribution amplifier module for complex equalization of individual adjustment of different parts of the response curve	387.00
285	Two knob distribution amplifier for frequent adjustment of gain and equalization	323.00
216/2	Portable case to accommodate two distribution amplifier 280 Series with mains	237.00
	Blank Panel for 1-4 module width	22.00

Audio Distribution Amplifiers 760 Series

The Audio Distribution Amplifier, type 760 is contained on a single 3-1/2" high (2U) module. This module contains mains transformer, power supply and active circuits. A.C. mains connects to the module through a separate isolated connector and not through the printed circuit edge connector. This feature considerably enhances safety aspects as well as reducing the likelihood of breakdown in high humidity conditions. To extend the versatility of the unit a variety of connector units and transformer modules are available. All the units fit into the same rack frame as the Link VDA, type 280.

FEATURES

- Low noise and low distortion
- Balanced and floating bridging input.
- Balanced, centre grounded outputs—fully floating using optional transformer module
- 20 dB variable gain range
- Compact, self powered modules with low power consumption
- Mechanically compatible with 280 Video DA series—uses same rack frame

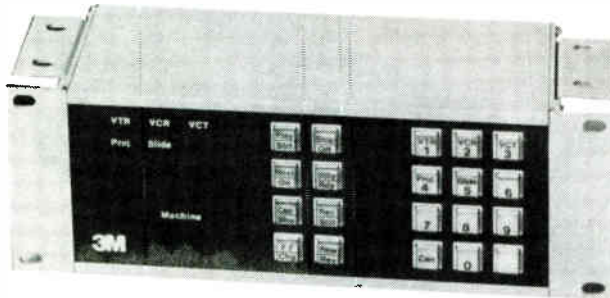
760	Audio Distribution Amplifier	\$215.00
762	Rear Connector-screw	97.00
763	Rear connector for 760	183.00
766	Rear Connector-varien	95.00
767	5 Balanced and Floating	237.00
768	2 Balanced	129.00
769	Extender board for 760	108.00
286	Rack frame for 8 units w/one main	258.00
287	w/two mains	323.00



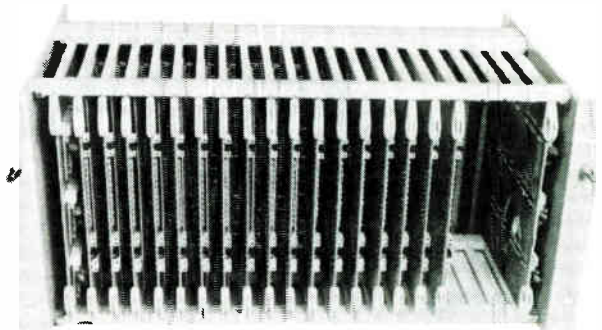
BROADCAST PRODUCTS DIVISION

3M Center Bldg. 225-3N
St. Paul, MN 55144
(612) 733-8132

MACHINE CONTROL SYSTEM/ ROUTING SWITCHER



MODEL 6500



MODEL AX

MODEL 6500 Machine Control System

FEATURES

- Controls VTR's, audio tape machines or film chains
- Coax control line(s), simplifies installation
- Machine Interface Decoder — controls eight functions per decoder; maximum of 16 functions per machine
- Control of each machine's mechanical functions can be delegated to any number of machine control panels — Each control panel can operate up to ten (10) different categories of machines
- The central 6500 Microprocessor Controller can be programmed to provide special functions, such as temporary or permanent assignment of specific machines to a specific control panel
- Verification of machine function(s)
- The 6500 Machine Control System can be operated as a stand alone system or it can be integrated with the 3M 40X, AX and Series H Routing Switcher Systems
- Machine Control can also be assigned from a video terminal and display controller
- Automation of machine control and switching commands available
- Machine Lockout capability is a standard feature
- Tape Duplicator environment in Master—Slave Machine Control situation. Allows a bank of machines, i.e. 4, 6, 8, etc., to be controlled from one machine Interface Decoder in a "ganged condition."

The 6500 Machine Control System is a microprocessor/software base control system which allows an operator the capability for remote control of the mechanical functions of machines.

It eliminates patch panels or complex relay switching systems where the delegation of machine control is required.

Connection between the microprocessor, the machine interface decoders, and the machine control panel(s) is via coax cable. The machine interface decoder module interfaces directly to the specific machine(s).

In addition to handling the mechanical functions of machines, the decoder will provide verification that a specific machine has actually performed the requested function, if such a tally is available from the machine electronics.

MODEL AX Series Routing Switcher

FEATURES

- Mono or stereo
- 8-3/4" High rack frame
- All plug-in construction
- Balanced input & output amps
- Transformer input (optional)
- Plug-in control boards for every channel
- All solid state
- 400 Crosspoints/frame
- FET Crosspoints
- Card frame construction 20 x 20 or 40 x 10 mono configuration or 20 x 10 stereo
- Low cost
- Available with 6500 Microprocessor control

An audio routing switcher not only serves to eliminate the patch panel but provides a good portion of the audio distribution. Output distribution amplifiers are available with six (6) outputs.

Card frame construction is used to house two independent 20 (input) x 10 (output) matrices in the same frame. These two matrices may be combined to obtain either a 20 x 10 stereo matrix or 40 x 10-20 x 20 mono configuration. Input isolation is maintained with an isolation amplifier which bridges the line and provides a low driving impedance to the crosspoints. Each amplifier has provisions for balanced input feeds with common mode hum rejection.

For those who want transformer inputs, space on back panel is allotted for mounting the transformers (optional). The crosspoints are high impedance FET-MOS integrated circuit modules and offer line isolation and no measurable loading effect.

Each AX Series frame occupies 8-3/4" of rack space. A full width removable front panel allows access to the plug-in boards. Input connectors are gold plated multipin type. If terminal block type interconnect wiring is desired, ready made pigtail cables are available. Outputs wired to a plug-in terminal strip provided for each output furnishes all power required by that unit. Every card frame board has a power regulator for isolation. The power supply can be removed by simply removing two screws and three connectors.

The AX Series can be purchased in increments of four inputs and any number of outputs. To add more outputs than the capacity of a single frame requires looping the inputs of additional frames. If more than 40 inputs is required, additional frames can be cascaded together. Includes output amplifiers with +21 dBm maximum output on each of six (6) outputs.



SERIES H

Compact size, excellent mechanical and electronic integrity, and circuit redundancy give the 3M Series H switching equipment the best product performance per dollar of any Routing Switcher on the market.

The Series H Routing Switcher offers a number of other benefits as well. They include:

- No internal maintenance or service adjustments
- DC coupled inputs to outputs allow analog switching circuits to handle certain data signals without DC-restore circuitry
- Bi-directional, parallel control bus with positive feedback from crosspoint latches gives immediate and positive confirmation of crosspoint latching
- Pre-tested and pre-adjusted hybrid circuits
- Microprocessor control system simplifies design, maximizes dependability
- Single line coax control capability simplifies wiring and connections
- Separate plug-in video and audio output amplifier cards to assure that failures are isolated to one point and disable only one output if removed
- Each video path can have multiple associated audio paths (i.e., stereo, SMPTE time code, multi-lingual applications)
- The microcontrol system can provide one video with up to 5 audio levels with separate control for each level
- Audio-follow-video, video only, audio only, and audio breakaway for easy adaptation to any switching application
- I/O ports for RS232 computer terminal control, and standardized I/O protocol to allow for external CPU control by a variety of devices
- Improved temperature uniformity, hybrid ceramic substrates have stable and predictable dissipation characteristics
- Easy and cost-effective switcher expansion through modular building block design with full expansion compatibility
- Control circuits are distributed by card, another valuable circuit redundancy feature

Hybrid Circuits

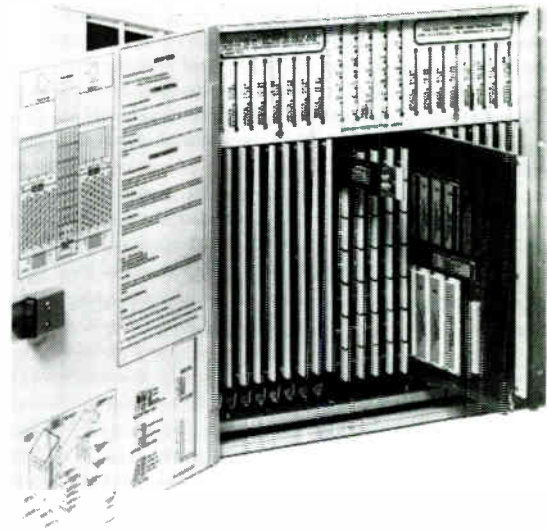
A hybrid circuit consists of a high purity alumina ceramic substrate on which various alloys and resistive materials are printed to form conductor paths and resistive circuit elements.

Miniature leadless discrete components are attached directly to the substrate. Adjustments are made to screened resistors and capacitors by laser trimming. Each microelectronic hybrid substrate contains an entire circuit function. These centralized, modular functions include video and audio crosspoints, video and audio input amplifiers, and video and audio output amplifiers. Seven building block hybrid circuits make up the Series H system. They are:

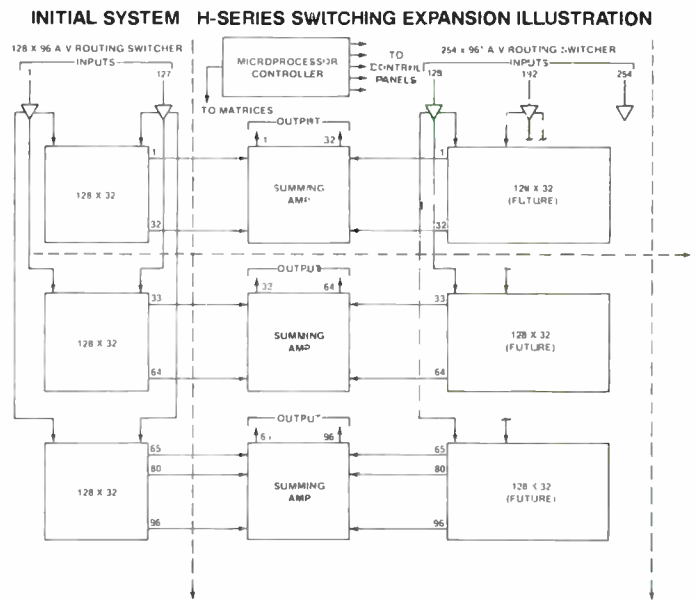
- 16 x 2 Video Crosspoint
- 16 x 2 Audio Crosspoint
- Quad Audio Input Amplifier
- Quad Video Input Amplifier
- Block Control Logic
- Video Output Amplifier
- Audio Output Amplifier

16 x 16 Audio/Video Matrix Card

The 16 x 16 Audio/Video Matrix Card is the basis of the Series H, Model 128 x 32 Audio/Video Switching System. It provides up to 16 inputs and 16 outputs of audio and video switching on a 11-1/2" x 15-1/4" circuit board. The audio/video matrix card is simply a carrier card for the hybrid circuits. All switching matrix functions are contained on this single card, demonstrating the packaging density that can be achieved using hybrid circuit design. This new technology allows crosspoint densities never before attained.



SERIES H MODEL 128 x 32



The 16 x 16 Audio/Video Matrix Card consists of the following hybrid circuit devices:

- 16 x 2 Video Crosspoint
- 16 x 2 Audio Crosspoint
- Quad Video Input Amplifier
- Quad Audio Input Amplifier
- Logic Control for the 16 x 16 A/V Matrix Card

Video and Audio Output Amplifiers

The Series H Routing Switcher employs individual hybrid video and audio output amplifiers. These amplifiers are placed on separate output amplifier carrier cards. An example, the Model 128 x 32 uses five output amplifier motherboards. Two of the boards have 7 plug-in audio and video output circuits, and the remaining 3 boards have 6 audio and video output circuits, for a total of 32 outputs. Individual video and audio outputs are used for ease of maintenance and card changing. This technique also restricts malfunctions to no more than one video or audio output circuit.



BROADCAST PRODUCTS DIVISION

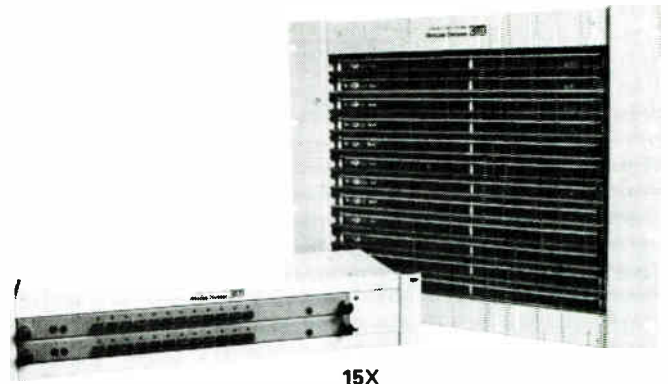
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(612) 733-8132

ROUTING SWITCHERS

15X SERIES

The Series 15X Routing Switcher offers an inexpensive method of eliminating patch panels and providing selectable distribution of audio and video signals. Any output channel can be independently programmed to select any input signal. The 15X Series offers very flexible control options which are divided into two categories — local and remote which can be intermixed within the same frame. Units are available in sizes: 2 outputs, 6 outputs, and 12 outputs. Also available with Audio Breakaway.

Plug-in input and output amplifiers are used for video and audio. The audio input amplifiers incorporate balanced inputs with common mode rejection for cancelling hum on input lines. The video inputs have looping BNC connectors and terminating switches.



15X

15X Series Video/Audio Routing Switchers • Bridging Crosspoints • Choice of Local or Remote Controls • Modular—Field Expandable • Three Frame Sizes • Low Crosstalk • Second Audio Level (optional) • LED Status Indicators • Input and Output Amps • Terminating Switches on Inputs • Audio Breakaway

LOCAL CONTROL		REMOTE CONTROL	
Description	Price	Description	Price
15 in x 3 out	\$3300.00	15 in x 3 out	\$ 4300.00
15 in x 4 out	3600.00	15 in x 4 out	4800.00
15 in x 5 out	4000.00	15 in x 5 out	5700.00
15 in x 6 out	4300.00	15 in x 6 out	6300.00
15 in x 7 out	4800.00	15 in x 7 out	7500.00
15 in x 8 out	5100.00	15 in x 8 out	8500.00
15 in x 9 out	5400.00	15 in x 9 out	9300.00
15 in x 10 out	5800.00	15 in x 10 out	10,000.00
15 in x 11 out	6000.00	15 in x 11 out	10,800.00
15 in x 12 out	6400.00	15 in x 12 out	11,500.00

OPTIONS

Description	Price
Vertical Interval Switching (remote only)	\$ 350.00
Audio Input/Output Cable (6' pigtailed)	
6 out frame	170.00
12 out frame	340.00
Remote Control Cable (assembled and tested)	50.00
	+ 1.00/ft.
Second Audio Level Switching (remote only)	
6 out frame, add	1240.00
12 out frame, add	1475.00
Expansion Modules for:	
15X Local Control Chassis, per output	510.00
15X Remote Control Chassis, per output	820.00
For 12 out frame with less than 6 outputs	1500.00

Local Control

Mechanically interlocked pushbutton switches are used to select and switch the audio, video and tally signals.

Each video crosspoint is isolated from feeding back through the switch to the newly selected signal eliminating the glitch on other monitors. Each output has a separate plug-in tray containing the mechanical switch as well as the audio and video output amplifiers which are also separate plug-in units. LED status indicators above each pushbutton illuminate when the corresponding switch is depressed.

Remote Control

Standard remote controls are available for momentary pushbuttons. Remote control pushbutton trays are interchangeable with the local modules. Only D.C. voltages are used for control. Switch module assemblies are available in 12 x 1 and 15 x 1 sizes.



15X-2 Series Video/Audio Routing Switchers		15X-2
Local Control, Video Only:		
15 in x 1 out	\$2000.00	
15 in x 2 out	2200.00	
Local Control, Audio/Video:		
15 in x 1 out	2300.00	
15 in x 2 out	2500.00	
Remote Control, Video Only:		
15 in x 1 out	2300.00	
15 in x 2 out	2500.00	
Remote Control, Audio/Video:		
15 in x 1 out	2600.00	
15 in x 2 out	2950.00	
15X-2 with 1 Local Control Panel and 1 Remote Control Panel:		
Video Only	2400.00	
Audio and Video	2800.00	
Accessories/Options	350.00	
Vertical Interval Switching (remote only), add	50.00	
Remote Control Cable (assembled and tested), add	+ 1.00/ft.	

101 SERIES

Model 101 Vertical Interval Bridging Switcher

A 10 x 1 bridging switcher with built-in video and audio DA's featuring vertical interval switching on all inputs; lighted push buttons; and switch position memory. The switch position memory is effective for at least 30 seconds, and longer when connected to an external battery source (terminals provided).



101

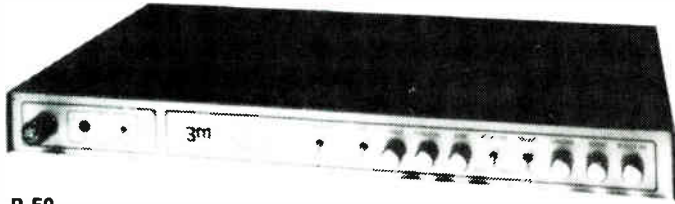
Model 101 Vertical Interval Bridging Switcher	\$1255.00
Accessories/Options	
Remote Control	450.00
Instruction Manual (one supplied with each unit)	30.00



BROADCAST PRODUCTS DIVISION

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(612) 733-8132

VIDEO PRODUCTS



P-50

P-50 Video Processing Amplifier

The Model P-50 Processing Amplifier accommodates a wide range of sync formats and provides adjustment for all signal parameters including sync, video, pedestal, burst level, burst phase and chroma level. In addition to the processed output, a pulse cross output is provided enabling the operator to adjust skew and tracking controls on a video tape recorder for optimum performance. The P-50 also has built in AGC circuitry for maintaining signal level automatically.

FEATURES

- Front panel control of six video signal parameters, including video level, sync level, chroma level burst, burst phase and pedestal level.
- Accepts most sync formats.
- Input AGC for maintaining proper signal level automatically.
- Generates a pulse-cross format with automatic picture brightening to allow the use of a standard monitor for VTR skew and tension adjustments.
- Comes complete with rack mounting kit and instruction manual. **\$1700.00**

SPECIFICATIONS

ELECTRICAL

Video Input

Level: 1.0V peak-to-peak, ± 6 dB, composite video
Impedance: 75 ohms, $\pm 5\%$

Video Outputs (2 each)

Level: 1.0V peak-to-peak, ± 6 dB, composite video
Impedance: 75 ohms, $\pm 5\%$ source terminated
Output No. 1 works in conjunction with the front panel Operate/Bypass switch
Output No. 2 can be strapped to provide a non-composite video signal

Monitor Output

Level: 1.0V peak-to-peak, ± 6 dB, composite video
Impedance: 75 ohms, $\pm 5\%$, source terminated
Output mode selectable by the front panel Monitor/Pulse Cross switch

Sync Output

Level: 4.0V peak-to-peak
Impedance: 75 ohms, $\pm 5\%$, source terminated
Sync signal is separated from the incoming video signal

Frequency Response: ± 0.5 dB to 5 MHz, down less than 3.0 dB at 8.0 MHz

Differential Gain: 1.0% maximum (10-90% APL)

Differential Phase: 1.0 degree maximum (10-90% APL)

Low Frequency

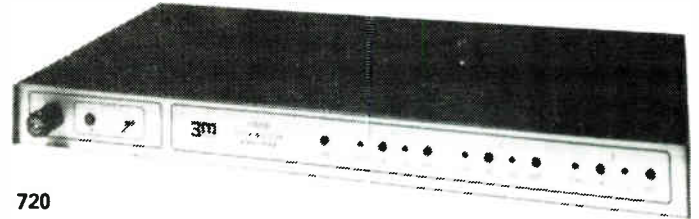
Noise and Hum Reduction: Greater than 30 dB

AGC (Sync Tip Detector)

Input: 1.0V peak-to-peak, ± 6 dB
Output: Less than 0.5 dB change with \pm dB change on the input

Controls (referenced to Nominal Video Levels)

Video Level: ± 6 dB
Sync Level: ± 6 dB
Chroma Level: ± 6 dB
Burst Level: ± 6 dB
Burst Phase: $\pm 45^\circ$
Pedestal Level: ± 40 IRE Units



720

Power

Requirements: 100-135 VAC, 50-400 Hz, 16 watts nominal

Connectors

Video Signal: BNC type
AC: 3-prong, heavy duty grounding type

MECHANICAL

Size: 1.75"H x 17.0"W x 9.30"D. Mounting hardware provided for standard 19" rack. Feet provided for desk top mounting 6 lbs. (net) 8 lbs. (shipping)

Weight:

ENVIRONMENTAL

Temperature: 0 to 50°C operating, -55 to +85°C (non-operating)
Relative Humidity: 0-90% (no condensation)

720 Video Distribution Amplifier

3M's Model 720 Video Distribution Amplifier has been designed for flexibility in almost any situation. It's ideal for studio, mobile, or duplication applications, where quality signal performance and reliability are mandatory.

Used independently, our Video Distribution Amplifier accepts up to three different sources with four outputs for each source. Multiple sections may be looped together to provide 4, 8, or 12 outputs from a single video source.

The Model 720 can either be conveniently rack-mounted or utilized as a free-standing unit.

FEATURES

- Three sections; 1 input, 4 outputs per section, with common power supply
- Front panel gain adjustments
- Cable equalization adjustments up to 1000' of cable
- Front panel test points
- High impedance, loop-through inputs
- 1 3/4" rack-mounting **\$835.00**

SPECIFICATIONS

ELECTRICAL

Input Impedance: Bridging, greater than 40 dB, 75 ohm return loss, 0-10 MHz

Maximum Input DC: ± 25 volts

Gain: ± 6 dB (front panel adjust)

Outputs: 4 each, 75 ohm source terminated

Maximum Output: 2.2 volts peak-to-peak into 75 ohms

Output Isolation: 35 dB at 3.5 MHz between outputs

Frequency Response: ± 0.25 dB, 100 Hz-5 MHz; ± 0.5 dB, 5 MHz - 10 MHz; Less than 3 dB down at 15 MHz, 50 Hz tilt less than 1%

Differential Phase: 0.5 degrees

Differential Gain: 0.5%

Chrominance/Luminance Delay

Error: 10ns

Cable Equalization: Capable of 1000 RG59U to 10 MHz. Unity gain through system

Isolation between Amps:

50 dB at 3.58 MHz

Power Requirements:

103-135 volts, 50-400 Hz, 10 watts nominal

Connectors:

BNC type

MECHANICAL

Size: 1.75"H x 17.0"W x 9.30"D. Feet provided for table top use. Mounting kit provided for standard 19" rack

ENVIRONMENTAL

Temperature: 0 to 50°C (operating) -55 to +85°C (storage)

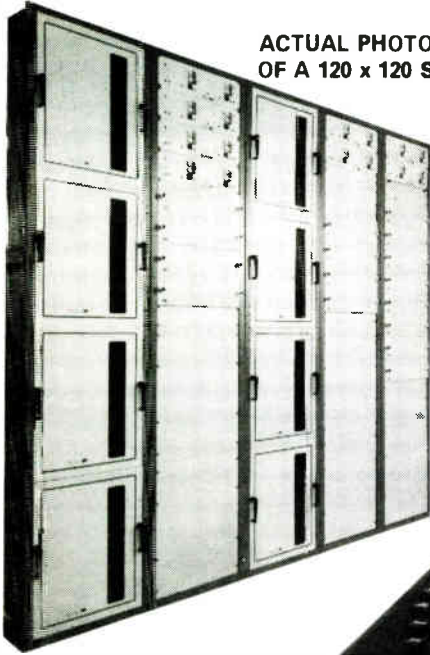


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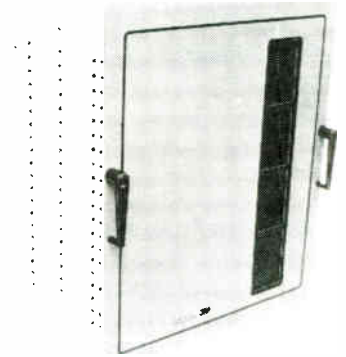
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(612) 733-8132

MICROPROCESSOR SWITCHERS

ACTUAL PHOTOGRAPH
OF A 120 x 120 SYSTEM



CONTROL TERMINAL



40X MAINFRAME

40X Series

The 40X Series Routing Switcher is designed as an expanded 20X system. Up to 40 inputs can be accommodated in the same main frame and frames can be added to handle systems in excess of 40 inputs. One 40X Mainframe will house a complete 40 input—20 output routing switcher providing input/output amplifiers and switching for video, audio and auxiliary signals.

Inputs are expandable in groups of ten (10).

Outputs can be added one at a time. Each 40 x 1 channel is mounted on a single Switch Module that plugs into the Mainframe. Output Amplifiers and Crosspoint Modules, including latches, plug into the Switch Module. All redundant modules are interchangeable without compensating adjustments.

A unique microprocessor logic system is standard in the 40X system allowing any type of control to be used without changes to the logic. A dual microprocessor system with automatic changeover (option) may be employed eliminating the possibility of total system failure. With this type of logic every channel can be programmed for any type of control or can be changed in the field by simply replacing the existing control with another type. Single line coax cables are used as panel control cables. Tally verification is returned from the matrix crosspoints to the control panel. Control panel cables can be looped through without making home runs to the mainframe.

The Microprocessor System makes the following capabilities standard features:

1. RS232 port for a terminal or computer interface.
2. Port for cartridge tape recorder which can be used for test routines or special instructions.
3. Plug-in expansion to 4K of RAM (1K standard).
4. Plug-in expansion to 6K of ROM (10K total).
5. Plug-in I/O and timer expansion.
6. 5 1/4" card frame chassis.

7. Separate power supply in frame.
 8. Audible and visual alarm in case of failure-external closure for remote alarm also available.
 9. Audible and visual failure alarm can be used with one or two microcomputers.
 10. Display and keyboard included on board for field programming.
 11. MPU will handle a 1000 x 1000 matrix.
- Total Reliability is greatly enhanced in this type of system because of several factors.
1. Failure of any input will cause a loss of only one input in the matrix.
 2. A failure of any component or module associated with any given output will cause a loss of only that output or a small portion thereof.
 3. Modules can be removed and replaced while system is operating.
 4. All logic is provided with connector for applying emergency battery power in case of power failure. Only small dry cells are necessary with CMOS logic.
 5. Redundant power supplies are available as an option.
 6. Every channel has separate power regulators for all voltages offering excellent power isolation.

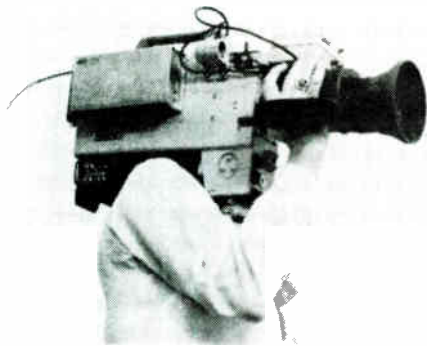
Options include a second audio switching path (built-in), redundant power supplies.

Breakaway Audio is standard with pushbutton control. It consists of selecting any audio from another input signal source and switching that source without changing the video. From that point the audio can be changed to another source or returned to the audio-follow mode.

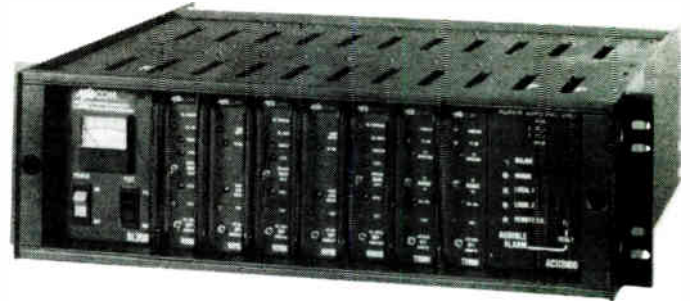
With all other types of control, Breakaway Audio is available at a slight additional cost. Provisions are also available for adding a second audio switching channel. However, if this option is taken, the auxiliary switching channel is not available. Vertical Interval Switching is standard with all 40X systems.

M/A-COM VIDEO SYSTEMS, INC.

63 Third Ave. Bldg. 5
Burlington, MA 01803
(617) 272-3100



FIBER OPTIC TRANSMISSION SYSTEM



- Higher Resolution Video – to 30 MHz
- Greater Signal-to-Noise Ratio – Beyond 70 dB
- Lower Distortion – For Video and Audio
- Greater Distances – to 3 km and Beyond Without Repeaters
- Immune to RFI, EMI, Crosstalk and Hum

The SL-2000 Fiber Optic Transmission System represents a major advance in communications technology from M/A-COM Video Systems, Inc., a leading supplier of communications systems. The revolutionary SL-2000 System provides transparent transmission of broadcast quality signals over several kilometers of fiber optic cable without using repeaters and with none of the potential interference problems encountered when using conventional coaxial or microwave links. The MVS SL-2000 System is a cost-effective way of satisfying your video, audio or data communications requirements with provision for future expansion.

The MVS SL-2000 Fiber Optic Transmission System is capable of simultaneous transmission of video and multiple audio/data signals over a single optical fiber. Fiber optic cable provides the benefits of dielectric waveguide transmission with the convenience of lightweight dedicated cable and significantly lower installation costs. Add to this other inherent advantages of fiber optic cable, such as immunity from interference, electrical isolation, and security. The field proven MVS SL-2000 System is engineered for years of reliable, unattended operation with a built-in expansion capability to meet future requirements. Up to nine channels of video, audio, or data are housed in a single 19" rack frame. Modular design permits expansion or reconfiguration by simply adding or changing plug-in modules.

GENERAL

Rack Shelf Capacity	power supply/test module, plus up to nine function modules
Dimensions	17" (l) x 19" (w) x 5.2" (h) (43.2 x 48.3 x 13.4 cm)
Optical Connector	standard Amphenol 906 SMA Type

VIDEO PERFORMANCE

Input/Output	1.0V P-P; 75 ohms (loop-through/dual)
Signal-to-Noise Ratio	70 dB at 1 km; 60 dB at 3.2 km (2 miles)
Frequency Response	10 Hz to 6 MHz ± 0.15 dB
Distortion	
Line Time	1%
Field Time	1%
Chrominance-Luminance Delay	15 ns
Differential	
Gain	1%
Phase	0.5°

AUDIO PERFORMANCE

Input/Output Signal Level	+ 9 dBm (TT), + 21 dBm (peak)
Impedance	600 ohms balanced
Modulation	FM
Signal-to-Noise Ratio	83 dB at full modulation
Frequency Response	± 0.2 dB, 20 Hz to 20 kHz
Total Harmonic Distortion	0.1% (TT level)
Pre-Emphasis/De-Emphasis	75 µs

POWER

Voltage	115 Vac/60 Hz or 220 Vac/50 Hz
Consumption	5W/module

ENVIRONMENTAL

Temperature Range	0 to + 50°C
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VIDEO DELAYS AND FILTERS

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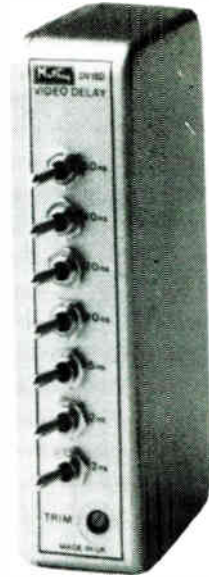
Box 393
S. Salem, NY 10590
(914) 763-8893 TWX 710-575-2600

VIDEO DELAY BOXES (VARIABLE), DV SERIES

Small metal boxes with BNC connectors provide infinitely variable video delay either with switches (type 180 or 360) or taps (type 097) over a range of 10-665ns. A ± 1 ns trim achieves precise timing at installation and will compensate for temperature and aging variations during subsequent maintenance. For longer delay requirements, these variable boxes may be cascaded with lump delay boxes (type DV 0100-1000) for a maximum delay of 2500ns. The prefix DV identifies boxes which can be used as "stand alone" units or can be mounted on a 19" rack panel (Type 5) which accommodates 15 separate boxes. The prefix DN refers to similar boxes which are not rack mountable.

Adjustment of time delay in TV signal routes is important in all countries of the world. Matthey 75 ohm delay units are suitable for use in all TV systems including NTSC, PAL, SECAM, and all variations.

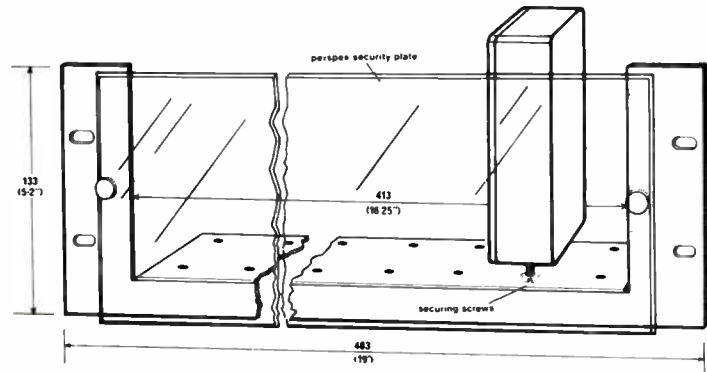
The Matthey SMALLER VIDEO DELAY UNITS are designed to make the fullest use of Matthey miniature DIP video delay line modules (separate data available on request) and retain features important to TV engineers.



Technical Data

Impedance 75 ohms
Frequency Response ± 0.05 dB Ripple up to 5.5 MHz (0.1 dB peak to peak)
Return Loss 27dB*
Temperature range 0-70°C
Max. input voltage 2v.d.c.
Performance of box and 19" rack units is a function of the delay line combinations used.

*Delay times > 400ps = > 25dB



RACK MOUNTED PC CARD DELAY (INFINITELY VARIABLE)

Video Delay Range 10-1830ns. with optional "O" loss.

Rack Frame Type 175: Height 1-3/4"; accommodates 10 PC cards (2 delay lines on each card); total 20 delays; BNCs on back of PC card; lucite front cover; cards mount horizontally.

Rack Frame Type 350: Height 3-1/2"; accommodates 16 PC cards (2 delay lines on each card); total 32 delays; BNCs on back of PC card; lucite front cover; cards mount vertically.

Delay Range	Part Number	1 - 10	11 - 50
10-165ns	VU 180 (switches)*	\$205	\$185
10-325ns	VU 360	482	433

*Original Matthey Video delay (not DIP performance)

Use rack panel 3

10-170ns	DV 180 (switches)	\$234	\$211
10-320ns	DV 360 (switches)	455	410

LUMP DELAY BOXES

These can be cascaded with variable boxes to achieve any delay out to 2500ns.

Delay Range	Part Number	1 - 10
100ns	DV 0100	\$196
200ns	DV 0200	218
300ns	DV 0300	267
400ns	DV 0400	290
500ns	DV 0500	305
600ns	DV 0600	418
700ns	DV 0700	442
800ns	DV 0800	489
900ns	DV 0900	514
1000ns	DV 1000	529

PC CARD DELAY LINES FOR 175 AND 350 SERIES (NOT INTERCHANGEABLE)

Video Delay Range	Part Number Prefix 175 or 350	Prices for Video Delay Channels			
		Suffix "S" (switches)		Suffix "N" (taps)	
		1-10	11-50	1-10	11-50
10-170ns	A	\$ 316	\$275	\$ 297	\$267
10-330ns	B	434	391	415	373
170-490ns	C	553	498	533	479
210-530ns	D	570	513	550	496
310-630ns	E	617	556	598	538
410-730ns	F	641	576	621	559
510-830ns	G	657	591	638	574
610-930ns	H	770	692	750	675
710-1030ns	J	793	714	774	697
810-1130ns	K	840	756	820	739
910-1230ns	L	864	778	845	760
1010-1330ns	M	879	791	860	774
1110-1430ns	N	993	894	974	876
1210-1530ns	P	1016	915	997	897
1310-1630ns	R	1063	957	1044	940
1410-1730ns	S	1088	979	1069	962
1510-1830ns	T	1103	992	1084	975

ME-888 DIGITAL VIDEO PROCESSOR & STANDARDS CONVERTER

- Five input standards (auto switching)
PAL/SECAM/NTSC/4.4NTSC/PAL-M
- Four output standards (plus Y-U-V)
PAL/NTSC/4.4NTSC/PAL-M
- Eight-bit resolution — luminance & chrominance
- Five standard SPG & genlock full PAL sequence
- Noise reduction
- Detail enhancement
- Color correction
- Versatile control panel
- A-B channel switching
- Remote control
- Freeze and fade
- Fully modular construction

The ME-888 is much more than just a standards converter; it also performs a wide range of signal processing functions:

Timebase Correction:

A separate TBC is unnecessary when ME-888 is available.

Noise Reduction and Detail Enhancement

The powerful noise reduction capability and horizontal and vertical detail enhancement are valuable aids to improving picture quality. Improvements equivalent to at least one tape generation are easily possible.

Freeze

Field and frame controls are accessible externally (as are all controls) for effects generation, multigrab, etc.

Color Correction

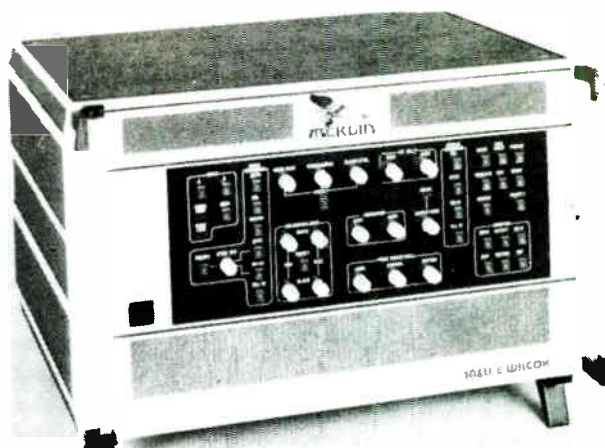
A separate color corrector is unnecessary. Color errors in source material may be eliminated by the comprehensive color balance controls which are standard on the ME-888. Red and blue gain controls operating at white and black levels of the picture ensure complete color control.

Synchronizing

Multi-standard frame synchronizing to external references further increases the cost effectiveness of the ME-888.

TV Standards

The ME-888 offers TV standards conversion or synchronization between: (Inputs) PAL/SECAM/NTSC/4.4NTSC/PAL-M and (Outputs) PAL/NTSC/4.4NTSC/PAL-M. Y-U-V (optionally RGB) outputs are always available. Input standard selection is automatic and failsafe; it will not change until it positively identifies a new standard. Provision is made for manual selection in instances when interior quality render it necessary.



ME-888

Genlocking

Outputs of all four standards may be genlocked to a suitable reference. Coded signals (e.g. SECAM), derived from the Y-U-V outputs via an external coder, may also be genlocked if the coder provides for it. A genlock status light is provided. The full EIGHT-FIELD sequence is maintained in PAL and PAL-M.

SPG

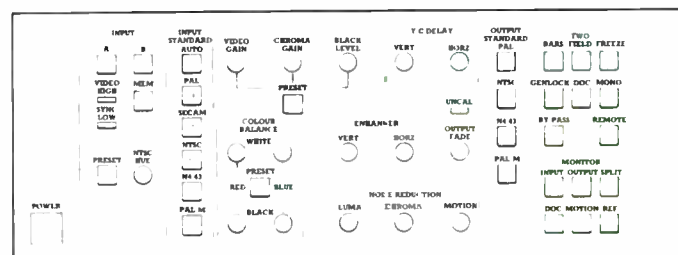
The ME-888 contains its own stable multi-standard sync pulse generator and outputs all the necessary signals for driving external equipment. In PAL and PAL-M the full eight-field sequence enables recording on one inch VTRs from a freestanding ME-888. Sync/subcarrier phasing is adjustable on all output standards. (This enables, for example, EBU recommended phasing in PAL). Provision is made for temperature compensated reference oscillators to be used.

Remote

The front panel may be removed from the unit and adapted by means of a simple and inexpensive optional kit for remote use. Alternatively, an additional remote panel may be used. Total control passes to the remote unit when the REMOTE switch on the master panel is operated. Status lights on both panels are illuminated. The remote control panel has standard 19" fixings and is 3U (132mm) high.

Dimensions: (6U) 280H x 406D x 445W mm,
Weight: 19kg (approx.)

Cabinet is suitable for rack mounting when fitted with side lugs (supplied).



MICROTIME, INC.

1280 Blue Hills Avenue
 Bloomfield, CT 06002
 (203) 242-4242 (800) 243-1570
 TWX 710-425-1165

ROLL EFFECTS SYSTEMS



DIGITROL 2

DIGITROL 2 Video Source Control System

- Station Automation
- Commercial Insertion
- Automatic Studio Programming
- Playback for Delayed Broadcasts
- Video Tape Duplication Control

Features

Microprocessor Control

- Up to 8 VTR's for as many as 98 Separate Events
- Change any Sequence Assignment
- Eight Hours of Pre-programmed Automated Presentation without Intervention
- LED Readout
- Pushbutton Keyboard Programming
- Vertical Interval Switching
- Built-in D.A. for Time Base Corrector Advance Comp. Sync
- Card Edge LED for VTR Status Indication
- Detector Senses Loss of Video, and Automatically Switches to External Video Source
- Back-up Power Supply Maintains System Logic in Event of Power Failure \$6495.00

System Configurations

S² E-120 A/B Roll Effects System

Consists of:

- (2) S-230D TBC/Frame Synchronizers
- (1) E-120 Effects Processor and Effects Control \$32,950.00

TSE-120 A/B Roll Effects System

Consists of:

- (1) S-230D TBC/Frame Synchronizer
- (1) T-120D Standalone Time Base Corrector
- (1) E-120 Effects Processor and Effects Control \$26,950.00

T² E-120 A/B Roll Effects System

Consists of:

- (2) T-120D Standalone Time Base Correctors
- (1) E-120 Effects Processor and Effects Control \$21,950.00

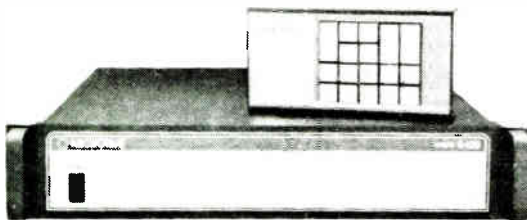


T² E-120

E-120 Effects Processor and Effects Control

Features

- T-120D or S-230D Units can be Separated from the Systems for Standalone Operation
- 8 Bit, 4x Subcarrier Design for High Reliability and Transparent Performance
- Dynamic Tracking Operation (with T-120D)
- Manual or Automatic Freeze (with S-230D)
- Controllable by VTR Editor for Preview and Record
- Built-in Genlock RS-170A Sync Generator for Precise Output Timing \$5950.00



E-120

Options for Above A/B Roll Effects Systems

- Rackmount Panel Adaptor for Effect Control \$ 250.00
- Mosaic Transition Package 1290.00

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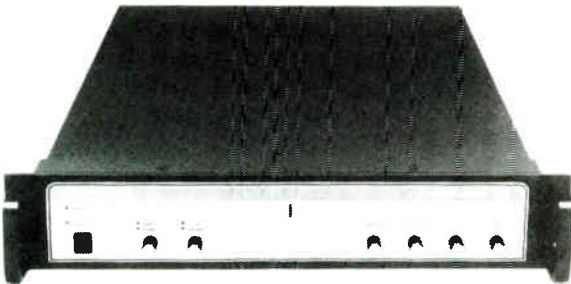
TIME BASE CORRECTORS



T-220 FIT



T-120D



T-120



T-100

T-220 FIT/Time Base Corrector

The T-220 FIT™ component digital TBC allows multiformat input selection with simultaneous multiformat outputs from:

- 1/2" or 3/4" heterodyne VTRs
- 1/2" Professional Type M (Component) Format
- 3/4" U-Matic® (Dub) Y688, or Composite Mode

The T-220's input processing control architecture permits standard outputs to be integrated with future developments, such as digital effects. This architecture gives you the cleanest, most versatile TBC available today, ready to interface with your component studio.

- Freeze: Vertical interpolator provides clean, crisp pictures
- Vari-Trak™: Color to 3x Forward and 1x Reverse when used with Sony BVU-820 in Dynamic Tracking® mode
- Search Performance: A full 40x Forward and Reverse
- Infinite Window TBC: Allows Operation with Nonservo'd VTRs or Remote VTR Feeds
- DOC Detector: TTL/RF Selectable with Automatic AGC
- Plug Compatible with Sony U-Matic Series

The T-220 can be purchased in NTSC and PAL-B television formats.

T-220 FIT Format Interchange TBC.....**\$11,900.00**
 Accessory Service Extender Card.....**350.00**

T-120D Time Base Corrector

- 8 Bit, 4x Subcarrier Digital Design for Transparent Performance
- 16 H-Line Memory, Handles Large Gyro Errors
- D.T. Operation with the Sony BVU 820 U-matic*, plug compatible
- Interfaces with our E-120 for Digital Effects and A/B Roll
- Standalone Heterodyne or 3.58 MHz Feedback
- Auto Trac 3™ Circuit "Steers" VTR

T-120D.....**\$7990.00**

T-120 Time Base Corrector

- 16 H-Line Memory, Handles Large Gyro Errors
- 8 Bit, 4x Subcarrier Digital Design for Transparent Performance
- Passes VITs, VIRs and Teletext
- Auto Trac 3™
- Built-in Standalone or Genlock RS-170A Sync Generator

T-120.....**\$6990.00**

T-100 Time Base Corrector

- 16 H-Line Memory Range, Handles Large Gyro Errors
- 8 Bit, 4x Subcarrier Digital Design for Transparent Performance
- 3.58 MHz Subcarrier Feedback
- Averaging Velocity Correction for Best Color Performance
- Switchable 1 H-Line Advance Allows Easy Interface With the Microtime 2100 Image Processor

T-100.....**\$5490.00**

Optional for Above Time Base Correctors

Remote Control with 75' cable (additional at \$2.00 per foot) ..**\$895.00**
 Interconnect Cable (8') for Sony BVU-820**250.00**

MICROTIME, INC.

1280 Blue Hills Avenue
Bloomfield, CT
(203) 242-4242 (800) 243-1570
TWX 710-425-1165

VIDEO PRODUCTS



S-230D

S-230D TBC/Frame Synchronizer

- Interfaces with our E-120 for Digital Effects and A/B Roll Editing
- Selectable Field 1, Field 2, or Full Frame Freeze
- Infinite Window Heterodyne TBC Handles Large Gyro Errors
- 8 Bit, 4x Subcarrier Digital Design for Transparent Performance
- Selectable Response to Fading Signals
- Auto Mode Switching Selects TBC or Synchronizer Mode
- Built-in Genlock RS 170A Sync Generator

\$14,950.00

Option for all TBC/Frame Synchronizers

Remote Control with 75' cable (additional at \$2.00 per foot) **\$1295.00**



S-230

S-230 TBC/Frame Synchronizer

- Selectable Field 1, Field 2, or Full Frame Freeze
- Infinite Window Heterodyne TBC Handles Large Gyro Errors
- 8 Bit, 4x Subcarrier Digital Design
- Steering Signal Interfaces With Optional Audio Delay Corrector
- Selectable Response to Fading Signals
- Auto Mode Switching Selects TBC or Synchronizer Mode

\$13,950.00



2100

S-130 Full Frame Synchronizer

- Full Frame Storage Processes VITs, VIRs and Teletext
- Selectable Response to Fading Signals
- Excellent Hot Cut Performance
- Available in NTSC, PAL B and PAL M TV Standards
- Internal Microprocessor Controlled Troubleshooting
- Manual selection of Field 1, Field 2 or Full Frame Freeze

S-130 NTSC

\$10,990.00

S-130 PAL B, PAL M, TV Standards

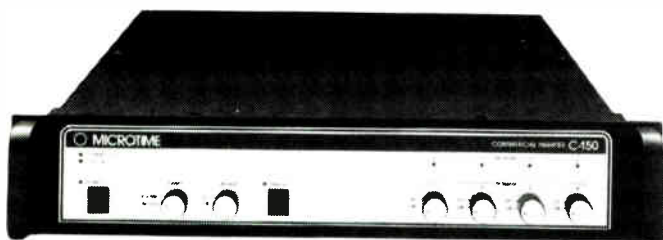
11,500.00

2100 Video Image Processor

Provides dramatic picture improvement of any video signal and corrects many problems inherent in VTRs.

- 6 dB Noise Reduction in Chroma and Luminance
- Vertical and Horizontal Enhancement: Adjustable
- Automatic Chroma/Luminance Delay Compensation
- Proc Amp Controls

\$5950.00



C-150

C-150 Automatic VTR Machine Controller/ Commercial Ad Inserter

For use in Broadcast, Satellite, Cable and Low-Power Television applications.

- Total Automatic Operation, up to 4 VTRs
- Logging Interface
- Satellite Tone Decoder
- Automatic TBC Interface
- Vertical Interval Switching

\$4995.00

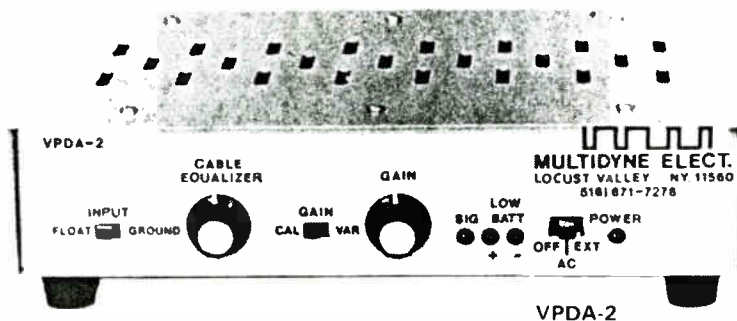
MULTIDYNE ELECTRONICS

P.O. Box 528
Locust Valley, NY 11560
(516) 671-7278

AUDIO/VIDEO EQUIPMENT



TS 2



VPDA-2

MULTIDYNE TS-2

The Multidyne TS-2 is a high quality test signal generator with many particular functions that are often achieved through the use of at least four different instruments. It produces bars with a field programmable 12 character message, black burst, tone end all standard oven-referenced pulses. It also produces a sophisticated ten second tape leader count-down with a swinging pendulum, frequency shift beeps, one second of black after second 2 and display of the edit point for the first 3 frames of second zero (picture start) For more versatility in editing systems it also has an audio and video bypass. The TS-2CG also has a character generator that allows typing over tape leaders. The instrument is housed in a 1 3/4" welded steel cabinet.

SPECIFICATIONS

Sync Generator

Frequency 14.318180 MHz
Subcarrier 3.579545 ± 1ppm, RS-170A

All pulses widths as generated by the National Electronics

MM5321 sync generator IC in the color mode.

Pulse and Subcarrier

Amplitude & Stability 1% 0 - 50 C.
Character Phase Stab Same as subcarrier
Tone Stability 10% 0 - 50 C.
AC Input 117/220 ± 10% at 10W
Bars Stability 2 degree, 2 IRE
Number of Characters 12 switch program
Count Down 0 through 2 w/ frequency shifted tone

TS-2 with all options \$2400.00
 With only bars logo and tone 1350.00
TS-2CG 3000.00

ACCESSORIES

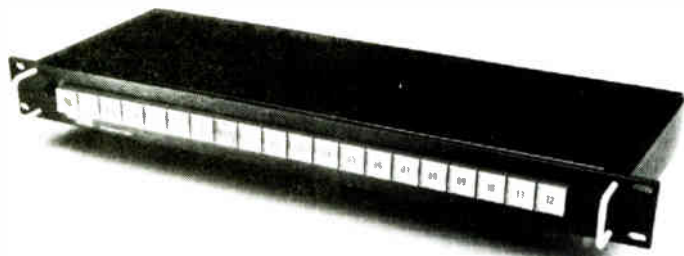
TS-2A	Bars, black, logo, tone, aud.o/video bypass	\$1150.00
TS-2B	Bars, black, logo, tone, audio/video bypass All sync drives and black burst	1750.00
TS-2C	Bars, black, logo, tone, audio/video bypass All sync drives, black burst, & count-down	2250.00
TS-2D	Bars, black, logo, tone, audio/video bypass All sync drives, black burst, count-down, cross hatch, and character generator	3000.00

Multidyne VPDA-2

The Multidyne VPDA-2 is an AC/DC distribution amplifier designed mainly for field use. It runs on 115/230 Volt A/C 40-60 Hertz externally selectable or from external battery power dissipating about 4 Watts. It provides visual indication of low battery voltage and, most important, of signal presence at the output. Dimensions: 9"W x 7 1/2"D x 2 1/2"H \$650.00

Dual equalizer option	.....	\$100.00
Rack mountable, two units per 1.3/4" rack height	.....	\$1300.00
TCC-1	Time code center	\$4200.00
TCR-1	Time code reader/regenerator	2000.00
ADA-7	Audio distribution amplifier	650.00
ADA-7RM	Dual rackmounted	1300.00

130 McCormick Avenue
 Suite 112
 Costa Mesa, CA 92626
 (714) 545-5111 Telex 855065 MYCOMP TECH



DRC-120



DRC-202

SERICON SYSTEM — MACHINE CONTROL

The Sericon System is a set of SMPTE-compatible general-purpose remote control devices. A complete system consists of one or more Transmitters, one or more Receivers, and optional Interfaces, all connected to a common bidirectional digital serial data line. Each unit is housed in a rackmount enclosure, one rack unit 1.75" high and 6" deep.

DRC-108/DRC-120 Transmitter

The Sericon Transmitter is available in two versions: 8-button and 20-button. The 8-button version has 8 software-configurable illuminated pushbuttons mounted on its front panel, and 5 auxiliary input and 5 output lines available at a 15-pin D-connector on the rear panel. The 20-button version has 20 software-configurable illuminated pushbuttons and no auxiliary input/output lines. The Sericon Transmitter normally functions as a Controller.

DRC-202/DRC-20XA Receiver

Sericon Receivers have two rear-panel 15-pin D-connectors, each carrying 8 software-configurable outputs and 4 inputs. Each connector may be treated as a separately addressed port; in effect a Sericon Receiver may function as a single or a dual Receiver.

Interface

A Sericon Interface is required whenever a Sericon system must communicate with a device which employs a non-SMPTE-compatible serial data format.

Specifications

All Units:

Overall Dimensions	1 75 x 19 x 6 inches
Weight	3 lbs.
Power Requirement	110/220V, 50-60Hz, 15W
SMPTE Port	See SMPTE 207M & RP-113
Warranty	3 Years

Transmitters:

Buttons	8 or 20, illuminated, field-legendable
Rear Panel Connectors	AC power, 2- x 9-pin SMPTE, 2- x 15-pin D (1 Expansion Box Compatible, 1 user I/O)
Signal Levels	(Outputs) 200mA open-collector drivers, (Inputs) 0/5 Volt logic

Receivers:

Rear Panel Connectors	AC power, 2- x 9-pin SMPTE, 2- x 15-pin D (Both Expansion Box Compatible)
Signal Levels	(Outputs) 200mA open-collector drivers, (Inputs) 0/5 Volt logic

Interfaces:

Rear Panel Connectors	AC power, 2- x 9-pin SMPTE, 1 of: 25-pin D, RS-232C signal levels, 9-pin D, RS-422A signal levels BNC, 70mA current loop
Protocols Supported	Sony, Image Video, or per request

Sericon System: SMPTE Compatible Digital Serial Remote Control

DRC-001	Buss Controller	\$ 770.00
DRC-108	8-Button Transmitter	1700.00
DRC-120	20-Button Transmitter	1960.00
DRC-128	8-Button Passive Controller	425.00
DRC-202	2-Channel Receiver	1300.00
DRC-20XA	1 to 8 Channel Receiver (basic unit)	950.00
	(A) Plus, per channel (X)	150.00
	(B) Option 01: RF playback level digitizer, (requires one RFB-02/channel)	50.00
	(C) Option 02: Provides rack temperature digitizing (requires one per rack)	150.00
DRC-30X	Serial Switcher Interface (firmware required)	1050.00
DRC-6XX	Firmware package for DRC-30X	POR
EB-303	Expansion Box, 1 x 8 out, parallel	540.00
EB-416	Expansion Box, 1 x 16 out, analog	680.00
IC-300	15-Pin Expansion Box Cable (specify length)	65.00
OC-3XX	VCR Cable 15-Pin/Hirose (specify VCR model)	75.00
RFB-01	RF Buffer Amplifier Board, QC VCR	70.00
RFB-02	RF Buffer Amplifier Board, DC plus RF out	80.00
OS-7000	Audio Output Switcher, QC VCR, JVC-BR-7000	47.00

NON-LINEAR SYSTEMS

DIVISION OF KAYPRO CORP.

P.O. Box N

Del Mar, CA 92014

(619) 481-3900 Telex 249045

TEST EQUIPMENT

TR-1 and TR-1B Non-Linear Systems TRACER

Features:

- *In-circuit and out of circuit testing of circuit components & networks.
- *Graphically displayed signature patterns for rapid detection of faults by inexperienced personnel.
- *Tests all parameters simultaneously.
- *Test circuit boards to component level without powering up tested device.
- *Dual inputs for good-bad circuit comparisons.
- *Automatic, adjustable input switching rate.
- *LED input indicators.
- *Battery or line operation.
- *Self test capability.
- *Small and lightweight for user portability.
- *Dynamic testing of components and circuitry.
- *Tests all these components and more:
 - *Field Effect Transistors
 - *Bipolar Transistors

- *Diodes
- *Diodes back to back
- *Light Emitting Diodes
- *Zeners
- *Unijunctions
- *Ferrite Core Inductors
- *Seleniums
- *IC's and LSI Chips
- *Darlingtons
- *Bridge rectifiers
- *SCR's
- *Triacs
- *Capacitors
- *Inductors
- *Transformers
- *Combinations of all of these and more
- *Also indicates shorts and opens



DESCRIPTION

The NLS TRACER is a small, portable test instrument incorporating a cathode-ray tube display and test circuitry which enable it to present a graphically displayed "signature pattern" of a component or electronic network under test and thereby allows the user to determine if the component or circuit is good or faulty. The TRACER performs dynamic testing on circuits that are not powered up, in circuit or out. The TRACER has two inputs (A & B) each of which can be used alone or which can be used alternately at an adjustable rate. LED indicators show which input is being displayed on the CRT. Using this alternating mode, the user can compare a known good circuit to others in question and easily observe any difference in the displays.

The TRACER has two sensitivity ranges: LO — 1 Volt / Division and HI — 10 Volts / Division and includes a self-test capability that enables the user to determine that the TRACER is functioning correctly and is in proper calibration.

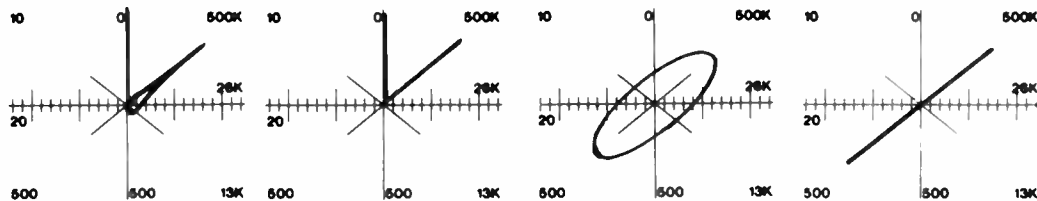
Model TR-1B comes complete with a battery charger and batteries as well as a set of three adjustable tip test leads. A leather carrying case with a neck strap and belt loop for versatile hands-free operation is offered as an optional accessory.

Package size is a small 2.9 inches high by 6.4 inches and 8.0 inches long. Weight is less than three pounds.

The TRACER uses mainly integrated circuits of the CMOS or low power Schottky types. Warm-up time is less than five seconds. Power consumption is less than 8 watts (actual running power consumption with batteries not charging is approximately 3 watts). Low battery indication is provided when the power ON LED doesn't light when the power switch is in the ON position.

The TRACER is an extremely stable instrument and therefore requires no controls for synchronization.

TR-1	\$645.00
TR-1B	795.00



Which diode is a good video detector?

Which is a good capacitor?

SPECIFICATIONS

INPUTS

- NUMBER: Dual inputs (A & B)
- MODES: A, B or A / B (Alternate)
- A / B SWITCHING RATE: 0.25 Sec to 0.5 Sec
- INDICATORS: LED indicators for each input
- TEST VOLTAGE FREQUENCY: 2 KiloHertz
- SENSITIVITY: 1 Volt / Division or 10 Volts / Division
- ACCURACY: 3%
- MAXIMUM VOLTAGE: 25 Volts peak (HI range)
2.5 Volts peak (LO range)
- MAXIMUM CURRENT: 1 mA peak (HI range)
125 mA peak (LO range)

DISPLAY

- CRT: Bluish-white phosphor, medium persistence, 1 1/2" diagonal screen. CRT uses low power filament for low battery drain.
- X AXIS: Represents peak voltage across the circuit under test.
- Y AXIS: Represents peak current through the circuit under test

POWER SOURCE

- INTERNAL: Three rechargeable, sealed lead-acid cells. Operating time using fully charged cells is approximately six hours. Charging circuitry is integral and functions when the TR-1 is connected to a power line through a plug-in transformer (supplied with each TR-1). Battery charge time with instrument off is 16 hours.
- EXTERNAL: Operates continuously from a 115 VAC source, 50 to 400 Hz when connected to the plug-in transformer.
- Alternate transformer for 230 VAC is available. Power consumption is less than 8 Watts.

ENVIRONMENT

- OPERATING TEMPERATURE: 0 to +40 degrees Celsius.
- SHOCK AND VIBRATION: Will withstand normal shock and vibration encountered in commercial shipping and handling.
- PHYSICAL MEASUREMENTS
SIZE 2.9" x 6.4" x 8.0" D.
WEIGHT Less than 3 lbs (1.36 kg) with batteries.

Prices and Specifications Subject to Change Without Notice.

VT-139

NON-LINEAR SYSTEMS

DIVISION OF KAYPRO CORP.

P.O. Box N

Del Mar, CA 92014

(619) 481-3900 Telex 249045

TEST EQUIPMENT



LM-3A



LM-40A

Miniature Digital Multimeters

LM-3A, 3 Digits. • Full three digits — 1000 counts • Measures AC and DC volts, kilohms, megohms and AC and DC milliamperes • Bright, sharp .3" LED readout • Battery or AC line operated • Nicad batteries and charger included • Automatic polarity indication • Auto decimal placement • Automatic overload indication • No zero adjustment and no full scale ohms adjust • Small size — 1.9" H x 2.7" W x 4.0" D • Overload protection all functions • Weight — 9.2 ounces, including batteries

The Model LM-3A 3-digit Digital Multimeter is an original Digital Voltmeter designed and manufactured by NLS. NLS goal was to design an economical DMM with a wide range of accurate performance and thereby make digital instruments available to a much wider group of users. The LM-3A is packaged in a small 1.9 inches high by 2.7 inches wide by 4.0 inches deep attractive, tough case. It weighs only 9.2 ounces. Case design allows the meter to be placed on end for vertical viewing, as well as on its side for customary horizontal viewing. Optional tilt stand or panel-mounted cases are available. **\$148.00**

LM-3.5A • Moderate cost • 3 1/2 digits — 2000 counts — 100% over-range • Measures AC and DC volts, kilohms, megohms, and AC and DC milliamperes • Battery or AC line operated • Bright sharp 0.3" LED readout • Nicad batteries and charger included • Automatic polarity indication • Automatic decimal placement • Automatic overload indication • No zero adjust and no full scale ohms adjust • Small size — 1.9" H x 2.7" W x 4.0" D • Overload protection all functions • Weight — 0.2 ounces, including batteries • 10 megohms input impedance

The Model LM-3.5A e-1/1-digit Digital Multimeter called the "Voltmeter-Plus," was designed to be a rugged, hard working general purpose multimeter, priced very competitively with instruments of comparable performance. Since its introduction in 1975, it has been one of the fastest selling instruments in the world.

The Model LM-3.5A is a neat appearing instrument — in a modern, tough, scuff-resistant, basic black-colored case. Its size, 1.9 inches high, by 2.7 inches wide, by 4.0 inches deep, makes it the smallest 3 1/2-digit instrument available and allows it to fit snugly into any tool kit. Weight is only 9.2 ounces with batteries installed. Its form factor permits standing the meter on end for vertical viewing as well as placing it on its side for conventional horizontal viewing. Optional tilt-stand or panel-mounted cases are available.

Basic functions include AC and DC volts, kilohms, megohms, and AC and DC milliamperes. Full scale ranges are 2, 20, 200 and 1000 volts (750 VAC), 2, 20, 200 and 2000 kilohms as well as 20 megohms and 2, 20, 200 and 2000 milliamperes. Resolution for each function is 0.001 volts, one ohm and one microampere.

\$182.00

LM-4A, 4 Digits. • Moderate cost • 4 digits — 10,000 counts Measures AC and DC volts, kilohms, megohms and AC and DC milliamperes • 0.03% DC accuracy — 0.0001 VDC resolution • Battery or AC line operation • Bright, sharp 0.3" LED readout • Nicad batteries and charger included • Automatic polarity indication • Automatic decimal placement • Automatic overload indication • No zero adjust, no full scale ohms adjust • Small size — 1.9" H x 2.7" W x 4.0" D • Overload protection all functions • Weight — 9.2 ounces, including batteries • 10 megohms input impedance.

The NLS Model LM-4A "Lab Accuracy Voltmeter" was developed to provide a small hand-held DMM which would produce precise measurements in a laboratory, shop or field environment and yet would be small, tough and operate independently of the AC line. The LM-4A, 10,000-count DMM meets these requirements beautifully.

In addition it is a neat appearing instrument — in a modern, tough, scuff-resistant, basic black-colored case. Its size, 1.9 inches high by 2.7 inches wide by 4.0 inches deep, makes it the smallest 4-digit instrument available and allows it to fit snugly into any tool kit. Weight is only 9.2 ounces with batteries installed. Its form factor permits standing the meter on end for vertical viewing, as well as laying it on its side for conventional horizontal viewing. Optional tilt-stand or panel-mounted cases are available. **\$275.00**

LM-40A, 4 Digits. • 4 digits — 10,000 counts • Measures AC and DC volts, kilohms, megohms and AC and DC milliamperes • 0.01% DC accuracy — 0.0001 VDC resolution • Battery or AC line operation • Bright, sharp 0.3" LED readout • Nicad batteries and charger included • Automatic polarity indication • Automatic decimal placement • Automatic overload indication • No zero adjust, no full scale ohms adjust • Small size — 1.9" H x 2.7" W x 4.0" D • Overload protection all ranges • Weight 9.2 ounces including batteries • 10 megohms input impedance

The NLS Model LM-40A Digital Multimeter was designed to provide the extra performance offered by a 4-digit multimeter at a price comparable to that of a 3-1/2-digit hand-held DMM. This was achieved by replacing some of the most expensive parts in the NLS "Lab Accuracy Voltmeter." Only a slight degradation in accuracy was the result. However, the accuracy of the LM-40A meets or exceeds that of the best 3-1/2-digit DMM and in all other regards the 10,000-count LM-40A is vastly superior to its 2000-count counterpart.

In addition it is a neat appearing instrument — in a modern, tough, scuff-resistant, basic black-colored case. Its size, 1.9 inches high by 2.7 inches wide by 4.0 inches deep, makes it the smallest low cost digital instrument around and allows it to fit snugly into any tool kit. Weight is only 9.2 ounces, with batteries installed. Its form factor permits standing it on end for vertical viewing or placing it on its side for conventional horizontal viewing. Optional tilt-stand and panel-mounted cases are available. **\$252.00**

DIGITAL FREQUENCY METER

Miniature Digital Frequency Meters

FM-7, 7 Digits. • Seven digits — 10 million counts • Measures frequency 10 Hz to 60 megahertz (to 512 megahertz using SC-5 prescaler) • Small size — 1.9" H x 2.7" W x 4.0" D • 30-millivolts sensitivity at amateur and CB frequencies • One-hertz resolution on 10Hz range • Meets FCC standards for setting transmission frequencies • Battery or AC line operation • Nicad batteries and charger included • Automatic decimal placement • One-megohm input impedance • Weight — 9 ounces, including batteries • Bright, sharp LED display.

The NLS Model FM-7 Digital Frequency Meter is the smallest 7-digit, 60-megahertz, battery or AC line operated instrument available. Its dimensions are a neat appearing 1.9 inches high by 2.7 inches wide by 4 inches deep. Its case is modern tough, scuff-resistant and basic black-colored. The form factor of the case is amenable to standing the meter on end for vertical viewing or placing it on its side for viewing in the conventional manner. Optional tilt-stand and panel-mount cases are available. **\$237.00**

NOVA SYSTEMS, INC.

20 Tower Lane
Avon, CT 06001
(203) 677-5252

TIME BASE CORRECTORS

The nova Series Digital Time Base Correctors

The nova Series Digital Time Base Correctors define new industry standards. For the first time, digital performance doesn't have to cost a lot. Designed for optimum correction of non-segmented 3/4" and 1/2" video tape recorders. Engineered like their predecessors, the nova Series provides superb performance in the smallest packages available.

Operating in the heterodyne (process) mode, the nova 490 will correct 3/4" and 1/2" non-segmented video tape recorders, including U-Matic®, VHS®, and Beta® formats. The nova 500 will time base correct all 3/4" and 1/2" non-segmented video tape recorders which accept sync and derived subcarrier inputs. The result is a full bandwidth time base corrected signal. The nova 510 contains more features in one rack height than any other time base corrector in its class. A general purpose TBC, operating in either subcarrier feedback (direct) or heterodyne (process) modes at the flick of a switch.

Compact — Only one rack unit high (1.75"), the nova 490 fits in even the tightest space. Strong aluminum extrusions form the front, rear and sides providing a solid chassis. A weight of only 10 pounds enhances portability in all applications.

Simple Operation — The nova Series is designed for use right out of the box. Simply connect 2 cables from the nova 490 to your VTR, one to your monitor, and turn on the power. Simply connect coax cables to the nova 500 and nova 510 and turn on the power. Control of video, chroma, hue and setup constitute the built-in video processing amplifier controls. Front panel LEDs indicate the presence of video and reference signals, as well as proper video level. (A front panel switch instantly changes from direct to process modes and back again on the nova 510 only).

Advanced Design — 8 bit 4X subcarrier sampling is employed for maximum picture fidelity. Advanced design memory provides 32 lines of video storage. Reference to output delay (or advance) is adjustable for perfect plant timing. Digital processing amplifier reinserts sync and burst perfectly every time. Never a need to trim filters or pots for proper rise time or position. RS-170A relationship is maintained regardless of Reference SCH. Proven technology allows operation with less than 60 Watts (50 Watts for nova 500) of power dissipation. Color lock is maintained in VTR shuttle and pause operation. A stable color still frame picture can be recorded in pause. (Front panel adjustment of luminance/chrominance timing for best multi-generation tape performance on nova 490).

Reliable — All active components are temperature cycled, burned-in and tested prior to assembly into the nova Series. Each system is thoroughly burned-in after test for enhanced reliability. Power supplies operate at no more than 60% (55% with nova 500) of their rated capacity.

Cost Effective — Compare the nova Series with any other time base correctors. Feature for feature, the nova Series are the lowest priced digital time base correctors around.

SPECIFICATIONS

Performance:

Correction Range	32 lines
S/N Ratio	56dB (p-p video to RMS noise)
Differential Gain	Less than 2% (plus quantizing effects)
Differential Phase	Less than 2° (plus quantizing effects)
K-Factor (2T)	
nova 490	Less than 3%
nova 500	Less than 2%
nova 510	Less than 2% (Direct) Less than 3% (Process)
Bandwidth	
nova 490	2.3MHz (Y), 1.0MHz (C)
nova 500	+/-0.5dB to 4.2MHz
nova 510	+/-0.5dB to 4.2MHz (Direct) 2.3MHz (Process)
Residual Error	+/-10ns (Y), 2° (C)
nova 500	+/-10ns
Sampling Rate	14.3MHz (4 times color subcarrier)
Number of Bits	8
L/C Delay Adjustment	
(nova 490 only)	Greater than 400ns



Video Inputs:	1.0 Volt p-p +6dB into 75 ohms
VTR Video Reference	Composite video or black burst, looping, or terminated. Necessary only if genlock is required.
Video Outputs:	
Program Video	Composite video, 1.0 Volt p-p nominal into 75 ohms. Input hard wired to Program Video output if power is off or the bypass switch is activated. Time base corrected video otherwise.
Monitor Video	Same as Program Video except no output with power off, and black burst output in bypass mode.
Control Outputs:	
Advanced Sync	4.0 or 0.4 Volts, nominal (jumper selectable) into 75ohms. 16lines advance of the Reference.
VTR Subcarrier	
nova 500, 510	2.0 Volts nominal into 75 ohms, 3.58mhz. Locked to Video Input horizontal rate.
Mechanical:	
Depth	20.5" (52.1cm)
Width	16.75" or 19.0" (with rackmount ears installed) (48.3cm)
Height	1.75" (4.5cm)
Weight	10 lbs. (4.6kg)
Electrical:	
nova 500	95-130 VAC, 47-63Hz, 50VA
nova 490, 510	95-130VAC, 47-63Hz, 60VA
Environmental:	
Operating Temperature	10°C-40°C
Humidity	5%-90% RH, no condensation
Front Panel Controls:	Power, Bypass/Operate, Video Level, Chroma Level, Hue, Setup, H Phase Coarse, H Phase Fine, Chroma/Luma Delay (490 only), Direct Process (510 only)
Front Panel Indicators:	Reference, Video Input, Video Low, Normal, High
nova 490	..... \$5850.00
nova 500	..... 6450.00
nova 510	..... 7450.00
ACCESSORIES	
novapak (Carrying Case)	..... \$95.00
Additional Manual	..... 60.00
Additional Rack Ears	..... 12.00

CALIFORNIA PALTEX CORP.

2752 Walnut Avenue
Tustin, CA 92680
(714) 838-8833
TWX 910-333-8535

DIGITAL VIDEO PROCESSOR



GEMINI DIGITAL VIDEO PROCESSOR

GEMINI DIGITAL VIDEO PROCESSOR

- Dual bus digital processing
- Multiple inputs per bus
- Full synchronization from any source
- Universal Time Base Correction from any VTR or other input
- Digital switcher and effects panel
- Remote engineering control panel
- A/B roll editing capability
- Built in freeze and strobing
- Digital control of all functions
- Software control of signal processing, mixing and effects
- Built in broadcast sync pulse generator
- Variable digital enhancement
- Variable digital color balancing
- Built in color bar and black burst generators
- 8-bit integrated ADC's
- NTSC Coded and RGB outputs
- Selectable input proc modes
- Remote control by Paltex edit controller or other computer systems using RS422A
- Remote preselected effects initiated from relay closure or ground
- Single wire genlock or stand alone
- Operates in stop and slow motion
- Store error concealment
- Ease of maintenance
- Software controlled test routine
- Common size plug in circuit cards
- Cool and quiet main frame
- Optional "B" bus output for expanded applications

Designed to meet and exceed the requirements of the most demanding production and post-production applications, at a cost lower than that expected from similar systems consisting of multiple units from various suppliers.

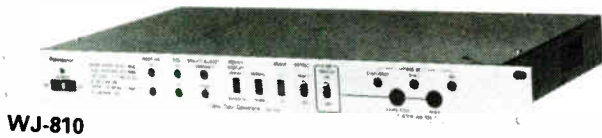
GEMINI features advanced component coded sampling techniques to deliver fully framed, digitally processed, stable color video output, from the widest range of inputs, including unstable VTR outputs, and non-synchronous video feeds.

On board microprocessor software allows control of all signal processing, mixing and effects functions, offering flexibility as well as unlimited life expectancy. GEMINI is ideal for editing applications because of its infinite window which only requires a single wire feed from the source VTRs. An RS422A interface or a simple GPI contact closure may be used to command cut, mixes and effects for different levels of sophistication.

Four video inputs plus color black can be assigned to either A or B channel, and a joystick picture positioner can move any input selected on channel A off in any direction including diagonally.

GEMINI comes complete with central processing rack, fully operational production switcher, and engineering control panel. Hundreds of units are already in service around the world with a proven record of reliability, minimum down time, and maximum operational efficiency.

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



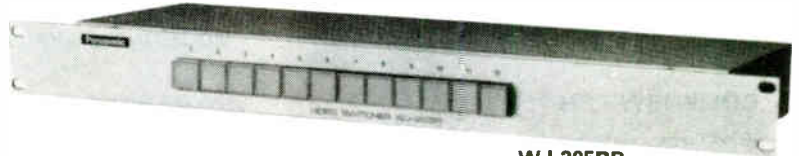
WJ-810



WJ-200B



WJ-205B



WJ-205RB



WJ-200RB

WJ-810 Time Date Generator

Superimposes time and date onto any composite video signal, stopwatch function, variable independent adjustment of white to black character brightness and black to white edge brightness, adjustable control of character size, internal quartz-crystal time accuracy: 15 seconds per month, internal batteries (not included) are designed to prevent time error due to short term power failure, battery warning indicator, full automatic calendar, rack mountable.
WJ-810 **\$475.00**

Passive Switchers

WJ-200B
Desktop passive switcher with six inputs that can be switched to a single video output, mechanical switching, front panel card holder permits labeling each input source, all inputs terminated with 75 ohms, BNC connectors.
WJ-200B **\$ 95.00**

WJ-200RB
Rack mountable passive switcher with six inputs that can be switched to a single video output, mechanical switching, front panel card holder permits labeling each input source, all inputs terminated with 75 ohms, BNC connectors.
WJ-200RB **\$ 95.00**

WJ-205B
Desktop passive switcher with 12 inputs that can be switched to a single video output, mechanical switching, front panel card holder permits labeling each input source, all inputs terminated with 75 ohms, BNC connectors.
WJ-205B **\$175.00**

WJ-205RB
Rack mountable passive switcher with 12 inputs that can be switched to a single video output, mechanical switching, front panel card holder permits labeling each input source, all inputs terminated with 75 ohms, BNC connectors.
WJ-205RB **\$175.00**

Sequential Switchers

WJ-512
Sequential Switcher, accepts up to 10 camera inputs with alarm mode, two spot monitor, sequential & spot monitor, front panel indicator lamps, manual selection of any camera for display on second monitor, switching interval manually adjustable from 1 to 30 seconds, 12-pin connector for optional remote selection of the spot monitor output, BNC connectors, front-panel buzzer shows alarm condition, inputs for 10 sensors: door switch, mat switch, window switch, etc., when sensor activated, sequential output automatically switches to camera involved.
WJ-512 **\$495.00**

WV-1000/WV-1000A series
WV-1600/WV-1650KT1 series
WV-1800/WV-1850 series
WV-1900/WV-1904 series
WJ-810 Time Date Generator
NV-8030
NV-8050

WJ-521
Sequential Switcher, accepts up to 6 camera inputs, two video outputs, sequential and spot monitor, front panel indicator lamps, manual selection of any camera for display on second monitor, switching interval manually adjustable from 1 to 30 seconds, 12-pin connector for optional remote selection of the spot monitor output, BNC connectors.
WJ-521 **\$330.00**

WV-1000/WV-1000A series
WV-1600/WV-1650KT1 series
WV-1800/WV-1850 series
WV-1900/WV-1904 series
WJ-810 Time Date Generator
WV-1400/1500 series

WJ-523
Sequential Switcher, accepts up to 10 camera inputs, two video outputs, sequential and spot monitor, front panel indicator lamps, manual selection of any camera for display on second monitor, switching interval manually adjustable from 1 to 30 seconds, 12-pin connector for optional remote selection of the spot monitor output, BNC connectors.
WJ-523 **\$395.00**

WV-1000/WV-1000A series
WV-1600/WV-1650KT1 series
WV-1800/WV-1850 series
WV-1900/WV-1904 series
WJ-810 Time Date Generator

WJ-525
Sequential Switcher, accepts up to 14 camera inputs, two video outputs, sequential and spot monitor, front panel indicator lamps, manual selection of any camera for display on second monitor, switching interval manually adjustable from 1 to 30 seconds, 20-pin connector for optional remote selection of the spot monitor output, BNC connectors.
WJ-525 **\$475.00**

WV-1000/WV-1000A series
WV-1600/WV-1650KT1 series
WV-1800/WV-1850 series
WV-1900/WV-1904 series
WJ-810 Time Date Generator

WJ-527
Sequential Switcher, accepts up to 10 camera inputs, two video outputs, sequential and spot monitor, front panel indicator lamps, manual selection of any camera for display on second monitor, switching interval manually adjustable from 1 to 30 seconds, 12-pin connector for optional remote selection of the spot monitor output, BNC connectors.
WJ-527 **\$550.00**

WV-1000/WV-1000A series
WV-1600/WV-1650KT1 series
WV-1800/WV-1850 series
WV-1900/WV-1904 series
WJ-810 Time Date Generator

Prices and Specifications Subject to Change Without Notice.

4790 W. Jacquelyn Ave.
Fresno, CA 93711
(209) 275-5561



COMPUSWITCH™

Pelco Compuswitch™ series of sequential switchers are the first of a new generation. They are designed using the latest high reliability micro-computer technology. Included are more useful features of higher priced switchers in an economical attractive package for general use.

MICRO-COMPUTER TECHNOLOGY — Compuswitch™ incorporates the majority of circuit functions in a single specially developed micro-computer to control video switching and other functions greatly reducing parts counts, which enhances reliability.

TWO SWITCHERS IN ONE — Compuswitch™ combines the features of Homing and Bridging switchers into a single compact configuration. The Monitor 1 output allows a number of CCTV cameras to be displayed in automatic sequence, or any cameras to be displayed in automatic sequence, or any camera may be selected for continuous viewing. The Monitor 2 output allows an independent camera to be selected for continuous viewing or may sequence with the Monitor 1 output.

Other outstanding features include Independent Programmable Dwell Time, Digital Channel Display, Rapid Sequence of All Cameras, a Self Test Mode, and human engineered ease of operation.

VARIETY OF MODELS — Compuswitch™ is available in a wide variety of models to fulfill the requirements of all systems. Separate interfaces which connect to the basic switchers using a flat ribbon cable allow for alarm operation, audio follow, and remote switching. Expansion of any Compuswitch system is easily achieved by cascading switchers together.

The Compuswitch Formatter interfaces with the basic Compuswitch and allows for a channel number, time, date and 16 character message to be superimposed onto a selected video picture. All programming is done from the front panel, for all inputs in the basic Compuswitch.

The channel number, time, date, and message are considered to be independent fields of information and can be positioned anywhere on the screen independent of the channel selected. Information can be displayed in black or white characters, and unwanted information may be blanked, independent of the channel selected. All displays are jitter free even with random interface cameras.

Each channel may have a different message on the screen, and have a different position on the screen. The character set has 128 characters, utilizing a 5 x 7 dot matrix, included are upper and lower case alphabet, numbers and 64 special characters.

The Compuswitch Formatter will interface with all basic Compuswitch options and accessories.

POWER SUPPLIES FOR DIGITAL RECEIVERS

PT3200PS	Pan/Tilt power supply	\$150.00
A3200PS	Autoscan power supply	150.00
V3200PS	Variable speed power supply	300.00
LZ3200PS	Pelco zoom lens power supply	130.00
AUX3200PS	*Auxiliary contact supply for MEH3200 and MG3200	140.00

COMPUSWITCH™ SYSTEM 700

NOTE: ALL COMPUSWITCH SYSTEM 700 PRODUCTS ARE DESK TOP MODELS. RACK MOUNTING IS AVAILABLE AT ADDITIONAL COST. SPECIFY WHEN ORDERING . . \$20.00

COMPUSWITCH — MASTER COMPONENT OF COMPUSWITCH SYSTEM 700

CS708DT	8 position user programmable sequential switcher combines both homing & bridging features. Separate dwell times programmable for each channel plus bypass of unwanted or unused inputs. Standard feature allows camera sequencing to be controlled from an external source such as VTR	\$490.00
CS708LDT	8 position. Same as CS708, except with looping inputs	540.00
CS716DT	16 position. Otherwise same as CS708	550.00
CS716LDT	16 position with looping inputs. Otherwise same as CS708	600.00
CS716EDT	16 position extender up to a maximum of 96 positions for interface with CS716DT or CSR716DT only. (Interface of more than one extender is available on special order only.)	380.00
CS716ELDT	16 position extender for looping inputs up to a maximum of 96 positions for interface with CS716LDT or CSR716DT. (Interface of more than one extender is available on special order only.)	420.00

SYSTEM EXPANSION MODULES

(NOTE: Interface with CompuSwitch Video Switcher Required.)

COMPUSWITCH FORMATTER™

CSF700DT	User programmable time/date, channel number, and 16 character message generator in one unit. Program each camera position independently. Position programmable information anywhere on screen individually for each camera. Internal battery backup system maintains power for up to 8 hours. Easily re-programmable in field.	790.00
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COMPULARM™

CSA716DT	16 position. Integrates video and alarm systems. User programmable. "Arm" or "disarm" any alarmed camera. Attended or unattended modes. Multiple alarm monitoring in either "priority" or "sequential mode." Visual and audible alert indicators	\$500.00
CSA716EDT	16 position extender up to a maximum of 96 positions for interface with CSA716E only. (Interface with more than one extender is on special order only.)	Quote

COMPUSWITCH REMOTE™

(Two pair and coax required.)

CSR708DT	8 position remote	\$ 950.00
CSR708LDT	8 position remote. Same as CSR708, except with looping inputs	1000.00
CSR716DT	16 position remote. Otherwise same as CSR708	1120.00
CSR716LDT	16 position remote with looping inputs. Otherwise same as CSR708 ..	1170.00
CS716EDT	16 position extender for a maximum of 32 positions	Quote
CS716ELDT	16 position extender for a maximum of 32 positions. Interface with CSR716LDT only.	Quote

COMPUSWITCH AUDIO FOLLOW

CS708AFDT	8 position balanced audio follow. Integrates audio and video system for synchronized switching of audio with video	Quote
CS716AFDT	16 position balanced audio follow. Otherwise same as CS708AF	Quote
CS716EAFDT	16 position extender up to a maximum of 96 positions for interface with CS716AF only. (Interface with more than one extender is available on special order only.)	Quote

PELCO SALES, INC.

4790 W. Jacquelyn Ave.
Fresno, CA 93711
(209) 275-5561

VIDEO SWITCHERS MANUAL/SEQUENTIAL



MS504-DT



VS510HDT



MS540

Video Switchers – Manual

Note: All Manual Switchers listed below are Desk Top Models.
Rack Mounting is available at additional cost.
Specify when ordering \$20.00

MANUAL PASSIVE SWITCHERS

MS504DT 4 Position	\$ 66.00
MS508DT 8 Position	121.00
MS512DT 12 Position	154.00
MS518DT 18 Position	264.00
MS540DT 40 Position*	880.00

ILLUMINATED MANUAL PASSIVE SWITCHERS

MS504GDT 4 Position	\$121.00
MS508GDT 8 Position	165.00
MS512GDT 12 Position	210.00
MS518GDT 18 Position	320.00

MANUAL LOOPING INPUT SWITCHERS

MS504LDT 4 Position	\$ 77.00
MS508LDT 8 Position	140.00
MS512LDT 12 Position	187.00
MS518LDT 18 Position	320.00
MS540LDT 40 Position*	1040.00

ILLUMINATED MANUAL LOOPING INPUT SWITCHERS

MS504GLDT 4 Position	\$132.00
MS508GLDT 8 Position	187.00
MS512GLDT 12 Position	240.00
MS518GLDT 18 Position	374.00

PASSIVE MANUAL SWITCHERS WITH AUDIO-FOLLOW

MS504AF 4 Position	\$114.00
MS508AF 8 Position	217.00
MS512AF 12 Position	298.00
MS518AF 18 Position	400.00

LOOPING INPUT SWITCHERS WITH AUDIO-FOLLOW

MS504AFL 4 Position	\$125.00
MS508AFL 8 Position	236.00
MS512AFL 12 Position	331.00
MS518AFL 18 Position	440.00

PASSIVE MANUAL SWITCHERS W/BALANCED AUDIO-FOLLOW

MS512BAF 12 Position (RKS20 Rack Kit)	TBA
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Note: All Switchers are Desk Top Mounted. Rack Mounting is available at additional cost. Specify when ordering 20.00

Video Switchers – Sequential

HOMING SEQUENTIAL SWITCHERS (Single Output)

VS504HDT 4 Position	\$215.00
VS506HDT 6 Position	253.00
VS508HDT 8 Position	297.00
VS510HDT 10 Position	340.00
VS512HDT 12 Position	374.00
VS520HDT 20 Position	434.00

LOOPING INPUT PASSIVE MANUAL SWITCHERS WITH BALANCED AUDIO-FOLLOW

MS512BAFL 12 Position (RKS20 Rack Kit)	TBA
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NOTE: *Available on Special Order Only

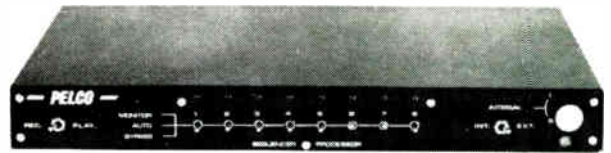
PELCO SALES, INC.

4790 W. Jacquelyn Ave.
 Fresno, CA 93711
 (209) 275-5561

VIDEO SWITCHERS/ SIGNAL EQUIPMENT



TDG-200



SP500DT



MD100DT



GIT-100

Video Switchers

HOMING LOOPING SEQUENTIAL SWITCHERS

VS504HLDT 4 Position	\$253.00
VS506HLDT 6 Position	300.00
VS508HLDT 8 Position	346.00
VS510HLDT 10 Position	396.00
VS512HLDT 12 Position	440.00
VS520HLDT 20 Position	518.00

BRIDGING SEQUENTIAL SWITCHERS (Dual Output)

VS504BDT 4 Position	\$237.00
VS506BDT 6 Position	280.00
VS508BDT 8 Position	330.00
VS510BDT 10 Position	368.00
VS512BDT 12 Position	414.00
VS520BDT 20 Position	470.00

BRIDGING LOOPING SEQUENTIAL SWITCHERS

VS504BLDT 4 Position	\$283.00
VS506BLDT 6 Position	334.00
VS508BLDT 8 Position	384.00
VS510BLDT 10 Position	418.00
VS512BLDT 12 Position	462.00
VS520BLDT 20 Position	560.00

VID-ALARM SEQUENTIAL SWITCHERS

VA504DT 4 Position	\$420.00
VA508DT 8 Position	590.00
VA512DT 12 Position	750.00

VID-ALARM LOOPING SEQUENTIAL SWITCHERS

VA504LDT 4 Position	\$460.00
VA508LDT 8 Position	630.00
VA512LDT 12 Position	790.00

Note: All Video Signal Equipment listed below are Desk Top Models. Rack Mounting is available at extra cost. Specify when ordering 20.00

Signal Equipment

TIME/DATE GENERATORS

TDG200DT Time/Date Generator. Superimposes month-day-year, hour-min.-sec onto TV picture	\$400.00
TDG200BDT Time/Date Generator. Same as TDG200R. Battery backup during power loss	440.00

SCREEN SPLITTER/INSERTER

VSS100DT Screen Splitter/Inserter simultaneously displays portions of video from 2 cameras on 1 monitor or full view of one camera. Size and position of insert/split is fully adjustable	\$315.00
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MOTION DETECTOR

MD100DT Motion detector utilizing "window frame," which can also be used for perimeter protection	\$800.00
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SEQUENCER PROCESSOR

SP500DT Sequencer processor records up to 8 cameras on a single VTR	\$800.00
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DISTRIBUTION AMPLIFIER

DA104DT 1 x 4 distribution amplifier	\$130.00
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GROUND ISOLATION TRANSFORMER

GIT100 Eliminates ground loops	\$110.00
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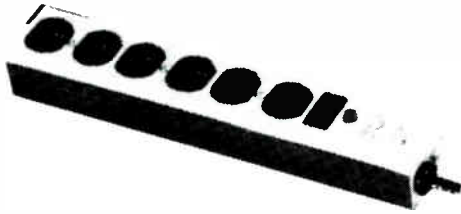
PERMA POWER[®] Electronics Inc.

5615 West Howard Ave.
Chicago, IL 60648
(312) 647-9414



MULTIPLE OUTLET STRIPS

**A safe and convenient way to
distribute power where it's needed**



Acts as a branch circuit, instantly providing additional power outlets.

- Fuse or circuit breaker protection
- U-ground outlets with electrically-wired ground
- Switch capability to turn outlets on or off
- Attractive styling
- Compact size, to fit into tight places
- Heavy-duty construction
- Cross-slot rapid mounting feature

A wide choice of models.

Perma Power makes it easy to find exactly the kind of multiple outlet strip that's needed...

Choose a group, and then select individual models on the easy-to-follow pictorial chart.

Easy mounting. All units are provided with two screws and cross-slots on the bottom for rapid mounting.

Cases are different lengths, depending on the number of outlets—2" x 2" x 9", 2" x 2" x 12", or 2" x 2" x 15".

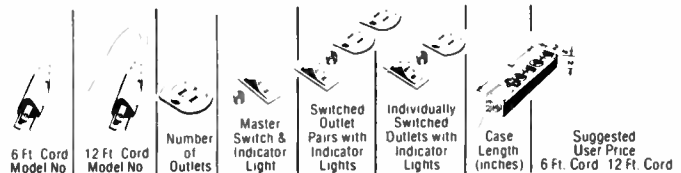
Convenient. "Sockets-Plus" multiple outlet strips are the quickest, most convenient way to control electric power when and where it's needed, with the assurance of complete safety. (Conventional cube taps and extension cords can result in over-loaded circuits and chaotic stacking of plugs into existing wall outlets.) Plug in "Sockets-Plus," and instantly you have the additional outlets you need.

Safe. All "Sockets-Plus" multiple outlet strips come with 3-wire U-ground outlets, and are housed in electrically-grounded steel cases. Because they are available with built-in fuse or circuit breaker, there's no danger of overloading one of the main circuits. If the power drain is too great, they shut off the power *here*, not in a fuse box somewhere down the line. They guard the line, so users can relax!

A smart idea in power control. With one or more on-off switch and current indicator lights available, "Sockets-Plus" multiple outlet strips put the user in complete control of his local power use! See at a glance what's on, what's off.

All units are rated at 15 amperes, 125 volts, 60 Hz continuous duty.

A one year limited warranty applies to all models.



INDUSTRIAL MODEL SELECTOR CHART All U.L. listed, all circuit breaker-protected									
6 Ft Cord Model No	12 Ft Cord Model No	Number of Outlets	Master Switch & Indicator Light	Switched Outlet Pairs with Indicator Lights	Individually Switched Outlets with Indicator Lights	Case Length (inches)	Suggested User Price		
							6 Ft. Cord	12 Ft. Cord	
K400	K402	4	—	—	—	9	19.70	22.70	
K410	K412	4	1	—	—	9	21.90	24.90	
K420	K422	4	—	2	—	12	24.70	27.70	
K440	K442	4	—	—	4	15	30.00	33.00	
K450	K452	4	1	—	4	15	32.40	35.40	
K510*	K512*	5	1	—	—	12	24.40	27.40	
K520*	K522*	5	—	2	—	12	26.70	29.70	
K540*	K542*	5	—	—	4	15	32.00	35.00	
K600	K602	6	—	—	—	12	21.90	24.90	
K610	K612	6	1	—	—	12	24.10	27.10	
K630	K632	6	—	3	—	15	29.40	32.40	
K710*	K712*	7	1	—	—	15	27.00	30.00	
K800	K802	8	—	—	—	15	24.40	27.40	
K810	K812	8	1	—	—	15	26.20	29.20	

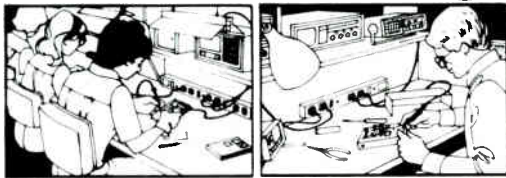
*Includes one outlet always "live" for clocks, etc.

UNITS WITH GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

K310G	—	3	1	—	—	9	56.00		
K510G	—	5	1	—	—	12	57.70		

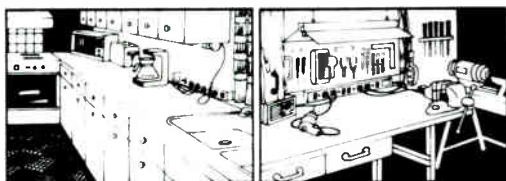
Industrial

Tough silver and black industrial finish—



Residential

Warm honey beige top, vinyl woodgrain side panels... blends with the decor of any home!



Commercial

Handsome decorative finish fits in beautifully with sales and display settings!



RESIDENTIAL MODEL SELECTOR CHART All U.L. listed, all circuit breaker-protected

L400	—	4	—	—	—	9	18.80		
L410	—	4	1	—	—	9	21.00		
L420	—	4	—	2	—	12	23.80		
L440	—	4	—	—	4	15	29.10		
L600	—	6	—	—	—	12	21.00		
L610	—	6	1	—	—	12	23.20		
L800	—	8	—	—	—	15	23.50		
L810	—	8	1	—	—	15	25.30		

UNITS WITH GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

L310G	—	3	1	—	—	9	55.40		
L510G	—	5	1	—	—	12	56.90		

COMMERCIAL MODEL SELECTOR CHART Fuse Protected

M400	M402	4	—	—	—	9	16.60	19.20	
M410	M412	4	1	—	—	9	18.80	21.40	
M420	M422	4	—	2	—	12	21.60	24.20	
M440	M442	4	—	—	4	15	26.80	29.40	
M600	M602	6	—	—	—	12	18.80	21.40	
M610	M612	6	1	—	—	12	21.00	23.60	
M800	M802	8	—	—	—	15	21.30	23.90	
M810	M812	8	1	—	—	15	23.50	26.10	

EXTENSION UNITS/NO PROTECTION

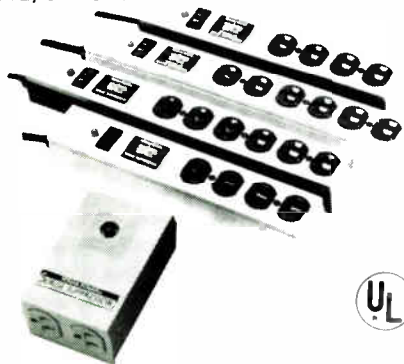
N400	—	4	—	—	—	9	14.50		
N800	—	8	—	—	—	15	18.80		

Prices and Specifications Subject to Change Without Notice.

VT-147

PERMA POWER[®] Electronics Inc.

5615 West Howard Ave.
Chicago, IL 60648
(312) 647-9414



SURGE SUPPRESSORS

Protect sensitive equipment
from power line voltage surges.

Sensitive digital circuits in today's home and business computers, and electronic office, industrial and medical equipment can be damaged or even destroyed by electrical power line voltage surges. These surges can be caused by lightning, equipment on the same power line being turned on and off, or by electrical utility company switching. Even though a direct strike by lightning is of low probability, lightning several miles away can cause significant power line surges that can harm electronic equipment (even without striking the earth).

All Perma Power Surge Suppressors provide protection against both *normal mode* surges (line to line) and *common mode* surges (line to ground). There are two model groups:

The first features single-stage filtering, provided by three metal oxide varistors. Unlike outlet strips in their price

category, the models in this group provide protection on all three conductors in a typical 120VAC circuit.

The second group features four-element, two-stage filtering, provided by a uniquely-engineered combination of metal oxide varistors and silicon avalanche diodes. These models assure you of both normal and common mode surge protection, and of an almost unlimited operating life.

All Perma Power Surge Suppressors feature a unique positive shutdown mechanism to prevent inadvertent operation of unprotected equipment in the event of a suppression element failure. A visual indication of shutdown is provided by the pilot lamp. Strip models have a 6-foot double-insulated #14/3 "SJT" line cord, master switch and indicator light and act as a *power control center*.

specifications

	PERMA POWER SURGE SUPPRESSORS	EXTENDED LIFE SURGE SUPPRESSORS	TEST WAVES
Protection Modes	normal (line/neutral) common (line/ground) common (neutral/ground)	normal (line/neutral) common (line/ground) common (neutral/ground)	1 IEEE Std 587 (0.5us-100 KHz, 6000 Volt, 200 Amp, Ringwave)
Clamping Threshold (Nominal)	250 Volts	225 Volts	2 5KW peak, 1.0 millisecond, exponential switching transient
Let-Through Voltage ¹	600 Volts	400 Volts	3 10 x 100 us-exponential (accepted industry test impulse for inductive load switching transients)
Response Time	5 nanoseconds	5 picoseconds	4 IEEE Std 587 (8 x 20 us, 3.0 KA, Unipolar current wave)
Pulse Life ¹	10 ⁶ cycles	10 ⁶ cycles	5 Limited in 120VAC distribution systems by wiring devices <i>acover</i> to 6000 Volts peak (IEEE Std. 587)
Pulse Life ²	10 ⁴ cycles	10 ⁴ cycles	
Steady State Power ³	0.8 watts	5.0 watts	
Single-Surge Energy ⁴	70 joules	70 joules	
Peak Current ⁴	6000 amperes	6000 amperes	
Maximum Transient Voltage ⁵	6000 Volts	6000 Volts	
Power Rating, Load	1875 watts	1875 watts	
Noise Filtering	—	More than 20db, 2-100 mhz	
Warranty	1 year	5 years	

SURGE SUPPRESSOR MODEL SELECTOR CHART

Perma Power Surge Suppressors

Model No.	Number of Outlets	Master Switch	Indicator Light	Case Length (Inches)	Price
PT 209	2	-	1	-	\$33.00
RT 410	4	1	1	12	46.60
KT 410	4	1	1	12	47.60
RT 610	6	1	1	15	48.60
KT 610	6	1	1	15	49.60
JT 06B0	6*	1	1	19	63.70
JT 06B2	6*	1	1	19	67.00

Perma Power Extended Life Surge Suppressors

PS 209	2	-	1	-	61.80
RS 410	4	1	1	12	75.40
KS 410	4	1	1	12	76.40
RS 610	6	1	1	15	77.40
KS 610	6	1	1	15	78.40
JS 06B0	6*	1	1	19	92.50
JS 06B2	6*	1	1	19	95.80

*Rack-mount models, outlets on rear panel.

Case Style and Color: (prefix)

P - Tan plastic case

R - Tan baked enamel on steel with Oak plastic sides

K - Silver baked enamel on steel and textured black plastic

Surge Suppressor Model Features

- Both normal and common mode suppression
- Low let-through voltage
- High single-surge energy rating
- Automatic failure shutdown
- 1 year warranty

Extended Life Surge Suppressor Model Features

- Both normal and common mode suppression
- Lower let-through voltage
- High pulse lifetime
- High steady-state (repetitive surges) power rating
- High single-surge energy rating
- Automatic failure shutdown
- 5 year warranty

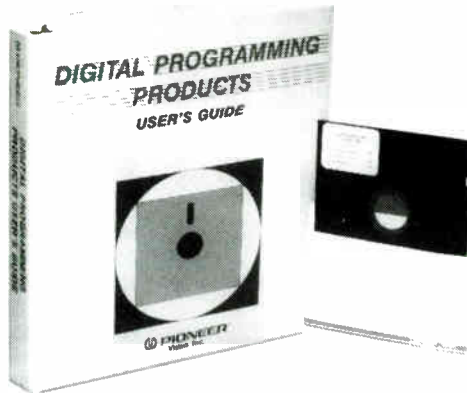
Case Style and Color: (prefix)

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PIONEER VIDEO, INC.
 INDUSTRIAL SALES DIVISION
 5150 E. Pacific Coast Highway / Suite 300
 Long Beach, CA 90804
 (213) 498-0300



DIGITAL PROGRAMMING PRODUCTS

DiscAssemble™

FEATURES:

- Free-form source lines with multiple commands
- Optimized object code uses minimum dump space
- Checksum generated for file verification
- Provides library of macros, subroutines, and diagnostics
- Assembler variables available for use in expressions
- Variable symbols redefined during a single pass
- Warning and error messages readable and well documented
- Command mnemonics provided with abbreviations checked for compatibility with videodisc player.

DiscAssemble* is a symbolic macroassembler designed to automatically translate source statements from a source file into object code in an object file and a program listing in a listing file. All three files are normally saved on diskette. Source file contains statements typed by the programmer.

DiscSimulate™

FEATURES:

- Simulates up to 100 data dumps by automatically loading them into the player as they are called
- Allows testing of the transmit commands used to send data from a videodisc player to an external computer or printer
- Permits testing Partial Load commands for data dumps of less than 1022 bytes
- Provides warning and error messages that are readable and well documented.

DiscSimulate* is a program designed to be used by people unfamiliar with computer programming. It is used for demonstrating and debugging digital programs for Pioneer LaserDisc™ Players. It is intended to be used with a Check Disc to simulate the finished disc prior to approving a production run.

DiscMail™

FEATURES:

- Data transmission at 300 or 1200 baud
- Automatic retries if there are transmission errors

DiscMail* is a telecommunications program which allows transmission of videodisc source, listing, object, or message text files from one computer to another. Transmission is accomplished over phone lines using a Bell 212A (or compatible) modem or by direct connection of two computers using an RS232 serial interface.

Digital Programming Products System Requirements

- Apple II or IIe with Apple II Pascal 1.1 operating system. With Apple II, a language card is also required. For display purposes an 80-column text card is recommended.
- IBM Personal Computer (P.C.) with UCSD p-System, Version IV.0 operating system and at least 128K bytes of memory.
- Modification for other computers capable of using the p-System—RFQ.

DiscAssemble (includes library of macros, subroutines, and diagnostic programs on diskette, plus user's manual package) \$2,250.00
 DiscSimulate (includes a diskette and user's manual package) 1,250.00
 DiscMail (diskette and user's manual package included) 750.00



SS-D1 PROCESSOR

SWSD SYSTEM STILLS WITH SOUND AND DATA

Motion Video With Stereo Sound

- Traditional applications of optical LaserDisc brand videodiscs
- High quality full color video with two discrete high fidelity audio channels

Still Frames With Sound

- On one side of a disc, over 20 hours of music and narration explaining and describing 4500 different still frames can be stored
- Transfers sound filmstrip programs to the LaserDisc™ medium (100 typical 20-minute filmstrips per side)
- Expands multi-language/message capability

Digital Data Storage

- As much data as 1000 floppy diskettes stored on one disc side
- Massive ROM capacity for typical computer applications
- Graphics and text file data storage
- Keyed title and overlay storage
- Interactive program control
- Additional user area at 40 bytes per frame

Still with Sound and Data (SWSD) is a system that allows compressed audio and/or digital data to be stored in video frames. The SS-D1 Processor, when attached to any optical laser videodisc player, can process data encoded on the disc.

Flexibility is provided by three different encoding techniques. The blinking method blanks the video screen while reading the data into SS-D1 memory, then displays a video still frame while playing back the audio from memory. The masking method allows the user to store data in up to nine horizontal band segments. Typically, the top and bottom of an image would be cropped as data is read off the disc while the cropped areas are blanked on the video screen. Then, the player displays a still frame while the SS-D1 memory is played back. The user area, uses five lines at the top of the picture, outside visible range, to provide data transfer of 40 bytes per frame.

SWSD System **POR**

SPECIFICATIONS

Audio Encoding Method

- Adaptive Delta Modulation (ADM)

Error Correction Method

- Reed-Solomon

Power Supply Specifications

- Nominal Voltage 20V 50/60Hz
- Power consumption 30W

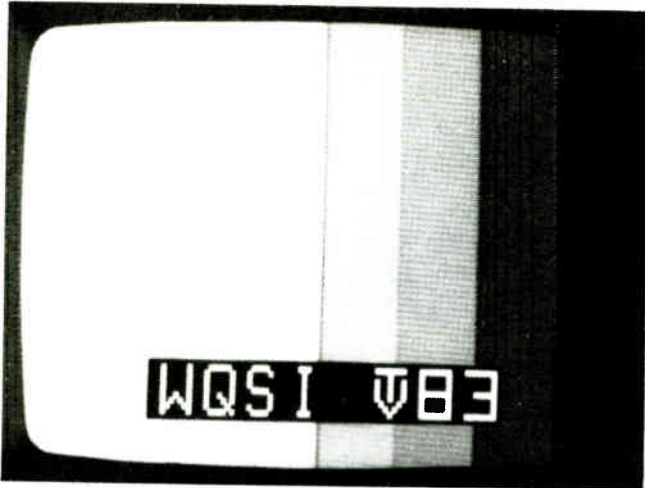
Connectors and Controls

- Video input 1-BNC
- Video output, masked nonmasked 2-BNC
- Audio input 1-RCA pair
- Audio output 1-RCA pair
- RS-232C port 2-D-Type (25 pin)
- Digital data out (conforms with Centronics specs) 1-Amphenol (36-Pin)
- SWS Audio Repeat switch 1-Push button
- Power ON/OFF switch 1-Push button
- RS-232 Baud rate (300-38 400) select 2-DIP (8 switch)
- AC Outlet: switched 1-200 Watts max

QSI SYSTEMS, INC.

12 Linscott Rd.
Woburn, MA 01801
(617) 938-1403

COLOR BAR GENERATORS/ VIDEO IDENTIFIER



QSI BG-200 SERIES

BG-200, BG-208, BG-216 COLOR BAR GENERATORS

The QSI BG-200 Series is an inexpensive line of high quality color bar generators which produce full field bars and a 1000Hz tone. This series is designed for testing both audio and video feed lines quickly and efficiently. The standard model, the BG-200, generates full field bars and 1000Hz tone only. Models BG-208 and BG-216 will provide the additional advantage of an on-screen ID of eight characters and sixteen characters, respectively. This ID proves very useful in locating specific feed lines.

FEATURES

- Full field color bars
- 1000Hz tone
- Field programmable eight character ID (BG-208 only)
- Field programmable sixteen character ID (BG-216 only)

SPECIFICATIONS

Power: 117VAC at 3/8 A
Size: 19"W x 1-3/4"H x 16"D rackmounted
Audio Output: +8dBm into 600 ohms, transformer isolated, balanced, Male XLR.
Video Output: 1.0V p-p source terminated in 75 ohms, BNC.

ID (where applicable):

Eight or sixteen alphanumeric characters, depending on model; character and background mattes adjustable. Horizontal and vertical size and position adjustable. Two character matrices 5 x 7 and 7 x 9 (7 x 9 shown). Background may be deleted.

BG-200 Full Field Bar Generator	\$1195.00
BG-208 Full Field Bar Generator with 8 character programmable identification	1395.00
BG-216 Full Field Bar Generator with 16 character programmable identification	1595.00

BG-308 COLOR BAR GENERATOR

- 1kHz audio test tone
- Internally switchable for either constant display or flashing mode
- Split-field NTSC bars patterns

BG-308 is a split-field color bar generator with a field programmable 8 character video source identifier positioned in the black block of the split-field pattern. The BG-308, one rack unit high, is perfect for the microwave equipped ENG truck.

SPECIFICATIONS

Video output
(color bar with 8 character ID): 1V p-p, 75 ohm source terminated, BNC connector

Blackburst output: 75 ohm source terminated, BNC connector

Pulses: Within RS-170 specifications

Subcarrier: 3.579545MHz ± 10Hz, 0-50 degrees C

Vector accuracy: Within 1.5 degrees

Audio output: Internally adjustable 0 to 8dBm, 600 ohms balanced, transformer isolated, male XLR

Tone: 1kHz sinewave, distortion less than 3%

Power: 117 VAC, 2 watts

Size: 19"W x 1-3/4"H x 12"D. Rack Mount

BG-308 **\$1495.00**

CB-9000V SERIES LIVE VIDEO IDENTIFIER AND SOURCE IDENTIFIED COLOR BAR GENERATORS

- Adds ID to vertical interval of external composite video when bars are dropped, placed on lines 10 through 16, both fields
- Switch selectable character matrix 5 x 7 or 7 x 9, in color bar mode
- Digital line by line vertical positioning in color bar mode

The CB-9000V Series, in the color bar mode, allows you to test your audio and video links, and the split field identification indicates who is out there. When the color bar is dropped for the live feed, the identification is automatically transferred to the vertical interval of the live video.

CB-9000

SMPTE Color Bar Generator with 8 character field programmable VSID (Video Source Identification) and 1000Hz Audio Tone. Video and audio by-pass. 19"W x 1-3/4"H x 16"D. Rack Mount. 117 VAC.
CB-9000 **\$2095.00**

CB-9000V

8 Character Vertical Interval Identifier. SMPTE Color Bar Generator with 8 character field programmable VSID (Video Source Identification) and 1000Hz Audio Tone. When bars are dropped for program feed, the 8 character I.D. is automatically transferred to the vertical interval. 19"W x 1-3/4"H x 16"D. Rack Mount. 117 VAC.
CB-9000V **\$2195.00**

SPECIFICATIONS

Video input: 1Vp-p nominal, 75 ohm terminated, BNC

Video output: Adjustable to 1Vp-p 75 ohm source terminated, BNC

Video transparency: Differential gain: Less than 0.5%
Differential phase: Less than 0.5°
Frequency response: ±0.5dB to 8MHz

QSI SYSTEMS, INC.

12 Linscott Rd.
Woburn, MA 01801
(617) 938-1403

COLOR BAR/ BLACKBURST GENERATORS

MODEL AF-1000 AUTOPHASING BLACKBURST GENERATOR

The AF-1000 is a time and labor saving device for multiple camera systems. Cable lengths are no longer a consideration since the AF-1000 adjusts each of its three blackburst outputs automatically to ensure properly phased chroma and sync at the switcher. Fully self-contained, the AF-1000 also features a fixed blackburst output to which all three cameras are referenced. The one rack high unit can be daisy-chained for systems of more than three cameras, due to its genlocking capabilities which include a single control covering more than 360° of subcarrier phasing.

FEATURES

- Stand alone or genlocking
- May be used at distances of 1000 feet
- Reference blackburst output
- All inputs are Hi-Z looping
- One rack high

TYPICAL APPLICATIONS

- Phases three cameras automatically
- Daisychain to phase additional cameras
- Enable quick camera phasing
- No camera tweaking for cable lengths
- Locks TBCed studio VTR's

AF-1000 SPECIFICATIONS

Auto Phase

H phase within ± 70 ns

Subcarrier phase within $\pm 1^\circ$

Lock time 5 seconds max

Internal phase trim H ± 1 us min., subcarrier ± 90 min.



Genlock Mode

H phase adjustable $\pm 2\mu$ s

Subcarrier phase adjustable more than 360°

Lock time 5 seconds max

19"W x 1-3/4"H x 16"D

115 VAC $\pm 10\%$, 22W

0-70 C operating

Net weight: 8 lbs.

Shipping Weight: 11 lbs.

AF-1000 Automatic Black Burst Phasing Generator

Automatically adjusts each of its three black burst outputs for varying camera cable lengths to ensure properly phased chroma and sync at the switcher. The unit can be used as a stand alone or genlocked. The one rack unit generator can be stacked for systems of more than three cameras

AF-1000 \$2595.00

MODEL CB-1680 COLOR BAR GENERATOR/VIDEO SOURCE IDENTIFIER

The CB-1680 gives you an ID in the vertical interval of an external video source. It is easy to program since pushbuttons are readily available on the front panel. The built-in memory stores up to 80 separate 16 character messages. The CB-1680 includes genlocking SMPTE bar generator and 2 blackburst sources.

FEATURES

- ID in vertical interval for satellite up-link feeds
- Up-link transmission
- Microwave feeds from both fixed and mobile transmitters
- EFP segment identification
- SMPTE bars
- 1kHz tone and blackburst signal

CB-1680 SPECIFICATIONS

Colorbar

Output: 1Vp-p, blanking at 0 VDC, 75 ohm source terminated.

Pattern: SMPTE with plunge.

Pulse Widths: Within RS170 specifications.

Subcarrier Frequency: 3.579545 MHz ± 10 Hz 0°C ~ 50°C.

Vector Accuracy: Within 1.5 degrees

Genlock

Input: 75 ohm terminated, requires blackburst.

H Phase: Front panel adjustable to within ± 70 ns.

Subcarrier Phase: Front panel adjustable more than 360 degrees.

Blackburst

Outputs: Two, 75 ohm source terminated, blanking at 0 VDC.

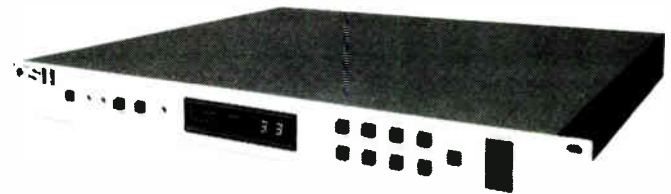
Pulse Widths: Within RS170 specifications

Subcarrier Phase: Adjustable more than ± 30 degrees.

ID

Inputs: Two, one internally connected to color bar, one external, 75 ohm terminated.

Clamping: Synctip.



Differential Phase: Less than 0.5 degrees.

Differential Gain: Less than 0.5%.

Frequency Response: 0.5dB to 8MHz.

Tilt and Overshoot: Less than 1%.

Hum and Noise: -60dB below 1Vp-p.

Dc In Output: Less than 0.75 VDC.

Output: 1Vp-p nominal, 75 ohm source terminated.

Audio

Input: +8dB, 600 ohm balanced.

Output: +8dB nominal at 0 VU transformer isolated, 600 ohm balanced.

Line Gain: adjustable from full off to a gain of 2.

Tone: 1kHz sinewave, distortion less than 1%.

Power

117 VAC 50/60Hz 25 Watts.

Mechanical

Video Connectors: BNC

Audio Connectors: XLR

Size: 19"W x 1-3/4"H x 16"D

Weight: Approx. 7 lbs.

Remote

7 BIT parallel plus negative strobe for remote ID selection.

CB-1680 \$2895.00

QSI SYSTEMS, INC.

12 Linscott Rd.
Woburn, MA 01801
(617) 938-1403

COUNTDOWN GENERATOR/ VIDEO DISTRIBUTION AMPLIFIER



VT-7 7 SEGMENT VIDEO LEADER COUNTDOWN GENERATOR

The QSI VT-7 Video Leader Countdown Generator provides video and audio tape cueing information at the head end of each program segment. Video cueing is a 1 second interval numerical countdown for 10 seconds, consisting of 8 seconds of displayed numbers and 2 seconds of terminal or no numeral video. Audio cueing is 0.5 second of 400Hz tone burst during the first half display of each new video numeral. The first half second of "2" count contains a 200Hz tone burst, indicating that the terminal video has been reached.

All electronics are rack mounted with Size Flash, Set, Count, and Hold front panel controls. Remote contact closures may be input through the rear panel. Remote inputs are priority.

FEATURES

- Selectable expanding size
- Selectable fixed sizes; any one of eight
- Set: Places "10" in screen, no audio
- Count: Countdown starts with "9" and tone burst
- Count video deleted after "2" displayed
- Video bypass on power-down
- Switch selectable 1/2 second flashing characters
- Hold: Stops countdown on last number and silences audio
- Remote inputs for all control functions
- 400Hz Counting Audio, 200Hz Black Cue
- Accepts any composite video input
- Numerals generated in any display area
- Pulse out at "5", "3" and terminal count

SPECIFICATIONS

MECHANICAL

Size: 19"W x 1-3/4"H x 12"D, Rack Mount

CONNECTORS

Video: BNC

Audio: XLR

Remote Control: Terminal Strip

ELECTRICAL

Power: 115VAC, 60Hz, 10 watts

Controls: Toggle switches, pushbuttons and external dry closures

VIDEO

Input: 1.0Vp-p, 75 ohm terminated

Output: Adjustable to 1.0Vp-p, 75 ohm source terminated

Audio Output: 600 ohm balanced, transformer isolated

VT-7 10 Second Countdown Timer 7 Segment \$1395.00

6 x 1 UTILITY VIDEO DISTRIBUTION AMPLIFIER

The QSI 6 x 1 DA Video Distribution Amplifier is designed to handle standard utility video distribution for your television system. The 6 x 1 DA is a desk top type distribution amplifier with looped-through video input and six isolated video outputs. The compactness and self-contained power supply makes the VDA highly portable for those tight quarters in your operations.

FEATURES

- 1 in x 6 out
- Looped-through input
- Excellent transparency
- Output source terminated in 75 ohms
- Front panel gain and equalization controls

SPECIFICATIONS

Size: 4-1/2"W x 2"H x 4-1/2"D

Power: 115VAC, 50/60Hz 5 watts

Optional: 230VAC, 50/60Hz 5 watts

VIDEO

Input: Hi-Z looped-through 1.0 VPP

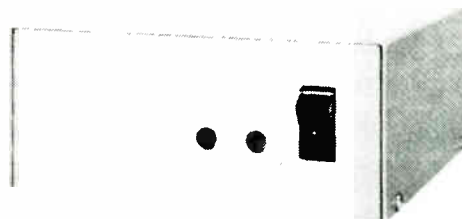
Outputs: 75 ohm source terminated

Frequency Response: 0.5dB to 10MHz

Differential Gain: Less than 0.5%

Output Isolation: 40dB

Equalization: Utility — Single control, approximate compensation of 200-1000 ft. of RG59U coaxial cable.



Noise: Less than 60dB, below 1 VPP

Differential Phase: Less than 0.5°

Propagation Delay: Approximately 10 ns.

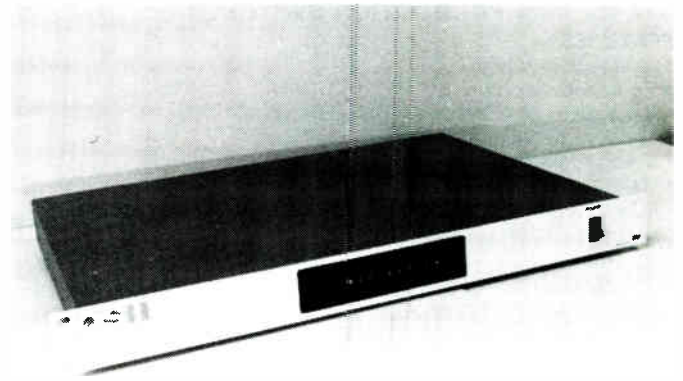
Gain: Adjustable from less than unity to greater than +10dB

6 x 1 DA Portable 1 in, 6 out distribution amplifier with front panel control for gain and equalization \$295.00

QSI SYSTEMS, INC.

12 Linscott Rd.
Woburn, MA 01801
(617) 938-1403

VIDEO SOURCE IDENTIFIERS



VSID-1611V VIDEO SOURCE IDENTIFIER

FEATURES

- 5 x 5 dot matrix
- 16 character positions
- No signal interference or degradation of video signals
- Adjustable matte level

The VSID-1611V inserts 16 numeric characters in the vertical blanking interval of a NTSC signal using lines 10 through 14 inclusive. There are 10 numeric characters (0 through 9) plus a blank for each of the 16 character positions.

Selection of the number or blank is done through sixteen (16) eleven position thumbwheel switches located on the front panel of the VSID-1611V. The thumbwheels are arranged in the same manner as the character format so that programming the identifier is simply a matter of dialing it in.

The VSID-1611V was designed to identify video signals transmitted by mobile satellite uplinks. The telephone number of the uplink is inserted into the VBI of the video program being transmitted.

SPECIFICATIONS

Input/Output:	Hardwire looping, 1 Vp-p nominal, 75 ohm source terminated, BNC connectors
Frequency Response:	± 0.5dB, DC to 8MHz
Differential Phase:	Less than 0.2 degrees
Differential Gain:	Less than 0.2 percent
Character Insertion:	Additive—no signal degradation with power loss
Matte Level:	Adjustable between 35 and 80 IRE
Power:	117 VAC ± 10%, 4 watts
Dimensions:	19"W x 1-3/4"H x 12"D
VSID-1611V	..... 1295.00

VSID-82 VIDEO SOURCE IDENTIFIER

Developed for security, broadcast, medical and industrial applications, the VSID-82 provides an efficient and effective visual indicator of video signal's identity. The VSID-82 generates eight alphanumeric characters and inserts them into a composite video signal. The ID is movable anywhere on-screen or into the vertical interval, with separate controls for character and background matte levels. It can also be adjusted for several sizes.

Switches on the board allow the user to select either a 5 x 7 or a 7 x 9 character matrix and, if desired, to delete the full-surround background. Because the ID is programmed with DIP switches, it can be easily changed at any time, even in the field.

FEATURES

- Switch selected 5 x 7 or 7 x 9 matrix
- Eight easily programmed alphanumeric characters
- Adjustable mattes
- Switchable background delete
- Line by line vertical positioning
- Adjustable horizontal and vertical size

SPECIFICATIONS

Power:	5VDC at 500mA per card
Size:	4-1/2"W x 9"D x 5/8"H
Video Input:	1.0Vp-p nominal, on board termination
Video Output:	Adjustable to 1.0Vp-p, 75 ohm source terminated
Frequency Response:	± .5dB to 8MHz
Differential Gain:	Less than 0.5 percent
Differential Phase:	Less than 0.5 degrees
Display Size:	Horizontally adjustable from 1/4 to full screen. Vertically adjustable, three sizes per matrix. Character heights of 14, 28, and 42 raster lines in 5 x 7; 18, 36, and 54 raster lines in 7 x 9.



VSID SERIES VIDEO SOURCE IDENTIFIER — DUAL MATRIX UNIT

VSID-82/101	Single Card in Rack Frame	..... \$1375.00
VSID-82/102	Double Card in Rack Frame	..... 2095.00
VSID-82/103	Triple Card in Rack Frame	..... 2850.00
CARDS		
VSID-82	Single Card	..... 595.00
FRAME W/POWER SUPPLIES		
VSID-82/195RMPS	Sixteen (16) Card Frames	..... 1995.00
SYSTEMS SUPPORT EQUIPMENT		
"X" Board	Universal Extender Board for Frames	.... 99.95

QSI SYSTEMS, INC.

12 Linscott Rd.
Woburn, MA 01801
(617) 938-1403

SWITCHER/PORTABLE COLOR BAR GENERATOR

SW-402 MINI-PRODUCTION SWITCHER

FEATURES

- One rack-unit high
- Four video inputs
- Two switchable buses
- Dissolve between buses
- Two program and two preview outputs
- Tally contacts (dry closure)

The SW-402 is a four input, two output mini-production switcher with a simple dissolve feature between the two selected signals. Designed originally to augment the QSI AF-1000 autophasing black-burst generator, the SW-402 can easily be integrated into other systems. The SW-402 is a compact, easy to operate, mini-production switcher—ideal where space and dollars are limited.

SPECIFICATIONS

Inputs: 1V p-p composite, internal termination, BNC
Outputs: 1V p-p, adjustable, two preview, two program, BNC
Dissolve: between buses
Power: 115 VAC \pm 10%, 230VAC optional
Size: 19"W x 1-3/4"H x 12"D
Tally: dry contacts on program bus, 9 pin connector, supplied



SW-402

Frequency Response: \pm 0.5dB to 8MHz
Differential Gain: < 0.5%
Differential Phase: < 0.5°
Switching: vertical interval
Sync Source: video or black on input #1
Weight: net weight: 6 lbs. shipping weight: 9 lbs.
SW-402\$1695.00

PSF-777 COLOR BAR GENERATOR

FEATURES

- 1kHz audio test tone output
- Can be powered by most common camera/VTR—11 to 15VDC batteries
- Internally selectable for either flashing ID or constant display

PSF-777 a battery operated split-field colorbar generator with 8 character user programmable video identification in the black block of the split-field bar pattern.

The PSF-777 is perfect for the remote engineer when testing temporary microwave links or long cable runs.

SPECIFICATIONS

Video Output (with 8 character ID): 1V p-p, 75 ohm source terminated
Pattern: Split-field NTSC bars
Pulses: Within RS170 specifications
Subcarrier: 3.579545MHz \pm 10Hz, 0-50°C
Vector Accuracy: Within 1.5 degrees
Video bypass with power switch off
Audio Output: Front panel switchable (transformer isolated)
-56dB, 150 ohm balanced; 0dB, +4dB +8dB at 600 ohm balanced
Tone: 1kHz Sinewave; distortion less than 3%
Power: 11 to 15 VDC, 120mA
External Controls: Power switch; LED indicates power on and low battery (flashing); and 4 position audio level switch



PSF-777

Mechanical:
Video Connector: 2 BNC for video in/out
Audio Connector: XLR
Power Connector: 2.1mm coaxial power jack
Size: 8.6"L x 4.6"W x 3"H
Weight: 3.5 lbs. (less battery)
Optional transistor battery pack (2) with 115V AC power adaptor.
PSF-777\$995.00

uniVUer

The uniVUer puts stereo metering over monitor video for quick unified reference of audio level and phase error.



The uniVUer is the first practical method of measuring audio levels in an environment which demands that the engineer's visual attention be on the video monitor. With the stereo audio levels keyed into the video monitor program material, the engineer has a single reference point for all program quality evaluations. Add the MonSter option (Mono-Stereo Coherency Evaluator) and the uniVUer will signal Phase/Polarity errors.

The uniVUer is available with either VU or PPM ballistics, both meters complying precisely with industry adopted standards.

The uniVUer has an adjustable peak flasher for system headroom protection and an adjustable silence sense which can be tied to an external alarm for master control "off the air" alarms.

The uniVUer is compatible with both NTSC and PAL systems and will not degrade the signal to even the most expensive video monitors. Simply insert the uniVUer into the monitor input loop and you're ready to go. Horizontal and vertical size and position are adjustable to suit any monitoring situation. The bar video level is adjustable, and a black box surround can be switched in or out to enhance visibility. The uniVUer display can be bypassed and both the bypass function and the black box can be remote controlled.

The uniVUer consists of two 4 1/2" x 6 1/2" PC boards stacked and hinged to open like a book for setup and maintenance. All setup adjustments are located on the front edge of the boards. The uniVUer is rackmounted (3 uniVUers in a 1 3/4" x 19" chassis with common power supply).

The uniVUer can be used any place where audio competes with video for operator attention. In master control rooms, network switching centers, satellite uplink facilities and other program distribution points where more than one program channel is in use and it isn't possible to monitor audio on all channels simultaneously.

Hundreds of uniVUers are in operation worldwide in major network facilities, production and post production facilities, satellite switching centers, duplicating houses and motion picture dialog and scoring stages.

The piggy-back optional MonSter (Mono-Stereo Coherency Evaluator) monitors stereo phase energy. As an optional extra capability within the uniVUer, the MonSter provides a go/no-go decision for both program material and setup tones. Intended for use in stereo TV, motion picture and recording studio applications, the MonSter is essential where left-right energy coherency provides the basis for correct mono-mix.

Specifications.

Performance Spec.	VU	PPM
	ANSI C16.5—1954	EBI3205-E BS4297: 1968
Input Impedance	50K ohms, balanced 25K ohms, unbalanced ± 0.3dB	50K ohms, balanced 25K ohms, unbalanced ± 0.3dB
Frequency Response 20-20KHz Reference Level (0) Adjustment Range	- 20 to + 8dB	- 6 to + 22dB
Input Overload Capability (Continuous, Above Operating) Loading (600 ohm line)	+ 22dB	+ 10dB
Dynamic Measuring Range	30dB	30dB
Dynamic Response (5KHz Tone Burst @ REF Volts in)	100ms:0dB 10ms: 2.5 ± 0.5dB 5ms: - 4.0 ± 0.75dB 1.5ms: - 9.0 ± 1.0dB	100ms:0dB 10ms: 2.5 ± 0.5dB 5ms: - 4.0 ± 0.75dB 1.5ms: - 9.0 ± 1.0dB
Response Time	300ms	10ms Integration Time
Fall Back Time (24dB Drop)	300ms	2.8 ± 0.3sec.
Peak Flasher Adjustment Range (Relative to Operating)	- 33 to + 18	- 30 to + 10
Reversability/Polarity Error Resolution	± 0.5dB Logarithmic, 1 to 5dB/Step	± 0.5dB 15 2dB Steps
Silence Sense ("C" contact closure)	Delay adjustable from 6-second to 1-minute	
Video Input (10K ohms, Bridging)	1Vp-p ± 10% 75 ohm term	
Video Output (Into 75 ohms)	1.00Vp-p	
Video Frequency Response	8MHz ± 0.5dB	
Video Differential Phase	1°	
Video Differential Gain	1%	
Tilt	1%	
Power Requirements	+ 12 ± 0.5VDC @ 100ma	
Operating Temperature	0 to 50°C, 30°-122°F	
Stability (Δ20°C, Δ5% Power)	± 0.5dB	
2-Cards Stacked Together	4 1/2" x 6 1/2" x 1 1/4" Thick	
Edge Connector	22 Position (0.156")	
Weight	10oz, 280g	
Rack Frame (Mounts 3 uniVUers)	19" x 1 3/4" x 12" Deep (1RU)	
Weight	4 1/2 lbs., 2.025kg	
Power Requirements	115/230V, 50-60Hz 7VA	
Input Voltage Tolerance	± 10%	

MonSter

The Mono-Stereo Coherency Evaluator is a stereo phase energy bargraph display.



Mono-Stereo energy coherency is defined as the point at which the electrically combined left and right channels will have substantially the same energy component as the perceived energy component when acoustically and aurally combined. In other words...the point at which the mono mix will sound like the stereo mix.

When bridged across the left and right channels the bargraph provides a continuous readout of average phase energy. The extremes, from center channel buildup to polarity reversals, and all the nuances in between are clearly apparent. The MonSter provides much the same information as the Lissajous Oscillograph in a display which requires less subjective interpretation.

The MonSter is intended for use in stereo TV, motion picture, and recording studio applications where left-right energy coherency is essential for correct mono-mix. The input filtering is designed to provide reliable phase energy measurement of program material. With the filters switched out the MonSter can be used to measure point source phase during microphone placement, transmission system frequency sweeps, and tape machine head alignment.

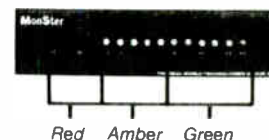
The Mono-Stereo Coherency Evaluator graphically indicates the phase energy relationship of the stereo channels in an unambiguous bargraph readout. In a stereo signal the instantaneous phase relationships appear random, but in reality they must be energy additive in order to provide "loudness" to the program material.

When program material is evaluated, the MonSter bargraph movement indicates the left-right instantaneous sum energy measured against the total left-right energy. The result is phase energy relationship. This relationship is extremely important if the resulting program is subject to being listened to on a monophonic system (as in television).

Maintaining the program in the GREEN with occasional dips as low as - 3dB into the AMBER range is the recording engineer's goal. When the display goes down into the RED zone a distinct cancellation is occurring, usually due to a microphone misphasing. When total energy reaches the - 15dB level a probable left-right polarity reversal is assumed and the RED portion of the display will blink as an operator warning. When audio level in either channel falls below the minimum sampling threshold, the entire display goes dark.

With the filters switched out of the circuit, the MonSter will display point source phase cancellation during microphone placement and system checkout.

Normal Program



Specifications.

Input Impedance	50K ohms balanced bridging 25K ohms unbalanced bridging
Frequency Response	20-20KHz ± 0.5dB
Reference Level	+ 4 dBm (± 4dB)
Minimum Sample Level	10dB below operating
Loading (600 ohm line)	0.1dB
Frequency Roll-off (Switchable)	2nd order at 750Hz lo-pass
Power Requirements	115/230V, 50-60Hz, 7VA ± 10%
Operating Temperature	0-50°C, 32°-122°F
Stability (Δ20° Δ5% Power)	± 0.5dB
Size	2 1/2" H x 8 1/2" W x 9 1/4" D, 63.5mm x 215.9mm x 234.94 mm
Weight	2 1/2 lbs., 1.125 kg.

Product Ordering Information.

PRODUCT & OPTIONS	PRODUCT DESCRIPTION	LIST PRICE
4514-01	uniVUer, VU BALLISTICS	\$ 995.00
4514-02	uniVUer, PPM BALLISTICS	\$ 995.00
4514-03	uniVUer, TV MODULATION MONITOR BALLISTICS	\$ 995.00
4514-04	uniVUer, CUSTOM BALLISTICS	\$1,095.00
4403	MonSter OPTION TO uniVUer	\$ 475.00
4539-01	RACK FRAME W/POWER SUPPLY 110V/220V 50-60Hz VIDEO INPUT LOOPING	\$ 250.00
4539-02	RACK FRAME W/POWER SUPPLY 110V/220V 50-60Hz W/VIDEO BYPASS RELAYS—INPUT 75 ohm TERM	\$ 350.00
4509	uniVUer MAINTENANCE EXTENDER CARD	\$ 55.00
4300	PRODUCTION MonSter	\$ 675.00



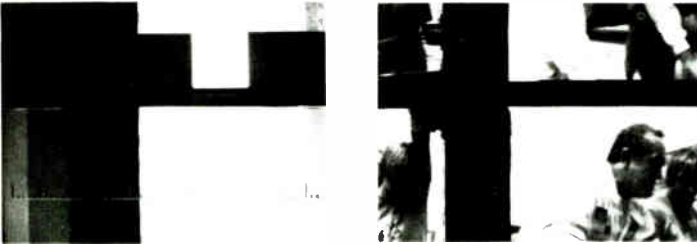
**THE REAL WORLD
TECHNOLOGIES
GROUP, INC.**

130 McCormick, Suite 109 • Costa Mesa, CA 92626 • (714) 957-1061

VT-155

RG341

Turn any video monitor into a precision alignment instrument with the Real World RG341 Safe Area/Safe Title Display Generator with Center Marker, Micro-Mark Cursor for extra convenience in post production and optional Remote Control.



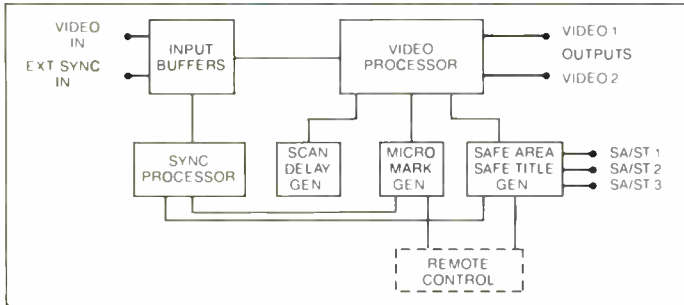
The Real World RG341 is a stand-alone display generator which provides three of the most useful alignment and signal verification tools for video engineering, production and post production.

Pulse Cross Precision electronics delay incoming video into horizontal and vertical elements in order to check video timing and adjust video tape machine tension and tracking.

Blanking Verifier Fixed patterns (10.9 microsecond horizontal and 20 TV lines vertical) are included in the pulse-cross display to verify that equipment under test conforms to RS-170A standard for H & V blanking width.

Micro-Mark Cursor Digitally-generated marker, calibrated in 1 microsecond intervals, may be positioned anywhere within picture to verify timing information and to aid in titling or scene setup.

Safe Area/Safe Title Dual reticules, digitally generated to meet SMPTE standard specifications confirm safe transmission of vital picture information. RG341 displays may be used separately or in any combination.

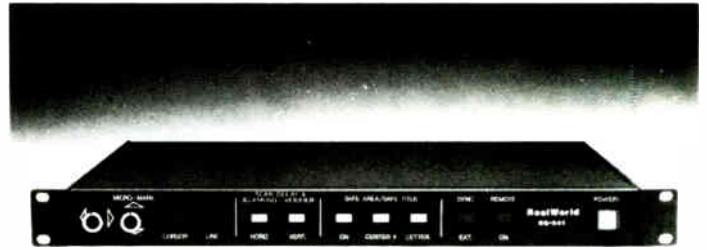


Specifications

Real World RG341 Micro-Mark/Safe Area Generator

INPUTS	Video	1V p-p, loop through differential input
Ext Sync	1-8 V p-p loop through	
OUTPUTS	Video	Two video outputs 1 V p-p 75 ohm with or without selected keyed-in pattern
SA/ST	Three dedicated non-switchable composite outputs, 1 V p-p 75 ohms 60dB isolation between outputs	
CONTROLS	1 Micro-Mark Cursor	On-Off (LED Indicator)
2 Line	On-Off (LED Indicator)	
3 Horizontal Position	Multi turn potentiometer	
4 Vertical Position	Multi turn potentiometer	
5 Horizontal Scan Delay	On-Off (LED Indicator)	
6 Vertical Scan Delay	On-Off (LED Indicator)	
7 Safe Area/Title	On-Off (LED Indicator)	
8 Center Crosshair	On-Off (LED Indicator)	
9 Minimum letter size	On-Off (LED Indicator)	
10 External Sync	On-Off (LED Indicator)	
11 Remote	On-Off (LED Indicator)	
12 Power	On-Off (Incandescent Indicator)	
NOTE Functions 7 and 8 are independent of each other Function 9 works in conjunction with function 7		

VT-156



VIDEO PERFORMANCE	Differential input with HUM rejection	40dB		
	Frequency response	+ 15dB to 4MHz. - 3dB @ 15MHz		
	Differential Phase	0.5°		
	Differential Gain	0.5%		
	K Factor	0.5%		
	Horizontal tilt	0.5%		
	Vertical tilt	0.5%		
	Signal-to-noise ratio	better than 60dB (measured with Rhode & Schwartz noise meter)		
	PATTERN DETAILS	Vertical Line Thickness	200 nanosec (100-white/100-black, internally adjustable to 100 nanosec -50-white/50-black)	
		Horizontal Line Thickness	2 TV Lines (one line white, one line black)	
Blanking Markers		Horizontal	10.9 microsec	
		Vertical	20 TV lines	
Safe Area Limits		90% of scanned image		
Safe Title Limits		80% of scanned image (conforms to SMPTE RP 27.3, reaffirmed 1977)		
Visibility		Independent of picture content		
Micro-Mark		1 microsecond spacing with enlarged marks for 5 and 10 microsecond intervals		
ENVIRONMENTAL		Temperature	Non-operating	- 45°C to + 65°C
			Operating	0°C to 45°C
	Altitude	Non-operating	to 50,000 feet	
	Operating	to 15,000 feet		
POWER REQUIREMENTS	115 Volts AC or 230 Volts AC nominal (internally selectable)			
	Main voltage	104 to 126 Volts AC or 208 to 252 Volts AC		
	Line Frequency	48 Hz to 62 Hz		
MECHANICAL	Power consumption	35 W Max		
	Electronics- Remote Control	1 3/4" H x 19" W x 14" D 1 3/4" H x 5" W x 3 3/4" D		
PRODUCT ORDERING INFORMATION				
Product & Options	Product Description	List Price		
RG-341-01	NTSC model	\$1495.00		
RG-341-02	PAL model	\$1795.00		
RG-341R	Remote control	\$ 275.00		

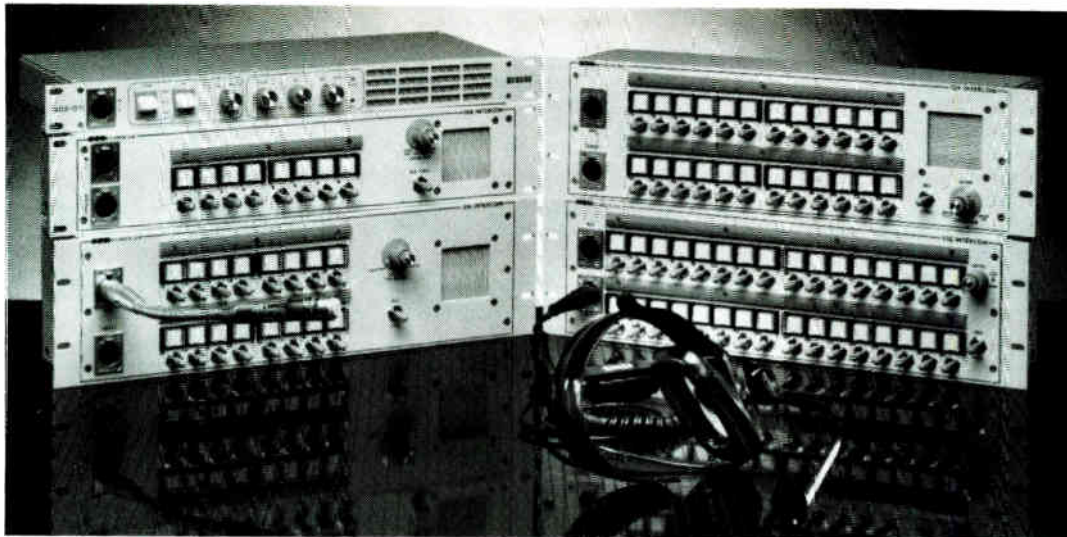


130 McCormick, Suite 109 • Costa Mesa, CA 92626 • (714) 957-1061

ROH CORPORATION

3603 Clearview Place NE
Atlanta, GA 30340
(404) 455-7940

INTERCOMMUNICATION MASTER STATIONS



302 308 316 324 332

SERIES 300 INTERCOMMUNICATION MASTER STATIONS

The full range of ROH Series 300 Intercom Stations provide a flexible and efficient intercommunication system capable of satisfying a broad range of news, production and technical operation requirements. Series 300 Master Stations are reliable and are suitable in both fixed and mobile environments.

Available in 1, 8, 16, 24 and 32 Channel versions, these Intercom stations can be configured to accommodate any combination of Intercom, Interphone, Party Line, IFB/PGM Interrupt, Page/Talk-back, 2-Way Radio, Telephone and All Call functions. When configuring these communication features into a single operator station, additional auxiliary control panels and associated accessories are unnecessary. ROH Intercom Stations can be supplied in either self-contained or remote panel versions.

Series 300 Intercom Systems include Models 308, 316, 324 and 332 and are designed for applications which require the coordination of Intercom, Party Line (PL), Program Interrupt (IFB), Page, Telephone, 2-Way Radio and All Call communication, utilizing a single Operator control panel in a Headset or Speaker/Mic mode. Each Operator panel is removable from its chassis and equipped with its respective number of dual purpose pushbutton switches, a corresponding number of toggle keys, speaker/headset selector and a master All Call toggle key.

Except for PL usage, all the functions are easily satisfied through the exclusive use of the toggle keys.

Operating controls have been kept to a minimum and communications with any number of Master Stations is a simple and straightforward procedure. Each Intercom station can originate and maintain two-way communications with any one or more stations. Both private and group communications can be conducted simultaneously without other stations interfering with one another. By depressing the momentary push-to-talk keys, individ-channels or functions (2-Way, IFB, etc.) may be addressed while alternate action switches select the listen status for the desired interphone channel(s). Concentric front panel controls adjust speaker volume and auxiliary program level. In addition, a rear panel control is provided for microphone gain.

- 332-02 32 Transmit and 20 Receive circuits, 5.25" x 19" rackmount. Requires RAN-001 or RAN-015 external speaker; and 75-pair interconnect cable. \$4700.00
- 332-01 Same as 332-02 except with 12 Receive circuits. 4460.00
- 324-02 24 Transmit and 20 Receive circuits with built-in speaker, 5.25" x 19" rackmount. Requires 50-pair interconnect cable. 4200.00

- 324-01 Same as 324-02 except with 12 Receive circuits. 3960.00
- 316-02 16 Transmit and 20 Receive circuits with built-in speaker, 3.50" x 19" rackmount. Requires 50-pair interconnect cable. 3700.00
- 316-01 Same as 316-02 except with 12 Receive circuits. 3460.00
- 308-01 8 Transmit and 12 Receive circuits with built-in speaker, 3.50" x 19" rackmount. Requires 25-pair interconnect cable. 2960.00
- 302-01 1 ICM and 2-channel PL (selectable) circuits with speaker and power supply, 115/230V, 50/60 cycle. 1.75" (H) x 19" rackmount. Includes 2 ea. PTT keys; ICM, PL and AUX volume controls; 4 ea. 3-pin XLR connectors for audio inputs/outputs; and 3-pin XLR gooseneck/mic connector. NOTE: 302-01 is self-contained only. 780.00

ACCESSORIES

- RAN-001 Unpowered full range speaker system in a walnut veneer enclosure. 30 Watts power capacity and 4 ohms input impedance. \$118.00
- RAN-015 Same as RAN-001 except housed in a protective transport case with handle and removable front/rear covers. 118.00
- RAN-002 Unpowered extended range speaker system. Constructed of 5/8" high density laminated wood, finished with walnut veneer. Includes two low frequency drivers, one HF Dome Tweeter and crossover. 60 Watts power capacity and 4 ohms input impedance. 178.00
- RAN-025 Same as RAN-002 except housed in a protective transport case with handle and removable front/rear covers. 188.00

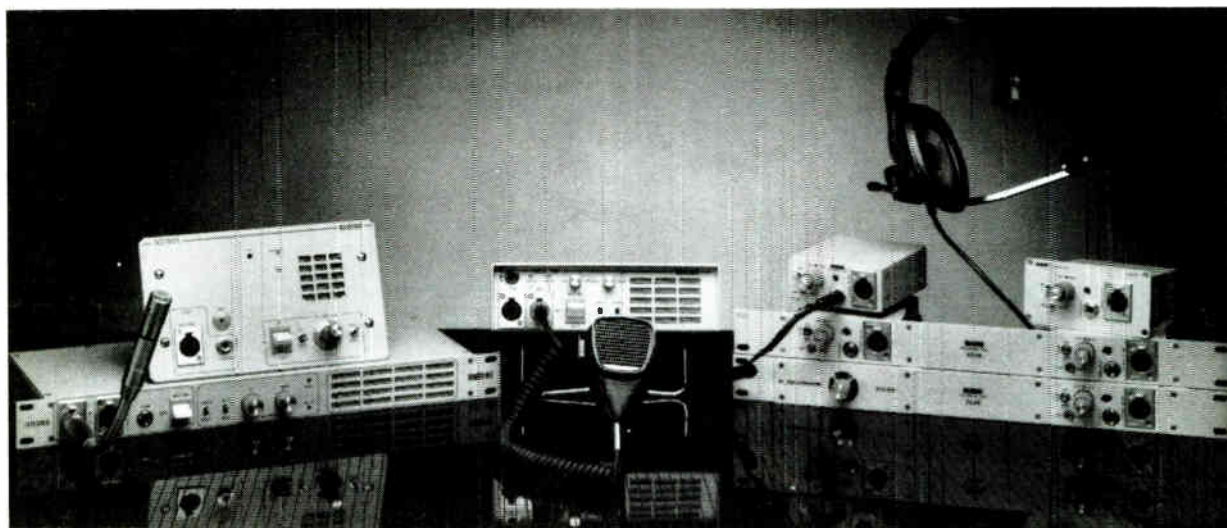
GOOSENECKS/MICS

- 565-7 7" gooseneck, connectorized \$ 40.00
- 565-14 14" gooseneck, connectorized. 45.00
- 565-20 20" gooseneck, connectorized. 50.00
- 558 Noise-cancelling mic with 12" goose-neck for hardmounting on PL stations so designated. 140.00
- 563 Noise-cancelling mic, connectorized. 100.00
- 563H Handheld push-to-talk mic with 6' coil cord and 3-pin XLR connector installed. 90.00

CABLE, TELEPHONE (Specify to nearest 5' Length)

- 25-Pair 351B-() Solid, with connectors installed. \$30 + .70 ft.
- 351S-() Same as 351B except standard. Upon Request
- 50-Pair 352B-() Solid, double-booted with connectors installed. \$60 + 1.00 ft.
- 352S-() Same as 352B except standard. Upon Request
- 75-Pair 353B-() Solid, triple-booted with connectors installed. \$90 + 1.30 ft.

3603 Clearview Place NE
Atlanta, GA 30340
(404) 455-7940



303WS 303RS 303TM 303B 303R2 303RD 303C

SERIES 303 PARTY LINE (PL) USER STATIONS

The full range of ROH Series 303 Party Line (PL) User Stations are designed to provide reliability and audio clarity to party line communications for industrial, entertainment, and broadcast requirements. Series 303 stations are available in both Headset and Speaker/Mic versions to include Belt Pack, Console, Rack, Portable Speaker, Rack Mount Speaker and Wall Mount Speaker. All stations can be used with either Dynamic or Carbon headsets.

PL/User Stations are supplied standard as high impedance bridging (10,000 ohms, typical) across a 150 ohm unbalanced line; configured standard with one channel PL and one channel PGM. Two channel PL, optional. Other standard electro-mechanical features include a 3-position MIC Key for MIC ON/OFF and PTT (momentary) use, associated volume controls and Carbon and Dynamic headset jacks.

ROH User Stations can be used to construct a comprehensive stand-alone mobile or fixed PL System or to complement any ROH Series 300 Intercom Master Stations to provide additional communications to floor personnel, cameras, and remote field units. Although intended for PL use, various Series 303 User Stations can also be interfaced with ROH Intercom Systems as private intercommunication positions when the multiple channel features of Master Stations are not required.

Series 303 Party Line units are interconnected via standard 2-conductor mic cable or single shielded pair through the use of 3 pin XLR type audio connectors. DC power and two channels of the interphone stations are combined at a central location by a plug-in PC card regulator which creates phantom powered or "WET" audio buses. In addition to being able to receive power from the wet audio bus, Model 303RS and TM are also offered with the optional Model 200PS, 115/230 VAC Power Supply. Stations equipped with the PS will power themselves for the AC line normally, and will revert to the wet bus power if no AC is present.

A maximum of 30 non-speaker user stations or 8 speaker user stations may be powered from one wet line. Two wet lines may be audio coupled together to further expand the number of user stations intercommunicating with one another. Speaker user stations may be externally powered in order to reduce the DC load on a wet bus. All Series 303 User Stations present a high impedance bridging load to the wet bus audio and multiple units have little or no effect to the audio level on the bus. All units incorporate fast attack and slow decay automatic gain control circuits on their microphone inputs which helps maintain the audio bus level at a near constant level.

ROH Party Line units receive power from Model 274 Power Regulator module, installed in any Series 200 Mainframes. Typical installations use an XLR Breakout Panel to provide multiple interphone line connectors or lines may be connected direct to the plug-in regulator. Line connectors may all be wired to the same party-line channels or routed through a Source Delegation or Assignment Panel. Series 303 units are directly compatible with RTS TW Series and Clearcom System II interphone user stations, and can be interchangeably plugged into these systems.

GENERAL SYSTEM SPECIFICATIONS

(Ref 0dBV = 0.775V RMS)

Audio Line Impedance: 150 ohms, ± 50 ohms, 75Hz-20kHz
Speech Level: -20dBV to 0dBV (-10dBV avg.)
Line Capacitance: 0.3 microfarads max. (typ. 10,000 ft of cable)

303B	Portable headset station	..... \$400.00/300.00
303C	Console mount headset station	..... 400.00
303TM	Portable speaker station, 2-channel (selectable) plus AUX, removable rear panel for (optional) Model 200PS plug-in power supply. Includes 3-pin XLR connectors for INPUT, LOOP THRU, AUX and MIC	..... 520.00
303R	Rack mount headset station, 1.75" x 19"	..... 460.00
303R2	Same as 303R except with two (2) headset stations	
303RD	Same as 303R except with 10-position PL channel select switch. Requires 25-pair cable and 300SP Splitter Panel for system interconnect	..... 700.00
303RS	Rack mount speaker station, 1.75" x 19", with 2-PL channels (selectable) plus AUX. Includes 14" gooseneck/noise-cancelling mic and removable rear panel for (optional) Model 200PS plug-in power supply	..... 620.00
303WS	Wall mount speaker station, 2-PL channels (selectable) plus AUX. Includes built-in electret mic and rear-mounted terminal strip	..... 540.00

ROSS VIDEO LIMITED

500 John St.
P.O. Box 220
Iroquois, Ontario, CN KOE 1K0
(613) 652-4886 Telex 05-811579

MULTI-LEVEL EFFECTS SYSTEM/ CHROMA KEY

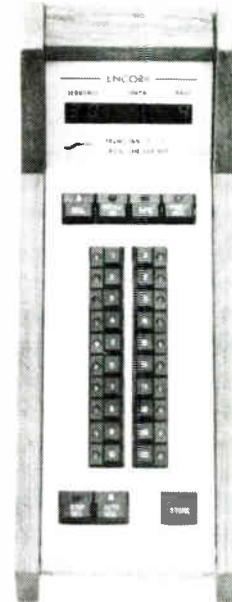
Encore Memory System

- Simple operation with one Multi-Level Effects system to store and recall the next scene as shown on the MLE preview monitor. The MLE program output is never disturbed.
- Set-ups are created on the switcher panel and stored or recalled from the Encore control module.
- Each of 5 memory pages stores 20 Multi-Level Effects set-ups (events) and one sequence of up to 32 events. Total storage is 100 set-ups and 5 sequences of 32 scenes each.
- RS422 serial port for editor interfacing.
- Built-in diagnostics for simplified trouble-shooting and verification of system operation.

The Ross Encore is a microprocessor based memory system that greatly enhances the capabilities of the switcher both in studio use and post-production.

Encore provides a simple-to-operate means of storing and recalling video production switcher set-ups. In the studio it improves accuracy and reduces the pressure on the switcher operator during fast-moving programs.

In the post-production suite, Encore can communicate with computerized videotape editing systems by means of a serial interface port. Now the most complex production effects can be created and instantly recalled, time after time, ensuring production consistency and effective use of costly editing time. When Encore is used with some brands of editors it is able to store switcher set-up information directly to the edit system's floppy disk.



Ultra Key

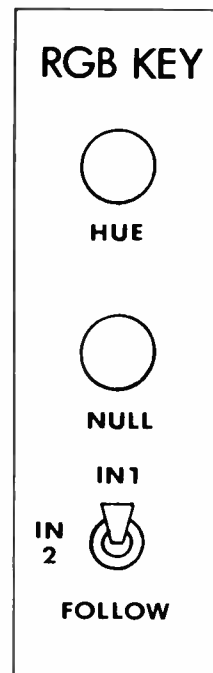
- Keying with ANY color
- Superior hue discrimination
- Production flexibility
- Ease of operation

The Ultra Key is a new approach to chroma keying that provides superb quality keys, free from the effects of background color "spill".

And now for the first time in the present generation of enhanced chroma keyers, there is continuous remote control of hue adjustment — you can key with ANY color. The Ultra Key is completely integrated into the Ross Multi-Level Effects system, meaning that you can use it like an ordinary chroma key unit WITHOUT the limitations and restrictions imposed by add-on units. You can change foreground or background sources separately or in combination with each other or with titles. And while other units limit you to one camera, the Ross Ultra Key permits the use of two or more chroma key cameras with selection right on the switcher control panel, including automatic key follow of the foreground bus video selection. An optional multi-camera selector is available. With Ultra Key there is no distortion of colors in the keyed scene. That means you can make transitions to and from chroma key situations without the distracting hue shifts on the keyed-in subject that occur on some chroma keyers.

A separate "travelling matte" output may be recorded for subsequent post-production to eliminate problems of encoded keying.

There are only two remote controlled adjustments — hue selection and null control. With the use of the null control, you can eliminate blue edging or blue tint, so common to conventional chroma keyers.



Continuous hue selection offers improved hue discrimination.

Null control is set to eliminate undesirable edge color effects from subject.

Two camera selector has follow position. An optional multi-camera selector is available.

SHINTRON COMPANY, INC.

144 Rogers Street
Cambridge, MA 02142
(617) 491-8700 Telex 921497

AMPLIFIERS

HI-REL SYSTEM SERIES

High Reliability Audio/Video Distribution Amplifiers and Audio-Follow-Video Routing Switchers.

Shintron Hi-Rel System Component Series for video production professionals is an expanding line of signal distribution amplifiers and audio-follow-video routing switchers commonly required in video production systems.

The Hi-Rel Series pursues "reliability" single-mindedly. The products go through a series of long aging and quality control procedures before shipment. In addition to the thorough attention to reliability, the basic design philosophy is conservative in all aspects.

For example, all audio distribution amplifiers listed in this series are equipped with both input and output transformer isolation. Some manufacturers think this practice is superfluous. We think it adds an extra margin of safety making the products supremely reliable.

AUDIO DISTRIBUTION AMPLIFIERS (Transformer Coupled)



MODEL 201

Model 201 Audio Distribution Amplifier (Terminal Block)

The Model 201 is the terminal block type connector version of the extremely popular Model 316 as described below. The specifications are identical to Model 316 except 201 is equipped with terminal block connectors on the rear panel instead of XLR connectors.

\$450.00



MODEL 316

Model 316 Audio Distribution Amplifier

The Model 316 is an audio distribution amplifier with one input and six outputs. The Model features transformer isolation both at input and output. This conservative design approach makes this product popular among professionals.

\$480.00

VIDEO DISTRIBUTION AMPLIFIERS



MODEL 336

Model 336 Video Distribution Amplifier

Shintron Model 336 Video Distribution Amplifier is a professional grade, all-silicon solid-state video distribution amplifier for multiple fan-out, high grade distribution systems. Model 336 features professional electronics specifications, a compact 19" rack-mount package, and modern appearance.

\$300.00



MODEL 337

Model 337 Dual Video Distribution Amplifier

The Model 337 Dual VDA packs two Model 336's in one rack enclosure for compactness. The Model 337 can be used as either 1 in 12 out DA's or 2 in 6 out DA's in one enclosure.

\$480.00

The electrical performance is identical to Model 336 as above.



MODEL 338



MODEL 338-P

Model 338 Pulse Distribution Amplifier

The Model 338 is a regenerative PDA suitable for Broadcast Cable and other high reliability environment. The 338 contains two identical Pulse DAs of one input/six outputs.

\$480.00

BUILDING THEM BETTER IN TEXAS

Low cost. Fast delivery. Superb quality. Smart reasons to select Shook mobile television production systems. But the real advantage is not how little you'll spend for Shook's totally custom designed vehicles—it's the additional revenues you'll earn by delivering those profitable remote productions.



Cost effective? With Shook's low prices and solid reputation for quality and reliability, you couldn't ask for a better return on your investment!

Providing quality built mobiles throughout the industry at the right price. We give you what you want and how you want it.

Vehicles of all sizes custom designed and manufactured. Ready for equipment or turn-key jobs. Call or write today. We'll put you on the road to success.

Shook Electronic Enterprises

6630 Topper Parkway San Antonio, Texas 78233

Phone (512) 653-6761

SIGMA ELECTRONICS, INC.

1830 State St.
E. Petersburg, PA 71520
(717) 569-2681

SYNC AND DISTRIBUTION EQUIPMENT

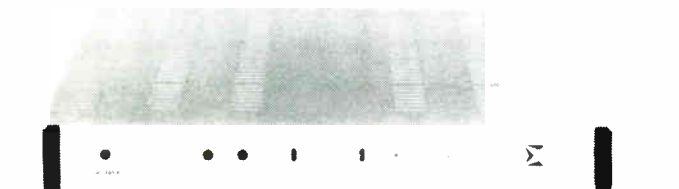
PROCESSING EQUIPMENT



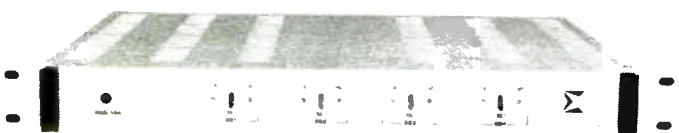
CSG-350A



CSG-355A



CSG-365A



BBG-144



VPA-380



ADA-110



ADA-210



FR-3-100

VS6-100 PASSIVE VIDEO SWITCHER

For switching six video inputs to one input. Desk or rack mount.

\$115.00

FR-3-100 RACK FRAME

For all of the above items; occupies 1.75 vertical inches of standard rack.

\$70.00

BP3-100 BLACK PANEL

For unused spaces in the rack frame.

\$16.00

CSG-160 COLOR SYNC GENERATOR

\$800.00

Provides all the standard synchronizing outputs including Blackburst. RS-170 standard. Desk or rack mount.

CSG-350A MASTER SYNC GENERATOR

\$1200.00

Provides all the standard drives, plus Blackburst and a color field ID pulse. Features include: RS-170A timing; SC/H locked; adj. blanking widths; freq. stability 1 P.P.M.

CSG-355A MASTER SYNC GENERATOR

\$1550.00

Same as CSG-350A, also includes: SMPTE Color Bar Signal plus an audio tone. The ideal generator for any studio large or small.

CSG-360A COLOR SYNC GENERATOR

\$1450.00

With Genlock. Source select allows lock to Helical VTR. RS-170A in crystal mode, SC/H locked.

CSG-365A COLOR SYNC GENERATOR

\$1850.00

With Genlock and color bars. RS-170A in crystal mode, SC/H locked.

BBG-144 SYSTEM TIMING MODULE

\$1650.00

Provides 4 independently adjustable Blackburst outputs with advance, as well as delay, $\pm 3 \mu$ sec. adjustment of Horizontal time, 360° subcarrier adjustment.

VPA-380 VIDEO PROCESSING AMPLIFIER

\$1750.00

Built-in genlocking sync generator, adjustable blanking width controls to allow saving the various vertical test and identification signals; and a dual-mode genlock circuit to allow acceptance of either stable or VTR signals.

AUDIO DISTRIBUTION AMPLIFIERS

ADA-110 AUDIO DISTRIBUTION AMPLIFIERS

\$405.00

High performance Audio D.A. One input and ten outputs; low noise, flat response, adjustable gain -8 to +23.5 dB. Can be used for SMPTE CODE.

ADA-210 AUDIO DISTRIBUTION AMPLIFIERS

\$610.00

Same high performance DA as the 110 except dual configuration. Can be either dual 1 X 10 or a single 1 X 20. Ideal for SMPTE CODE.

SELF-CONTAINED SYNC AND DISTRIBUTION EQUIPMENT

VDA-115 VIDEO EQUALIZING AMPLIFIER

\$360.00

The VDA-115 is an extremely versatile unit. In its most simple configuration, it is a 1 x 6 Video D.A. More importantly, it is a cable equalizing amplifier that can serve as a "line-driver" or "line-receiver" to compensate for up to 1100 feet of coaxial cable. It features a differential input that can eliminate as much as 10 volts of A.C. hum.

VDA-100A VIDEO DISTRIBUTION AMPLIFIER

\$310.00

6 output D.A. Freq. response 0.2 dB to 10 MHz, looping input, d.c. coupled, ± 6 dB gain adjust. 110/220 VAC Desk or rack mount.

ADA-106 AUDIO DISTRIBUTION AMPLIFIER

\$310.00

1 x 6, high performance amplifier, with a frequency response of ± 0.1 dB to 30 kHz, can be used for SMPTE Code. Screw capturing terminals. 110/220 VAC. Desk or rack mount.

PDA-100A PULSE DISTRIBUTION AMPLIFIER

\$310.00

1 X 6 Pulse regenerative D.A. with looping input. 110/220 VAC. Desk or rack mount.

SDA-110 SUBCARRIER DISTRIBUTION AMPLIFIER

\$390.00

Regenerative subcarrier amplifier, 2 independently adjustable outputs. 110/220 VAC. Desk or rack mount.

PDA-110 PULSE DELAY AMPLIFIER

\$415.00

Ideal aid in system timing. Four independently delayable outputs, range of 0.2 to 2μ sec. 110/220 VAC. Desk or rack mount.

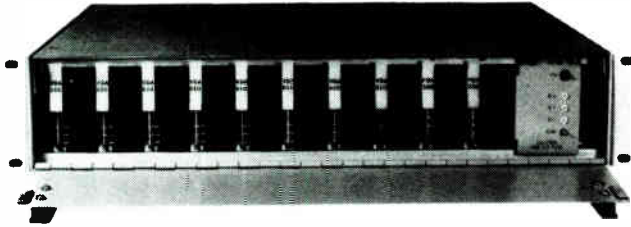
SIGMA ELECTRONICS, INC.

1830 State St.
E. Petersburg, PA 71520
(717) 569-2681

DISTRIBUTION EQUIPMENT/ SWITCHERS



SYSTEM 500

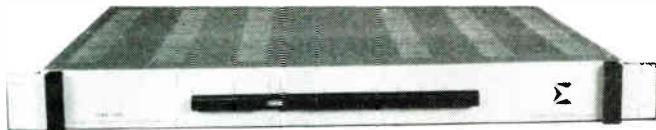


SYSTEM 500 MODULAR DISTRIBUTION SYSTEM

- 10 Modules Per Frame with Plug-In Power Supply; 11 Modules Per Frame with External Supply
- Redundant Power Supply Configurations Available
- Different Types of Modules may be Mixed in Frame

Each FR-500 frame will hold up to ten plug-in modules plus a plug-in power supply, or eleven plug-in modules with external power supply. The exclusive Sigma Interface Adaptor System allows the mixing of Audio, Video, Pulse, and Subcarrier Distribution Amplifiers and other System 500 modules in the same frame.

FR-500	Holds 10 modules and PS-501 or 11 modules without power supply	\$400.00
PS-501A	Power Supply — Powers one FR-500 frame 90-130/180-260 VAC, 50/60Hz	150.00
EX-505	Extender Card	30.00
VDA-510	Video Distribution Amplifier, one-in, six-out — Differential Gain less than .1%; Differential Phase less than .2°; Return Loss less than 40dB to 5MHz	240.00
ADA-526	Audio Distribution Amplifier, one-in, six-out — THD less than .1%; Drives 600 ohm balanced lines to +22dBm	280.00
PDA-530	Regenerative Pulse Distribution Amplifier, one-in, six-out; less than 100 nsec delay; controlled rise and fall times	240.00
PDA-535	Dual Pulse Delay Amplifier, Two independent amplifiers each with two adjustable delayed outputs — 0.20 μ sec to 2.0 μ sec controlled rise and fall times	360.00
SDA-540	Subcarrier Distribution Amplifier, one-in, three-out; each output individually phase adjustable over 360° range	320.00
BBG-550	Adjustable SC & H Phase Blackburst Module	375.00
VDA-515	Video Equalizing D.A. for up to 1100 ft. of cable	280.00



VSS-120/VAS-120 SWITCHERS

- Can be used for Tally or Time Code
- Highly Visible Green Legend
- High Isolation
- Balanced or Unbalanced Audio Operation

The VSS-120 12 x 1 Passive Switcher offers simple and clean selection of any of 12 video and stereo or 2nd channel audio inputs to a single output, while terminating unselected inputs in their characteristic impedances. 2nd channel can also be used for tally indicators. The VAS-120 is basically the same unit, providing only one channel of audio. Easy input and output connections with BNC type video connections and screw-capturing terminal strip for audio.

VSS-120	Video/Stereo Audio Switcher	\$250.00
VAS-120	Video/Audio Switcher	225.00



VSD-200/VAD-200 VIDEO DISTRIBUTION AMPLIFIERS

- Balanced or Unbalanced Audio In and Out
- Separate Channel Gain Controls
- Easy Installation
- Dependable and Proven Circuits

The Video Stereo-Audio D.A. Model VSD-200, provides one 1 x 6 video channel and two 1 x 6 audio channels in one simple package. Both audio and video amplifiers provide flat frequency responses, making them suitable for any studio or duplication environment. The Model VAD-200 is the same device, with only one audio channel. With on-board regulators on each of 3 separate circuit boards, this unit provides the isolation of independent devices, in the space of the single unit. The "screw-capturing" audio terminal strips make for easy installation. The audio channels can be used for audio or time code signals.

VSD-200	(Stereo) Distribution Amplifier	\$900.00
VAD-200	(Audio) Distribution Amplifier	650.00

Prices and Specifications Subject to Change Without Notice.

VT-163



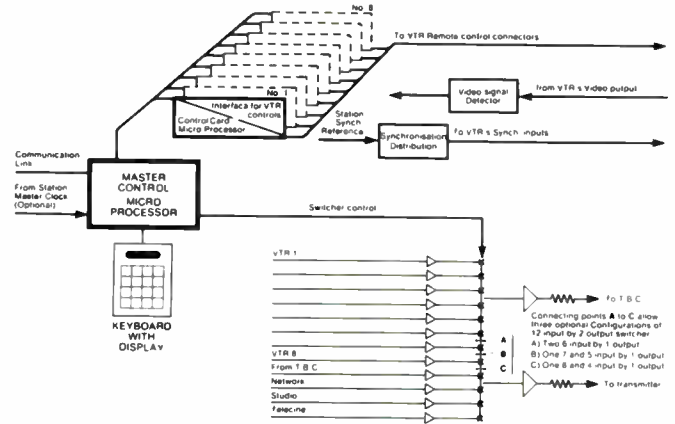
AUTOMATED BROADCASTING SYSTEM

H.A. Solutec Ltd
 4360 Iberville Street
 Montreal, Quebec, Canada H2H 2L8
 (514) 524-6893 Telex 055-62139



SOL-6800

- Controls up to eight VTRs with an integrated 12 input audio and video switcher
- Stereo audio optional
- Video component switcher optional (2 or 3 levels)
- Spare parts kit optional
- 250 real time or sequential events
- Programmable emergency and fill in inputs for automatic recovery
- VTR recording software option (for delayed telecast)
- Events logging software option
- RS422 or 232 communication link optional
- DTMF decoder optional



SOL-6800/MINI



- Controls up to four VTRs with an integrated 6 input audio video switcher
- All options available

SOL-6800/MICRO



- Controls one VTR with integrated 4 input stereo audio and video switcher
- Integrated DTMF decoder
- Can drive a printer
- Can be driven or programmed externally
- Can become a remote switcher
- Offers manual switching
- Memory battery back up
- Automatic bypass
- 6809 micro processor: offers two serial communication ports configurable as RS422, RS232, FSK Demodulator (modem)
- Networkable system; configurable up to 32KB EPROM, 24KB RAM

SOL-6800 COMPONENT SWITCHER



GSS-04 CUE TONE GENERATOR



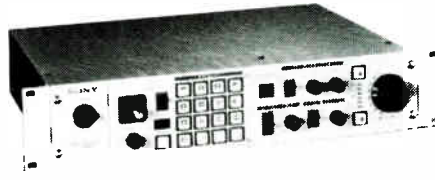
- 2 frequencies available
- F1 start and end of message
- F2 pause (recue or skip)

AD.ID/Q GENERATOR FOR MESSAGE RECOGNITION

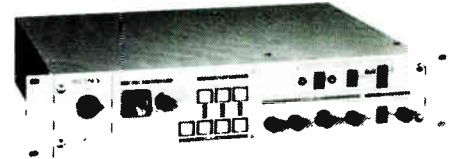
- Records on audio channel:
- 6 digit number
 - Duration (MM:SS) min, sec
 - 20 digit alpha information
 - Cue code



SEG-2000A



WEX-2000



CRK-2000

DIRECTOR 2000 SWITCHER SYSTEM

The Director 2000 Switcher System is made up of three beautifully matched, professional quality components that, as a trio, provide an incredibly diverse range of production possibilities coupled with outstanding control and broad flexibility. The impressive capabilities of the SEG-2000A, the central system component, are enhanced and extended through interaction with the WEX-2000 Wipe Pattern Extender and the CRK-2000 Chroma Keyer and create a system that is capable of very sophisticated and artistic special effects.

The SEG-2000A, by virtue of its ability to operate on either AC or DC power can be used for both studio and field production. The unit mounts in standard 19" racks for optimum studio convenience, yet is light enough at 21 lbs to be eminently portable at the same time. It is equipped with connections for up to six color cameras, one playback VTR, a camera for an external keyer and one camera for downstream keying using the built-in downstream keyer. A full complement of professional controls provide professional results with cut, mix, external key, downstream key and wipe functions. Output connections are extensive with three program outputs, two preset outputs, seven video outputs, four black burst outputs, a V drive output and four tally intercom connectors.

The WEX-2000 extends the wipe pattern selection of the SEG-2000A to 84 different patterns and provides easy-to-use keyboard actuation of the desired pattern with memorization of up to 3 patterns for enhanced convenience. There are auto wipe, servo wipe and trim wipe functions with variable wipe speeds.

The CRK-2000 has dual inputs for composite video signals as well as a separate RGB input. Another unique feature is the natural chroma key facility which creates natural shadow and softness on the compound key camera's picture. It also has a built-in effect amplifier, a background color generator and a sync generator which coupled with its external key input and SC/H phase indicator allow it to be used not only as a chroma keyer but also as a switcher. In operation with the SEG-2000A and WEX-2000, this unit enables the user to create a diverse range of artistic and creative special effects.

System Price \$9900.00

SPECIFICATIONS

SEG-2000A

• Color System: NTSC color • Switching System: Vertical blanking switcher • Effects: MIX: Dissolve by special effects control lever and PGM/PST mix lever. WIPE: 6 selectable wipe patterns, continuously variable wipe edge softness, border line with continuously variable hue, chroma, luminance, width and amplitude. EXT KEY: 0.7V p-p (VB) or 1.0 p-p (VBS) input signal, 75 ohms unbalanced, BNC connector. DOWNSTREAM KEYER: Gen-lock with PGM bus line signal, 6 pin B & W camera connector. Output Signal: Horizontal Drive, Vertical Drive, VD 4V p-p, 75 ohms, unbalanced. Input Signal: Video 0.7V p-p, 75 ohms, unbalanced. Shadow: Wide and Narrow,

Selectable. BACKGROUND COLOR: Chroma: 0-650mV p-p (variable according to the hue level). Hue: 0° to 360°. Luminance (Y): 0-450mV continuously variable **\$4990.00**

Optional Accessories

• Sony CVM and PVM Series Color Video Monitors • Sony DXC Series Color Video Cameras • Sony B & W Series Black and White Video Cameras • Sony CCDD, CCF Connecting Cables • BP-60 Rechargeable Battery Pack • LC-2003 Carrying Case for Camera Control Unit and Monitor • LC-2006 SEG 2000A Carrying Case • BC-20 Battery Charger

WEX-2000

• Color System: NTSC color • Genlock Input: Sync 0.3V p-p, Burst 0.3V p-p • Wipe patterns: 84 kinds • Wipe outputs: OUT 1: 6 pin for SEG-2000A (via CCF-5 cable). OUT 2: BNC connector for SEG-2000A or CRK-2000, 1.0V p-p, 75 ohms • Wipe speed: Approximately 0.5 to 9 seconds • Pairing wipe: Every other line • Pattern modulation: Wave length and frequency are continuously variable • Power requirements: 120V AC, 50/60 Hz; 11-15V DC, external DC • Power consumption: 19 W AC, 14 W DC • Operating temperature: 32°F to 140°F (0°C to 40°C) • Dimensions: 3-1/2"H x 19"W x 11-7/8"D (88 x 482 x 300 mm) • Weight: 15 lbs. 7 oz. (7 kg) **\$2500.00**

Supplied Accessory

• AC power cord

Optional Accessory

• CCF-5 interface cable with the SEG-2000A

CRK-2000

• Color system: NTSC color • Video inputs: VBS 1.0V p-p, 75 ohms • RGB inputs: 1.0V p-p, 75 ohms • External key: VIDEO INPUT: 1.0V p-p or 0.7V p-p, 75 ohms. HD/VD OUTPUT: 3.8V p-p • Gen lock input: Sync 0.3V p-p, Burst 0.3V p-p • Video outputs: VBS 1.0V p-p, 75 ohms • Video output channel crosstalk: Better than 40 dB • Video output DP: 1.5° • Video output DG: 1.5% • Video output frequency response: 5MHz +/-1 dB • Chroma key outputs: VBS 1.0V p-p • Chroma key output crosstalk: 32dB (fsc) • Chroma key output DP: 2.5° • Chroma key output DG: 2.5% • Chroma key output frequency response: 5MHz +/-1 dB • Black burst outputs: Sync 0.3V p-p, Burst 0.3V p-p • Keying bandwidth: RGB mode more than 2.0MHz, Line mode more than 0.8MHz • Power requirements: 120V AC, 50/60 Hz • Power consumption: 29 W • Operating temperature: 32°F to 140°F (0°C to 40°C) • Dimensions: 3-1/2"H x 19"W x 11-7/8"D (88 x 482 x 300 mm) • Weight: 15 lbs. 7 oz. (7 kg)

Supplied Accessories

• AC power cord • Chroma key cloth (Blue) • Instruction tape (U-matic® format) **\$2550.00**



244

244 Portastudio® Portable Recorder/Mixer

The Tascam 244 Portastudio improves upon the original 144, the world's first portable 4x2 mixer with a built-in 4-track sync cassette recorder. Portastudio combines top sound quality with flexibility and ease of operation, making it possible for the performing artist to sing and play multiple parts by recording in sync on successive "passes", and to transfer tracks ("ping-pong") for building more complex recordings. With its 4 input mic/line mixer, parametric EQ, and headphone cue capability, the 244 is also being used for AV production and occasional sound reinforcement.

- 4-track Simul-Sync cassette recorder operates at 3¾ ips (variable) with built in dbx noise reduction
- Simultaneous 4-channel recording capability for copying
- Accessory patch points on each input for use with compressor/limiters, graphic EQ, or special effects
- Punch in/out footswitch jack for "third hand" convenience
- "Mic/Line-Tape" selector switches have "Off" position to mute unused inputs without pulling down faders
- 18-1/2"W x 4-3/4"H x 14-5/8"D. Wt. 20 lbs. **\$1300.00**

RECORDER SECTION

- 4 channel Record/Reproduce
- 2 channel Simul-Sync record/4 track playback for multichannel recording
- Pitch control enables precise tuning of special effects
- Punch-in recording
- Built-in full time dbx* noise reduction system
- High speed, 3¾ ips (9.5 cm/sec) for wider dynamic range
- Digital Tape Counter and Zero Return function
- 4 track tape output

MIXER SECTION

- 4 Mic/Line or Tape Inputs
- 2 band, 4 knob sweep EQ
- Simul-Sync monitoring with separate stereo cue mix system for complete overdub flexibility
- Stereo AUX MIX SEND for echo recording using an external echo unit
- Acc. SEND/RECEIVE on each input
- Stereo AUX RECEIVE for effects or extra bus inputs

RECOMMENDED ACCESSORIES

- FC-144 Flight Case
- RC-30P Punch-in Foot Control

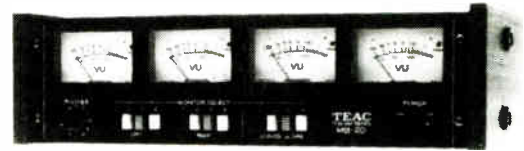
Shown with MB-20 and optional sideboards

M-2A Active 6-In/4-Out Mixer for Recording, P.A., Disco

- Model 2A—the right balance between multi-channel recording flexibility and low cost
- Six inputs drive four separate outputs
- Each input has switchable mic/line and mic attenuation to reduce overload distortion
- Bass and treble controls (+/- 12 dB at 100 Hz and 10 kHz)
- Color-coded channel assign buttons
- Pan for stereo balance
- Slide fader level control
- Master fader for overall level control
- Lots of mixdown flexibility with the Model 2A's patch points
- 13-7/16"W x 3-17/32"H x 14-9/16"D. WT. 13.2 lbs. **\$495.00**

MB-20 Meter Bridge

- A Natural Sale with Each Model 2A
- Excellent for P.A., Audiophile or Studio Applications
- 4 VU Meters each with fast acting Peak LED's
- Built-in 4 x 2 Monitor Mixer and 1 watt Headphone Amp
- Selectable Meter Sensitivity Control (4, -2, -10 and -20 dB)
- 13-3/8"W x 3-3/4"H x 6-11/16"D. Wt. 4.25 lbs. **\$250.00**



MB-20



M-2A



PORTA ONE

SB-2A Console Cradle for Models 2A and MB-20

- 38"W x 10-3/8"H x 17-3/8"D Wt. 2-15/16 lbs.

\$40.00

Ministudio Porta One Mixer/Recorder

The Ministudio is a portable, battery-operated 4 channel audio mixer/recorder designed for field work and convenient operation. Each input channel of the built-in mixer can accept a microphone, musical instrument, line level source or playback from the built-in recorder. Each channel contains controls for TRIM, EQ HIGH, EQ LOW, PAN, and a fader, as well as a Record Function matrix used to assign each input to any of the four tracks for recording, or all four inputs to any one track. Tape transport runs at 1-7/8 ips using standard track spacing, and switchable dbx noise reduction*. The recorder section is FG servo controlled with variable PITCH CONTROL, and a counter with ZERO RETURN for faster cueing. The monitor system includes cue capability. Four VU meters provide visual monitoring of any recorded or reproduced signals. Up to 10 different parts can be recorded without going beyond a second generation. A jack for an electronic remote punch-in/out (the optional RC-30P footswitch) permits you to start and stop recording with your hands free. **\$595.00**

RECOMMENDED ACCESSORIES

- AC Adaptor, PS-P1
- Soft Carrying Bag, CS-P1
- Flight Case, CS-P1H
- Auto Battery Adaptor

*dbx is a trademark of dbx, Inc.

300 Series Recording/Sound Reinforcement Mixers

Eight, twelve or twenty input channels with the following features on each channel:

- MIC or LINE selectable inputs
- Separate MIC and LINE TRIM controls
- 3 band sweep-type parametric EQ
- EQ bypass switch
- 2 assignable AUX send controls
- EFFECTS send control
- DIRECT OUT jack
- INSERTION jack
- MUTE and channel "On" indicator, overload LED
- PFL
- PGM and STEREO BUS assign matrix and PAN control

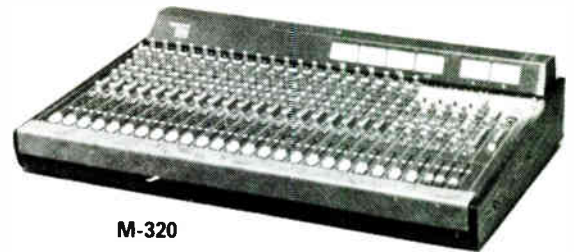
Other Features of the 300 Series:

- 4 PGM BUS MASTER SECTIONS with AFL
- STEREO and MONO MASTER SECTIONS
- 8 assignable TAPE RETURN MONITOR sections with LEVEL and PAN
- 2 EFFECTS RETURN master sections
- Multiple MONITOR selection with stereo outputs and headphone jack
- +4dBm balanced and unbalanced outputs on PGM, STEREO and MONO busses
- 6 selectable VU meters with LED peak indicators

Features of the M-312 and M-320 only:

- 2 additional AUX sends in TAPE MONITORS
- Built-in TALKBACK MIC and signal routing switch array

M-308	\$1649.00
M-312	2595.00
M-320	3495.00



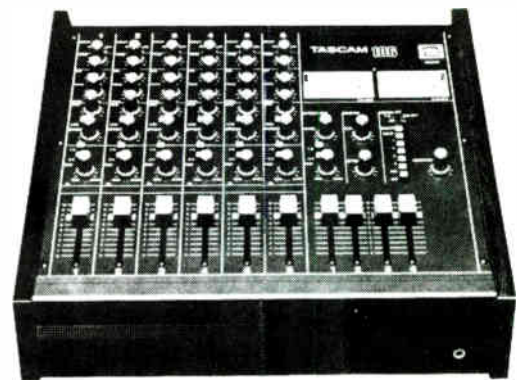
M-320



M-312



M-308



M-106

M-106 6-In/4-Out Mixing Console

M-106 is equipped with a flexible combination of functions so it can be used in a wide range of applications, from small studio recording, to mixing in PA and disco systems and mixing audio productions.

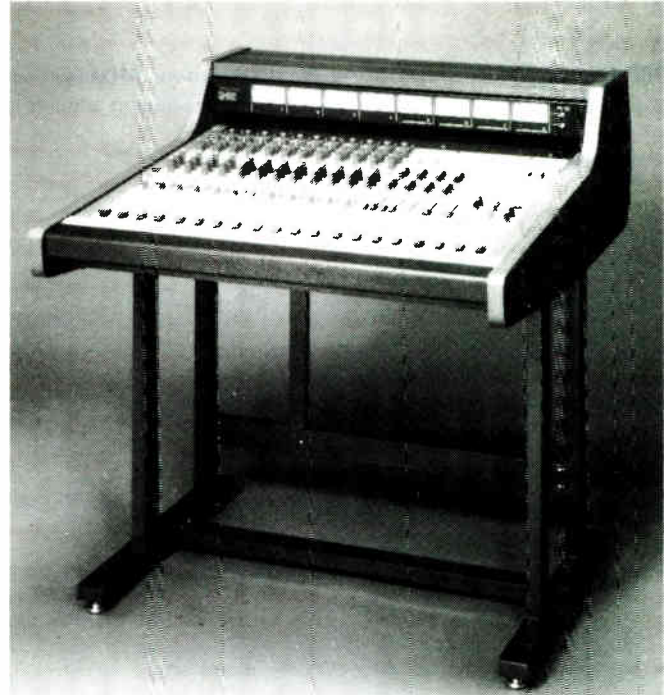
- 6 input channels with selectable inputs, provide; 6 MIC IN; 6 LINE IN; 4 RIAA PHONO IN
- 4 PGM busses
- AUX bus with master level control
- EFFECT bus with master level control
- Each input channel provides: Input selector (CH 1 and 2; MIC-ATT-LINE, CH 3 to 6; MIC-ATT/PHONO-LINE), Trim control, Low (100Hz) and high (10kHz) EQ (12dB boost/cut), Direct out, insertion, Post/Line select switch for AUX bus, AUX send level control, EFFECT send level control, PGM assign/pan, input fader, Overload indicator
- PGM insertions
- PGM master faders
- EFFECT RETURN with level control and PGM bus assign/pan
- Monitor outputs (L, R) with monitor select matrix, mono switch and monitor level control
- Headphone jack (1.5W + 1.5W)
- 2 VU meters with peak indicators
- Meter select switch (PGM 1-2, PGM 3-4, Aux/Effect)
- PGM sub in/EFFECT sub in/AUX sub in
- 2 fader-link knobs supplied
- Optional portable case CS-106
- Optional EIA 19" rack mount angle RM-106
- Frequency Response: 20Hz — 30kHz, +1dB, -1.5dB
- Dimensions: 395W x 135H x 395D (mm)
- Weight: 7.0kg (net)

M-106	\$595.00
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M-500 SERIES MIXING CONSOLES

The M-500 Series are sophisticated audio mixing consoles designed for professional production applications. The M-520 (20-in/8-bus) is intended primarily for 16-track studios, while the M-512 (12-in/8-bus) is ideal for 8-track installations.

- 20-input channels on the M-520, 12-input channels on the M-512, each with selectable inputs, provide:
 - 20 (M-520), 12 (M-512) balanced XLR microphone inputs with individually switchable phantom power.
 - 2 pair of instrument inputs (1/4" phone and RCA pin).
 - 2 RIAA phono inputs (RCA pin).
 - 16 (M-520), 8 (M-512) line inputs (RCA pin).
 - 16 (M-520), 8 (M-512) multi-track tape returns (RCA pin).
 - 2 pair of stereo tape returns (RCA pin).
- 8 main program busses with bus master controls
- 4 independent auxiliary busses
- 16 (M-520), 8 (M-512) groups of stereo monitor mix controls
- 8 balanced amplifiers (input; RCA pin/22K ohms, output; XLR/600 ohms)
- Access Send/Receive on each input channel and program bus
- 3-band parametric EQ on each input channel
- Mute switch on each input channel
- Direct Out on each input channel
- Built-in talkback mic plus slate tone/test oscillator
- Stereo SOLO
- PFL (Pre Fader Listen)
- 12 (M-520), 8 (M-512) VU meters with LED peak indicators
- 100mm input and bus master faders (compatible with PG-3000)
- Bipolar 15 volt power supply
- Optional pedestal (CS-520 for M-520, CS-512 for M-512)
- Optional top/side board (CS-521 for M-520, CS-513 for M-512)



MODEL M-512

M-520/512 SPECIFICATIONS

Crosstalk: Better than 70dB (1kHz)
Better than 60dB (15kHz)

Total Harmonic Distortion

1 line to 1 PGM out: 0.02% (1kHz, nominal level)
1 mic to 1 PGM out: 0.025% (1kHz, 50dB above nominal level, MIC ATT 30dB on)

Fader Attenuation: 80dB or more
Overload Indicator: 25dB above nominal level
Meter Peak Indicator: 10dB above nominal level

Dimensions:
M-520: 1082W x 240H x 798D mm
M-512: 802W x 240H x 798D mm

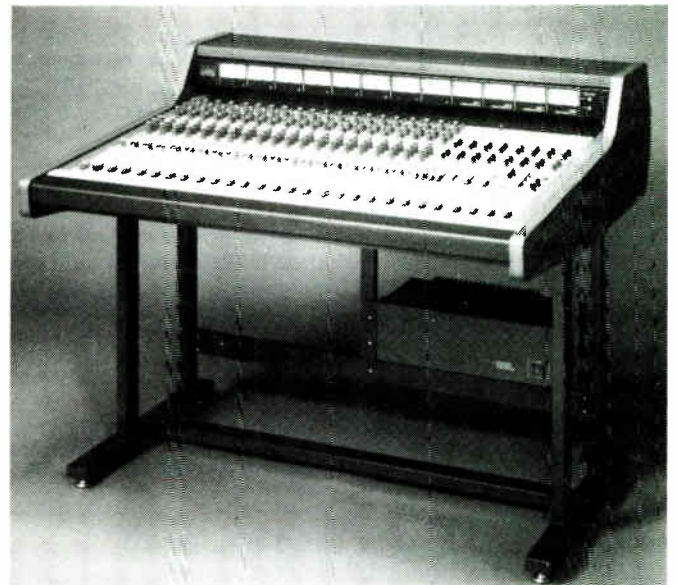
Weight:
M-520: 47kg
M-512: 38kg

Frequency Response: Line in to —
PGM out: 20-20kHz, ± 1dB
Aux out: 20-20kHz, ± 1dB
Mon out: 20-20kHz, ± 1dB

Equalizer
Type: Sweep
Level: Boost/Cut ± 15dB
Frequency (low): 50Hz to 500Hz
(mid): 100Hz to 5kHz
(high): 2.5kHz to 15kHz

Oscillator Frequencies: 40Hz, 1kHz, 10kHz switchable
S/N Ratio: (nominal input level, EQ out, UNWTD/"A" WTD)

1 line to 1 PGM out: 85dB, 87dB
1 mic to 1 PGM out: 68dB, 70dB
1 tape to 1 PGM out: 86dB, 70dB

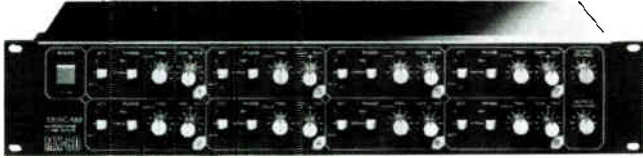


MODEL M-520

M-512 \$3995.00
M-520 5495.00
Accessories for 512/520 POR

RACKMOUNT SERIES

The TASCAM Rack Mount Series signal processing and auxiliary equipment augments a number of sound systems. By using top quality circuit components, TASCAM engineers have made the Rack Mount Series a cost-effective approach toward the expansion of your capabilities with signal processing/routing technology.



MX-80, 8 x 2 Mic/Line Mixer

The MX-80 offers top performance in a more versatile mixer. When other mixers are too large, too small, or lacking in necessary features, the MX-80 is ideal. It can be used for sound reinforcement as well as recording.

- Using the mic-level outputs, the MX-80 is perfect as a "spot mixer" for increasing the capacity of a snake.
- Transformerless, its electronically balanced differential inputs provide immunity from hum and noise without the high-level saturation.
- Pad and gain trim enable line-level inputs to be fed directly into microphone XLR input connectors.
- Accepts most 150 to 600 ohm low impedance mics; wired to supply external phantom power.
- Phase switch and mute/input attenuator switch.
- Pre-level control jacks allow effects or signal processing equipment to be patched into each input; double as unbalanced line inputs.
- Eight pan spots for assignment to the stereo mixing buss, and two independently adjustable stereo outputs: a balanced, 600-ohm, -40dBm nominal output for driving mic level inputs, and an unbalanced, 200-ohm source switchable to a medium line level of -10dBV or high line level of 0dBu for driving power amps directly.
- MX-80's can be cascaded together for increased input capability.

MX-80 \$650.00



LA-40 Line Amplifier/Impedance Converter

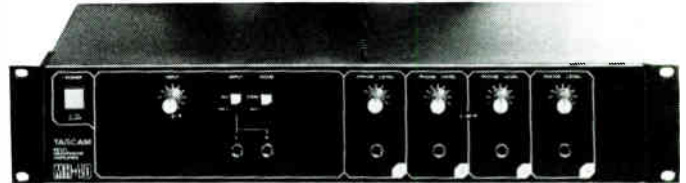
The TASCAM LA-40 is the perfect 1-track space solution to the problem of mismatched line levels or impedances. The LA-40 is a compact 4-channel unit that permits interconnection between +4dBm, -20dBm and -10dBV inputs and outputs. It also matches balanced and unbalanced circuits.

When you have an LA-40, you'll never have to concern yourself with compatibility. Your system will be able to drive or be driven by any line level equipment. It's an invaluable tool, a time saver, and a security blanket — a necessity for every studio, radio and TV production/broadcast facility and sound reinforcement system.

- Each of the LA-40's channels is really two circuits back-to-back. One channel can convert a +4dBm or -20dBm output to drive a -10dBV input, and it can simultaneously convert a -10dBV output to drive a +4dBm or -20dBm input.
- By plugging a jumper across the RCA in and out jacks, both halves of a channel can be used together permitting the LA-40 to match a -20dBm balanced or unbalanced input to a +4dBm balanced output, or vice-versa.
- Can be used where no level conversion is required, but instead for buffering (isolating) a line or for converting from unbalanced to balanced operation when both the output and input are at the same +4 or -20dBm nominal level.

- Instant compatibility between TASCAM or similar -10dBV unbalanced inputs and outputs and almost all other equipment: compatible levels, compatible impedances, and balanced/unbalanced operation.
- Utilizing three of the most popular types of connectors (XLR, phono, phone) the LA-40 also avoids the need for costly adaptor cables.
- All connections are on the rear panel for neat, orderly installation, except the phone jacks, which are intentionally placed on the front panel where they can be used in conjunction with a standard TRS jack patch bay.

LA-40 \$360.00



MH-40B Multi-Headphone Amplifier

The MH-40B accepts a low or high line level mono or stereo input and feeds it to four adjustable headphone outputs. By using one or more monitor outputs, or the stereo outputs from a TASCAM M1 or MX-80 mixer, the MH-40B provides increased monitoring capacity.

- Avoids overloading a headphone output when more than one person is using the same mono or stereo headphone system.
- No need for costly custom distribution systems with expensive high-power amplifiers and high-power attenuators.
- Allows use of different types of headphones, each with separate volume control.
- Increases headphone cue capacity.
- Unlimited freedom of expansion and system configuration.

MH-40B \$275.00



PE-40 4-Band 4-Channel Parametric Equalizer

The PE-40 permits adjustment of the three parameters: the center frequency at which boost or cut is applied, the amount of gain (boost or cut), and the "Q" (affected bandwidth). The PE-40 is really four separate equalizers in one rack mount package.

Graphic equalizers can be used to reduce feedback-causing peaks, and then also tune out desired program material. The PE-40 eliminates those peaks while permitting the overall level to be increased. The PE-40 can also alter the character of the sound in any PA or recording application.

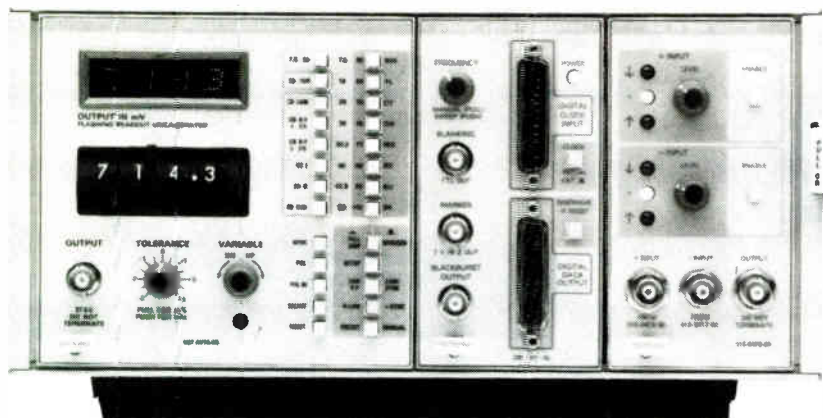
- A top-quality recording or PA equalizer that can be patched into any input channel or output circuit.
- The four sections can be used for different programs, or combined for greater control over one signal.
- In addition to "Q", Frequency and Gain controls, each section has two High Pass and one Low Pass Filter for reducing vocal pops, wind noise, floor rumble, hiss.
- Bypass switches allow comparison of original and EQ'd signals, or instant preset changes in sound during a mix.

PE-40 \$650.00

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

VIDEO AMPLITUDE CALIBRATION FIXTURE



Video Amplitude Calibration Fixture, Digital Sweep Generator and P-P Detector shown in a Tektronix TM 504 Mainframe

Accurate calibration and verification of video equipment performance is essential for maintenance of optimum television system quality and thus signal quality.

New products as well as calibration standards and procedures, have been developed to help provide accurate and NBS-traceable calibration and performance verification of Tektronix television products.

VIDEO AMPLITUDE CALIBRATION FIXTURE

Provides a Standard Reference for Amplitude Calibration

Preset Values for Common Video Signals

NTSC, PAL, PAL-M, SECAM Compatible

The VAC (Video Amplitude Calibration Fixture) is a precision test fixture used in the measurement of common video signals and the calibration of video test signal generators and waveform monitors. It provides a simple means of measuring and calibrating luminance and chrominance amplitudes associated with most video signals.

The VAC provides a squarewave amplitude reference from 0.0 mV to 999.9 mV peak with a resolution of 0.1 mV and an accuracy of 0.05%. Signal amplitude may be selected using a four-digit front panel lever switch or from over 500 preset values stored in EPROM. The VAC preset amplitudes are compatible with NTSC, PAL, PAL-M and SECAM television systems.

In the design of the VAC, careful attention was paid to thermal tilt to ensure accurate conversion from dc calibration to squarewave output. Unique choice of output impedance compensates loading effects when calibrating equipment with loop-through inputs.

The calibration of the VAC requires only a digital voltmeter with an accuracy of 0.01%.

The VAC operates in any of two compartments of the Tektronix TM 500 or TM 5000 Series power modules (except TM 501).

CHARACTERISTICS

Output Signal
Front Output Connector — 37.5 Ω, BNC connector located on front panel
Rear Interconnect — 0.0 Ω, Rear edge connector pins 27A and 28A
Amplitude Range (Tolerance Disabled) — 0 mV to 999.9 mV (0.05% ± 0.1 mV), p-p squarewave amplitude
Amplitude Range (Tolerance Enabled) — 0 mV to 999.9 mV (0.5% ± 0.1 mV) · Tolerance reading, p-p squarewave amplitude
Resolution — 0.1 mV
Risetime — 1 μs
Frequency — NTSC, PAL-M 270 Hz nominal, PAL, SECAM 275 Hz nominal

ENVIRONMENTAL

Normal Operating Temperature — -15 C to +35 C
Operating Temperature Range — 0 C to +50 C
Weights — Net 1.4 kg (3.0 lb) Net Shipping 4.5 kg (10.0 lb)

INCLUDED ACCESSORIES

(± 0.025%) 75 Ω Terminator (011-0102-01), 0.06% attenuator (011-0134-00), subcarrier harmonic rejection filter (015-0407-00), manual

ORDERING INFORMATION

Video Amplitude Calibration Fixture Order 067-0916-00 **\$2,250**

OPTIONAL ACCESSORIES

Low Loss Cable 72 inch 75 Ω — Order 012-0159-01 **\$35**

PEAK-TO-PEAK DETECTOR

NBS-Traceable Frequency Response Standard

Ultra Flat Response

Detector Amplifier Corrects Detector Diode Gain and Offset Errors

The 015-0408-00 Detector Amplifier, combined with a 015-0413-00 Detector Head, comprise an NBS-traceable peak-to-peak detector system for baseband video frequency response testing. This system allows precise comparison of sinewave amplitudes at frequencies throughout the video spectrum. Typical response is accurate to as low as ± 0.02% (± 0.002 dB).

The frequency response of an analog generator may be calibrated using the peak-to-peak detector system as a transfer standard. The generator may then be used as a frequency response transfer standard to calibrate frequency response and chrominance-luminance gain of test equipment such as waveform monitors and vectorscopes.

A second detector head may be ordered for differential measurements.

CHARACTERISTICS

Input Signal Range — 0.25 V to 1.0 V p-p
Envelope Gain Unit — ± 0.1% for 1% signal change
Input Impedance — 75 Ω
Frequency Response

Frequency	Performance Requirements	Supplemental Information			
		Typical Response	Transfer Uncertainties		
			TEK	NBS	
25 kHz	± 0.1, ± 0.7%	± 0, ± 0.25%	± 0.05%	± 0.01%	
50 kHz	± 0.1, ± 0.3%	± 0, ± 0.1%	± 0.05%	± 0.02%	
100 kHz	± 0.1%	± 0.05%	± 0.05%	± 0.02%	
200 kHz	± 0.1%	± 0.02%	± 0.05%	± 0.05%	
500 kHz	± 0.1%	± 0.02%	± 0.05%	± 0.05%	
1 MHz	0.0% (Reference)	± 0.02%	± 0.05%	± 0.05%	
2 MHz	± 0.1%	± 0.02%	± 0.05%	± 0.1%	
5 MHz	± 0.1%	± 0.02%	± 0.05%	± 0.1%	
10 MHz	± 0.15%	± 0.05%	± 0.05%	± 0.1%	
20 MHz	± 0.2%	± 0.1%	± 0.05%	± 0.2%	
30 MHz	± 0.5%	± 0.2%	± 0.1%	± 0.2%	
50 MHz	± 2.0%	± 1.0%	± 0.2%	± 0.5%	

INCLUDED ACCESSORIES

Detector head and data sheet with NBS-traceability curves (015-0413-00), 72 inch low loss 75 Ω cable (012-0159-01), manual

ORDERING INFORMATION

Peak-to-Peak Detector Order 015-0408-00 **\$1,265**

OPTIONAL ACCESSORIES

Extra Detector Head — (For differential measurements) Order 015-0413-00 **\$195**

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

DIGITAL SWEEP GENERATOR

DIGITAL SWEEP GENERATOR

Digitally Derived Sweep Signal

10-Bit Digital Data for Use with 1900-Series Digital Test Signal Generators to Reconstruct Analog Sweep

Frequency Range 55.9 kHz to 7.16 MHz Field Sweep or (Manually Adjustable) CW

The Digital Sweep Generator provides 10-bit, 14.31818 MHz, digital data words derived from a cosine lookup table. The output signal sweeps from 55.9 kHz to 7.16 MHz in each field with high spectral purity and amplitude accuracy when used with the DAC in a 1900 Series generator. A front panel connector provides SMPTE*1 compatible balanced ecl data. Data is continuous through blanking so that it can be used with noncomposite video detectors. Sync and burst may be inserted by a 1900 Series generator using the blanking output on the DSG if desired. The Digital Sweep Generator may be locked to a 1900 Series generator using TRS and clock outputs from the 1900 Series generator. Alternatively, the 1900 Series generator may be genlocked to the black burst output from the sync generator in the Digital Sweep Generator. A separate marker output provides identification of 1 MHz intervals, as well as 3.58 MHz and 4.43 MHz, during the sweep.

The Digital Sweep Generator is enclosed in a single wide TM 500 package. The front panel includes an LED power indicator, two 25-pin digital data connectors, three BNC connectors for blanking, markers, and black burst outputs, and one variable control to manually set CW frequencies. Digital interfaces of the DSG conform to the signal levels, clock rate and pinout of the proposed SMPTE standard.

When the Digital Sweep Generator is used in conjunction with a 1900 and an 015-0408-00 peak-to-peak detector (included accessory), it will provide an NBS-traceable analog frequency response standard and completes an effort to provide NBS-traceable performance verification of Tektronix television generators, waveform monitors, and other television equipment.

*1 The proposed SMPTE standard "Digital Format for a Parallel Interface (System M/NTSC)," draft of July, 1979.

CHARACTERISTICS

Digital Sweep Output

Frequency Range — 55.93 kHz to 7.159 MHz in 55.93 kHz increments; Field Sweep, or CW digital data.

Format — SMPTE Standard parallel 10-bit signal.

Sample Clock Frequency — 14.31818 MHz (4 fsc) ± 100 Hz; also accepts external 14.3 MHz clock from 1900.

Blanking — Vertical: 22 lines to 23 lines. Horizontal: 10.8 μs.

Markers

1 V at 1.006747 MHz.

1 V at 2.013494 MHz.

1 V at 3.020241 MHz.

0.5 V at 3.579545 MHz.

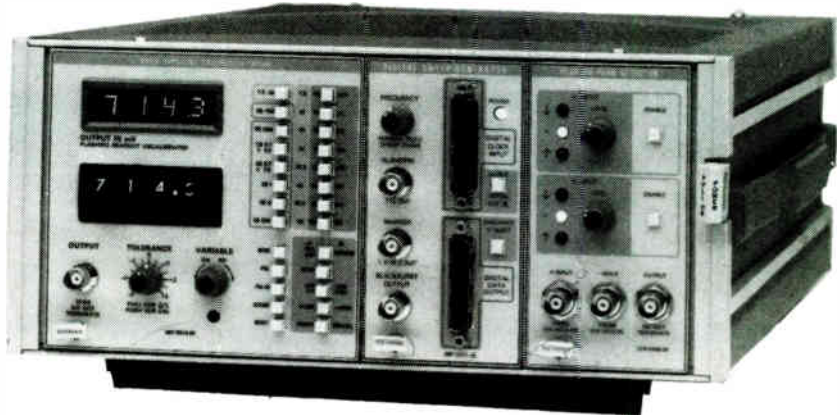
1 V at 4.026988 MHz.

0.5 V at 4.418501 MHz.

1 V at 4.977805 MHz.

1 V at 5.984552 MHz.

Marker frequencies are multiples of 55.93 kHz.



The 1450 Series Test Modulator is used to test a television demodulator plus down converter (system) or the television demodulator alone. Test modulators are available for four CCIR Systems and three visual IF Carrier Systems. The Test Modulator converts baseband video frequencies to a specified IF or RF. The aural carrier is below the visual carrier frequency at the IF output and above the visual carrier at the RF output.

Group delay precorrection (except System 1) and sound pre-emphasis switches are front panel mounted. The RF and IF outputs provide double-sideband modulated signals of high quality. State-of-the-art circuitry is used to achieve high accuracy and stability. The test modulator needs very little maintenance or recalibration.

ORDERING INFORMATION

Test Modulator, 37 MHz for 1450-1. Order 067-0886-01	\$4,275
Test Modulator, 38.9 MHz for 1450-1. Order 067-0886-02	\$4,275
Test Modulator, 45.75 MHz for 1450-1. Order 067-0886-03	\$4,275
Test Modulator, 38.9 MHz for 1450-2. Order 067-0886-04	\$4,275
Test Modulator, 38.9 MHz for 1450-3. Order 067-0886-05	\$4,275
Extender Cable, for TDC/14501.-2.-3. Order 067-0899-00	\$105

ENVIRONMENTAL

Temperature Range — Operating: 0°C to +50°C. Nonoperating: -40°C to +65°C.

Altitude — Operating: To 4752 m (15,000 feet). Nonoperating: To 15 240 m (50,000 feet).

Weights — Net: 0.6 kg (1.3 lb). Net Shipping: 1.3 kg (2.8 lb).

INCLUDED ACCESSORIES

ECL data cable assemblies (175-3671-00); 72 in low loss 75 Ω cable (012-0159-01); p-p detector (015-0408-00); manual.

ORDERING INFORMATION

Digital Sweep Generator. Order 067-1011-00	\$3,310
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OPTIONAL ACCESSORIES

Detector Head. Order 015-0407-00 \$225

TEST MODULATOR

High Quality Double-Sideband Modulator

Available in Five Versions Covering Systems M, I, B, and G

RF Output is -25 dBm ± 3 dB

IF Output is -24 dBm ± 3 dB

Separate Video and Aural Carrier Level Controls

Group Delay Precorrection Systems M, B, and G

OPTIONAL ACCESSORIES

Half-Rack Adaptor Kit — (Two instruments side-by-side.) Order 020-0633-00 \$140

Half-Rack Adaptor Kit — (One instrument and a "dummy" box, side-by-side.) Order 020-0634-00 \$350

Other Calibration Fixtures for Tektronix Television Products.

ORDERING INFORMATION

GENERATORS

Diagnostic Prom Order 067-0964-00 \$125

690SR PICTURE MONITOR

Minimum Load Unit — Order 067-0998-00 \$175

Rigid Module Extender — Order 067-0999-00 \$50

Flexible Interface Module Extender — Order 067-1000-00 \$125

CRT Scale — 11 x 15 line for 690SR, Option 40/42. Order 067-1034-00 \$150

Pattern Generator — Order 067-1039-00 \$3,000

CRT Scale — 14 x 17 line for 690SR. Order 067-1054-00 \$150

CRT Scale — 15 x 20 line for 690SR. Order 067-1055-00 \$150

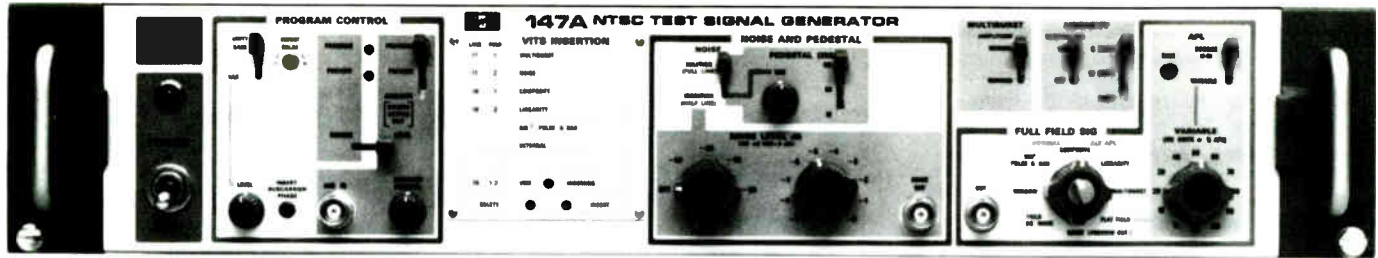
1980 ANSWER

Service Kit — for the 1980

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

NTSC TV SIGNAL GENERATOR



R 147A NTSC TEST SIGNAL GENERATOR

R147A

VITS Generation, Insertion, and Deletion

Sync and Burst Regeneration

Program Signal Protected

Full Field Test Signals Independently Selectable from VITS Program

Reprogrammable for New Signals

Vertical Interval Reference Signal

Noise Test Signal and Measurements

The R147A NTSC Television Signal Generator provides the test signals commonly used for test and measurement of video transmission systems. The signals generated are available as full-field composite video test signals and Vertical Interval Test Signals (VITS) that may be inserted on an incoming composite video signal.

VERTICAL INTERVAL INSERTION/DELETION AND PROGRAM CONTROL

The R147A will insert VITS only when gen-locked to an incoming composite video signal. A VITS deleter inserter involves active circuit elements in the program line within the generator. Fail-safe provisions are provided in the event of a malfunction within the instrument including loss of sync or power. Local and remote-control manual override capability is also provided.

When an incoming program is lost, the R147A will go to one of two operating modes selectable by internal reprogramming jumpers. They are program line bypass, or full field test signal or flat-field signal. In the event the program signal is lost, the transmitter will continue on the air.

PROGRAM CONTROL FEATURES Processing Amplifier

In addition to performing deletion and insertion functions, the R147A generator is designed to function as a sync and burst regeneration amplifier.

TEST SIGNALS

The R147A provides the following NTSC Vertical Interval Test signals. These signals are also available full field (except VITS).

Composite
Linearity
Multiburst
Noise
Pulse and Bar
VITS

The R147A also provides these full field test signals:

Field Squarewave
Flat Field
Window

NOISE TEST SIGNAL

The R147A offers a signal-to-noise measuring technique for in-service testing during the vertical interval. The noise present in the middle portion of a line is deleted while the noise generated in a calibrated source is inserted for measurements by comparison. You then adjust the calibrated attenuator until inserted and incoming noise appears the same on a waveform monitor. The measured noise values are independent of operator interpretation errors to within 2 IRE.

CHARACTERISTICS

PROGRAM CONTROL SYSTEM

Input Level — Adjusted to unity gain.

Variable Input level — $\pm 30\%$.

Input Return Loss — 46 dB to 5 MHz. Power on, 40 dB to 5 MHz in bypass.

Inserted Signal Level — 714 mV (100 IRE) $\pm 1\%$.

Frequency Response, Program, and Preview Channel — $\pm 1\%$, 50 kHz to 5 MHz; $\pm 1\%$, 5% to 8 MHz.

2T Pulse to Bar Ratio — 100% $\pm 0.5\%$.

OTHER CHARACTERISTICS

Power Requirements — 90 V ac to 136 V ac or 180 V ac to 272 V ac, 48 Hz to 66 Hz, 40 W maximum at 115 V ac and 60 Hz.

PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Width	483	19.0
Height	89	3.5
Depth	436	17.9
Weights	kg	lb
Net	9.1	20.0
Shipping	16.3	36.0
Export Shipping	25.4	56.0

147A OPTION 01

The 147A Option 01 provides the signals used for transmitter remote control, but Color Bars must be provided from an alternate source such as the Tektronix earlier models 140, 144, 146, or the current model 1410, SPG2, TSG7.

INCLUDED ACCESSORIES

75 Ω , BNC termination (011-0103-02), two each BNC-T adaptors (103-0030-00), front panel protective cover (200-1246-00), rackmount slide (351-0195-01), manual.

ORDERING INFORMATION

147A NTSC Signal Generator \$9,750

Option 01 — NTSC Signal Generator NC

R147A NTSC Signal Generator

(Rackmount) \$9,750

Option 01 — NTSC Signal Generator

(Rackmount) NC

OPTIONAL ACCESSORIES

Noise Measurement Filters — External filters are required with the 147A Generator when making noise measurements.

Low Pass 4.2 MHz 525/60 — Order 015-0212-00 \$125

Noise Weighting 4.2 MHz 525/60 — Order 015-0214-00 \$90

CCIR recommendation 568 provides for measuring signal-to-weighted random noise on all international transmissions (both 525/60 and 625/50) with a 5.0 MHz low pass filter and a unified noise weighting filter.

Low Pass 5 MHz — Order 015-0213-00 \$125

Unified Noise Weighting Order 015-0283-00 \$65

Rackmount to Cabinet Conversion Kit — Order 040-0573-00

..... \$150

TEKTRONIX, INC.

P.O. Box 500
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R148/R148-M

Insertion Test Signals (Per EBU, CCIR Recommendation 473-2, Annex 1)

Full-Field Test Signals (Per CCIR Recommendation 567)

Easily Reprogrammable

Safe In-Service ITS Insertion (Per EBU Specifications)

Noise Measurement

APL Bounce Signal

Source Identification Code

Operates with Sound In Syncs

Locks with Mixed Sync (Per EBU Homologation Specifications for ITS Generators) Subcarrier, PAL Pulse, Burst Flag, Comp Sync

The Tektronix R148 (PAL) and R148-M (PAL-M) Insertion Test Signal (ITS) Generators provide all the test signals you need to test and measure PAL (or PAL-M) video transmission systems. Test signals are available as both full-field composite video and ITS inserted into the incoming program signal's vertical blanking interval. All timing information for ITS insertion is derived from the incoming composite video signal.

VERTICAL INTERVAL INSERTION/ DELETION AND PROGRAM CONTROL

The R148 and R148-M insert ITS only when genlocked to an incoming composite video signal. Since ITS insertion/deletion involves active circuit elements in the program line, program line fail safe operation is provided in the event of instrument malfunction, loss of sync, or power failure. You also have access to local and remote control manual override capability.

A preview monitor output permits observation of the ITS deletion/insertion program before anything is actually done to the program signal. Preview/program operation can be locally or remotely controlled.

Provisions are made for adding an externally generated ITS to the program line.

INSERTION SIGNAL CONTROL FEATURES Free Running Operation

A warning light indicates absence of incoming synchronizing information and ITS deletion and insertion is automatically discontinued.

Program Level

A front panel switch lets you select a preset gain, normally adjusted for unity gain between program input and program output. Or, you can use a front panel level adjustment to normalize the incoming program signal to provide 1 volt at the program output.

Local-Remote Control of Program and Preview

You can shift control of program or preview modes from the front panel (local) to a position remote from the generator. When operating under either local or remote control, front panel lights indicate program line status, since the front panel program status switch position may not correspond to the operating mode selected.

Program-Preview-Bypass

This three-position switch is used to select one of three modes: Program, Preview, or Bypass.

Program: In this switch position, ITS is inserted on program line output according to internal selection of test signals and their time addresses.

Preview: In this switch position, ITS is inserted only on program, as viewed on the preview monitor output. Preview is used for verification prior to inserting these signals on program output.

Bypass: In this switch position, incoming program material bypasses R148 functions and output is unchanged.

Auxiliary

A noncomposite video signal (such as a sweep generator) applied to the auxiliary input appears at the preview monitor output connector with composite blanking and sync added. A pedestal control provides a dc offset so the auxiliary signal excursion may be positioned between the black and white limits of the resulting composite video signal. Remote control is not available.

ITS Subcarrier Phase

A recessed front-panel control adjusts phase of color subcarrier on internally generated signals to be correct in relation to the phase of incoming burst.

Insertion Delay

A recessed front-panel control provides a fine horizontal timing adjustment for inserted signals.

FULL-FIELD OPERATION

The Tektronix R148 and R148-M provide full-field test signals separate from program. These signals are generated with or without external synchronizing information and will be locked to the external synchronizing signal when a program signal or external synchronizing signals are present.

FLAT-FIELD SIGNAL

The flat-field signal with VITS inserted is used primarily for system testing at discrete average picture levels.

The flat-field signal is a composite video signal that, during the active portion of each field, has a constant luminance level. The luminance level is selectable in eleven increments from 0% to 100% of white. An alternate selection provides automatic change between black and white with a period variable from 1 s to 10 s.

When operating the R148 in the flat field mode, you may select a white level preset between 85% and 100% and a black level preset between 0% and 15%. Automatic change between white and black is available and occurs at a period adjustable from 1.0 s to 10.0 s.

FIELD SQUAREWAVE SIGNAL

The field squarewave signal is used to measure field time distortions. In this mode, the Tektronix R148 provides a composite video signal with 205 active lines at 700 mV, approximating a 50 Hz squarewave. The R148-M provides a composite video signal with 132 active lines at 700 mV, approximating a 60 Hz squarewave.

Use this signal to detect low frequency phase and gain distortions, even those passing through clamper amplifiers.

PAL AND PAL-M INSERTION TEST SIGNAL GENERATORS

CHARACTERISTICS

PROGRAM CHANNEL

Input Level — Adjusted to unity gain.

Variable Input Level — $\pm 30\%$.

Inserted Signal Level — Within $\pm 1\%$ of nominal.

Output Dc Level — ≈ 50 mV (no signal).

Frequency Response, Program, and Preview Channels — $\pm 1\%$, 50 kHz to 5 MHz.

Field Time Tilt — $< 0.5\%$.

Line Time Tilt — $< 0.25\%$.

Differential Phase Standard Input — Program Output: $< 0.15^\circ$. Preview Output: $< 0.3^\circ$.

Differential Gain Standard Input — Program Output: $< 0.2\%$. Preview Output: $< 0.4\%$.

Random Noise Output Program Channel — < -75 dB RMS.

Hum, Transients on Noninserted Lines — ≥ 60 dB down.

Spurious Signals During Blanking Time — Inactive line time ≥ 40 dB down. Active ITS lines ≥ 60 dB.

Signal Attenuation in "Delete" Mode — 2T Pulse: > -70 dB. Subcarrier (Color Bars): > -60 dB.

Crosstalk into Program Channel from Internal Signals — 2T Pulse: < -70 dB. Subcarrier (Color Bars): < -60 dB.

Unwanted Pedestal at Time of ITS Insertion — Program and Preview Channel: < 5 mV.

Insert Delay Adjustment Range — ± 0.5 μ s front panel.

SOURCE IDENTIFICATION CODE (R148 ONLY)

The Tektronix R148 is a source identification code generator with up to 25 pulses available in any combination on line 16 or line 329.

Pulse Width — 1 μ s.

One Level — 630 to 700 mV above blanking.

Zero Level — Within 25 mV of blanking.

OTHER CHARACTERISTICS

Power Requirements — 90 V ac to 136 V ac or 180 V ac to 272 V ac; 48 Hz to 66 Hz, 55 W maximum at 115 V ac and 60 Hz. Factory set at 230 V ac (R148) or 115 V ac (R148-M).

Ambient Temperature — Performance characteristics are valid over an ambient temperature range of 0°C to $+50^\circ\text{C}$.

PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Width	483	19.0
Height	88	3.5
Depth	499	19.7
Weights	kg	lb
Net	9.1	20.0
Shipping \approx	16.3	36.0

INCLUDED ACCESSORIES

75 Ω BNC termination (011-0103-02); two each BNC-T adaptors (103-0030-00); rackmounting hardware (351-0195-01); manual.

ORDERING INFORMATION

R148 PAL Test Signal Generator \$5,540
R148M PAL-M Test Signal Generator . \$8,700

OPTIONAL ACCESSORIES

Noise Measurement Filters — External filters are required with the 148 Generator when making noise measurements.

Low Pass 6.0 MHz 625/50 — Order 015-0220-00 **\$100**

Noise Weighting 5.0 MHz 625/50 — Order 015-0215-00 . **\$80**

Low Pass 4.2 MHz 525/60 — Order 015-0212-00 **\$125**

Noise Weighting 4.2 MHz 525/60 — Order 015-0214-00 . **\$90**

CCIR recommendation 568 provides for measuring signal-to-weighted random noise on all international transmissions (both 525/60 and 625/50) with a 5.0 MHz low pass filter and a unified noise weighting filter.

Low Pass 5.0 MHz — Order 015-0213-00 **\$125**

Unified Noise Weighting Network — Order 015-0283-00 **\$65**

Rackmount to Cabinet Conversion Kit — Order 040-0573-00 **\$150**

Prices and Specifications Subject to Change Without Notice.

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TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

1410R NTSC/1411R PAL/ 1412R PAL-M

Five Test Signal Generators and One Switcher

Conforms to EIA Standard RS-170A (1410R)

Sync to Subcarrier Phasing Maintained or Corrected

Color Frame Reference Output

Genlock to Composite Video

Lock to External References

Adjustable Blanking Widths

Adjustable Sync Delays (H and V)

Broadcast Quality

The 1410R Series sync and test signal generators are precision generators for use in studios, remote vans, maintenance facilities and anywhere high quality sync or test signals are required.

Three different models are available. The 1410R is for NTSC applications, the 1411R for PAL and the 1412R is for PAL-M applications.

Each 1410R Series generator includes a genlock sync pulse generator. Five different test signal generators (four for PAL-M) and one signal switcher are available for each color standard (NTSC, PAL, PAL-M). Any combination of up to five test signal generators and signal switchers can be installed in one mainframe. The following components are available for each color standard:

1410R SERIES PRODUCTS

Description	Color Standard		
	NTSC	PAL	PAL-M
Mainframe	1410R	1411R	1412R
Sync Pulse Generator	SPG2	SPG12	SPG22
Color Bars Generator	TSG7	TSG11	TSG21
Convergence Generator	TSG2	TSG12	
Linearity Generator	TSG3	TSG13	TSG23
Pulse & Bar Generator	TSG5	TSG15	TSG25
Multiburst Generator	TSG6	TSG16	TSG26
Signal Switcher	TSP1	TSP11	TSP21

The 1410R Series generators may be ordered with standard combinations of signal generators or they can be configured to your specific requirement. A 1410R Series generator can be ordered with a minimal complement of signal generators now and others added later as your needs grow.

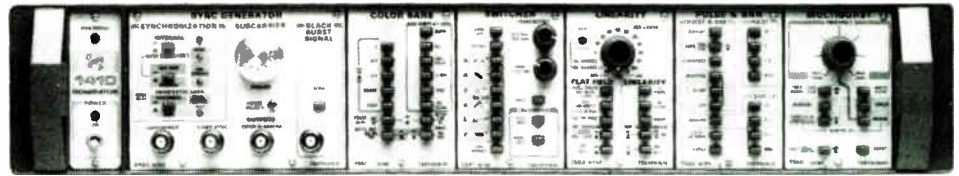
Unless otherwise indicated by a statement enclosed by parentheses (), all information characteristics and descriptions of the 1410R NTSC Series and its generators applies equally to equivalent mainframes or generators for the 1411R PAL and 1412R PAL-M Series. Information in parentheses applies only to the specified series.

SYNC PULSE GENERATORS

The SPG2, SPG12 and SPG22 are high quality sync generators designed for use in systems where accuracy, stable SCH (sync-to-subcarrier) phasing capability, and lockup mode versatility are of prime importance.

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SYNC AND TEST SIGNAL GENERATORS



1410R OPTION 04 TEST SIGNAL GENERATOR

Two external synchronization modes, external reference and genlock, are available. In the genlock mode, line, field, subcarrier, and PAL pulse (SPG12, SPG22) timing are derived from the incoming composite video signal.

In the external reference mode, line, field, subcarrier, and PAL pulse timing is derived from individual reference signals applied to the generator.

The SCH phasing can be set or maintained at any offset. This is made possible by locking the generator color subcarrier to the reference color subcarrier and referencing generator line and field-sync-signal timing to subcarrier rather than line and field sync on the incoming reference signals. This feature is of value in editing and program assembly applications. A color frame identification pulse output identifies Field 1 of the color field sequence. Should the user desire, the SCH phasing feature of the sync pulse generator can be disabled with a front panel control. In this mode of operation the SCH phasing of the incoming signal is maintained by locking subcarrier to incoming burst or subcarrier, sync to incoming sync.

A slow genlock mode is provided for those applications where fast-lock may upset the system. The slow-lock selector is located on the generator card sets.

Genlock or external reference lock mode selection may be remotely controlled. Remote manual phasing of the SPG12 or SPG22 signal to an external source is possible in the internal mode. Vertical and/or horizontal timing are altered as in slow-lock operation. Front panel LED's are used to indicate generator lock status.

Internal adjustments permit some variation of burst and blanking widths on the burst flag, comp blanking, and black burst outputs. These adjustments are preset to conform to recognized standards. You can reduce widths initially to allow for the widening that sometimes occurs when the video signal is processed.

The subcarrier frequency accuracy is ± 1 Hz when operated in the internal mode. An optional ± 10 Hz oscillator (Option 10) is available for the 1410R. A black burst output independent of all other outputs is provided. For NTSC systems, the VIRS (Vertical Interval Reference Signal) is factory programmed on line 19, Field 1 and Field 2 of the black burst when selected by a front panel switch on the SPG2. VIRS can be selected on line 18 if desired.

INCLUDED ACCESSORIES

Extender board (670-4441-02), 1.5 A fuse (159-0016-00), 0.75 A fuse (159-0042-00), rackmount hardware, instruction manual.

1410R NTSC Mainframe and SPG2 ...	\$4,200
Option 03** — NTSC Package Installed and Tested Together	+ \$3,295
Option 04** — NTSC Package Installed and Tested Together	+ \$7,885
Option 1B — Adds TSG7 Installed	+ \$1,780
Option 1S — Adds TSP1 Installed	+ \$1,565
Option 10 — 10 Hz Color Subcarrier Frequency Accuracy	— \$405
Option 2C — Adds TSG2 Installed	+ \$505
Option 3L — Adds TSG3 Installed	+ \$1,250
Option 4M — Adds TSG6 Installed	+ \$2,265
Option 4P — Adds TSG5 Installed	+ \$1,625
** Cannot be combined with any other option except may be combined with Option 10.	

TSG2 Convergence Generator	\$530
TSG3 Linearity Generator	\$1,310
TSG5 Pulse and Bar Generator	\$1,715
TSG6 Multiburst Generator	\$2,375
TSG7 Color Bars Generator	\$1,870
TSP1 Switcher	\$1,640

1411R PAL Mainframe and SPG12 ...	\$4,200
Option 03** — PAL Package Installed and Tested Together	+ \$3,000
Option 04** — PAL Package Installed and Tested Together	+ \$7,500
Option 1B — Adds TSG11 Installed	+ \$1,500
Option 1S — Adds TSP11 Installed	+ \$1,535
Option 2C — Adds TSG12 Installed	+ \$495
Option 3L — Adds TSG13 Installed	+ \$1,225
Option 4M — Adds TSG16 Installed	+ \$2,220
Option 4P — Adds TSG15 Installed	+ \$1,595
** Cannot be combined with any other option.	

TSG11 Color Bars Generator	\$1,575
TSG12 Convergence Generator	\$520
TSG13 Linearity Generator	\$1,285
TSG15 Pulse and Bar Generator	\$1,680
TSG16 Multiburst Generator	\$2,330
TSP11 Switcher	\$1,610

1412R PAL-M PACKAGES

1412R PAL-M Mainframe and SPG22, TSG21	\$7,415
Option 05 — Adds TSG23/TSG25/TSG26/TSP21 Installed	+ \$8,795

OPTIONAL ITEMS (FOR ALL CONFIGURATIONS)

Single-Width Blank Panel — Order 333-2171-00	\$1.35
Conversion Kit for SMPTE Bars — For TSG1 Module Order 040-1010-00	\$375
Rackmount to Cabinet Conversion Kit — Order 040-1152-00	\$90

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1410 R Series (cont'd)

TSG3/TSG13/TSG23 Linearity and Modulated Pedestal Test Generators

5 Step and 10 Step Staircase Signal
Ramp Signal
2 Modulation Amplitudes

One or Three Level Modulated Pedestal

Flat Field with 11 Fixed Levels

Ac and Dc Bounce

The TSG3, TSG13 and TSG23 provide high-quality linearity and modulated pedestal test signals for the 1410R Series signal generators

Combine variable APL with either of these signals to measure nonlinear distortions. The generators operate independently of all other test signal generators installed in the mainframe, while the rear panel output is available simultaneously with all other test signal generators' outputs

You can select the 5 step and 10 step staircase signals and the ramp signal with or without 180 subcarrier modulation for NTSC, or U subcarrier modulation for PAL and PAL-M. The subcarrier amplitude is front panel selectable at 20 IRE or 40 IRE on the TSG3, or at 140 mV and 280 mV on the TSG13 and TSG23. Applications include measuring differential phase and gain, dynamic gain, luminance linearity, and burst phase errors

With the TSG3, the flat field signal can be used on all active picture lines with levels set by the IRE Level control (% peak white on the TSG13, TSG23) or flat field on four lines can be alternated with one line of linearity or modulated pedestal. When using the alternate mode APL is controlled by the IRE level control (% peak white on the TSG13, TSG23)

The ac Bounce position of the IRE level switch (TSG3) or the % peak white switch (TSG13, TSG23) provides a signal in which the active portion of each line (excluding sync) changes APL levels at a rate determined by the rate control (1 second to 30 second intervals)

For the TSG3, amplitude of the bounce excursions is fixed at 0 IRE to 100 IRE in flat field mode and 10% to 90% APL in alternate modes. Blanking level remains fixed at 0 V. To check ac coupled circuitry use ac bounce

With the switch set to dc bounce, ac bounce occurs as described above. In addition, the entire signal changes dc level in the opposite direction at the same rate resulting in no change in average dc level. Clamp circuits may be checked using dc bounce

TSG5/TSG15/TSG25 Pulse and Bar Generators

Pulse and Bar Overlay

Full and Half Amplitude Pulse and Bar

Field Squarewave and Window

Modulated Pulse and Modulated Bar

Front Panel Selection of 2T, T, and T/2 Pulse
Width and Bar Risetime

The TSG5, TSG15, and TSG25 are \sin^2 pulse and bar television test signal generators designed for use with the 1410R Series signal generators. They're well suited for testing on equipment manufacturers' production lines and for testing of television transmitters, common carrier microwave and wire lines, and studio distribution systems. Front panel controls provide most test signal options, while internally selectable options provide additional versatility

The pulse and bar test signal consists of a \sin^2 modulated pulse, a \sin^2 pulse, and luminance bar. The pulse and bar overlay mode lets you conveniently compare pulse to bar ratio without manipulating waveform monitor controls

The inverted and noninverted 2T pulses may be overlaid to compare shape and HAD (half amplitude duration). This capability is particularly useful in detecting quadrature distortion which results from envelope detection of the RF modulated video signal. The pulse and bar test signal is also useful in measuring line time and short time distortions

For \sin^2 pulse signals, three self-cancelling switches permit independent selection of pulse half amplitude duration (2T, T, T/2) independent of bar risetime. In the bar mode, four self-cancelling switches permit selection of luminance bar risetime (2T, T, T/2) or modulated bar

Full or half amplitude pulse and bar test signals can be provided with or without pedestal or setup (the TSG15 and TSG25 do not offer setup capability). For the TSG5, full amplitude is 100 IRE units with no setup. Half amplitude is 50 IRE with no setup. For the TSG15 and TSG25, full amplitude is 100% (700 mV) with no setup. Half amplitude is 50% (350 mV) with no setup

The luminance pulse, luminance bar, and luminance components of the modulated pulse and modulated bar may be switched off to provide chrominance pulse and chrominance bar. The chrominance pulse and bar may be placed on a pedestal (50 IRE for the TSG5, 50% for the TSG15 and TSG25) to prevent chrominance from extending below blanking level

Use the standard field squarewave (with full amplitude and no setup) to measure field time distortion, and the window signal to measure line time distortion and picture monitor smearing. You can switch the color burst off without affecting the chrominance components of the test signals

Use the TSG5 for measuring overall gain, transient response, line and field time tilt, and chrominance to luminance delay and gain

SYNC AND TEST SIGNAL GENERATORS

TSP1/TSP11/TSP21 Switchers and Convergence Generators

Single Switchable Output for Two to Six
Generated Signals

Blanking, Sync and Burst Insertion for
External Signal

Matrixing—Eight Programmed Display
Formats to up to Six Sequential Signals

Convergence Border

Convergence Key

Crosshatch or Dots

Combined Crosshatch and Dots

The TSP1, TSP11 and TSP21 combine the capabilities of a test signal switcher and convergence signal generator in a single unit. They simplify and expand the uses of the 1410R Series signal generators

From a single, electronically switched output, you have access to all the test signals (from two to six) generated by the card sets in the mainframe. Meanwhile, you may continue to use the individual generator card sets' parallel outputs, so no restrictions are imposed on an established system. As an added feature, one of the input signals can be external (composite or noncomposite). All of the switcher inputs are provided with clamp circuitry

Eight different matrixes are stored in the PROM. This signal matrixing capability, combined with the full-field mode of the TSP1 presents several combinations of signals sharing the full field display

Most of TSP1 switching functions can be remotely controlled through the mainframe's Remote connector

TSG2/TSG12 Convergence Test Signal Generators

Dots and Crosshatch

Dots Only

Vertical Lines Only

Horizontal Lines Only

Vertical and Horizontal Lines

Position Controls

The TSG2 and TSG12 provide high-quality convergence test signals for the 1410R Series signal generators. You can use them to determine picture monitor or camera scanning linearity, aspect ratio, and geometric distortion. Signals for the TSG2 conform to IEEE Standard 202

Provision is made for on/off switching of the dots, vertical lines, and/or horizontal lines and for positioning vertical and horizontal lines. The signal output is located on the rear panel of the mainframe in which the test signal generator is installed. The convergence signal output is available simultaneously with all other test signal generator outputs

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1410 R Series (cont'd)

TSG7/TSG11/TSG21

Color Bars Generators

Color Bars Signals

SMPTE Color Bars (TSG7)

EIA (TSG7)

Fixed Full Field (TSG11/TSG21)

Full Field with Switchable Components

75% or 100% Amplitude

Split Field/Y Reference

Split Field/Red

Split Field Bars/Bars Reversed

The TSG7, TSG11 and TSG21 provide high-quality full field and split field color bars for the 1410R Series signal generators. The TSG7 operates independently from any other test signal installed in the mainframe. Its output is available simultaneously with all other test signal outputs. The composition of the signal can be altered by switching off Y, B-Y (U), R-Y (V), Burst, and Sync.

You may also select fixed or alternating R-Y (V) subcarrier phase, bar amplitude, white reference, and setup level (or pedestal).

The /Y REF switch selects a split field display of color bars in the same sequence as full field, followed by the luminance portion of the color bars for the remainder of the field. The split can be 1/2 or 3/4 field as selected by internal programming in the sync pulse generator. With this signal, you can check chrominance to luminance delay and picture monitor gray scale tracking while simultaneously evaluating color performance.

The /RED switch selects a split-field display of color bars, as in /Y REF, followed by red chrominance. (Same phase and amplitude, and at the same luminance level as the red bar.) Use this signal for adjusting VTR playback controls. Head equalization errors and noise are easily spotted on a red field. Other bar colors can be chosen by internal programming. The signal is also remotely switchable to color bars/white.

The /REVERSE switch selects a split field display of color bars as in /Y REF, followed by color bars in a reverse sequence. That is black, blue, red, magenta, green, cyan, yellow, white. This signal helps detect chrominance to luminance delay while viewing the kinescope of a color monitor receiver. Reverse bars are also useful in detecting VTR velocity errors.

The TSG7 will produce color bars VIT on any VIT line desired. (VIT signals cannot be inserted on the program line. Use a 147A, 148, 148M, or 1910 for insertion of VITS on a program line.)

The SMPTE switch (TSG7) is used to select the alignment color bar test signal for television picture monitors. This signal is generated in accordance with the format outlined in SMPTE Engineering Committee Recommendations, ECR 1-1978. SMPTE bars provide an easy way to objectively adjust picture monitor chroma, hue, and brightness.

VT-176

TSG6/TSG16/TSG26

Multiburst Signal Generators

Multiburst Signal

Controlled Risetime Burst Packets

Last Burst Frequency Variable

Manual and Field Swept Frequency Signals to 20 MHz

Markers for Both Frequency and Amplitude Reference

Full and Reduced Amplitude on all Signals

The TSG6, TSG16 and TSG26 are television multiburst and video sweep test signal generators designed for the 1410R Series signal generators.

They feature front panel controls for most test signal options, plus special Remote functions for additional versatility. They can be used in many testing applications, including equipment manufacture and microwave or long-line transmission systems.

Performance advances include reduction in harmonic content of sinewave signals and skirt energy associated with gating burst packets. Phase modulation of the burst packets aids ease of measurement by filling in shape of packets. Two ranges of multiburst frequencies are available: the 500 kHz to 4.1 MHz (TSG6) range aids in testing television transmitters and common carrier links, while the 1.25 MHz to 12 MHz range is used in testing television studio equipment and cabling.

Use these generators where nonlinearities make reduced amplitude test signals desirable. The reduced amplitude multiburst signal allows accurate testing of video tape record/playback systems, since it is not subject to the false distortion of the full amplitude multiburst that often occurs in such applications.

Using the front panel controls, you can select a high or low-frequency band for each operating mode. SWEEP, allows selection of field sweep signal with or without markers. MARKERS inserts amplitude/frequency markers in Sweep, and amplitude markers in Composite/Manual. BURST allows insertion/deletion of color burst on composite video for use with systems that operate differently when burst is present. COMPOSITE/CONTINUOUS determines whether sync, blanking, and a pedestal will be added to the sweep and manual signals.

MANUAL selects a fixed-frequency sinewave with frequency determined by the Frequency control and Frequency Range switch. AMP allows selection of either full or reduced amplitude in all operating modes. MULTIBURST selects line-rate discrete-frequency packets with reference insertion levels.

COLOR BAR GENERATORS (TSG7, TSG11, TSG21)

Luminance Signal Accuracy — Within 1% or 1.5 mV, whichever is greater.

Chrominance Accuracy — Absolute Amplitudes: Within 3% (all subcarrier components). Relative Amplitudes: Within 1% of the red chrominance bars or 1 mV plus p-p residual subcarrier amplitude, whichever is greater.

Full Field Displays — Bar Width: 6.45 μs (TSG7), 6.5 μs (TSG11); 6.6 μs (TSG21). White Bar Risetime: 130 ns, +20 ns, 10 ns (TSG7); 115 ns ± 15 ns (TSG11); 125 ns ± 20 μs (TSG21). Time Difference Between Chroma and Lum Channels: < 20 ns.

SYNC AND TEST SIGNAL GENERATORS

MULTIBURST SIGNAL GENERATOR (TSG6, TSG16, TSG26)

	Low Range	High Range
Multiburst		
Frequencies (TSG6)	500 kHz ± 3% 1.25 MHz ± 3% 2.00 MHz ± 3% 3.00 MHz ± 3% 3.58 MHz ± 3% 4.10 MHz ± 3%	1.25 MHz ± 3% 3.50 MHz ± 3% 5.50 MHz ± 3% 8.00 MHz ± 3% 10.0 MHz ± 3% 12.0 MHz ± 3%
(TSG16)	500 kHz ± 3% 1.00 MHz ± 3% 2.00 MHz ± 3% 4.00 MHz ± 3% 4.80 MHz ± 3% 5.80 MHz ± 3%	1.00 MHz ± 3% 3.00 MHz ± 3% 5.00 MHz ± 3% 8.00 MHz ± 3% 10.0 MHz ± 3% 12.0 MHz ± 3%
(TSG26)	500 kHz ± 3% 1.00 MHz ± 3% 2.00 MHz ± 3% 3.00 MHz ± 3% 3.58 MHz ± 3% 4.20 MHz ± 3%	1.00 MHz ± 3% 3.00 MHz ± 3% 5.50 MHz ± 3% 8.00 MHz ± 3% 10.0 MHz ± 3% 12.0 MHz ± 3%
Amplitude (First Multiburst Packet)		
Full (TSG6)	643 mV (90 IRE) ± 20 mV	643 mV ± 25 mV
(TSG16, TSG26)	700 mV ± 21 mV	700 mV ± 28 mV
Reduced (TSG6)	428 mV (60 IRE) ± 12 mV	428 mV ± 16 mV
(TSG16, TSG26)	420 mV ± 12 mV	420 mV ± 16 mV
Flatness, Reduced and Full (TSG6)	10 mV or less	16 mV or less
(TSG16, TSG26)	10 mV or less	17.5 mV or less
Packet Envelope Risetime	400 ns ± 60 ns	400 ns ± 60 ns
Burst Phasing	Phase shifted at field rate to provide filled-in burst packets.	
Sweep/Manual		
Sinewave Frequencies		
Start	100 kHz minimum	330 kHz minimum
Stop	6 MHz ± 10%	20 MHz ± 10%
Amplitude at First Marker (TSG6)	643 mV ± 20 mV	643 mV ± 25 mV
(TSG16, TSG26)	700 mV ± 21 mV	700 mV ± 28 mV
Reduced (TSG6)	428 mV ± 12 mV	428 mV ± 16 mV
(TSG16, TSG26)	420 mV ± 12 mV	420 mV ± 16 mV
Flatness ³		
Full and Reduced (TSG6)	10 mV	15 mV to 12 MHz 20 mV to 20 MHz
(TSG16, TSG26)	10 mV	17.5 mV to 12 MHz 21.0 mV to 20 MHz
Markers		
Frequencies	500 kHz ± 3% ^{*1} 1.0 MHz ± 3% ^{*1} 2.0 MHz ± 3% ^{*1} 3.0 MHz ± 3% ^{*1} 4.0 MHz ± 3% ^{*1} 5.0 MHz ± 3% ^{*1}	1.0 MHz ± 3% ^{*1} 2.0 MHz ± 3% ^{*1} 4.0 MHz ± 3% ^{*1} 6.0 MHz ± 3% ^{*1} 8.0 MHz ± 3% ^{*1} 10.0 MHz ± 4% ^{*1} 12.0 MHz ± 4% ^{*2} 14.0 MHz ± 6% ^{*2} 16.0 MHz ± 7% ^{*2} 18.0 MHz ± 7% ^{*2} 20.0 MHz ± 7% ^{*2}
Multiburst/Manual (Last Burst Variable Mode)		
Frequency Range (TSG6, TSG26)	· 3.8 MHz to 4.5 MHz	· 14 MHz to 20 MHz ± 10%
(TSG16)	· 5.0 MHz to 6.0 MHz ± 10%	· 14 MHz to 20 MHz ± 10%
Accuracy	± 0.2% short term	± 1% short term

Prices and Specifications Subject to Change Without Notice.

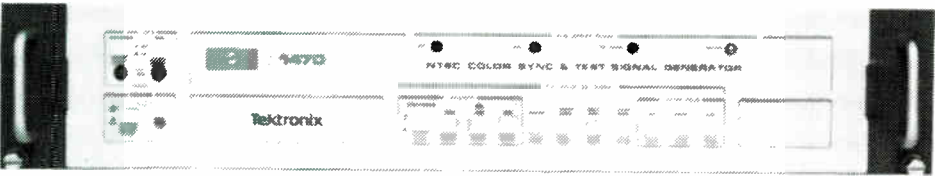
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SYNC AND TEST SIGNAL GENERATORS



1474 NTSC COLOR SYNC GENERATOR



1470 NTSC COLOR SYNC AND TEST SIGNAL GENERATOR

1470/1474

Full Color Sync Generator with Gen-Lock

Locks to Most Helical Scan VTRs

Simple to Operate

Compact and Economical

Full Selection of Sync and Timing Signals

Simplified Timing Via Multiple Subcarrier Phasing Controls

The 1470 Sync and Test Signal Generator is a compact, full color, gen-lock sync generator providing a full selection of high quality test signals.

The 1474 is identical in performance to the 1470 with the exception of test signals which, in the interest of economy, are not included. Both products have color gen-lock compatible with composite video from all normal sources including most helical scan video tape recorders.

The 1470 and 1474 can operate as master-sync generators or as units fully or partially timed from external sources. Color gen-lock capable of locking to most helical scan VTRs is a standard feature.

Front-panel pushbutton selection of external synchronization is provided. In external mode, the 1470 and 1474 automatically lock on composite video (1 V), composite sync (-4 V), or reference subcarrier (2 V). Two front-panel lights show subcarrier and/or sync external lock. Lights out indicate a switch to internal standard.

1470 Test Signal Functions

To simplify your test signal selection and speed testing operations, the 1470 has push button selection of test signals. All test signal push buttons, except the color field selectors, are self-cancelling. Each test signal provides aberration-free transitions and accurate flat levels.

Color Bars

The 1470 provides full-field color bars signals useful for color monitor adjustments, VTR tape lead in, and system checks.

Color Fields

Red, green, and blue color-field signals are provided for checking purity on color monitors/receivers that do not have individual gun on/off controls. These signals may also be used to provide a color background source. The red, green, and blue selectors may be used simultaneously to provide yellow, cyan, magenta, and white full field signals.

Linearity (Staircase)

Staircase signal with selection of high, medium, or low APL. Staircase subcarrier may be switched on or off from the front panel.

Test Signals

Test Signals available include: Window, Convergence Multiburst.

Window signals are suitable for measuring both line time and field time distortion. Convergence test signals are used to check color monitor convergence and linearity, and camera scanning linearity. Multiburst signals are used to check system frequency response.

Both the 1470 and 1474 are configured for rackmounting and are shipped ready to install in a 19 inch rack.

CHARACTERISTICS

SYNC GENERATORS OUTPUTS (1470/1474)

Horizontal Blanking — Leading Edge: 2.2 μ s to 0.6 μ s before the leading edge of sync. Trailing Edge: 9.1 μ s to 10.7 μ s after the leading edge of sync.

Horizontal Drive — Leading Edge: 2.2 μ s to 0.6 μ s before the leading edge of sync.

Vertical Blanking — 20 lines or 21 lines.

Subcarrier Phase Controls — Composite Test Signals: Subcarrier 1 and 2. Blackburst: Independent adjustment range of $\pm 120^\circ$, and jumpers allow a full 360° shift in 90° steps. Gen-Lock Master: Independent 360° front panel adjustment and 100° remote control, via a rear-panel BNC connector.

GEN-LOCK

Composite Sync — Output Level Into 75 Ω : 4 V \pm 0.5 V. Rise-time and Falltime: 140 ns nominal.

Composite Blanking — Output Level Into 75 Ω : 4 V \pm 0.5 V. Field Blanking Rise-time and Falltime: 140 ns nominal.

Vertical Drive — Output Level Into 75 Ω : 4 V \pm 0.5 V. Rise-time and Falltime: 140 ns nominal. Duration: 9 lines.

Horizontal Drive — Output Level Into 75 Ω : 4 V \pm 0.5 V. Rise-time and Falltime: 140 ns nominal. Duration: 6.35 μ s.

Burst Gate — Output Level Into 75 Ω : 4 V \pm 0.5 V. Delay from Line Sync: 5.1 μ s \pm 0.1 μ s. Rise-time and Falltime: 140 ns nominal. Duration: 2.5 μ s \pm 100 ns.

Subcarrier — Output Level Into 75 Ω : 2 V. Frequency: 3.579545 MHz \pm 10 Hz.

Black Burst — Sync Amplitude Into 75 Ω : 40 IRE. Burst Amplitude: 40 IRE (286 mV p-p). Burst Frequency: 3.579545 MHz \pm 10 Hz.

Gen-Lock Signal Loop Input — Composite Video Input Range: 0.5 V to 1 V when loop-through connectors are externally terminated into 75 Ω . Comp Sync: 1 V to 4 V, ref subcarrier 1.5 V p-p to 2 V p-p.

TEST SIGNAL OUTPUTS (1470)

Test Signal Generator Outputs Composite Video — Return Loss: ≥ 30 dB to 5 MHz. Output Level Into 75 Ω : 1 V. Sync: 40 IRE, ± 1 IRE (286 mV nominal amplitude). Peak Video Level: 100 IRE, ± 2 IRE (714 mV nominal amplitude). Blanking Dc Level: 0 V, ± 50 mV.

NTSC Color Bars — Full Field: 75% amplitude, 100 IRE white reference, 7.5% setup. Luminance Signal Accuracy: Within 2%. Chrominance Signal Absolute Amplitudes: Within 3% (all subcarrier frequency components).

Window Amplitude — 100 IRE, ± 2 IRE. Duration: 25.8 μ s, $\pm 3\%$. Starts at line 66 in each field and ends at 218 in each field. Rise-time: 150 ns nominal.

Crosshatch Pattern or Dots — Setup: 7.5 IRE ± 1 IRE. Peak Level: 77 IRE ± 2 IRE. Rise-time and Falltime: 150 ns nominal.

Multiburst — White Reference Amplitude: 100 IRE ± 2 IRE. Multiburst Amplitude: 50 IRE ± 2 IRE. Average Level: 55 IRE ± 1 IRE. Multiburst Frequencies: 0.5 MHz, 1.5 MHz, 2.0 MHz, 3.0 MHz, 3.58 MHz, 4.2 MHz.

Staircase Luminance Component — Five Step Amplitude (each step): 20 IRE ± 1 IRE (143 mV). Staircase Amplitude: 100 IRE ± 2 IRE (714 mV). Aberrations: Within 2% of step amplitude. Step Rise-time: 150 ns nominal.

Staircase Subcarrier Chrominance Component — Amplitude: 40 IRE ± 1 IRE (286 mV p-p). Phase: 180° . Differential Phase: $\leq 0.3^\circ$. Differential Gain: $\leq 0.5\%$. Subcarrier Envelope Rise-time: 400 ns nominal.

OTHER CHARACTERISTICS

1470 Power Requirements — 115 V or 240 V line voltage, high-low ranges. Selection switches for line voltages and ranges are accessible internally. Factory set to 120 V. 120 V Range: High, 108 V to 132 V; Low, 95 V to 110 V. 240 V Range: High, 216 V to 250 V; Low, 198 V to 242 V. Line Frequency: 50 Hz to 60 Hz. Power Maximum: 50 W. 1474 Power Requirements: 115 V: 90 V to 130 V. 240 V: 198 V to 250 V. Power: Maximum 40 W.

PHYSICAL CHARACTERISTICS

Dimensions	1470		1474	
	mm	in	mm	in
Width	483	19.0	483	19.0
Height	89	3.5	44	1.7
Depth	483	19.0	483	19.0
Weights	kg	lb	kg	lb
Net	4.9	10.8	4.2	9.2
Shipping	7.8	17.2	8.1	17.9

ORDERING INFORMATION

1470 Color Sync and Test Signal Generator (Rackmount)	\$3,595
1474 Color Sync Generator (Rackmount)	\$2,095

Prices and Specifications Subject to Change Without Notice.

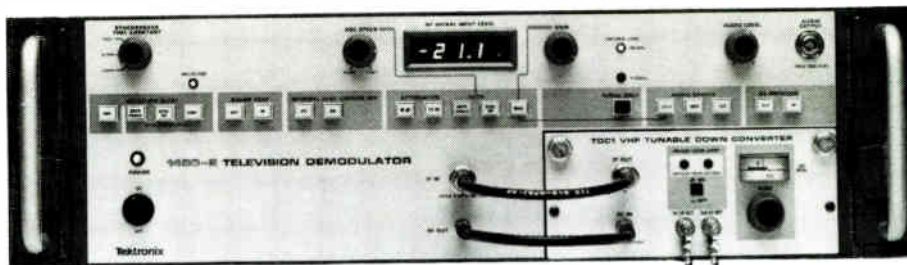
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TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

TELEVISION DEMODULATORS

The 1450-1 is compatible with
System M Television Transmission, the
1450-2 is compatible with System B/G,
and the 1450-3 is compatible with System I.



1450-2

1450-1/1450-2/1450-3

Measurement-Quality Performance for Negligible Distortion

Synchronous Detection Eliminates Quadrature Distortion

Envelope Detection for Accurately Determined Differential Phase

Surface Acoustic Wave Filter Provides Precise Nyquist Slope; Excellent Long and Short-Term Stability

Digital Readout of Input Power Level for Easy, Accurate Field Strength Readings

Constant-Bandpass Characteristics Over Wide Dynamic Range

Any Single VHF or UHF Channel Operation

UHF and VHF Tunable Down Converters

Conforms to EIA Standard RS-462 (System M Only)

The 1450-1 (System M), 1450-2 (System B/G) and 1450-3 (System I) Demodulator Mainframes are combined with a Tektronix Television Down Converter (TDC) to provide an accurate link between your transmitter's RF signals and video baseband measuring equipment. Unique components work together to identify and eliminate any possible demodulation distortion in reproduced signal characteristics. You see a transparent picture of your transmitter's performance and signal output.

High Performance Spectrum Analyzers for your RF measurements are described on pages 202-216.

Tunable or Fixed-Channel Down Converters

For demodulating an RF signal at a TV channel frequency, the 1450 Series demodulator mainframes must be used with a Tektronix TDC. Three compatible TDCs are available for each system and provide a selection between tunable and fixed-channel performance. The TDC Fixed-Channel Down Converter supports your specified system channel number. Tunable Down Converters available for VHF and UHF channels are the TDC1 and TDC2 respectively.

Demodulation of the transmitter IF signal may be accomplished by using only the mainframe.

Synchronous and Envelope Detection

The 1450 Series demodulators allow you to select either synchronous or envelope detection. Each method has advantages, yet both are required for full measurement capability. For instance, synchronous detection is necessary for measurements that can be seriously affected by quadrature distortion.

The 1450 Series demodulators have two synchronous video detectors operating in phase quadrature. One detects the in-phase signal; the other detects the quadrature component of the video signal. (The quadrature component is a measure of change in visual carrier phase resulting from a change of video level.)

However, if incidental phase modulation is present on the picture carrier, the amount of differential phase measured on a synchronously detected signal will be erroneous. Because of this, an envelope detector is necessary to determine the actual differential phase present. The envelope detector has linear transfer characteristics down to 3% carrier and so provides optimum modulation depth indication.

Tektronix-Developed Surface Acoustic Wave Filter

The 1450 Series demodulators feature a SAW (surface acoustic wave) filter developed by Tektronix. It provides more precise Nyquist slope characteristics without group delay distortion, improves long-term and short-term stability, and lowers maintenance costs compared to conventional filter network circuitry.

In conventional demodulators, the more precisely the bandpass characteristics approach an ideal Nyquist curve, the more complex the filter network required. In the 1450 Series demodulator mainframes however, the bandpass characteristics are determined by just a single component, the SAW filter. Precision is the result.

Conventional tuned IF circuitry must be meticulously adjusted and is subject to change with mechanical and thermal shock. But the SAW filter is in a sealed unit and accurately provides the critical selectivity characteristics of the demodulator—and requires no adjustments.

ORDERING INFORMATION, SYSTEM M

1450-1 Television Demodulator (Order one vision IF option)	\$14,400
Option 01 — 37 MHz Vision IF	NC
Option 02 — 38.9 MHz Vision IF	NC
Option 03 — 45.75 MHz Vision IF	NC

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-1 mainframe.

Order one vision IF option and either Option 11 or 14.

TDC Fixed Channel Down Converter — (Stipulate channel number when ordering.)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 01 — 37 MHz Vision IF	NC
Option 02 — 38.9 MHz Vision IF	NC
Option 03 — 45.75 MHz Vision IF	NC
Option 11 — System M Countries	NC
Option 14 — System M Countries	NC

ORDERING INFORMATION, SYSTEM B/G

1450-2 Television Demodulator (Order both Option 02 and Option 09)	\$11,900
Option 02 — 38.9 MHz Vision IF	NC
Option 09 — +90 ns/-170 ns Group Delay	NC

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-2 mainframe. Order both Option 02 and Option 12.

TDC Fixed Channel Down Converter — (Stipulate channel number when ordering.)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 02 — 38.9 MHz Vision IF	NC
Option 12 — System B/G/I countries	NC

ORDERING INFORMATION, SYSTEM I

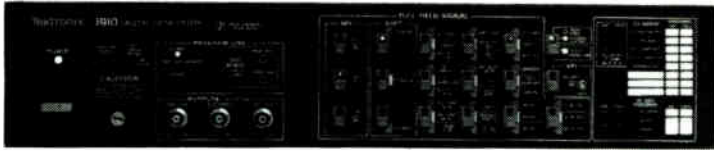
1450-3 Television Demodulator (Order Option 02)	\$13,145
Option 02 — 38.9 MHz Vision IF	NC

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-3 mainframe. Order both Option 02 and Option 12.

TDC Fixed Channel Down Converter — (Stipulate channel number when ordering.)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 02 — 38.9 MHz Vision IF	NC
Option 12 — System B/G/I countries	NC

TEKTRONIX, INC.

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1910 DIGITAL GENERATOR

1910 Digital Generator

Four External VITS Inputs for Insertion of Teletext, Closed Captioning, Source ID, etc.

Nonvolatile Memory to Maintain Selected VITS and Full Field Signal Configuration after Power Interruption

Signal Stored in Replaceable PROMs so Your 1910 won't Become Obsolete

The Accuracy and Stability of an all-Digital 10-Bit Sync and Signal Generation (RS-170A)

User Friendly RS-232C Control Port for Added Versatility

New Signals (Eye Test Pattern, Special Multipulse, Color Multipulse), New Functions (VITS Sequence, Field Sequence and More)

The 1910 Digital Generator is a state-of-the-art test signal generator designed for performance testing of NTSC video systems and equipment. The 1910 is especially suited where high accuracy and stability are required. It is also a VITS inserter (internal and external) with a full complement of signals that allow testing in studio, transmitter, production or research environments. Four external VITS inputs permit insertion of signals such as teletext, closed captioning, source ID, and other similar sources. These four inputs may be converted to four pulse outputs for use in a production environment.

External interfacing of the 1910 is controlled by an internal microprocessor and its nonvolatile memory. Test signals are stored as 10-bit digital words and converted to analog form by a 10-bit precision DAC (with deglitching to reduce differential gain and differential phase) to ensure signal accuracy as well as long term stability and repeatability.

Since all signals are stored in replaceable EPROMs, changing needs and industry standards will not cause obsolescence.

Control and versatility of the 1910 are greatly enhanced by the use of its RS-232 control port. Most functions of the 1910 can be controlled, reconfigured and saved. This includes VITS and full field signal selection, matrix signal creation, sequences and other features.

Remote Control

Remote control via a ground closure interface allows the user to control the full field signals, VITS insertion on lines 14 through 21 (VITS changes are saved in nonvolatile memory), VIR mode, bypass/operate, genlock source, control mode and reset to preprogrammed condition.

Programmability and RS-232 Control Port Features

The 1910 has a friendly command language that allows the user to program its features to meet specific applications. The user does not need to be a programming expert as the 1910 has a language that allows him to concentrate on the applications and not on programming.

The 1910 can be programmed and controlled using an RS-232 terminal. It can also be controlled or run under program control using an RS-232 host computer, including some handheld models or personal computers. The host computer could also be the Tektronix 1980 Automatic Measurement Set which would use the 1910 as a programmable signal source to stimulate and measure television equipment or a transmission link.

The 1910 can also be controlled over telephone lines. An auto-answer modem connected to the 1910 will allow the user to take control of the 1910, observe or modify its status and subsequently release control. The control and reconfiguration can also be accomplished automatically by a host computer.

Some of the capabilities offered by the RS-232 port include the ability to redefine the signal selection on the front panels (1910 and remote control unit) to better meet particular user needs, such as placing frequently used signals in a preferred position or in a convenient sequence for calibration; production testing or other special uses.

Pulse Out Feature

This included feature of the 1910 allows the user to change the four external VITS inputs to four pulse outputs for limited camera drive. The outputs available are H Drive, V Drive, Composite Blanking, and Burst Flag. Applications for pulse outputs are remote vans or standby sync generators. Composite sync and subcarrier outputs are always available.

The 1910 can also be used as a stand-alone signal source that will remain SCH phased and locked to an internal oven-controlled reference.

SIGNAL MATRIXING

The matrix feature of the 1910 divides the field into 16 blocks of lines consisting of approximately 16 lines each. Through the RS-232 control port the user can program any full field signal to appear in any of the 16-line blocks. Any signal can be repeated in as many blocks as necessary. There are three matrix signals in the 1910 that are factory set, but can be user-redefined and saved in a nonvolatile memory.

Some of the applications of this feature include user-defined tape headers or monitor test patterns. The matrixed signal can serve several users simultaneously, reducing the need for multiple signal outputs. By using the 15-line feature of the Tektronix 1480-Series Waveform Monitors, particular signals in the matrix can be viewed by the users.

DIGITAL GENERATOR

SYNC AND SUBCARRIER OUTPUT

All pulse outputs have negative going output levels of 4 V ± 10% into 75 Ω and have a risetime and falltime of 140 ns ± 20 ns.

Composite Sync Timing — EIA RS-170A Specifications.

Subcarrier Output — Frequency: See Genlock. Amplitude: 2 V p-p ± 10%.

The following optional outputs replace the external VITS input function of the 1910.

Composite Blanking — Horizontal Blanking Width: 10.7 μs ± 100 ns. Field Blanking: Field 1=21 lines, Field 2=21 lines.

Horizontal Drive Timing — Start of line blanking to end of line sync. ± 100 ns.

Vertical Drive Timing — Coincident with start of field. Duration: 9 lines.

Burst Flag — Duration: 2.5 μs ± 100 ns. Delay from Line Sync: 5.3 μs ± 100 ns.

RS-232C INTERFACE

Supports EIA Standard RS-232C format to the extent shown below.

Baud — 300 bit/s, 1200 bit/s, 2400 bit/s or 4800 bit/s.

Input/Output — ASCII, serial, asynchronous data. Full duplex input and output.

Character Length — Eleven bits/character, including a start and two stop bits.

Parity — Input: No parity required and, if present, is ignored. Output: No parity sent.

DIGITAL DATA INTERFACE

Parallel, 12 balanced, signal pairs consisting of 10 bits/sample, a clock, a timing reference signal.

Sampling Frequency — Four times color subcarrier. Nominally 14.3 MHz.

Sampling Phase Angle — Referenced to I axis and Q axis.

Dynamic Range — Ten bits/sample: Blanking level (0 IRE) is at digital word 240. Reference white (100 IRE) is at digital word 800 (5.6 LSB/IRE).

Input Logic Levels Terminated in 100 Ω — 10 k ECL compatible.

Output Logic Levels — 10 k ECL compatible.

Digital Input Timing — Setup and hold times are 10 ns before and after the 50% point of the negative transition of the clock.

Output Clock Timing — The 50% point of the leading edge of the clock pulse precedes the data by 5 ns ± 5 ns.

POWER SUPPLY

Line Voltage Range — 90 V ac to 132 V ac. 180 V ac to 250 V ac.

Maximum Power Consumption — 130 W.

Line Frequency — 47 Hz to 63 Hz.

PHYSICAL CHARACTERISTICS

	Cabinet		Rackmount	
	mm	in	mm	in
Dimensions				
Width	442	17.4	486	19.1
Height	96	3.8	88	3.5
Depth	525	20.6	525	20.6
Weight	kg	lb	kg	lb
Net	11.6	25.5	12.2	27.0
Shipping	16.7	37.0	16.7	37.0

ENVIRONMENTAL CHARACTERISTICS

Temperature — Operating: 0°C to +50°C. Nonoperating: -40°C to +65°C.

Altitude — Operating: To 4572 m (15,000 ft). Nonoperating: To 15,240 m (50,000 ft).

*1 Vertical interval color reference

INCLUDED ACCESSORIES

Pair of rack slides (351-0636-00); pulse out board (670-8007-00); cabinet hardware; rack hardware; operator manual; service manual.

ORDERING INFORMATION

1910 Digital Generator \$9,990
Option 03 — CBC Test Signals NC

OPTIONAL ACCESSORIES

Remote Control Unit
Order 015-0374-00 \$400
Interconnecting Cable (6 ft).
Order 012-0108-00 \$150
Interconnecting Cable (22 ft).
Order 012-0251-00 \$350

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

RANDOM NOISE MEASUREMENT SET



1430

1430

Conforms to CCIR Recommendation 568

In-Service Testing

Out-of-Service Testing

Program Material Protected by Fail-Safe Provisions

525/60 or 625/50 Standards

The 1430 provides random noise measurement capabilities on an in-service basis using the spatially adjacent noise matching technique with a waveform monitor. A program channel allows deletion of VITS and/or noise on selected lines in the vertical blanking interval and a monitor channel is provided for making measurements in conjunction with a waveform monitor.

The 1430 has two sections. One section, permanently mounted in the rack, contains inputs and outputs and program protecting material. The second section, containing circuitry and controls, may be easily removed without cable disconnection.

Monitor Channel

The monitor channel has an output independent from program for waveform comparison of the noise on the incoming signal and noise from the internal noise generator. Front-panel controls determine monitor channel parameters with three operating modes: VITS, Full Field, and Out of Service.

In the VITS mode, any line between 10 and 21 in either or both fields may be selected for insertion of the reference noise. The Full Field mode provides insertion on all active lines.

The Out of Service mode is provided for measurements on sources that do not have composite sync. In particular, these include transmission circuits not carrying signals at the time testing is conducted. Horizontal sync is added for waveform monitor synchronization.

In all modes the insertion width is internally set at 26 μ s. Delay between insertion and sync is controlled by the Delay adjustment. A switch and a potentiometer covering a range of 0 IRE to 100 IRE controls the insertion pedestal level.

Monitor channel gain control, with a ± 3 dB range, allows normalizing the signal for a 1 V peak-to-peak signal so that noise measurement relative to 1 V may be made. The internal noise weighting filter may be switched in or out from the front panel for evaluation of the spectral content of the incoming noise. This filter is the monitor channel only and does not affect the program output.

The 1430 may be used on both 625/50 and 525/60 systems but is shipped equipped for 525/60. The 1430 Option 01 is equipped for 625/50. Both models use the unified weighting filter per CCIR Recommendation 568. Insertion loss characteristics are as follows:

Insertion Loss \leq	
1 MHz	5.9 dB
2 MHz	10.2 dB
3 MHz	12.0 dB
4 MHz	13.0 dB
5 MHz	13.6 dB

Program Channel

The Program Channel has a 75 Ω input impedance and unity gain and output impedance of 75 Ω . No program impairment is introduced. A relay provides program signal continuity if the 1430 loses power. Internal programming, readily changeable, controls all deletion parameters. Up to three lines between 10 and 21 in either or both fields may be deleted. The deletion may be varied between the first half, second half, or full active portion of the video line. A pedestal may be inserted in the deleted portion of a line at 10 IRE, 50 IRE, or 100 IRE levels.

CHARACTERISTICS

PROGRAM CHANNEL

- Signal Input Level — 1 V nominal.
- Input Impedance — 75 Ω nominal.
- Input Return Loss — Power On: ≥ 46 dB to 5 MHz. Power Off or Bypass: ≥ 40 dB to 5 MHz.
- Output Impedance (Operating) — 75 Ω nominal.
- Output Return Loss (All) — ≥ 30 dB to 5 MHz.
- Output Blanking, Dc Level — 0 V within 50 mV, for blanking pulses.
- Inserted Pedestal Level — Adjustable to 100 IRE, 50 IRE, 10 IRE, or 0 IRE.
- 2T Pulse to Bar Amplitude — Within 0.25%.
- Mod Sin² Pulse (Chrominance and Luminance) — 100% within 0.5%.
- Waveform, Tilt — Field Rate Squarewave $\leq 0.5\%$, 26 μ s Bar, $\leq 0.5\%$.
- Differential Phase (10% to 90% APL, Standard Input) — Program Output: $\leq 0.15^\circ$.
- Differential Gain (10% to 90% APL, Standard Input) — Program Output: $\leq 0.2\%$.
- Line Time Amplitude Nonlinearity (10% to 90% APL, Standard Input) — $\leq 0.5\%$.
- Random Noise — Program Output: ≥ 75 dB (RMS) down (using weighting and low pass filters, 5 MHz).
- Hum or Transients on Noninserted Lines — ≥ 60 dB down, (using weighted and low pass filters, 5 MHz).
- Spurious Signals During Blanking Lines — ≥ 40 dB down, low pass (5 MHz).
- Signal Attenuation in Delete Mode — 2T Pulse: ≥ 70 dB down. Subcarrier (Color Bars): ≥ 60 dB down. Insertion pedestal: 10 IRE, 50 IRE, and 100 IRE, first half, second half, or entire line (up to 3; 10 to 21) or full field.
- Unwanted Pedestal at Time of VITS Insertion — ≤ 0.7 IRE.
- Time Jitter — ≤ 5 ns.

NOISE

- Pedestal Level — Pedestal Amplitude: 10 IRE, 50 IRE, and 100 IRE.
- Pedestal Position (Insertion Mode Only) — Delay: 10 μ s to 50 μ s.
- Noise Amplitude — 20 dB to 59.5 dB (0 dB = 700 mV RMS).
- Noise Attenuators — Absolute Amplitude: Within 1 dB.
- Noise Spectrum — Energy/Unit Bandwidth: Flat within 6 dB, 15 kHz to 5 MHz.
- Output Impedance — 75 Ω nominal.
- Output Return Loss — ≥ 30 dB.
- Noise Weighting and Low Pass Filter — Per CCIR recommendation 421-2.

AC POWER

- Line Voltage Range — 115 V ac: 90 V to 132 V. 230 V ac: 180 V to 264 V. Standard 1430: Factory set at 115 V ac. 1430 Option 01: Factory set at 230 V ac.
- Maximum Line Current — 0.25 A.
- Maximum Power Consumption — 30 W.
- Line Frequency Range — 48 Hz to 66 Hz.

PHYSICAL CHARACTERISTICS

Dimensions	mm		in	
	mm	in	mm	in
Width	483	19.0		
Height	44	1.7		
Depth	429	16.9		
Weights	kg		lb	
	kg	lb	kg	lb
Net	4.5	10.0		
Shipping	7.2	16.0		

INCLUDED ACCESSORIES

One pair slide guide (351-0331-03); cover program front panel (200-1481-00); manual.

ORDERING INFORMATION

- 1430 Random Noise Measuring Set (525/60) \$4,115
- Option 01 — Random Noise Measuring Set (625/50) .. +\$85

The 1430 and 1430 Option 01 are provided with the 5.0 MHz low pass filter and unified weighting filter per CCIR Recommendation 568.

VT-180

Prices and Specifications Subject to Change Without Notice.

TEKTRONIX, INC.

P. O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

AUTOMATIC VIDEO CORRECTOR



1440 NTSC AUTOMATIC VIDEO CORRECTOR



REMOTE CONTROL UNIT



REMOTE MONITOR UNIT

1440

Reduces Operating Costs

Extends Transmitter Tube Life and Reduces Maintenance Costs

Maintains Consistent High Quality Color Pictures

Automates Transmitter Modulation Level Control

Maintains Correct Sync-To-Video Ratios During Line Voltage Fluctuations

Automatic VIRS Referenced Correction of:

- Overall Video Signal Amplitude
- Chrominance to Luminance Gain Ratio
- Black Level
- Chrominance Phase
- Burst Gain
- Sync Gain

Optional Closed Loop Capabilities for Greater Efficiency and Economy in Transmitter and VTR Operations

The 1440 VIRS Automatic Video Corrector gives fully automatic correction of video gain, chrominance to luminance gain ratio, black level (set up), chroma phase, burst amplitude, and sync amplitude errors. With this corrector in your facility, the quality of the program signal is rigidly maintained. Ordinary changes and even many severe distortions are automatically corrected.

Video gain correction is referenced to the 50 IRE level of the VIRS. Chrominance to luminance gain ratio and burst phase corrections are referenced to the amplitude and phase of the VIRS chrominance respectively. Set up level correction is referenced to the 7.5 IRE level of the VIRS. Sync and burst gain corrections are controlled respective to their standard amplitudes.

Auxiliary Units

In most applications, the usefulness of automatic correction is enhanced by a Tektronix Remote Control Unit. You can conveniently select corrector modes and manually correct six signal parameters with this unit. The remote unit allows easy adjustment of the parameter's preset values for operation in the absence of a reference signal. Automatic correction value adjustments are also provided.

The Tektronix Remote Monitoring Unit provides meter indications of the amount of correction applied to the signal.

CHARACTERISTICS

Input Impedance — 75 Ω nominal.

Video Delay — 145 ns.

Output Impedance — 75 Ω .

Linear Waveform Distortions (Maximum) — Field Time: 0.5%, Line Time: 0.5%. Short Time: T Pulse/Bar: 2%. 2T Pulse/Bar: 1%.

Nonlinear Waveform Distortions — Differential Gain (10% to 90% APL): 0.5%. Differential Phase (10% to 90% APL): 0.5%. Dynamic Gain (10% to 90% APL): Picture 0.5%, sync 0.5%. Chrominance/Luminance Intermodulation: 0.5%. Line Time Nonlinearity: 0.5%.

Unweighted Video Signal to Random Noise Ratio — ≥ 60 dB to 5 MHz.

Spurious Subcarrier — -60 dB.

Field Time Tilt Correction — 25% Tilt on Input Signal: Will be reduced to $\leq 1\%$.

Clamping Characteristics — 10% to 90% APL or 90% to 10% APL. Recovery within one line to within five IRE without overshoot. Slow clamp option provided to reduce keyboarding when used with noisy signals. Hum Reduction: 1 V hum on input signal can be reduced to ≤ 25 mV.

Maximum Correction Ranges — Video Level at Input: ± 6 dB. Sync Level at Input: ± 3 dB. Chrominance/Luminance Gain: ± 3 dB. Burst Level: ± 6 dB Burst/Chrominance Phase: $\pm 25^\circ$. Black Level Set Up: ± 10 IRE.

Reduced Correction Ranges — Video Level: ± 2 dB. Sync Level: ± 3 dB. Chrominance/Luminance Gain: ± 3 dB. Burst/Chrominance Phase: $\pm 25^\circ$. Black Level Set Up: ± 5 IRE.

Dc Error-Signal Output — Source Impedance: 10 $k\Omega$. Open Circuit Voltage: 10 V for remote metering and telemetry. Six Outputs: Video gain, sync gain, burst gain, relative chroma gain, burst phase, and set up.

Chroma/Luminance Gain Correction (+3 dB to -3 dB)
-2T Pulse/Bar Ratio — 110% maximum and 92% minimum.
T Pulse/Bar Ratio: 125% maximum and 85% minimum.
2T Pulse Preshoot: 5% maximum. T Step Overshoot: 5% maximum. T Step Risettime: 95 ns minimum and 155 ns maximum.
Chrominance/Luminance Delay: 10 ns minimum and 10 ns maximum. VIR Signal Correction Rate: 0.35 s (90% correction without overshoot).

POWER SUPPLY

Line Voltage Range — 115 V ac $\pm 10\%$ and 230 V ac $\pm 10\%$.

Maximum Power Consumption — 35 W.

Line Frequency Range — 48 Hz to 66 Hz.

PHYSICAL CHARACTERISTICS

Dimensions	mm		in	
Width	483		19.0	
Height	881		3.5	
Depth	412		16.2	
Weight	kg		lb	
Net	7.6		16.7	
Domestic Shipping	11.0		24.1	
Export Shipping	16.8		37.0	

ORDERING INFORMATION

1440 NTSC Automatic Video Corrector \$6,325

OPTIONAL ACCESSORIES

Remote Control Unit for 1440 — (Includes two connectors).
Order 015-0240-00 \$775

Remote Monitor Unit for 1440 — (Includes one connector).
Order 015-0239-00 \$900

Six Foot Extender Cable — With connectors for use between the 1440 and Remote Control Unit or Remote Monitor Unit.
Order 012-0131-00 \$325

Three Foot Extender Cable — With connectors, for use between the 1440 chassis and the rear rackmounting section.
Order 012-0637-00 \$330

Prices and Specifications Subject to Change Without Notice.

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TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

AUTOMATIC VIDEO MEASUREMENT

1980 ANSWER

Complete Video Measurement Capability

Waveform Digitizer to Capture Video Signal

ANSWER BASIC Software for Measurements, Analysis and Report Generation

Remote Terminal Capability

The 1980 ANSWER Automatic Video Measurement Set provides total video measurement capabilities and offers maximum versatility and testing power. Special features provide quality measurement performance for a wide variety of applications.

Programmability

The 1980 can be programmed using ANSWER BASIC to make specific measurements required for a wide range of video applications. Comprehensive software packages (Options 01, 04, 05 and 06) are available from Tektronix. The instrument can be tailored for a specific operation, automatically performing a single measurement or a group of measurements continuously, on operator demand, or at prescheduled times. The results can be returned in report format, with or without graphics, on a variety of terminals and printers. ANSWER's microprocessor control and ROM memory give you extensive flexibility. Format or standard changes can be made without the expensive modifications or recalibrations associated with analog test equipment.

High Measurement Accuracy

The 1980 provides consistent measurement accuracy with high repeatability. Special features like signal offset, gain control, dither generation, and signal averaging can be used to minimize possible errors. Using these features can significantly reduce noise on the incoming signal and provide an effective resolution of 11 bits. This means you can use the 1980 for the most stringent measurement problems and have fast accurate results. Due to its digital nature ANSWER has very few internal adjustments, providing a high degree of reliability over long periods of time.

Amplitude, Phase and Timing Measurement

All type of measurements can be programmed into the 1980, including sync, burst, and bar amplitudes, differential gain and phase, and timing measurements. The 1980 can tell you immediately if video signals are within acceptable or legal limits.

Remote Operation

The 1980 can also be operated from a remote terminal over telephone lines. With Option 12 (Autocall), it can even be programmed to automatically telephone a remote terminal under user specified conditions, e.g., an out-of-limits signal. The 1980 can be used in a wide range of applications including unattended and remote transmission systems, and systems under computer control.

Display Terminal

ANSWER requires the use of a terminal for display. We offer several, including the 4105 and 4107 13 inch Color Graphics terminals. Standard RS-232C interfaces ensure compatibility with a wide range of other terminals and printers.

Available Measurement Programs

Application programs taking full advantage of the 1980's capabilities can be purchased from Tektronix to make most NTSC and PAL video broadcast measurements.

The flexibility of software-based measurements, unavailable in analog instruments, means that the 1980 can be tailored to a wide range of applications for the analysis, measurement, and testing of baseband video signals.

RS-232C Compatibility

ANSWER has five RS-232C (ASCII coding) Ports. This means the instrument can be adapted to a wide range of applications, including unattended and remote systems and computer control.

CHARACTERISTICS

SIGNAL HANDLING

Inputs — A and B (user selectable).

Impedance — 75 Ω .

Return Loss — Video: ≥ 46 dB to 5 MHz.

Signal Level — 0.5 V to 2 V p-p; sync negative.

Coupling — Dc or ac nonfloating (user selectable).

Clamp — Selection: Fast, slow, or off (user selectable). Level: Sync tip or back porch.

Hum Rejection — Fast: > 36 dB. Slow: ~ 1 dB.

Signal Averaging — Noise Reduction: 15 dB; with 32 line averaging and incoming signal-to-noise ratio of 46 dB or less. Dynamic Range: 2.5 V maximum; with 0 offset. Gain Range: 0 times to 15.5 times in 0.5 increments. Offset Range: 0 LSB to 248 LSB ± 0.5 LSB (8 LSB increments); referred to input at unity gain. Noise Floor: -72 dB (0 dB = 714 mV).

Distortions — Differential Gain Error: $\leq 0.5\%$. Differential Phase Error: $\leq 0.4^\circ$. Luminance Nonlinearity Error: $\leq 1.0\%$. Amplitude/Frequency Error (0 MHz to 5 MHz): 0 dB ± 0.25 dB; 7.16 MHz = ≥ 46 dB. Delay/Frequency Error (0 MHz to 5 MHz): ≤ 20 ns.

SYNCHRONIZATION

Modes — Internal: Satisfactory operation with 26 dB signal-to-noise ratio (Sound-in-Syncs disabled). Channel A and B (user selectable). External: Channel A and B (user selectable).

Amplitudes — Internal Mode: 143 mV (20 IRE) minimum; negative going sync on incoming signal. External Mode: Minimum: 0.2 V p-p into 75 Ω , composite sync. Maximum: 8.0 V p-p into 75 Ω , composite sync.

ANALOG TO DIGITAL CONVERSION

Resolution — 8 bits; 11 bits effective with dither.

Accuracy — RMS: ± 0.25 LSB ($\pm 0.1\%$). Peak: ± 0.5 LSB ($\pm 0.2\%$).

Conversion Rate — 20 MHz maximum.

Monotonicity — All 256 codes present and in sequence with no polarity reversals.

Sampling Rate — NTSC: 910 x horizontal frequency. PAL: 1135 x horizontal frequency.

Note: User selectable means that the function is controlled from the keyboard.

DIGITAL PROCESSING

Signal Memory — Video Acquisition Memory Capacity: 32 k samples. Video Acquisition Memory Controller Sampling Modes: Line rate, field rate or block sampling between two points on signal. Save Value: Multiples of eight. Skip Value: Multiples of two. Picture Monitor Bright-Up Pulse Output: Amplitude: ~ 240 mV. Termination: Internal in 75 Ω .

Real Time Clock — Internal Reference Stability: 10 P/M total over $+10^\circ\text{C}$ to $+50^\circ\text{C}$; crystal controlled. External Input Frequency: 1 MHz. External Input Amplitude: 0.3 V to 4.0 V.

Microcomputer — User Memory: 32 k words. Nonvolatile Memory: 8 k words.

Software Control — TEK ANSWER BASIC.

DIGITAL INTERFACE

Access Ports — Interface: RS-232C; (ASCII code). Number: 5; 3 DCE*1 (full duplex), 2 DTE*2 (full duplex).

Baud Rate — Five Ports: Up to 9600; user programmable.

Automatic Call-Up — RS-366 (optional).

User Operation — Via keyboard (ASCII).

*1 DCE = Data Communication Equipment

*2 DTE = Data Terminal Equipment

ENVIRONMENTAL CHARACTERISTICS

Temperature Range — Operating: 0°C to $+50^\circ\text{C}$. Nonoperating: -55°C to $+75^\circ\text{C}$.

Altitude Range — Operating: Sea level to 4572 m (15,000 ft). Nonoperating: Sea level to 15 240 m (50,000 ft).

PHYSICAL CHARACTERISTICS

Dimensions	Cabinet		Rackmount	
	mm	in	mm	in
Width	429	16.9	483	19.0
Height	355	14.0	355	14.0
Depth	593	24.0	644	22.0
Weights \approx	kg	lb	kg	lb
Net	25.0	55.0		

INCLUDED ACCESSORIES

Left rackmounting adaptor (367-0279-00); right rackmounting adaptor (367-0280-00); tracks (351-0104-03); 15 ft RS-232C modem connecting cable (012-0939-00); rubber cabinet feet (348-0068-00); power cord (161-0066-01); rack slides (351-0623-00); manual.

With the Option 06 Dual Standard Applications Software, ANSWER can make automatic or operator-initiated measurements on both PAL and NTSC video signals. The video standard in use on the incoming video signals is specified by the user, and thereafter Option 06 makes all measurements accordingly.

This program combines all features of Option 04 (NTSC Video Monitoring) and Option 05 (PAL video monitoring) into one program. The characteristics remain the same as in those programs.

The Option 06 program is stored in PROMS on two circuit boards which plug into the 1980 base unit.

ORDERING INFORMATION

For Base Unit Plus Software, Order:

1980 ANSWER with Option 01 —
NTSC Applications Software **\$26,000**

1980 ANSWER with Option 04 —
NTSC Monitoring Software **\$26,800**

1980 ANSWER with Option 05 —
PAL Monitoring Software **\$26,800**

1980 ANSWER with Option 06 —
PAL/NTSC Applications Software **29,5000**

Option 12 — Automatic Call Equipment **+\$500**

For Software Only, Order:

1980 F04 **\$5,800**

1980 F05 **\$5,800**

1980 F06 **\$8,500**

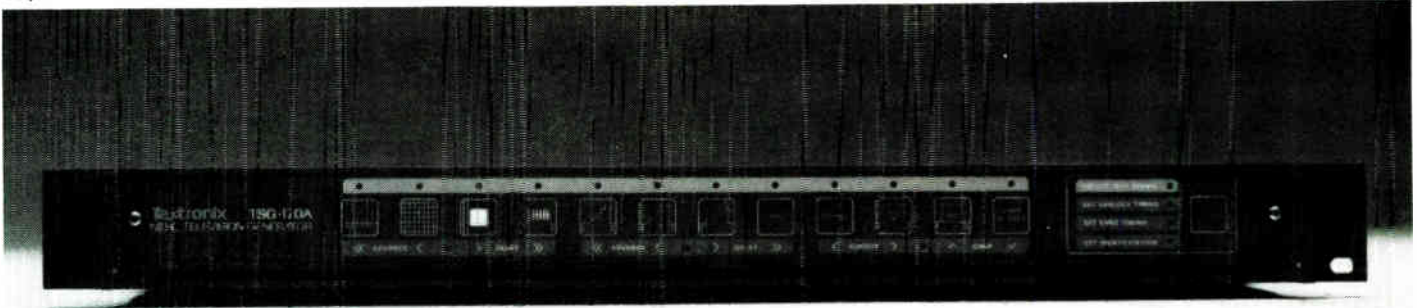
OPTIONAL ACCESSORIES

Service Kit — Order 067-1115-00

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TELEVISION GENERATOR



TSG-170A NTSC TELEVISION GENERATOR

The accuracy and long term stability of the TSG-170A test signals are enhanced by its precision digital to analog converter. Each converter is automatically laser trimmed to 12 bit accuracy.

Color bar blanking width is 10.6 μ s to facilitate verification of proper blanking throughout your system.

The TSG-170A sync generator's stable color standard and unique digital genlock make it ideal for either master generator or slave operation. All outputs are correctly SC-H phased, even if the TSG-170A is locked to an improperly SC-H phased reference input. The digital genlock calculates sync timing and subcarrier phase to properly identify color framing of the input reference signal.

The TSG-170A automatically senses composite video or 3.58 MHz subcarrier reference inputs. It switches to an internal oscillator in the absence of a reference input signal. This high stability crystal oscillator, with its constant temperature oven, ensures long term frequency stability.

Horizontal and subcarrier phasing control settings are stored in non-volatile RAM for digital control of genlock timing. In addition, a separate set of timing controls is provided for sync outputs to simplify system timing. A front panel lockout feature prevents inadvertent changes to the front panel system timing controls.

The TSG-170A has eight sync generator outputs; four fixed and four programmable. Option 1 adds a separate SMPTE bar output for routine studio needs, such as tape leaders, freeing the front panel selected test signals for engineering and maintenance.

An ID of up to 12 alphanumeric characters may be inserted in the SMPTE bar output. This front panel programmable ID is ideal for identifying satellite feeds, and videotapes.

Option 1 also provides a 400 Hz audio tone output, useful for

checking program line continuity and adjusting audio levels. The tone can be adjusted over a 0 to +8 dBm range into 150 or 600 ohms.

Remote operation of test signal selection and timing functions is available by simple ground closure control through a rear panel connector.

TSG-170A NTSC
Television Generator.... **\$4800.00**

TSG-170A Option 1 Adds a separate SMPTE Bars output with 12 character ID and audio tone output. **\$1000.00**

TEST SIGNAL GENERATOR

Luminance Amplitude Accuracy	$\pm 1\%$
Chrominance-to-Luminance Gain	$\pm 1\%$
Output Impedance	75 ohm
Return Loss	36 dB to 4.2 MHz
TEST SIGNALS	
COLOR BARS	
SMPTE Bars with 10.6 μ s blanking	
CONVERGENCE	
14 lines per field, 17 lines per horizontal	
PULSE & BAR WITH WINDOW	
21 Pulse HAO	
White Bar Amplitude	250 ns \pm 25 ns
Field Fill	100 IRE
Line Fill	0.5%
MULTIBURST	
White Reference	
Bar Amplitude	428.6 mV (80 IRE)
Packet Amplitude	428.6 mV (80 IRE) p-p
Burst Frequencies	0.5, 1.0, 2.0, 3.0, 3.58 and 4.2 MHz
5-STEP STAIRCASE	714.3 mV (100 IRE)
LUMINANCE RAMP	0 to 714.3 mV (100 IRE)
MODULATED RAMP	
Chrominance Amplitude	
Diff Gain	265.7 mV (40 IRE)
Diff Phase	0.9%
APL	0.3°
APL	
10% and 90%	
AC BOUNCE	
Bounce Rate	
1 second high, 1 second low	
FLAT FIELDS	
10 IRE, 100 IRE	
RED FIELD	
Luminance Amplitude	
202.2 mV (28.3 IRE)	
MULTIBARS	
Color bars and multiburst	
NTC7 COMPOSITE	
80 IRE, 5-step modulated staircase and pulse & bar	
LINE SWEEP	
714.3 mV p-p Linear sweep from 500 kHz to 5MHz	
MULTIPULSE	
Amplitude	
714.3 mV	
Frequencies	
0.5, 1.0, 2.0, 3.0, 3.58, and 4.2 MHz	
SYSTEM TEST MATRIX	
Multibars and NTC7	
MONITOR SETUP MATRIX	
Convergence, MWB, convergence and pulse & bar, reverse bars, and convergence	
DAC TEST	
500 kHz and 3.58 MHz	
OPTION 01	
COLOR BARS	
SMPTE bars	
IDENTIFICATION	
12 characters, 7 x 9 matrix	
AUDIO TONE	
400 Hz, 0 to 8 dBm adjustable	

SYNC GENERATOR

SUBCARRIER STABILITY	3.579545 MHz \pm 1Hz over temperature
BLACK BURST OUTPUT	
Setup	
7.5 IRE	
Blanking	
Less than 10.6 μ s	
PULSE OUTPUTS (GENERAL CHARACTERISTICS)	
Amplitude	
4.0 \pm 0.1V	
Impedance	
75 ohm	
Return Loss	
30 dB to 4.2 MHz	
Rise Time	
140 ns \pm 20 ns	
PULSE OUTPUTS (SIGNALS)	
COMPOSITE SYNC	
BLANKING	
Horizontal Blanking Duration	
10.7 μ s \pm 0.1 μ s, jumper selectable for 10.2 μ s or 10.9 μ s	
Vertical Blanking Duration	
20 lines, jumper selectable for 19 or 20 lines	
BURST FLAG	
HORIZONTAL DRIVE	
VERTICAL DRIVE	
COLOR FRAME PULSE	
SUBCARRIER OUTPUT	
Amplitude	
2 Vp \pm 0.2V	

GENLOCK

GENLOCK SOURCE (COMP VIDEO)	
Input Configuration	
75 ohm loop-through	
Return Loss	
At least 40 dB to 4.2 MHz	
Burst Amplitude	
286 mV \pm 3 to -6 dB	
Sync Amplitude	
286 mV \pm 3 to -6 dB	
GENLOCK PERFORMANCE	
HORIZONTAL TIMING RANGE	
10 μ s advance, 5 μ s delay	
VERTICAL TIMING RANGE	
0, 1, or 2 lines advance or 1 line delay, jumper selectable	
BURST LOCK RANGE	
3.579545 MHz \pm 20 Hz	
Jitter	
0.5°	

PHYSICAL CHARACTERISTICS

DIMENSIONS	
Rackmount Height	
1.734 inches (4.4 mm)	
Width	
19.0 inches (48.3 mm)	
Length	
22.1 inches (56.3 mm)	
POWER	
90-132 VAC or 180-250 VAC, 80 W max	
TEMPERATURE	
Operating 0° to 40°C, Storage -40° to +65°C	

TELEMET

DIVISION OF GEOTEL, INC.
185 Dixon Avenue
Amityville, L.I., New York 11701
(516) 842-2300 TWX 510-227-9850

VIDEO BROADCAST TEST EQUIPMENT

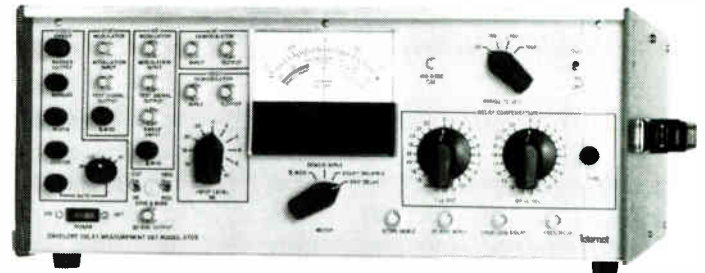
MODEL 3705

Envelope Delay Measurement Set

Envelope Delay Measurement Set Model 3705 measures envelope delay over a wide frequency range. It is expressly designed for measuring the envelope delay incurred in equipment used in the transmission and reception of color television signals.

The Model 3705 uses the split-frequency method proposed by Nyquist and Brand: a relatively low frequency, 20 kHz, called a split-frequency amplitude-modulates a video or RF test frequency and the modulated test signal is applied to the equipment "under test". The split-frequency, is demodulated from the output of the equipment "under test" and compared in phase with the split-frequency before modulation.

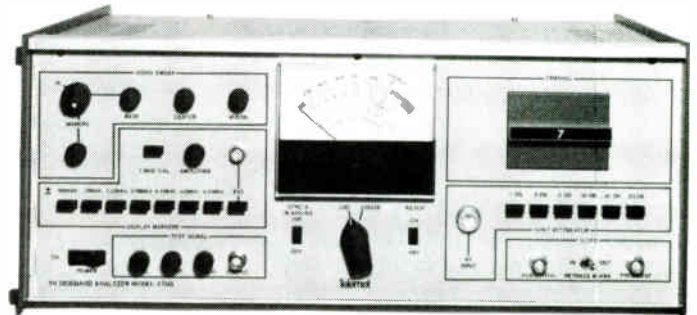
3705-A1 Envelope Delay Test Set w/Internal Sweep Generator \$7650.00



MODEL 3706-A1 Sideband Analyzer

Sideband Analyzer 3706 by direct display permits thorough examination of the entire sideband response of television transmitters and sideband filters. It can also be used for the examination, evaluation, and adjustments of video circuits. Spurious emissions, low level sidebands, and frequency deviations are accurately pin pointed with the use of 7 crystal markers whose frequencies are of the most interest in a television transmitter's VSB passband. Discrete frequency marking is augmented by a 1 MHz crystal comb frequency marker which provides markers at 1 MHz intervals across the swept band on display.

3706-A1 TV Transmitter Sideband Analyzer, includes VHF channel element (3708-A) \$7500.00



MODEL 6910 Audio DA System

Audio DA System Model 6910 is designed for distribution of audio signals in AM, FM and TV systems. The performance characteristics of the 6910 are in keeping with the high standards of modern audio equipment

Flexibility as to impedances, and expandibility as to the number of single and dual channels available should fill all input and distribution requirements.

6910-A1	Audio D.A. System consisting of:	
6001-A1	Frame	\$ 525.00
6101-A1	Power Supply	525.00
6201-A2	Audio Distribution Amplifier w/terminal board assembly	475.00
4145-A1	Extender	75.00
7300-B1	Audio Monitor	1085.00



TELEMET

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VIDEO BROADCAST TEST EQUIPMENT

MODEL 4706-A1 NTSC CHROMA KEYSER DECODER

Using unique new proprietary circuitry, Telemet's NTSC Chroma Keyer Decoder Model 4706 is designed to put your station's existing RGB Chroma Keyer inline, providing zero horizontal delay NTSC Chroma Keying. Also, a comb filter is incorporated in the unit that eliminates chroma crawl.

Another important feature is that the unit can use different encoded video sources. This includes standard and triaxial color TV cameras, video tapes, remotes or any other composite NTSC signal, without restriction to a particular one.

4706-A1\$3,000.00



MODEL 4706-A1

MODEL 7932 12 x 3 AV ROUTING SWITCHER

Audio/Video Routing Switcher 7932 is a modular system that uses 4 in 1 out video cards, and 4 in 1 out audio cards. The audio and video output amplifiers are also separate plug-in cards; therefore, a system can be expanded from 4 x 1 to 4 x 2, 8 x 1, 8 x 3 etc., to a maximum of 12 x 3 in one chassis. For economy, two other chassis are available wired 12 x 1 and 12 x 2 which can be used when it is known that expansion will not be needed.

7932-B1 A/V Routing Switcher w/audio follow and V.I. trigger (remote control version)

12 x 1\$2,300.00
12 x 23,700.00
12 x 35,050.00

Note: Above prices include Switchcraft pushbutton panels with 50' cables.

7932-B2 A/V Routing Switcher w/audio follow and V.I. trigger (self contained version)

12 x 1\$2,240.00
12 x 23,570.00
12 x 34,830.00

Note: Above prices include Switchcraft pushbuttons on front panel.



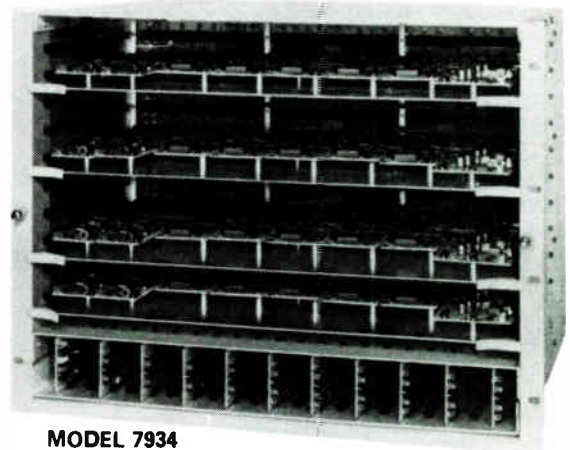
MODEL 7932

MODEL 7934 AV ROUTING SWITCHER

KEY FEATURES

- Remote Controlled
- Crosspoints and Latching CMOS I.Cs. provide Energy Efficient Design
- Unlimited Control Versatility and Computer Interface with Programmable Switching
- Less than 0.1µs Switching Time, 50mV max instantaneous video change
- V.I. Switching
- Stereo Audio Switching plus Auxiliary. (Can be used for Tally)
- Breakaway Audio available
- Hi level Tally available
- 20 x 10 standard, 400 x 400 possible
- Input Sync Adders optional
- Video DC Restorers optional
- Accurate Color Timing
- Complete accessibility through modular construction
- All boards removable/insertable with power on

NTSC, PAL and SECAMPOR



MODEL 7934

MODEL WU-05

Onyx Distribution Amplifier

This Onyx CCTV Distribution Amplifier allows you to isolate one video input signal into four individual video output signals. The user may install four monitors in four different places. It is lightweight and will give you dependable, long-term operation.

FEATURES

- Compact, solid state, reliability
- Receives an input signal, isolates and increases it, then provides four independent video outputs
- Four video outputs is four equal 75-ohm loads, by its four individual video amplifier circuit
- Convenient, desk top, easy installation

Connection

All ONYX DISTRIBUTION AMPLIFIERS use five BNC Connectors. Connections and cable should be given a continuity test to insure proper installation. An WU-05 Distribution Amplifier accessory model is recommended for distance within 1000' (300M.).

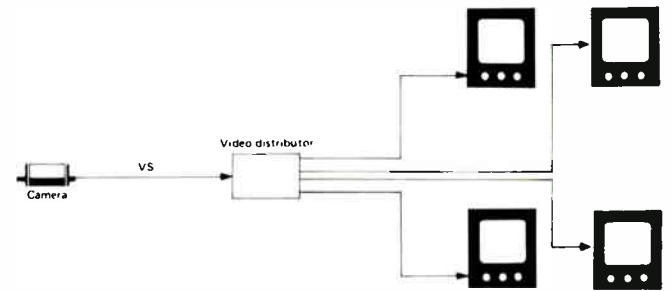
SPECIFICATIONS

Video Input: 1Vp-p to 2Vp-p, 75-ohm, 1 Input
Video Outputs: 1Vp-p to 2Vp-p, 75-ohm, 4 Outputs
Video Gain: Unity
Frequency Response: 2.5Hz to 15MHz to ± 0.3 dB
Bandwidth (-3dB) 1Hz to 15MHz
Input Voltage: 110V 50/60Hz (220V optional)
Power Consumption: 5 Watts
Video Connectors: BNC
Construction: Steel, Silver Gray Baked enamel
Size: 6" x 1.875" x 8.25"
(152(W) x 48(H) x 210(D)mm)
Weight: 2.75 lbs. (1.25kg)

Model WU-05 1-4 \$75.00 5+ \$72.00



WU-05



MODEL WU-07

Onyx Video Amplifier

This Onyx CCTV Video Amplifier is especially for the long cable run compensation. For example: when your video camera is installed from a distance of 3000' (1000M), you will need to use the WU-07 Video Amplifier.

FEATURES

- Compact and lightweight
- Convenient, easy installation, desk top
- Use in those applications where long coaxial cable runs are required
- Restores the high-frequency components of the video signal that are lost in long cable runs
- Produce crisp, clear and constant images despite relatively long distance
- An adjustable voltage gain of 13dB and fully regulated power will supply the user with stable continuous operation

Connection

All ONYX VIDEO AMPLIFIERS use a BNC Connector. Connections and cable should be given a continuity test to insure proper installation. The table shown provides maximum operating distance for Video Cable. An WU-07 line amplifier accessory model is recommended for distance over 1000' (300M.).

Cable Requirements

Max Distance (Feet)	Video (No Amp)	Amplified Video (WU-07)	Max Distance (Meters)
1000'	RG-59U	RG-59U	300M
2000'	RG-11U	RG-59U	600M
3000'		RG-59U	900M
5000'		RG-11U	1500M
6500'		RG-11U	2000M
8600'		RG-15U	2800M



WU-07



SPECIFICATIONS

Input Voltage: 110V 50/60Hz (220V optional)
Power Consumption: 6 Watts
Power: On-Off Switch
Gain/High Frequency Gain: Knob Adjustable
Video Connectors: BNC
Input Level: 0.4 to 2.0Vp-p
Input Impedance: 75 ohms
Maximum Video Gain: 13 dB
Maximum High Frequency Gain: 18 dB
Output Impedance: 75 ohms
Construction: Steel, Silver Gray baked enamel
Size: 6" x 1.875" x 9.25"
(152(W) x 48(H) x 210(D)mm)
Weight: 2.63 lbs. (1.2kgs.)

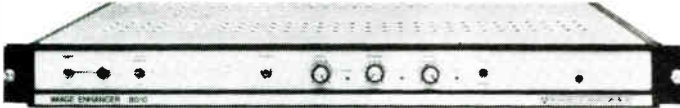
Model WU-07 1-4 \$75.00 5+ \$72.00



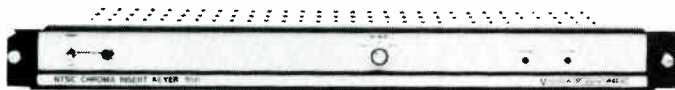
Thomson-CSF Broadcast, Inc.

37 Brownhouse Road
Stamford, CT 06902
(203) 327-7700

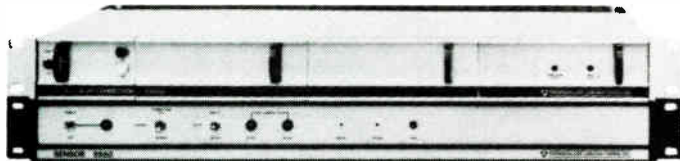
VIDEO PRODUCTS



8010N



7011



5500B
5550

MARK IV IMAGE ENHANCER

Models 8010N, 8310, and 8410E

Thomson-CSF Broadcast Mark IV Image Enhancer provides truly effective enhancing of the vertical and horizontal detail of a television video signal to produce increased picture sharpness. The Mark IV line of image enhancers (models 8010N, 8310, and 8410E) provides operational compatibility with all types of monochrome and color television cameras.

By comparing each picture element with its adjacent horizontal and vertical elements within a picture field, a detail signal is generated. The detail signal is then combined with the main video signal to enhance the sharpness of the picture element being analyzed.

Using the new combed H and crispening technique, the Mark IV Image Enhancer provides video enhancement without degrading color signal quality by effectively separating chrominance from the detail signal. Combing the detail signal improves the signal-to-noise ratio, allowing more enhancement to be used.

In the automatic mode, the model 8010N Image Enhancer automatically maintains picture sharpness and resolution without double enhancement if a previously enhanced program passes through the unit.

The delay lines are positioned in temperature controlled ovens to insure highest stability and lowest drift. Thus, the unit operates within the temperature range of 0 to 50°C without any readjustments required. The Mark IV Image Enhancer is available for NTSC, PAL, and PAL-M applications.

FEATURES

- With Improved Signal-To-Noise Ratio
- Enhances Network Feeds, Local Origination Programming
- Automatic Sensing Prevents Over-Enhancement
- With Combed H and Crispening
- Available in NTSC, PAL, and PAL-M

8010N	.....	\$4900.00
8310	.....	4900.00
8410E	.....	4900.00

NTSC CHROMA INSERT KEYER

7011

The Model 7011 Chroma Insert Keyer was especially designed for existing color installations. This unit contains its own insert keyer, thus eliminating the need for an external keyer. Installation is direct, and minimal system re-timing is necessary since through delay is less than 25 nanoseconds.

With the Model 7011, noise and "color crawl" are minimized from horizontal transitions. To reduce annoying crawl from the key signal, a unique comb filter is used to separate luminance and chrominance spectrums.

Since bandwidth of the Model 7011 key signal is the bandwidth of the color difference signals, the key is quieter than a full bandwidth key keyers.

APPLICATIONS

- Now the broadcaster can send a signal over a network with a "blue flat" background, and a local scene can be inserted in each city that receives the network signal.
- A program can be recorded on video tape, and played back for post-production editing and chroma keying.
- A single-cable color TV camera can be used to send a composite NTSC signal, with chroma keying done external to the camera control unit.
- Portable "minicameras" can be used to generate a composite NTSC signal, with keying done on a received signal.
- In new studio design, keying can now be done at the output of the composite program switcher.
- No separate RGB switcher is required for chroma keying.
- Furnished with remote control panel.

7011 \$3325.00

COLOR CORRECTION SYSTEM

NTSC Color Corrector, Model 5500B

Sensor, Model 5550, Remote Control, Model 5555

The Color Correction System was designed specifically for use in film chains. Typically, films may exhibit color deficiencies due to exposure and/or developing errors. Color mismatch is another problem which often occurs when sections of different films have been spliced together. Scenes shot from different cameras under different lighting conditions or a string of back-to-back film commercials can all contribute to color imbalance problems.

And now with the advent of ENG, color imbalance and colorimetry pose additional problems. Matching remote camera shots to indoor studio programs or assembling tapes from different locations is "chancy" at best. With the 5500B Color Corrector you will be able to rebalance and match video signals after encoding, either after the play-back tape machine or following the microwave receiver during live coverage.

Thomson-CSF Color Correction System compensates for all of these color balance deficiencies. Available in NTSC and PAL.

5500B	.....	\$4400.00
5550	.....	3595.00
5555	.....	925.00

Prices and Specifications Subject to Change Without Notice.

VT-187

TROMPETER ELECTRONICS

8936 Comanche Avenue
(818) 882-1020



Chatsworth, CA 91311
Telex/TWX: 910-494-1210

Standard Coax Patching Systems

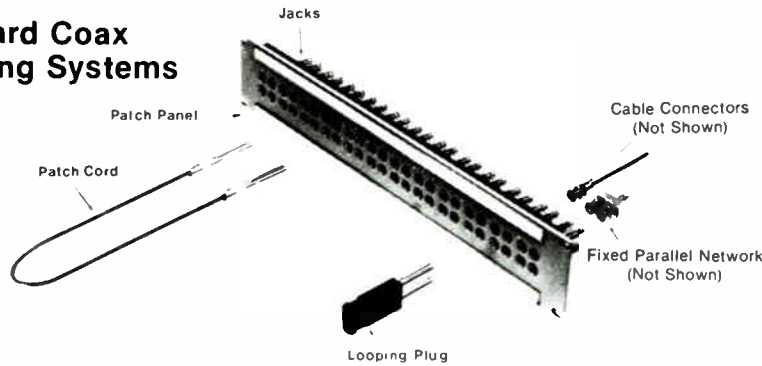
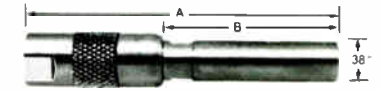


FIG. 1

Plugs & Cable Assemblies



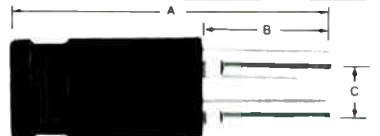
PATCH PLUGS (Crimp)
PL1CN * 070 pin (RCA) A = 2.80" B = 1.57"
PL1WCN * 090 pin (WE) A = 2.52" B = 1.29"

FIG. 2



ADAPTER PLUG (BNC)
AD1 070 pin (RCA) A = 2.77" (Shown)
AD1W 090 pin (WE) A = 2.83"

FIG. 3



LOOPING PLUG
C = 625" C = 1.00"
LPZ LPL-Z 070 pin (RCA) A = 3.76" B = 1.55"
LPW-Z LPLW-Z 090 pin (WE) A = 3.50" B = 1.25"

FIG. 4



PATCH CORD
PC-L-Z (50, 75, 93 ohm) 070 pin (RCA)
PCW-L-Z (50, 75, 93 ohm) 090 pin (WE)

FIG. 5



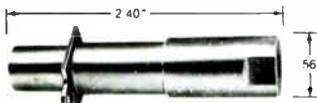
CABLE ASSEMBLY
PCX-L-Z (50, 75, 93 ohm) 070 pin (RCA)
PCWX-L-Z (50, 75, 93 ohm) 090 pin (WE)
Designate 75 ohm BNC by prefix U

FIG. 6

Cable Assemblies Ordering Information:

Assembly Model PC-L-Z
Standard Length in Inches _____
(6, 12, 18, 24 or 36)
Impedance (Ohms) _____ (50, 75, 93)

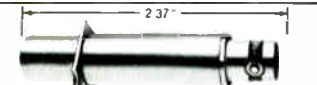
Jacks: Single/Dual



PATCH JACK (Cable entry) J3E-N * 070 pin (RCA)
J3WE-N * 090 pin (WE)

FIG. 7

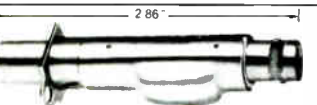
Usable whenever cable entry is desired in place of standard connectors



PATCH JACK (BNC) J3 J3W 070 pin (RCA)
J3W 090 pin (WE)

FIG. 8

Rear mates with Trompeter PL20-N series or any standard BNC plug



PATCH JACK (BNC) (Self-terminating) J13-R ** 070 pin (RCA)
J13W-R ** 090 pin (WE)

FIG. 9

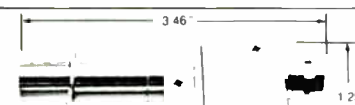
Rear mates with any BNC plug. Circuit is terminated when patch plug is removed. Signal degradation increases when used above 100 MHz. See Fig. 17



PATCH JACK (Normal Thru) J14 Series

FIG. 10

For available circuit configuration See Fig. 12 thru 16



PATCH JACK (Dual) — Wired J15B (BNC) J15H (TNC) 070 pin (RCA)
J15WB (BNC) J15WH (TNC) 090 pin (WE)

FIG. 11

PATCH JACK (Dual) — No Wiring J15BA (BNC) J15HA (TNC) 070 pin (RCA)
J15WBA (BNC) J15WHA (TNC) 090 pin (WE)

REAR ENTRY CABLE J15-N * 070 pin (RCA)
J15W-N * 090 pin (WE)

Introduction:

Trompeter Electronic's standard coax patching systems, shown on this page, provide limitless flexibility to route signals from one place to another. Two basic versions of Standard Coax patching are available. The RCA 50 ohm with a pin size of .070" and the Western Electric (WE) 75 ohm type with a pin size of .090". Signal degradation occurs above 100 mhz. The two series are not interchangeable but can be intermixed on the same panel along with TEI's audio patch jacks and panel lites (not shown).

PART NO		FUNCTION	REAR ENTRY	PIC. FIG.	CIRCUIT FIG.
RCA	WESTERN ELECTRIC				
J3E-N	J3WE-N	Patch Jack Single	Cable*	7	-
J3	J3W	Patch Jack Single	BNC Standard TNC Available	8	-
J3D	J3WD	Patch Jack Single	Solder Pot	Not Shown	-
J13R**	J13WR	Patch Jack Single — Self Terminating	BNC Standard TNC Available	9	17
J13C-R**	J13WC-R	Patch Jack Single — Self Terminating	Cable* Crimped	Not Shown	17
J14 Series	J14W Series	Patch Jack Dual — Self Looping	Dual BNC Standard TNC Available	10	12 thru 16
J15 Series	J15W Series	Patch Jack Dual — Prewired Parallel or No Wiring	Single — BNC TNC or Cable*	11	-

**Substitute Resistance for R 1" W 5%!

N *	1	2	4	5	3
RG CABLE	58	59	122	174	223

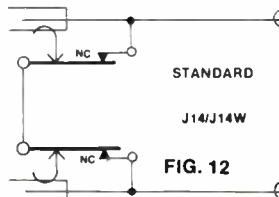


FIG. 12

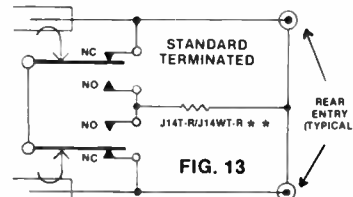


FIG. 13

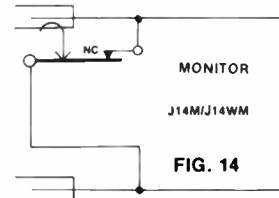


FIG. 14

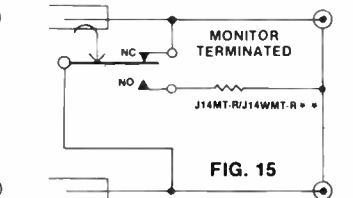


FIG. 15

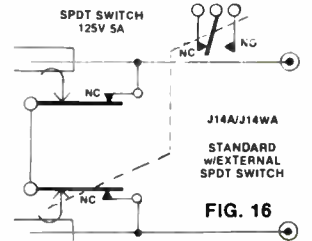


FIG. 16

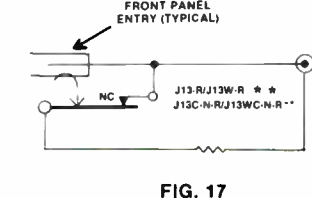


FIG. 17

Patch Panels

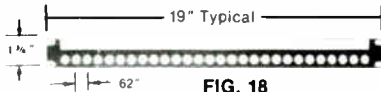


FIG. 18

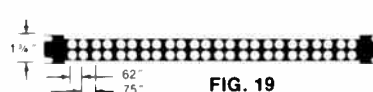


FIG. 19



FIG. 20

PANEL HEIGHT	NO. ROWS	FIG.	PANEL DESIGNATION AND NO. OF SINGLE JACKS ACCOMMODATED											
1 3/4"	1	18	12	14	16	20	24S	26	28					
	2	19								32S	40S	48S	52S	
3 1/2"	2	20					24L	28A	32A	36A	40	48	52	56

Will not accept J14 or J15 Dual Jack
Full Line Catalog and Pricing Available on Request.

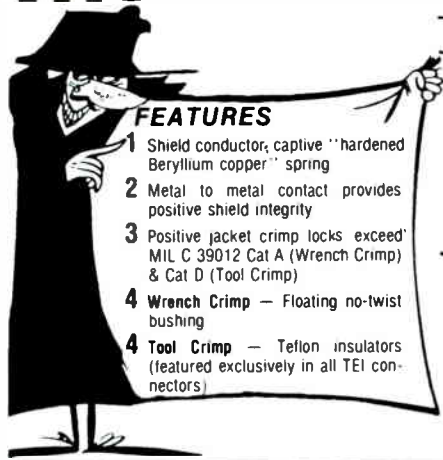
Ordering Information:

JSI - 12 / J3W

Panel Type _____
(JS = Aluminum)
(JSI = Insulated)
No. of Jack Holes _____
Jack Type _____
To Order Panels Only, Leave "Jack Type" Blank.

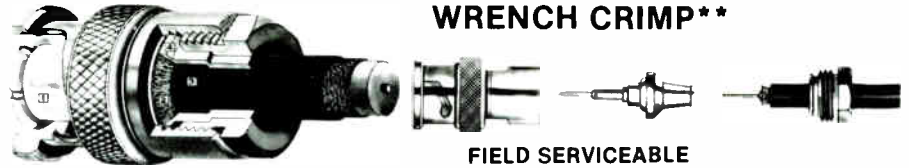
The TROMPETER NETWORK CONNECTION

MINIATURE COAX SERIES CONSTRUCTION



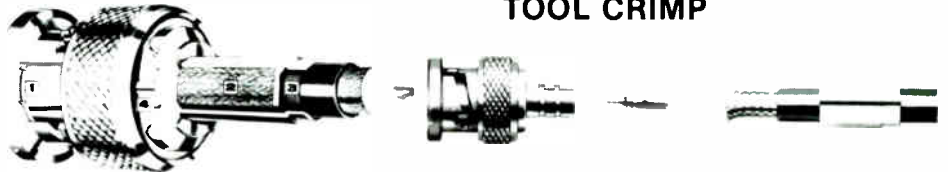
FEATURES

- 1 Shield conductor, captive "hardened Beryllium copper" spring
- 2 Metal to metal contact provides positive shield integrity
- 3 Positive jacket crimp locks exceed MIL C 39012 Cat A (Wrench Crimp) & Cat D (Tool Crimp)
- 4 Wrench Crimp — Floating no-twist bushing
- 4 Tool Crimp — Teflon insulators (featured exclusively in all TEI connectors)



WRENCH CRIMP**

FIELD SERVICEABLE



TOOL CRIMP

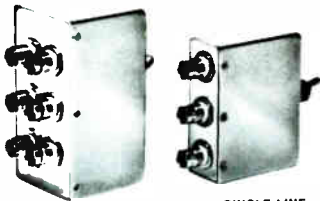
BNC 2-LUG BAYONET				TNC THREADED				
		Construct.	50 Ohm	75 Ohm		Construct.	50 Ohm	75 Ohm
IN-LINE CABLE PLUGS		WRENCH CRIMP	PL20-N*	UPL20-N*		WRENCH CRIMP	PL40-N*	UPL40-N*
		TOOL CRIMP	PL220-N*	UPL220-N*		TOOL CRIMP	PL240-N*	UPL240-N*
IN-LINE CABLE JACKS		WRENCH CRIMP	CJ20-N*	UCJ20-N*		WRENCH CRIMP	CJ40-N*	UCJ40-N*
		TOOL CRIMP	CJ220-N*	NOT AVAILABLE		TOOL CRIMP	CJ240-N*	NOT AVAILABLE
INSULATED BULKHEAD CABLE JACKS		WRENCH CRIMP	BJ26-N*	UBJ26-N*		WRENCH CRIMP	BJ46-N*	UBJ46-N*
		TOOL CRIMP	BJ226-N*	NOT AVAILABLE		TOOL CRIMP	CONTACT FACTORY	NOT AVAILABLE
INSULATED BULKHEAD FEEDTHRU JACKS		—	BJ28	UBJ28		—	BJ48	UBJ48

*SPECIFY CABLE NO. & MANUFACTURER JACKET DIA. MAX .332" (8.42mm) CONDUCTOR OIA. MAX .057" (1.45mm)

**TEI'S TPS & TCM SUBMINIATURE, F MINIATURE & C & N STANDARD COAX CONNECTOR SERIES ALSO FEATURE 3 PIECE WRENCH CRIMP CONSTRUCTION

COAX DATA SWITCHES:

Designed for use up to 15 MHz. Circuits are isolated from ground with shield & center conductor switched. Switched end ports are terminated in a resistive load.



BNC/TNC

SINGLE LINE BNC OR TNC

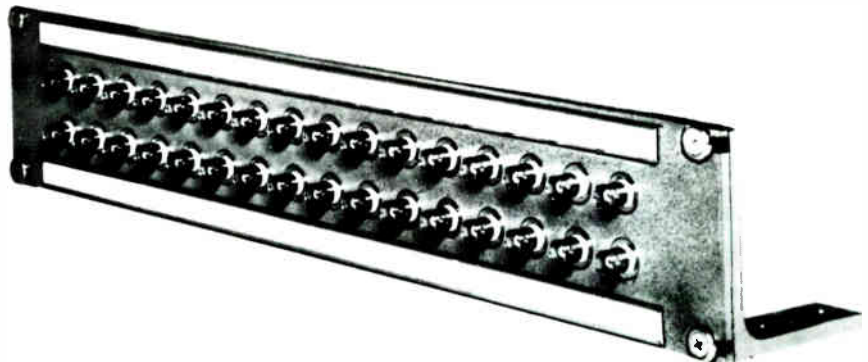
WALL MOUNT PLATE:

Available with up to 5 BNC or TNC connectors.



DATA DISTRIBUTION PANELS:

TEI manufactures signal distribution panels that accommodate from 12 to 52 Bulkhead Cable or Feedthru Jacks illustrated above. All panels are 19" standard rack size in insulated and non-insulated versions. Panels accommodating 24, 32, 40 or 52 lines are double row (as illustrated) and 3 1/2" high. Light gray is the standard color though other colors are available on special order.



TROMPETER ELECTRONICS, INC.

8936 COMANCHE AVENUE, CHATSWORTH, CALIF., 91311 • (818) 882-1020 • TWX: 910-494-1210

A complete line of concentric TWINAX/TRIAX connectors in MINIATURE, SUB-MINIATURE and STANDARD sizes, for military or commercial Data Bus applications, are also available. For this and more, send for our FREE T14A catalog

Prices and Specifications Subject to Change Without Notice.

VT-189

1685 West 2200 South
Salt Lake City, UT 84119
(801) 973-6840 (800) 453-8782
TWX 910-925-4037

CSP-100-E GROUP/UNIT SELECTION CONTROL & STATUS PANEL

- Source selection by familiar name
- A/V breakaway
- LED statusing
- Loop-thru coax control connection

The CSP-100-E is Utah Scientific's most popular panel. It permits addressing sources by their familiar group name and unit number and provides audio and video breakaway.

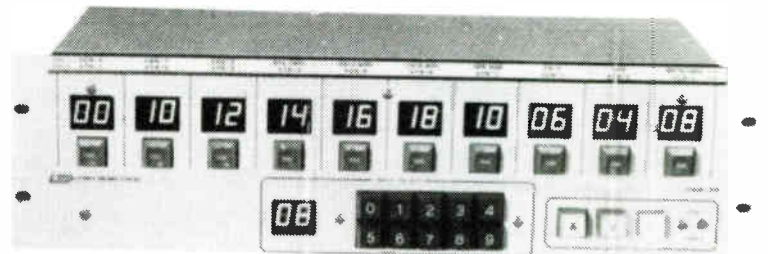


CSP-100-E

CSP-10 TEN OR TWENTY-BUS CONTROL AND STATUS PANEL

- Simultaneous statusing of ten buses
- Lower cost per bus
- Optional twenty-bus control at no extra cost
- Loop-thru coax control connection

The CSP-10 controls either ten or twenty buses. It provides continuous statusing of ten buses and audio/video breakaway.

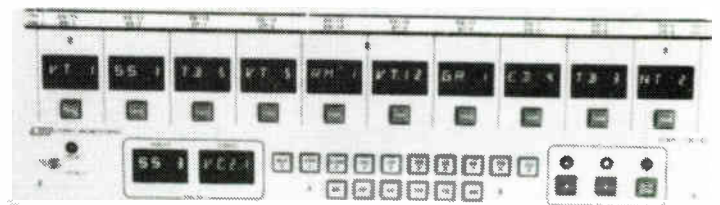


CSP-10

CSP-1610 TEN-BUS ALPHANUMERIC CONTROL & STATUS PANEL

- Alphanumeric displays
- 1600 Name/Number combinations
- A/V-split switching
- Optional twenty-bus programming
- Loop-thru coax control connection

The CSP-1610 alphanumeric ten/twenty-bus controller provides 12 four-character alphanumeric read-outs to permit addressing and statusing sources by their familiar names. Sixteen Name keys with either one or two keystroke Unit identification provides a total of 1600 Name/Number combinations. Separate audio and video preset displays permit both breakaway and A/V-split switching.

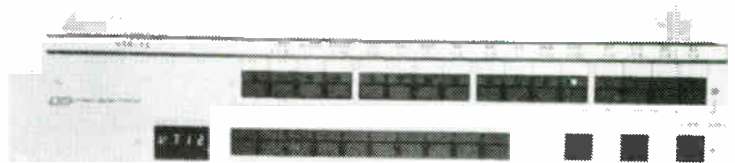


CSP-1610

CSP-1601 SINGLE-BUS ALPHANUMERIC CONTROL & STATUS PANEL

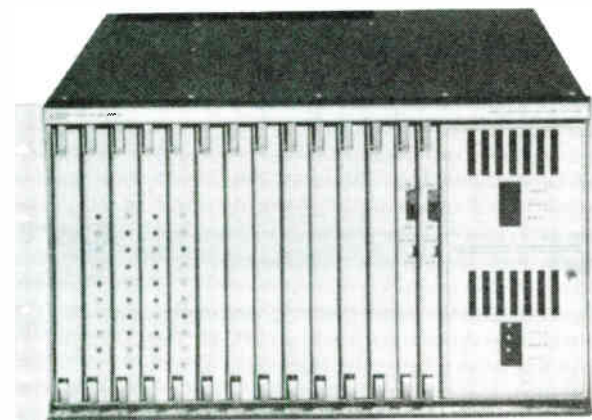
- Alphanumeric display
- Familiar name data entry & statusing
- Minimal keystrokes—1, 2, or 3—data entry
- Loop-thru coax control connection

Separate name and unit keyboards permit either one, two or three keystroke data entry addressing each source by its familiar name. Single four-character alphanumeric readout doubles as preset and status display. 1600 name/number combinations available.



CSP-1601

1685 West 2200 South
Salt Lake City, UT 84119
(801) 973-6840 (800) 453-8782
TWX 910-925-4037



AVS-1

AVS-1 SERIES ROUTING SWITCHERS

FEATURES

- Coax Party Line Control with Industry's Widest Choice of Panels
- Refresh Memory with 24-Hour Memory-Save
- Optional Dual Control Cards for "Hot Standby" Redundancy
- Standard BNC Video and Control Connectors
- Single Motherboard for Fully Operational Servicing with Simple Extender Card
- Compact—20 x 20 Audio and Video in 10-1/2-inch Panel Space

Utah Scientific routing switchers are available in two series—Model AVS-1 featuring coax party line controls and 12 matrix configurations in standard sizes up to 150 x 160, and Model CAV-7 Compact Series with inexpensive models up to 50 x 10 or 20 x 20 in size.

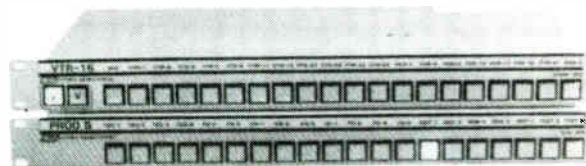
The AVS-1 system is available in twelve different packaging configurations and is designed to provide the ultimate in reliability. Neither input fan-out amps nor secondary combining matrices are required, and 100% "hot standby" backup of control cards and power supplies is available. Redundant cooling fans, redundant party lines, and minimal failure mode design further reduce the likelihood and consequence of failure to a bare minimum.

In addition to video and single or multiple audio levels, Utah Scientific offers Metallic Contact, Tally and Regenerative Time Code switching matrices. The Metallic Contact matrix (model RR-384) provides dual circuit, bi-directional switching of control signals or data. It is primarily used in conjunction with machine control systems and for switching serial data such as the CMX' I² signal. The Tally matrix (model CT-384) features a variety of strapping options accepting various control signals originating at video or audio destinations to control tally lights for other devices associated with video and/or audio sources.

Time Code matrices provide full regeneration of time code signals to permit multi-generation time code dubbing without degradation. Two models are available, one with fixed 25 μ sec rise time and the other with frequency-dependent rise time providing readable code in faster shuttle modes.

Thirty different party line control panels are available to suit varying user requirements in the control of AVS-1 matrices. They feature simple loop-through coax control connection and provide true matrix status* based on continuous refreshment from the system memory. *Except CPD/PL

Following are descriptions of some of these panels.



CSP-20/CX-20

CSP-20/CX-20 BUTTON-PER-SOURCE PANELS

FEATURES

- True A & V Stating
- Expandable
- Single Keystroke Selection
- Loop-Thru Coax Control Connection

The CSP-20 provides button-per-source switching with all source names professionally lettered in the write-in strip. Also provided are audio and video breakaway buttons. CSP-20 is shown with CX-20 twenty-button expander panel.



CPD/PL

CPD/PL DESKTOP PARTY LINE CONTROL PANEL

FEATURES

- Battery Powered
- Pull-Out Directory
- Single Coax Connection

The CPD/PL is a battery operated desktop controller for executive offices, meeting rooms, etc.

PLMC-1 PARTY LINE MACHINE CONTROL SYSTEM

FEATURES

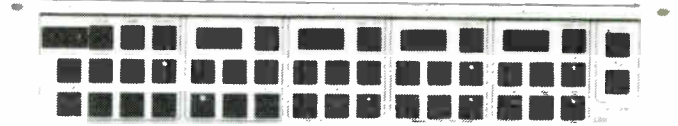
- Economical—utilizes "virtual" matrix established via system party line
- Free standing or integrated with AVS-1 routing switcher
- "Hot Standby" control & memory backup available
- Alphanumeric assignment statusing
- Gang Roll/Record/Stop capability
- Machine delegation capability
- Wide variety of standard control and interface panels

The PLMC-1 system has been designed to provide an economical, yet flexible means of controlling various machines such as VTRs, telecine projectors/multiplexers, character generators, satellite receivers, etc. It utilizes serial data transmitted over coax party lines. The data words and system protocol are compatible with the Utah Scientific AVS-1 switching system permitting the machine control system to be integrated with Utah Scientific routing switchers by merely connecting the control panels and machine interface panels to the existing party lines.

Previously available machine control systems have been hardwired, with individual panels dedicated to individual machines, or have required multiconductor interconnection or metallic contact switching matrices to permit machine/panel assignments. In the PLMC-1 system a "virtual matrix" is established over the system's party line thereby eliminating the need for a separate machine control switching matrix.

A PLMC-1 machine control system is composed of four basic elements: a control and memory card to generate polling and refreshment words on four redundant party lines; control panels for assignment of machines to machine control panels; machine interface panels to provide two-way serial-to-parallel interface between the party lines and machines; and machine control and status panels to generate machine commands and read back the machine's identity and status.

MACHINE CONTROL SYSTEM DISTRIBUTION AMPLIFIERS



MCSIP-5 CONTROL & STATUS PANEL

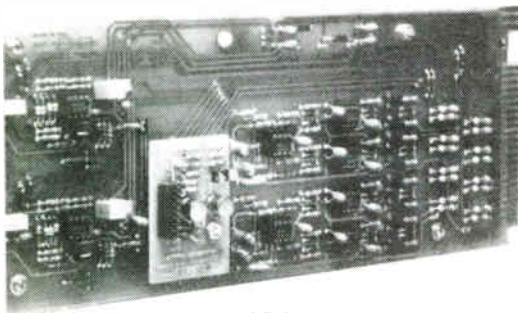


MCSIP-1D COMBINATION CONTROL AND INTERFACE PANEL



MIP-4 MACHINE INTERFACE PANEL

The control and memory function is provided by one or two standard PL-150 circuit cards either as part of a switching system or free-standing. Machine assignment can be accomplished with any of a wide variety of standard AVS-1 system control panels or with custom designed panels. Machine control, interface and delegation is provided by a variety of panels each of which is described herein.

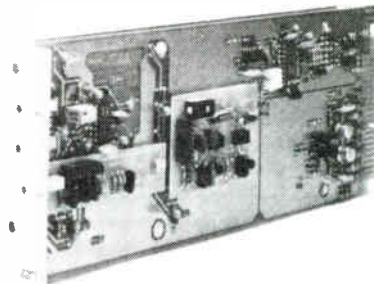


ADA-8 WITH RGM-1
REMOTE GAIN/MIX OPTION

ADA-8 AUDIO DISTRIBUTION AMPLIFIER

FEATURES

- 1-in/8-out or dual 1-in/4-out
- -6 dB to +30 dB gain
- Outputs short-circuit protected
- Front panel test points and level controls
- Redundant power supplies available
- On-card regulators for failure isolation
- .05%/± .05 dB distortion and flatness
- Optional remotely-controlled gain or mix
- Input over-voltage protection
- Can be intermixed with other devices in RF-50 frame



VDA-8 WITH EQUALIZATION
AND CLAMP OPTIONS

VDA-8 VIDEO DISTRIBUTION AMPLIFIER

FEATURES

- 8 outputs per DA, 80 per rack frame
- Optional feedback clamp and cable equalization
- Adjustable path length
- 0.1%/0.1° diff. gain & phase
- Differential input
- Extremely stable
- On-card regulators for failure isolation
- Redundant power supplies available
- Front panel test points and user adjustments



VIDEO AIDS OF COLORADO
 2450 Central Avenue
 Boulder, CO 80301
 (303) 443-4950 (800) 821-0426

VIDEO EQUIPMENT

FAULT INDICATORS

MODEL VS-2PC VIDEO SQUELCH

The Video Squelch is an automatic two input, one output video switch. The output is determined by monitoring the main input signal. If the main input signal quality degrades below the user predefined setting on the front panel dial, the output is immediately switched to the alternate input signal and a clearly audible alarm is sounded.

VS-2PC	Video Squelch (Insulated RCA's for Audio)	..... \$1000.00
Feature SFS	Squelch Feature Stereo Audio	..... 200.00
Feature SFT	Squelch Feature Audio Terminated	..... 100.00
Feature SFC	Squelch Feature XLR Connectors (3 or 4 pin)	..... 50.00
Feature SFR	Squelch Feature Remote Control	..... 200.00

(Any or all features may be added to the VS-2PC)

SWITCHES AND ALARMS

MODEL VPS-1PC VIDEO ACTIVATED POWER SWITCH

When this failsafe unit senses a video signal, it provides AC power to any device plugged into it. It is useful in remote applications, inaccessible units or any device the user chooses. A kit is available for installation in existing equipment.

VPS-1PC	\$165.00
----------------	-------	----------

MODEL APS-1PC AUDIO ACTIVATED POWER SWITCH

When this failsafe unit senses an audio signal, it provides AC power to any device plugged into it. It is useful in remote applications, inaccessible units or any device the user chooses. A kit is available for installation in existing equipment.

APS-1PC	\$165.00
----------------	-------	----------

MODEL AA-1PC AUDIO ALARM

This failsafe unit is an automatic monitor of your audio signal. A clearly audible alarm will sound upon any loss of audio for 12 seconds. A kit is available for installation in existing equipment.

AA-1PC	\$165.00
---------------	-------	----------

MODEL VA-1PC VIDEO ALARM

This failsafe unit is an automatic monitor of your Video signal. A clearly audible alarm will sound upon any loss of video for 1 second. A kit is available for installation in existing equipment.

VA-1PC	\$165.00
---------------	-------	----------

MODEL RFPS-1PC RF POWER SWITCH

When this failsafe unit senses a preselected TV channel or RF signal it provides AC power to any device plugged into it. A one antenna source may be used to initiate remote units, inaccessible devices, user defined devices or the selective dissemination of information. A kit is available for installation in existing equipment.

RFPS-1PC	\$255.00
-----------------	-------	----------

MODEL RFA-1PC RF ALARM

This failsafe unit is an automatic monitor of your preselected TV channel or RF signal. A clearly audible alarm will sound upon loss of this signal for 1 second. A kit is available for installation in existing equipment.

RFA-1PC	\$255.00
----------------	-------	----------

PARAMETER MEASURING DEVICES

MODEL BPM-1PC BURST PHASE METER

The Burst Phase Meter will save you time, give you a better picture and improve your quality because of the 1/2 degree of accuracy in color burst phase measurements, and 50 nanoseconds accuracy in the H-Phase mode. The Burst Phase Meter is particularly useful in vans and remote situations since it is more cost effective, space efficient and accurate than a vectorscope for these measurements.

BPM-1PC	.....	\$ 765.00
Opt 02 Switchable H and Burst	.....	941.00
Opt 03 with Dual Meters	.....	1089.00

MODEL CPG-1PC CROSS PULSE GENERATOR

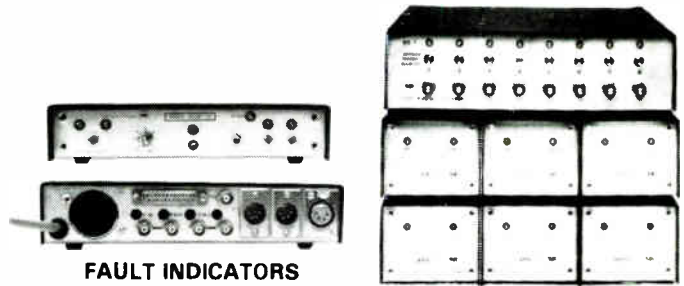
This unit is a valuable visual tool for diagnosing video problems in cameras, monitors and checking errors when making duplicate tapes. The Cross Pulse Generator will also show you any skew errors on your helical tape equipment.

CPG-1PC	.....	\$358.00
Opt 01 External Sync	.....	391.00

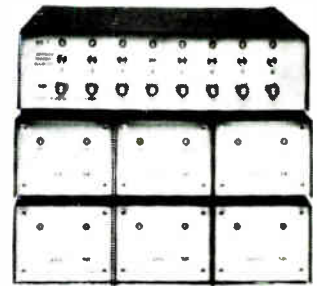
MODEL 4000 MULTI PHASE AND VIRS INSERTER

This unit adds, passes or deletes the Vertical Interval Reference Signal (VIRS) and monitors burst and H-Phase for accurate control of the color parameters. The meters in this unit allow easier and more accurate quality control than a vectorscope.

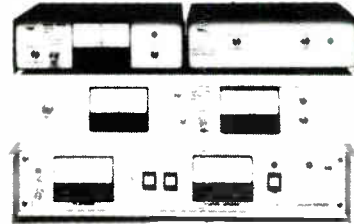
4000	\$1850.00
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FAULT INDICATORS



SWITCHES AND ALARMS



PARAMETER MEASURING DEVICES



DISTRIBUTION UNITS



DISTRIBUTION UNITS

DISTRIBUTION UNITS

MODEL ADA-2PC AUDIO DISTRIBUTION AMPLIFIER

This is a 1 in, 6 out device for distributing audio to a number of devices simultaneously.

ADA-2PC	\$275.00
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MODEL VDA-2PC VIDEO DISTRIBUTION AMPLIFIER

This is a 1 in, 6 out device for distributing video to a number of devices simultaneously.

VDA-2PC	\$275.00
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MODEL PDA-2PC PULSE DISTRIBUTION AMPLIFIER

This is a 1 in, 6 out device for distributing video pulses to a number of devices simultaneously. The outputs are regenerated so that dirty video pulses are effectively cleaned up.

PDA-2PC	\$275.00
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MODEL DA10-2PC DISTRIBUTION AMPLIFIER ASSEMBLY

This is a 5 in, 30 out device for distribution of video and audio signals. The combinations available are 5 which may be ADA-2P's, VDA-2P's or PDA-2P's. A minimum of 4 DA units are required for each order.

DA10-2PC	per Audio DA	.....	\$250.00
	per Video DA	.....	250.00
	per Pulse DA	.....	250.00

MODEL VSDA10-2PC VIDEO STEREO DISTRIBUTION AMPLIFIER

This is a 1 in, 6 out video and a 2 in, 12 out transformer isolated stereo audio device for distributing stereo to a number of units simultaneously. This 19" wide device comes with rack mounts and has a single power cord.

VSDA10-2PC	\$875.00
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VIDEO AIDS OF COLORADO
 2450 Central Avenue
 Boulder, CO 80301
 (303) 443-4950 (800) 821-0426

VIDEO EQUIPMENT

ISOLATORS

MODEL A1 TO MODEL 810 ELECTRO-OPTICAL ISOLATORS

These units are kits for converting most Sony and other receivers and projection sets to quality video monitor/receivers. See the complete Video Aids catalog for specific details.

Basic Kit \$150.00

MODEL VL-1PC VIDEO LINE ISOLATOR

This unit is a solution for 60Hz ground loop noise and provides up to 1500 volts isolation between input and output video lines. This unit is useful in vans, aircraft, and cable installations.

VL-1PC \$270.00
 VL-1APC 335.00

KITS/BARE BOARDS

MODEL BBG-1 BLACK BURST GENERATOR KIT

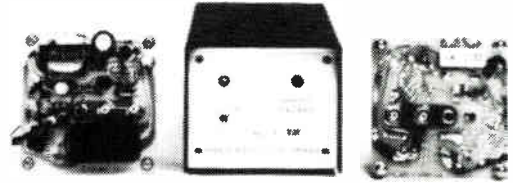
This kit is used to update old equipment with Black Burst output. It requires a 5 VDC at 12mA supply.

Basic Kit \$110.00

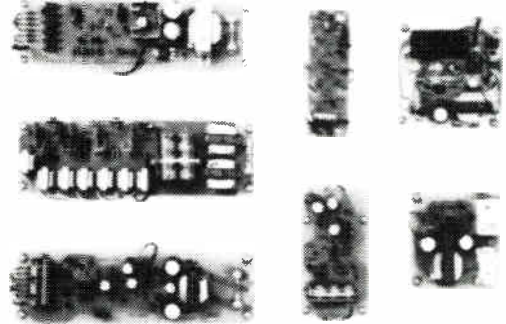
BARE BOARDS

• VPS-1P	\$105.00	VDA-2P	\$200.00
APS-1P	105.00	PDA-2P	200.00
RFPS-1P	195.00	VA-1P	105.00
ADA-2P	200.00	AA-1P	105.00
*VDA-1	140.00	RFA-1P	195.00

*Requires a 12VDC at 70mA supply. • P Requires 117 VAC.



ISOLATORS



MONITORING/COMMUNICATIONS

MODEL PL-1 PARTY LINE SYSTEM

The Party Line System allows the users to communicate either individually or collectively at the same time. These systems are available for either carbon headsets in the Standard station or dynamic headsets in the Deluxe station. The Deluxe model is designed for the Beyer DT 108 and DT 109 headset. One master unit will handle up to ten intercom stations. This allows up to ten conversations to be handled simultaneously with individual volume control for each party. Hard wire reliability means excellent transmission quality is assured at all times. These units may be mounted on cameras or worn on a belt clip.

PLS-1PC Master Unit with Power Supply \$140.00

Standard	Deluxe
PL-1 Intercom Station \$72.00	DPL-1 Intercom Station \$125.00
PL-1BC with Belt Clip 75.00	DPL-1BC with Belt Clip 128.00

MODEL PLC-1PC UNIVERSAL INTERCOM COUPLER

This transformer coupled device allows the user to connect the VAC Party Line System to existing intercoms without interference. This enables the user to substantially expand his communication network.

PLC-1PC \$239.00

UNIVERSAL DISTRIBUTION AMPLIFIER

MODEL UDA UNIVERSAL DISTRIBUTION AMPLIFIER

This unit is designed to be a low cost Universal-Utility Distribution Amplifier. It is a linear amplifier with response from DC to 6 MHz at -3 dB. In the Video mode, the response is related to a signal 2VPP. In Audio mode up to 30 kHz, the output swing is ± 4VPP. All outputs are 75 ohm output impedance. The input impedance can be selected by a switch on the face of the unit and either 75 ohm or 10K ohm is available with the switch.

UDA \$160.00

SYNC GENERATORS

MODEL 100-2PC COLOR SYNC GENERATOR

This unit insures that all the user's cameras, monitors, VCRs, character generators, editing and duplicating equipment are on exactly the same frequency. NTSC H-Drive, V-Drive, Blanking, Burst Flag, Subcarrier, Sync and Black Burst Signals are provided. A three output video distribution amplifier is offered as an option. Height: 1-3/4".

100-2PC \$685.00
 1000A-2PC with VDA (3 output) 845.00

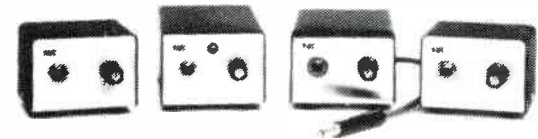
MODEL 5000 COLOR SYNC GENERATOR

This unit includes all the features of the VAC Model 100 Color Sync Generator with the added capability of GenLocking to a NTSC standard (network) or a helical standard (wide range GenLock). Subcarrier phase adjust is provided on the front panel. A video distribution amplifier option is offered.

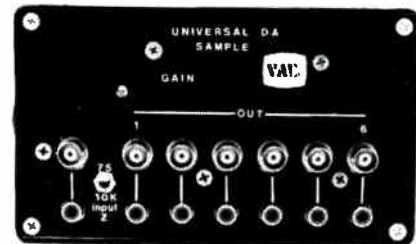
5000 \$1750.00
 5000DA with VDA (3 output) 1910.00

All Video Aids Cabinets are Rack Mountable for an Additional \$30.00 per unit.

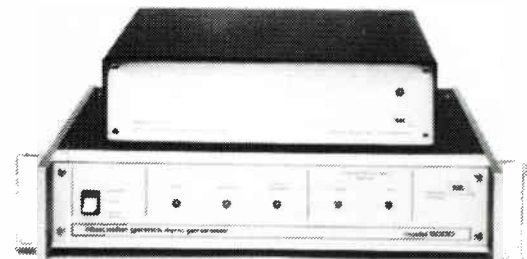
KITS/BARE BOARDS



MONITORING/COMMUNICATIONS



UNIVERSAL DISTRIBUTION AMPLIFIER



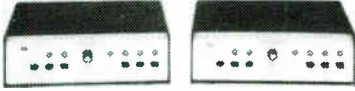
SYNC GENERATORS



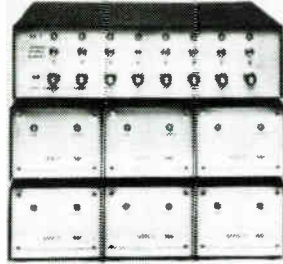
VIDEO AIDS OF COLORADO

2450 Central Avenue
Boulder, CO 80301
(303) 443-4950 (800) 821-0426

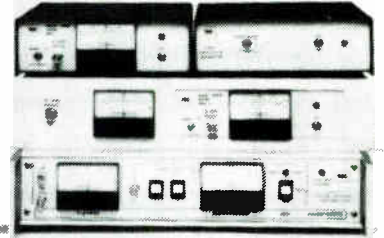
VIDEO EQUIPMENT



FAULT INOICATORS



SWITCHES AND ALARMS



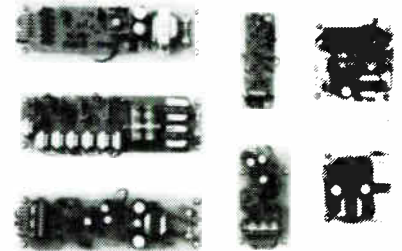
PARAMETER MEASURING DEVICES



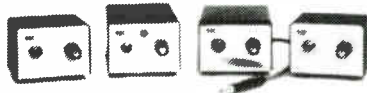
DISTRIBUTION UNITS



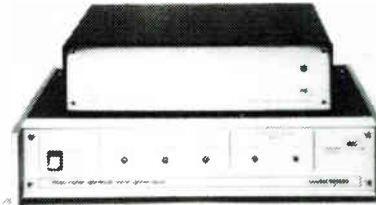
ISOLATORS



KITS/BARE BOARDS



MONITORING/COMMUNICATIONS



SYNC GENERATORS

PINPOINT THE PROBLEM AREA

Particular Problem

1. Multiple line intercommunications control, cameras, studio, floor, lights. Need to extend camera, crew, intercom, etc.
2. Tired of turning on everything by hand? Out of reach monitors? Remotes
3. Automatic turn on of other machines when audio is detected in the line.
4. Loss of audio in control rooms, remotes, studios, helicopters, satellite, transmitting VTR's.
5. Loss of video signal.
6. Need black burst, eliminate fuzzy transition.
7. Need additional video output and feeds.
8. Need additional audio outputs and feeds.
9. Update older video equipment, dirty pulse and/or cameras not in sync.
10. Monitoring stereo and/or audio amplifier. Editing, duplicating.
11. Convert Sony TV's to monitors/receivers.
12. Ground loop, distorted picture and/or noise interference.

Inexpensive Solutions

1. Party Line (intercom) System, Party Line Coupler
2. Video Activated Power Switch
3. Audio Activated Power Switch
4. Audio Alarm
5. Video Alarm
6. Black Burst Generator
7. Video Distribution Amplifier
8. Audio Distribution Amplifier
9. Pulse Distribution Amplifier
10. Stereo Headset Amplifier
11. Electro-Optical Isolators
12. Video Line Isolators

Particular Problem

13. Diagnosing video problems, i.e. cameras, monitors reference signals, errors on tape source, duplicating tapes or adjustment, skew errors.
14. Loss of video from cameras, remote vans, helicopters, studios, control centers, transmission, automatic change over.
15. Need to measure color burst to 1/2 degree.
16. Loss of color, loss of flesh tones, fading greens, bright reds, drifting.
17. Distribution of signals, isolating cameras.
18. Color variations between different units, cable and remote.
19. Substitute for vectorscope with more accuracy need to insert VIRS on Line 19.
20. Loss of RF, Automatic Switching.
21. Loss of RF.

Inexpensive Solutions

13. Cross Pulse Generator
14. Video Squelch
15. Burst Phase Meter
16. Color Sync Generator
17. Distribution Amplifier
18. Color Gen Lock Sync Generator
19. Multi Phase and VIRS Inserter
20. RF Squelch
21. RF Alarm

Prices and Specifications Subject to Change Without Notice.

VT-195

VANCO-CHICAGO, INC.

970 North Shore Drive
Lake Bluff, IL 60044
(312) 295-1050

ADAPTORS/CONNECTORS/ ACCESSORIES

VCR/VTR CABLES AND ADAPTERS

CABLE ASSEMBLIES



UHF
PLUG

UHF
PLUG

75-OHM CABLE Model UU-10 10 ft.

1 Per Bag



"F"
CONNECTOR

"F"
CONNECTOR

Model FF-3 3 ft.

Model FF-12 12 ft.

75-OHM CABLE Model FF-25 25 ft.

1 Per Bag



BNC
PLUG

BNC
PLUG

75-OHM CABLE Model BB-10 10 ft.

1 Per Bag



RCA
PLUG

BNC
PLUG

75-OHM CABLE Model RB-12 12 ft.

1 Per Bag



RCA
PLUG

RCA
PLUG

75-OHM CABLE Model RR-12 12 ft.

1 Per Bag

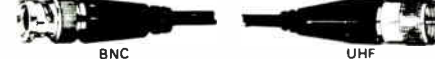


RCA
PLUG

UHF
PLUG

75-OHM CABLE Model RU-10 10 ft.

1 Per Bag



BNC
PLUG

UHF
PLUG

75-OHM CABLE Model BU-10 10 ft.

1 Per Bag

TV ACCESSORIES



Matching Transformers

MT-75. Separate F-59 and ring included 75 to 300 ohm matching transformers. Individually bagged



MTE-75. Popularly priced aluminum case 75 to 300 ohm

Connectors

F-59. With separate "O" ring
F-59-2. 2 per bag
F-59-50. 50 per bag

F-56. With separate "O" ring
F-56-2. 2 per bag
F-56-50. 50 per bag

F-81. Female connector mates F-56, F-59, F-61 connectors
F-81. 1 per bag
F-81-50. 50 per bag

Splitter/Transformers

UVS-3. UHF-VHF-FM Splitter. RLC High and low pass filter networks insure sharp, clear picture. Low insertion loss

UVS-75. UHF-VHF Splitter with matching transformer. Adapts 75 ohm lead-in to 300 ohm inputs on VHF-UHF terminals of set. Low insertion loss. F-59 with ring included

UVSF-75. UHF-VHF-FM Splitter with matching transformer. Same specifications as UVS-75 but with separate FM tap-off screw terminals

VCR/TV SEPARATORS



UV-75. VCR/TV Separator, U/V Splitter and Balun 75 ohm input 1-per bag



UVF-75. VCR/TV Separator, U/V FM Splitter and Balun 75 ohm input



UVFF-75. VCR/TV Signal Mixer, 75 ohm input



UV-300. VCR/TV Separator, U/V Splitter and Balun 300 ohm input



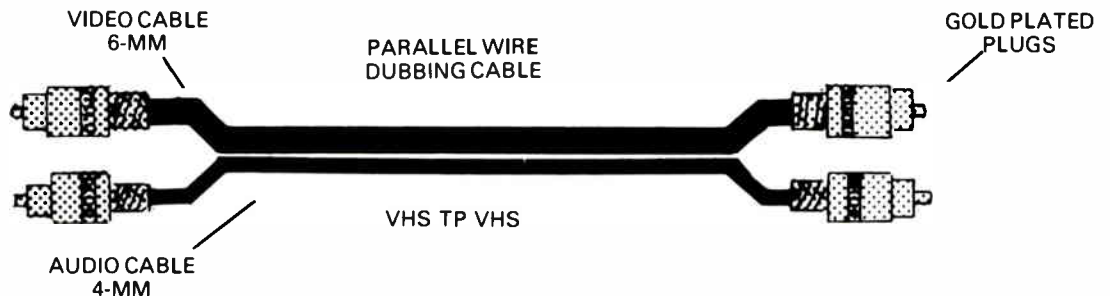
UVF-300. VCR/TV Separator, U/V FM Splitter and Balun 300 ohm input



UVFF-300. VCR/TV Signal Mixer, 300 ohm input

VIDEO DUBBING CABLES

VANCO NOW OFFERS NEW PARALLEL CABLE IN A VARIETY OF LENGTHS AND PLUG STYLES TO ACCOMMODATE THE MOST DISCRIMINATING BUYER. PLUGS AVAILABLE IN NICKEL PLATED AND GOLD PLATED FOR EVEN LOWER CONTACT RESISTANCE AND NOISE FACTOR.



VHS TO BETA
6 FT. Model DK-4
12 FT Model DK-5

\$19.00
\$22.15

INDIVIDUAL HANGER
SEE-THRU-BOX

6 FT Model DK-2
12 FT Model DK-3

\$18.75
\$22.00

VT-196

Prices and Specifications Subject to Change Without Notice.

VANNER, INC.

745 Harrison Dr.
Columbus, OH 43204
(614) 272-6263

POWER CONVERTERS



ENG VANNER-VERTERS are the most advanced products designed and engineered for the inversion of electrical power from battery to line current. The high efficiency, regulated control of frequency and voltage, light weight and compact size, and undistorted wave form make it effective for use in ambulances, fire trucks, boats, mobile broadcasting, and utility vehicles. Its efficiency, current control and reliability combine to make this the most outstanding product of its type manufactured today. The following paragraphs outline some of the specific features of the ENG VANNER-VERTER.

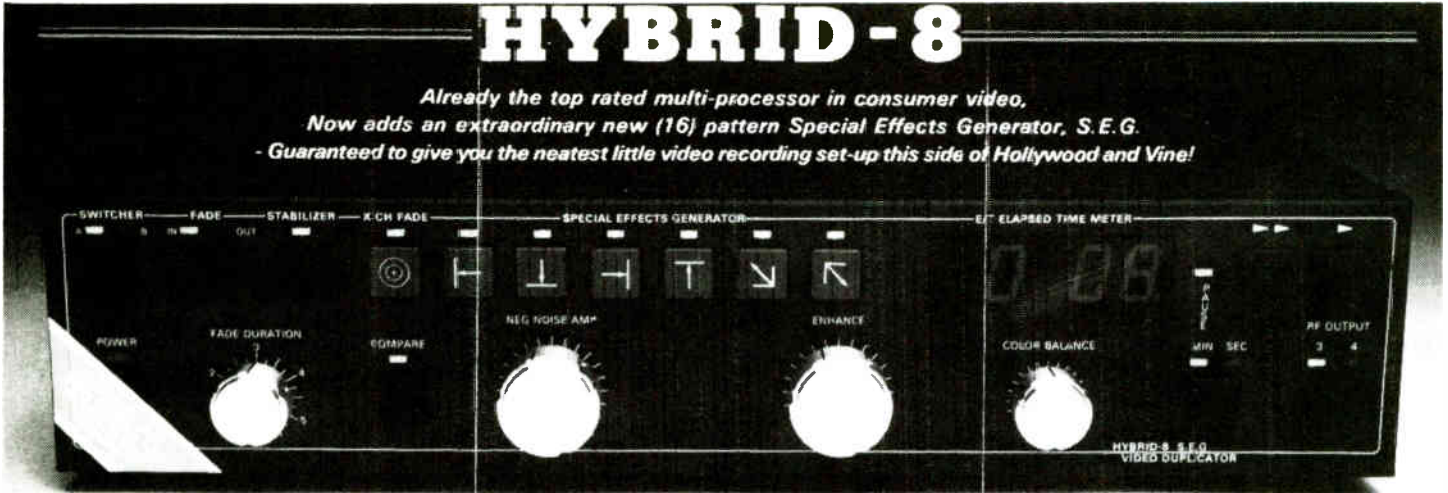
- The Vanner inverter produces full designated wattage continuously regulated 120 volt RMS power from idle to high RPM, and is not affected by high or low deviations in battery voltage.
- Produces a pulse width modulated wave form with less than 14% harmonic distortion.
- Frequency controlled by a 30 parts per million quartz crystal for 60 Hz time base.
- Capable of operating all types of electrical AC loads including resistive and reactive (either inductive or capacitive) without distortion. This is necessary for operating various types of medical and broadcasting equipment.
- Operates on only 30 watts at no load, and is over 87% efficient at full load, for more usable AC power. The 24 volt model, ideally suited for helicopter use, provides 1500 watts continuously with 2200 watts surge and is 92% efficient.
- Light weight — only 26 lbs.
- Compact size — 8 x 6 x 13 inches for convenient installation.
- Lighted remote control switch kit and quick connect battery terminals are standard equipment.
- Guaranteed one full year.

A built in 120 VAC transfer switch is also available for shore power equipped vehicles. Add the suffix 'T' to the part number.

MODEL NUMBER	DESCRIPTION	PRICE EACH
20-1000	ENG VANNER-VERTER, 1000 watts, 12VDC	\$ 899.00
20-1000T	Same as above with built in transfer switch	950.00
24-1500	ENG VANNER-VERTER, 1500 watts, 24VDC	998.00
24-1500T	Same as above with built in transfer switch	1090.00

Prices and Specifications Subject to Change Without Notice.

VT-197

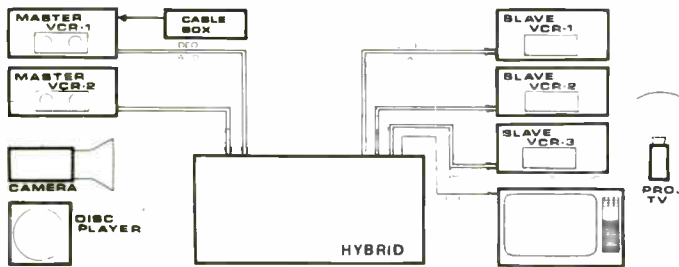


8 UNITS IN ONE

- (1) **Switcher** electronically switches between (2) sources New V.I.S. (vertical interval switching) technique makes glitch imperceptible.*
- (2) **Enhancer** (3) controls
Enhance improves detail sharpness
NEG. Noise Amp new high tech noise reduction circuit
Color Balance perfects color hues
- (3) **Stabilizer** cancels all copyguard roll automatically
- (4) **Video Distribution Amp** makes up to (3) copies at once
- (5) **NEW Stereo Distribution Amp** (3) Stereo outputs
- (6) **Editing Section** (3) controls:
Fader, fades video and audio,
Duration Control adjusts fade time .5 to 5 seconds
X-CH fade (cross channel fade) out A-switch-in B
- (7) **NEW Special Effects Generator (S.E.G.) and E/T Meter.** Meter counts elapsed tape time to the exact second. Special effects generator creates (4) basic wipe patterns, total of (16) combinations possible.
- (8) **R/F Output** for cable TV enhancement

Everything You Need For EXTRAORDINARY Video!

-HOOK-UP-DIAGRAM-



-PERFORMANCE CHARACTERISTICS-

SWITCHING TECHNOLOGY: All switching is remote to front panel and is affected via digital analogue circuits using pushbutton momentary contact switches. No actual video or audio signals pass through the switches. This advanced technique prevents noise and static normally heard and seen during switching.* V.I.S., Vertical Interval Switching minimizes glitch.*

INPUT SWITCHER: A-B input selector switch allows instant alternation between (2) video sources. Audio is automatically switched right along with video. Switcher is operative with new S.E.G. patterns.

VIDEO AUDIO FADER: The Fader fades your picture in and out at the push of a switch. It is a super aid in editing, allowing you alternation from full bright to black in a graduated way avoiding jerkiness between scenes and lending that dramatic smooth touch to entrances and endings. The auto feature is much superior to manual faders (turning a knob to fade) because when used in conjunction with the fade duration control, auto control assures fade time will be perfectly even and consistent throughout your entire edited presentation. Audio Fader fades sound out and in, synchronized perfectly with video fader. Fabulous results with musical recordings and concert editing.*

X-CH FADE: (Cross Channel Fade) this feature is a special refinement that is both subtle and striking. It's operation is quite simple; after pressing X-Ch Fade button, press Switcher button. Picture fades out on A-channel then switches to fade back in on B-channel. World's most pleasant way to input select** You can also use X-Ch Fade with all S.E.G. patterns, to cross channel wipe.

STABILIZER: (Automatic type) cancels all copyguard. Self adjusts to give rock stable TV picture even with (2) or more forms of copyguard on the same tape. **WARNING:** It is a violation of Federal law to duplicate copyrighted video tapes without permission of copyright holder. The sale of this device should not be construed to imply manufacturers' sanction of use for any illegal activity of any kind. Consult your attorney for answers to all copyright questions

NEGATIVE NOISE AMP: Removes video "snow" or "confetti". Prevents generation loss. Video noise appears on your TV screen as a snowy or blurred image. This problem becomes more acute with multiple generation tapes as aggregated noise builds up. Negative noise amp generates a negative image of all noise present in incoming video signal. Negative noise is then imposed onto positive noise. The effect is noise is nullified or canceled. This negative noise reduction technique helps make it possible to produce superb copies, nearly indistinguishable from a good quality master. The producer's dream of clear, sharp dubs can now be realized!*

When considering video improvement components there are a couple of ways to go. You can buy a bunch of stand alone modules and string them together - with lots of connectors cables - or you can buy a system. HYBRID offers you that alternative - the systems approach. HYBRID is a refined consolidation of (8) different precision engineered video improvement components in one streamlined console. Use Hybrid for Beta or VHS, record and playback. Here is a single system with spectacular video editing, viewing and duplicating capabilities to transform ordinary video into EXTRAORDINARY video! And HYBRID'S a good value too. Purchased elsewhere as modules, comparable features would exceed \$1,000.00 in cost - and that's not including the extras - Hybrid exclusives like pushswitch electronic function selector, L.E.D. E/T Meter, Cross Channel Fade feature, Negative Noise Amp and now new S.E.G. Just review our features and see. You get everything you need, and a little extra, for superb viewing and flawless copies. Why settle for less? Our introductory price includes full 1 year warranty and hand-held remote pause control with S.E.G. and E/T Meter option.

PRICE: \$419.00

ENHANCE: Produces super sharp detail or video edge definition. Control activates very specialized high speed video boost circuit that selectively amplifies and accentuates upper video frequencies - producing a super crisp, clear picture for viewing and for duplication. Upgrades widescreen TV systems with an extraordinary improvement in clarity.

COLOR BALANCE: Life-like colors stand out as this color processor breathes color life back into washed out video taped scenes. Compensator adjusts color hue and detail of outboard video signal. Especially appropriate for color improvement with home video cameras by compensating for inherent non-linear chroma band pass characteristics or color fringing. This important control colors the difference between bleak and beautiful copies.

E/T METER: Elapsed record time can now be measured to the second. Meter functions include fast forward, slow forward, reset and minute-second select. Meter registers time during recording and can be remotely paused with a hand held control, when recording deck is paused. This system is much superior to a VCR odometer which measures non-linearly and is inherently inaccurate. Knowing your elapsed time and thus, time remaining on tape is extremely useful for tape conservation, editing and scheduling.*

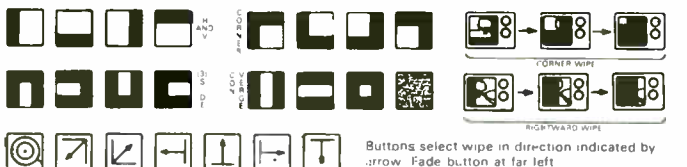
VIDEO DISTRIBUTION AMP: Makes (3) copies at once. Automatically supplies correctly regulated output gain. High output channel isolation safety feature prevents electrical malfunction of one slave VCR from damaging functions of others; a critical consideration in multiple production applications.

STEREO DISTRIBUTION AMP: Regulated voltage to (3) stereo audio outputs assures correct power to drive 3 slave VCR's or to interface with your stereo system.*

R/F OUTPUT: R/F (radio frequency) modulation is channel 3-4 selectable with a convenient pushbutton switch mounted on the front panel. With this fine feature you can stabilize and enhance all your video movies out of the Hybrid and direct to your TV eliminating the need for a second VCR. R/F output can additionally be used to supply video to power a second TV set. Since R/F section is internal to Hybrid no cumbersome noise inducing cables are necessary.

WARRANTY: Full 1 year warranty, covering all parts and service is in force with the sale of each Hybrid. Extended service policy is also available to cover all parts and labor for a full 24 months beyond original period at a cost of \$29.95. Request policy at time of purchase.

SPECIAL EFFECTS GENERATOR: Hybrid's new S.E.G. is a practical editing tool. With S.E.G. you can add professional style fades and wipes to your home video movies or duplicates. You'll probably use the (3) basic patterns most often, horizontal, vertical and corner. But if you wish, you can operate (2) or more patterns simultaneously to give you the (16) extraordinary combinations illustrated below. For a softer effect you can, even fade and wipe simultaneously. Duration control varies wipe duration, and yes, Fade and X-Ch Fade buttons create wipe to black and X-Ch wipe (wipe out on A-Channel - switch - then wipe back in on B-Channel) all automatically.



VIDEOLINK XANTECH CORPORATION

12950 Bradley Ave.
Sylmar, CA 91342
(818) 362-0353 (800) 843-5465

CABLES/ADAPTORS/ CONNECTORS

CABLES (RF)



5004/5014

High quality, 75 ohm cables in a variety of convenient lengths have molded (not crimped on) male F-type connector on each end. Use for interconnecting all types of video equipment.

5004 Length — 3' F-F \$7.29
5014 Length — 6' F-F 7.99

5104/5114

High quality, 75 ohm cables in a variety of convenient lengths have molded (not crimped on) male F-type connectors on one end and right angle quick connect F-type connector on the other end. For use when one end of cable is frequently switched between various video components.

5104 Length — 3' F-QC \$7.99
5114 Length — 6' F-QC 9.99

5204

Use for interconnecting two VHS VCR's for dubbing purposes. Interconnecting video components that use RCA jacks such as video enhancers, video stabilizers. All VHS VCR's utilize special video and audio inputs and outputs with RCA jacks. TV monitors, projection TV's and some newer home TV's are also equipped with RCA jacks for the transmission of pure video and audio signals.

5204 Length — 6' RCARCA \$7.99

5504

This kit provides high quality — shielded, 6 foot long video and audio cables for dubbing from one VCR to another. Connector and adaptors that permit dubbing from VHS to VHS, Beta to Beta or VHS to Beta are included.

5504 Dub Kit: \$22.95
2 Gold #5204 Cables
2 Gold #576 Adaptors (RCA-Mini)

CABLES (Audio Video)

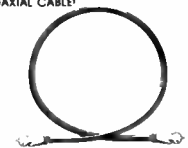


UNIVERSAL DUBBING KIT



CABLES (RF)

NOW FEATURING NEW "FLEXI LINK" RG-59U COAXIAL CABLE!



500/501/502/503

High quality, 75 ohm cables in a variety of convenient lengths have molded (not crimped on) male F-type connector on each end. Use for interconnecting all types of video equipment.

500 Length — 3' \$4.95
501 Length — 6' 5.95
502 Length — 15' 6.95
503 Length — 25' 9.19

510/511

High quality, 75 ohm cables in a variety of convenient lengths have molded (not crimped on) male F-type connectors on one end and right angle quick connect F-type connector on the other end. For use when one end of cable is frequently switched between various video components.

510 Length — 3' (QC) \$6.95
511 Length — 6' (QC) 6.95

CABLES (Audio Video)



520/521/522

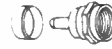
Use for interconnecting two VHS VCR's for dubbing purposes. Interconnecting video components that use RCA jacks such as video enhancers, video stabilizers. All VHS VCR's utilize special video and audio inputs and outputs with RCA jacks. TV monitors, projection TV's and some newer home TV's are also equipped with RCA jacks for the transmission of pure video and audio signals.

520 Length — 6' \$ 4.95
521 Length — 10' 7.95
522 Length — 10' (pair) 12.95

UNIVERSAL DUBBING KIT



CONNECTORS



560

This kit provides high quality — shielded, 6 foot long video and audio cables for dubbing from one VCR to another. Connector and adaptors that permit dubbing from VHS to VHS, Beta to Beta or VHS to Beta are included. \$14.95

570

Male F-type Plug (75 ohm (2 per card). Use to make up interconnecting cables or TV antenna leads. \$1.79

571

75 ohm Round Wire to Right Angle Quick Connector. Save time if cables are frequently switched. Convert the ends of round 75 ohm cables to right angle quick connectors. \$2.49

ADAPTORS CONNECTORS



572

Double Female "F" Jack. A handy connector that allows connection of two lengths of round 75 ohm cable that have male F-type connectors. Can also be used as panel mount connector. \$1.79

573

RCA Jack to "F" Plug Adaptor. Converts F-type male connector to RCA type jack. RCA jacks are usually found on video games, computers and other video accessories such as enhancers, stabilizers, etc. \$3.95



574

Adaptor. Converts RCA plug to female F-type jack that will accept F-type plug and round 75 ohm wire. ... \$3.69



575

Quick Connect F Plug Adaptor. Ideal where cables or antenna leads are frequently switched. Converts female end of round 75 ohm cables to quick connect, push on/pull off style. \$3.69



576

RCA Jack to Mini plug Adaptor. Converts VHS dubbing cables to Beta style so you can dub from VHS to a Beta VCR. \$2.39



577

Mini Jack to RCA Plug. Converts Beta dubbing cables to VHS style so you can dub from Beta to a VHS VCR. \$2.39



578

75 ohm Terminator. Provides constant 75 ohm "load" on unused inputs/outputs to maintain the proper system balance. \$1.59



580

Flush Mount 75 ohm Wall Plate. Wall plate provides a finished-professional look where 75 ohm round antenna lead passes through a wall. Includes built-in 75 ohm "F" jack. \$3.49



581

BNC Jack to 75 ohm "F" Plug. Professional level video equipment utilize BNC connectors for fast, positive hookup. This adaptor allows connection of round 75 ohm cables, with conventional "F" type threaded connectors to BNC jacks. \$6.95

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THE STC SYSTEM

The Videomedia STC (serial transport control) system represents a major breakthrough in remote control capability. It is a modular system that can fulfill virtually any remote control requirement and is flexible enough to change when you change or add to your existing system. The STC system will function as a universal remote system without the limitations placed on the operator using discrete remote control panels. Using the STC system allows the user to customize and even totally automate any or all components in the system. The name may be a little misleading in that transports are not the only things that can be remote controlled. Any device that has remote control capability such as routing switchers, film chains, audio decks, VTRs, and even transmitter parameters.

The Videomedia STC (serial transport control) system is based upon a unique two wire communications system between the controlled devices and the master transmitting unit (MSTC). This differential transmission system allows the controlled devices to be located long distances from the master control device (up to one mile using twisted pair wires, or around the world using a modem). Multiple master transmitting units (MSTC) may be incorporated in the system for control of devices from several remote locations.

Each device (or group of devices) to be controlled by the STC system must have a receiving module attached to it. One receiving module (RSTC) can control up to six devices in parallel. Each master control unit (MSTC) may command and monitor up to 63 RSTC units or 378 maximum transports. Multiple MSTC units can be on the line in systems where the user desires more than one remote location. The MSTC master control module will accept control from any external computer via an RS-232 port. This feature allows the end user to automate his system with any conventional computer using the Videomedia MSTC operational data format which we supply the code to at no charge for use with STC products.

Master Units (MSTC)

Master units are of one basic type, available in different packages for various applications. They are all capable of controlling up to 63 remote units and conversing with other master units. In addition, they may be interfaced to any external computer or RS-232 control. Master units are available in 1-3/4" rack mount (one or two per mount), or as a local keyboard input device known as the MSTC-2/PK.

Remote Units (RSTC)

RSTC-1

This is a unidirectional, non-addressable, commands-only module. It supplies no transport function feedback to the operator. This system is suitable for duplicating applications where low cost and mass transport control is required.

RSTC-2

This is a bi-directional, individual addressable, command and status module. Applications for its use include universal remote control systems, sequencing systems and station automation systems.

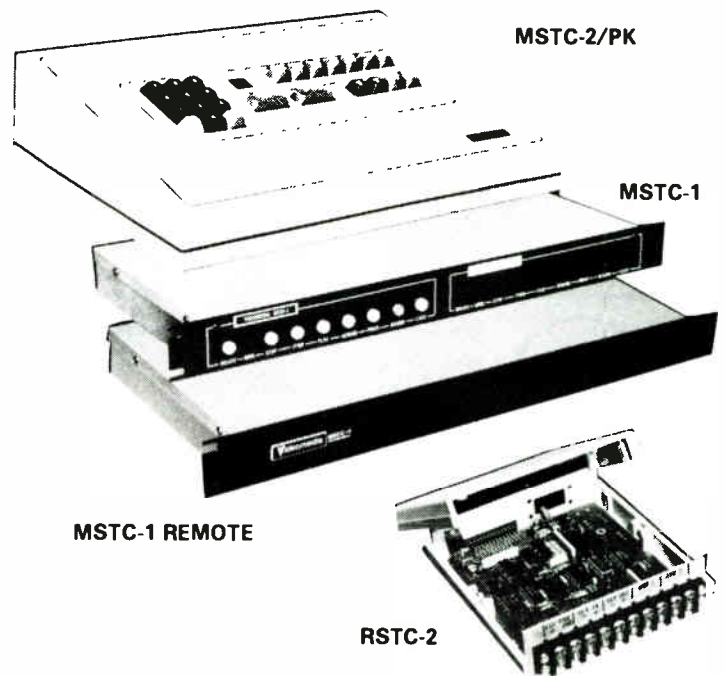
Supporting Units

MAFV-1

The MAFV-1 is a 10 input, 1 output, single channel, audio follow video switcher.

MAFV-2

The MAFV-2 is identical to the MAFV-1 except it provides stereo audio switching.



Serial Transport Control Systems

MSTC-1	Master control module can control up to 64 RSTC-1 receiving units	\$1300.00
STC-2-PS	1-3/4" rack mount unit and power supply will house 2 MSTC-1 modules	200.00
RSTC-1	Receiver/control module. One per transport required	190.00
MSTC-2/R1	Master remote control module. Single unit rack mount version	1650.00
MSTC-2/R2	Dual master control modules. Rack mount version	2900.00
MSTC-2/PK	Stand alone master control module with keyboard	1950.00
RSTC-2	Remote receiving module	275.00
STC2-CRT	CRT status display generator	1750.00
MAFV-1	10X1 serial controlled audio follow video routing switcher	1900.00
MAF-2	As above with 2 channel audio	2100.00
VMC-101C	Tone encoder, backspace tone placement module (for Q-Star)	900.00
VMC-101S	As above for SPOT-Q	900.00
	Control cable and connector for any U-Matic or 1/2" VTR. For use with MSTC-1 and 2 systems	75.00

AUTOMATION SYSTEM

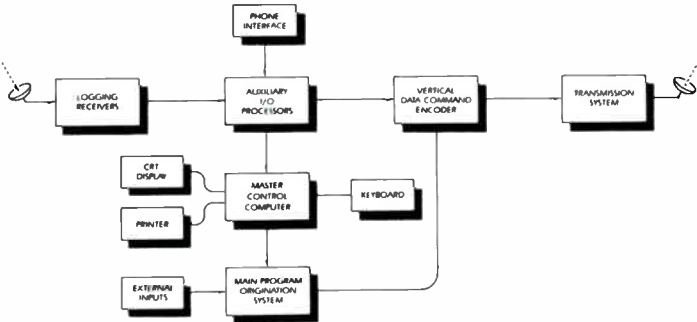
SPOT-Q

Low cost computerized VTR sequencing system. Controls up to 54 VTRs and up to 6 switchers in up to 24 pre-programmed events. Applications include commercial spot playback and channel automation. (order 1 RSTC-2 unit per VTR to be controlled). System includes 1 MSTC-2PK and 1 MAFV-1 10X1 audio follow video switcher. This unit is not upgradable to the VMC-200 system.

VIDEOMEDIA, INC.

211 Weddell Drive
Sunnyvale, CA 94089
(408) 745-1700

CONTROL PRODUCTS



VMC-200 MASTER CONTROL SYSTEM

This system will control up to six source VTRs, film chains, etc. (Additional units up to 255 are optional.) It will control the random access functions of each source, as well as automating their playback times and positions. This unit incorporates a terminal, modem, dual 8" floppy drives, a real-time clock and a printer port. It can receive its programming instructions either locally (terminal) or from a disk. Each source or sequence of sources may be activated manually, from the real-time clock or from a preceding sequence. The system generates a report at the operator's request for confirmation of the day's run activity. The VMC-200 will also pre-program, automatically, up to 99 remote locations using the VMC-201 at that location.

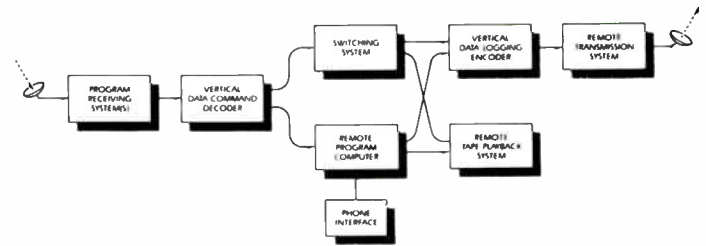
Control Automation System

The VMC-200 is a computerized version of the VMC-100 sequencing system, but incorporates many additional features and capabilities. It allows the broadcaster or cablecaster the capability of total random access of any group of commercials or program material from any of a group of tapes loaded in different VTRs. The accessing method incorporates Micro-Loc which allows for frame accurate programming automation and does not require tones or any timing reference that needs to occupy an audio channel. There are three basic standard versions of the system, and many broadcasters will find the need to incorporate all three operating modules.

The VMC-200 utilizes the STC components as machine control devices. All VMC-200 systems include customized programming in the base price to assure the customer of a system tailored to his specific needs. The customer merely needs to define his system in terms of how many sources (up to 255), how many channels of simultaneous operation (up to 63) and what kind of hardware is to be controlled and automated. Because the VMC-200 is software based, and no two systems requirements will be the same, you will find the VMC-200 to be the most powerful and cost effective automation system available. Options such as Auto-Logging, Auto-Billing and Vertical Data Command (VDC*) are available on any VMC-200 system regardless of size. All logging, billing and custom report forms will be customized to the customer's requirements from our standard data base.

*VDC is a Videomedia exclusive development for transmitting and receiving control and logging data during the vertical interval of the television signal. It is the only system in the industry that provides 100% verification that a program segment has, in fact, been transmitted. Contact your authorized Videomedia distributor for detailed information.

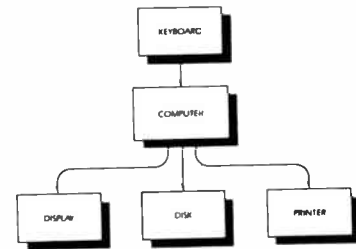
VMC-200 \$27,000.00



VMC-201 REMOTE OPERATING AUTOMATION SYSTEM

Accepts commands for execution from VMC-200 via modem or pre-programmed disk. System includes control computer, dual 8" disk operating system, printer port, real time clock, MAFV-1 10 x 1 vertical interval AFV switcher and hardware to control 6 devices. (Order additional RSTC-2 units for up to 255).

VMC-201 \$13,500.00



VMC-202 STATION MANAGEMENT & TRAFFIC CONTROL CENTER

Station management and traffic control center. Features contract generator, cuts sheet generator, log generator, sales tracking and report generator, word processor, data base management for up to 8 channels of operation. Center includes computer, dual 8" disk operating system, terminal, and software.

VMC-202 \$28,500.00

OPTIONS AND ACCESSORIES

- VMC-250** Auto-billing and report generating software for use with the VMC-202. Includes menu driven data base management and account billing software. Generates "make good" schedules and maintains "active account data" as well as print out invoices for commercial time actually run. This software package is custom formatted to individual operating parameters \$12,000.00
- VMC-260** Videc integrated operational software package. Used in conjunction with the VMC-200 and the Videc-1 package. Provides all programming necessary to supply and receive data commands as well as 100% feedback of commercial spot verification data actually aired 3000.00
- VIDEC-1** Vertical interval data encoder, decoder set for wireless remote control and commercial data verification. This unit includes the frame, power supply, encoder module, decoder module and line finder/cleaner module 4250.00
- VIDEC-2** Encoder module (installs in Videc-1). For additional control channel encoding 2495.00
- VIDEC-3** Decoder module (installs in Videc-1). For additional channel of control data 1695.00
- VDC-1** Rack mount frame and power supply will house three Videc-2 or Videc-3 modules 850.00

Prices and Specifications Subject to Change Without Notice.

VT-201



243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125



PVS-6A
Audio Follow Video Passive Switcher

FEATURES

- 100% passive - no power requirements • Low insertion loss • Low video/audio crosstalk • Six video/audio (unbalanced) inputs • One video/audio (unbalanced) output • BNC video connectors • Barrier strip audio connection • 1 3/4" rackmount height • Can mount three units side by side using a Videotek DAT-1 (rackmount tray) **\$190.00**

PVS-6
Passive Video Switcher

FEATURES

- 100% passive - no power requirements • Low insertion loss • Low video crosstalk • Six video inputs/One video output • 1 3/4" rackmount height • Can mount three units side by side using a Videotek DAT-1 (rackmount tray) **\$110.00**



10x1 ROUTING SWITCHER SERIES
Audio Follow Video With Breakaway Feature

FEATURES

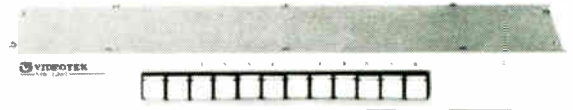
- Ten video inputs, bridging/Two video outputs • Two audio inputs for each video channel • Video/Audio latching breakaway control • Balanced/Unbalanced audio inputs or outputs • Overnight channel memory • Vertical interval switching • Momentary contact push buttons w/changeable legends and "LED" audio/video indicators • 1 1/4 inch rackmount or free standing with rubber feet.

RS-10A	10x1 Vertical Interval Switcher w/ Two Audio Channels & Audio (or) Video Breakaway Feature	\$1285.00
RS-10ARC	Remote 10x1 Vertical Interval Switcher w/ Two Audio Channels & Audio (or) Video Breakaway Feature	1855.00
RS-10ARC-LS	Same as RS-10ARC, but with Switching capability at the Local and Remote Locations	2070.00
RS-10ARC/L	Local portion of RS-10ARC-LS only	1498.00

OPTIONS (RS-10ARC, RS-10ARC-LS)

RSP-1	10x1 Remote Switching Panel (May be added to RS-10ARC or RS-10ARC-LS to provide a Second Remote Switching Location)	\$642.00
RCT-1	Remote Connector Kit	30.00
CR-1	Cable for Remote .....	.99/ft.

ROUTING SWITCHERS



VIS-1200
12x1 Video Only Routing Switcher

FEATURES

- Twelve video inputs, bridging Two isolated video outputs • Twenty-four hour channel memory • Vertical interval switching • Momentary contact illuminated push buttons with changeable legends (1 3/4" rackmount)

\$360.00



12x1 ROUTING SWITCHER SERIES
Video Only Routing Switcher

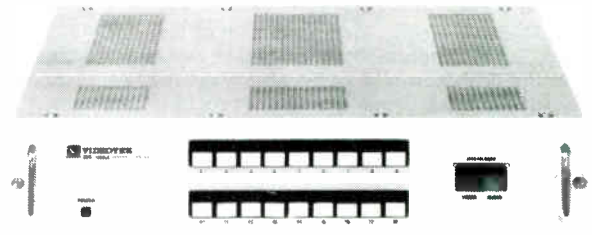
FEATURES

- Video inputs, bridging/Two video outputs • Overnight channel memory • Vertical interval switching • Momentary contact push buttons w/changeable legends and "LED" video indicators • 1 1/4 inch rackmount or free standing with rubber feet.

RS-12	12x1 Vertical Interval Switcher, Video Only	\$ 995.00
RS-12RC	Remote 12x1 Vertical Interval Switcher, Video Only	1224.00
RS-12RC-LS	Same as RS-12RC, but with Switching Capability at the Local and Remote Locations	1295.00

Options (RS-12, RS-12RC, RS-12RC-LS)

RSP-2	12x1 Remote Video Switching Panel with Rackmount Kit	\$225.00
RRK-2	Remote Rackmount Kit	110.00
BLK-2	Blank Panel	60.00
RCT-2	Remote Connector Kit	42.00
CR-2	Cable for Remote	1.22/ft.



18x1 AFV ROUTING SWITCHER
With Breakaway & Computer Interface

FEATURES

- 18 loop thru video inputs • 18 stereo & data channel audio inputs (balanced/unbalanced) • +24dBm audio headroom • Vertical interval line 10 switching • Edit pulse for user controlled switching times • RS-422 computer control interface • Optional RS-232 computer control interface • Computer control, menu driven for ease of operation • 15 selectable communication baud rates • Single line coax remote bus control • Multi-local addressing for remote selection of different locals • FCC approved EMI filtering

\$2795.00

OPTIONS

RS-183ARC	Remote Control RS-183A	\$3495.00
RS-183ARC-L	Additional Local for RS-183ARC	2720.00
RS-183ARC-LS	Same as RS-183ARC w/switching at both the Remote & Local Locations	3565.00
RSP-3	18x1 Remote Switching Panel (may be added to RS-183A or RS-183ARC-LS to provide a Second Remote Switching Location)	770.00

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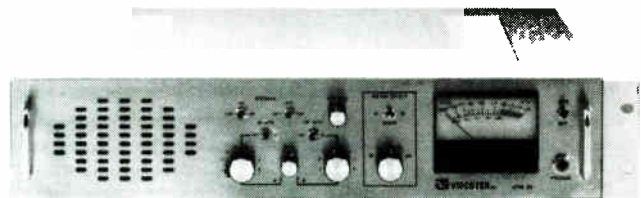
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Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125



Model APM-2RA
Dual Input Rackmount Audio Program Monitor

- FEATURES**
- The slim-line APM-2RA requires only 3-1/2" of vertical rack space
 - 100% Solid State
 - 2 Inputs — Balanced/Unbalanced
 - 3 Pin male XLR/RCA phono jack input connections
 - Internal 3" x 5" speaker
 - Two meter sensitivity ranges
 - Hi/Low input impedance select
 - A/B mix capability
 - Headphone jack with speaker defeat
 - 105VAC — 132VAC RMS, 48Hz — 66Hz
 - Lower power consumption makes the APM-2RA ideal for mobile applications

APM-2RA \$425.00



Model APM-8R
8 Input Rackmount Audio Program Monitor

- FEATURES**
- The slim-line APM-8R requires only 3-1/2" of vertical rack space
 - 100% solid state
 - 8 inputs — Balanced/Unbalanced
 - Barrier strip input/output connections
 - Internal 3" x 5" speaker
 - 10 watt amplifier
 - 5 meter sensitivity ranges
 - 0dBm, 600ohm line output
 - Calibrated tone output
 - A-B channel mix capability
 - Hi/Low input impedance select
 - 115/230VAC — 50/60Hz mains input select
 - + 12VDC battery operation
 - Connector removable PC board for serviceability

APM-8R \$799.00

Model APM-2RS
Stereo Audio Program Monitor

- The slim-line APM-2RS requires only 3-1/2" of vertical rack space
- 100% Solid State
- Stereo Inputs — Balanced/Unbalanced
- 3 Pin male XLR/RCA phono jack input connections
- Internal 3" x 5" speaker
- Two display sensitivity ranges
- Hi/Low input impedance select
- Stereo headphone jack with speaker defeat
- 105VAC — 132VAC RMS, 48Hz — 66Hz
- Low power consumption makes the APM-2RS ideal for mobile applications

APM-2RS \$493.00

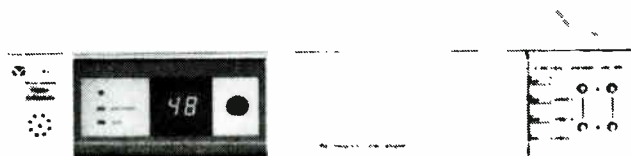
DEMODULATORS & AUDIO PROGRAM MONITORS

Model DM-4RA
Television Tuner/Demodulator

The Videotek Model DM-4RA Demodulator was designed specifically for Broadcast, CATV, Microwave Modulation and CCTV applications. The unit receives "off-the-air" signals, processes these signals and provides dual buffered composite video, audio and 4.5MHz Aural Subcarrier outputs.

- FEATURES**
- Varactor express tuning system with band select fine tuning presets
 - Channels — VHF 2-13, UHF 14-83
 - Low noise
 - Low chrominance/luminance differential gain & phase (maintains IRE color burst standards)
 - Regulated power supplies
 - Audio level indication via LED on front panel
 - Audio-video level controls on front panel
 - The slim-line DM-4RA requires only 3-1/2" of vertical rack space
 - Automatic fine tuning (AFT) with defeat switch, accurate tracking of all 82 channels
 - Dual buffered and short circuit protected aural outputs
 - SAW filter IF Technology for high quality gain and bandwidth characteristics

DM-4RA \$899.00



Model DM-40RA
Television Cable Ready Tuner/Demodulator

DM-40RA

- FEATURES**
- Low noise
 - Low chrominance/luminance differential gain and phase (maintains IRE color burst standards)
 - Regulated power supplies
 - Internal audio monitoring 2" speaker
 - Audio-video level controls on front panel behind access door
 - The slim-line DM-40RA requires only 3-1/2" of vertical rack space
 - Frequency synthesized 10-key express tuning with non-volatile memory
 - 100% solid state circuitry for long term reliability
 - Dual buffered and short circuit protected video and audio outputs
 - Two monitor outputs are sourced by the 4X1 input switcher
 - Cable-adaptable tuning circuitry for instant access to cable TV midband (A-I) and superband (J-W) channels in addition to standard VHF (2-13) and UHF (14-83) channels — 125 channels in all
 - RM-723 Multi-Function Express Commander Infrared remote control unit with 10-key multi-function command capability: complete VHF/UHF/cable TV channel selection, sequential up-down channel search, last channel memory, display-channel number appears in TV/monitor video out jack for a few seconds then reduces in size. Channel display is superimposed in video on upper right hand corner, channel clear, power on/off, antenna switch and video/audio line input selection. When used with Videotek's RGB/VM-19A and RGB/VM-25A, remote control of picture level, sound mute, volume control, and power on/off is available
 - Internal 4X1 video switcher permits selection of three external video inputs plus internal demod from the front of the DM-40RA or from the remote control via a one button sequence selection
 - Coax type 75 ohm "F" connectors are used to provide VHF/UHF antenna inputs, aux. cable input and converter output for a scramble decoder. The aux/ant RF inputs may be selected from the DM-40RA front panel behind the door or via the remote control. Indicators on the DM-40RA front panel display which mode has been selected
 - Three video inputs are BNC looped thru with a 75 ohm termination switch
 - Three stereo external audio inputs are provided that follow the video selection. These are loop thru Hi-Z inputs

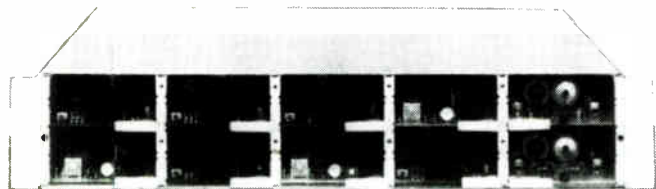
DM-40RA \$1495.00

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VT-203



243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
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800 SERIES

800 SERIES DISTRIBUTION AMPLIFIERS

Videotek's 800 Series Distribution Amplifiers are engineered to meet critical video distribution needs in all types of applications. The 800 Series is based on the TR-800 eight bay modular tray and PS-800 power supply. Up to eight distribution amplifier modules may be mounted in the TR-800 tray, in addition to a second PS-800 power supply for backup in case of primary supply failure.

The VDA-816S is a standard video DA with one looping single ended input and six outputs. Up to 300 feet of Belden 8281 may be equalized via a front card equalizer adjustment.

The VDA-816 is a precision video clamping DA with one looping differential or single ended input and six outputs. An optional EQ-800 card may be added to the VDA-816 to allow front panel adjustment of equalization up to 1000 feet of Belden 8281.

VDA-816 Precision Video Clamping DA Module

FEATURES

Front card output level adjustment • Front card equalizer adjustment when optional EQ-800 equalizer card is employed • Can equalize up to 1000 feet of Belden 8281 • Switchable clamping or DC restoration • Modular plug-in card • One looping differential or single ended input and six outputs.

VDA-816 **\$375.00**

TR-800 Modular DA Tray

FEATURES

Eight bay modular two rackmount high tray • Will accept any combination of VDA-816 precision DAs or VDA-816S standard DAs • Also permits the use of a redundant back-up PS-800 supply • Comes standard with a single PS-800 supply.

TR-800 **\$750.00**

VDA-816S Standard Video DA Module

FEATURES

Front card output level adjustment • Front card equalizer adjustment can equalize 300 feet of Belden 8281 cable • Modular plug-in card • One looping single ended input and six outputs.

VDA-816S **\$250.00**

PS-800 Redundant Power Supply

FEATURES

Provides unregulated ± 16 VDC to the TR-800 rack tray • An additional PS-800 can be installed as a back-up supply in case of primary supply failure.

PS-800 **\$199.00**

EQ-800 Equalizing Module for VDA-816. Equalizes up to 1000 feet of Belden 8281 **\$65.00**

EX-800 Extender Card for Servicing DA Modules **90.00**

DISTRIBUTION AMPLIFIERS



VDA-16



PDA-16



ADA-16



SDA-14

DISTRIBUTION AMPLIFIERS

VDA-16 Video Distribution Amplifier

FEATURES

One looping video input • Six isolated video outputs • Front panel output level adjustment • Cable equalizer front panel adjustment (300 ft. Belden 8281) • Front panel input/output test points • Front panel LED power indicator • BNC input/output connectors • Rack-mountable using Videotek DA tray option DAT-1.

VDA-16 **\$325.00**

ADA-16 Audio Distribution Amplifier

FEATURES

One balanced/unbalanced audio input • Six balanced audio outputs • Front panel output level adjustment • Front panel input/output test points • Front panel LED power indicator • Barrier strip input/output connectors • Rackmountable using Videotek DA tray option DAT-1.

ADA-16 **\$325.00**

PDA-16 Pulse Distribution Amplifier

FEATURES

One looping pulse input • Six pulse outputs • Front panel input/output test points • Front panel LED power indicator • BNC input/output connectors • Rackmountable using Videotek DA tray option DAT-1.

PDA-16 **\$325.00**

SDA-14 Subcarrier Distribution Amplifier

(SDA-14P, PAL/SDA-14PM, PAL-M)

FEATURES

One looping subcarrier input • Four isolated subcarrier outputs • Regeneration technique removes noise & distortion from input signal • Available for NTSC, PAL, PAL-M • Front panel 0°-360° output phase adjust w/0° preset • Front panel input/output test points • Front panel LED power indicator • BNC input/output connectors • Rackmountable using Videotek DA tray option DAT-1.

SDA-14 **\$450.00**

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H & V VIDEO IMAGE ENHANCER

The H & V Enhancer minimizes detail loss. The visual clarity of pictures is significantly improved when used with Videotape Productions and Video Projection Systems and the editing and duplication of $\frac{3}{4}$ " and $\frac{1}{2}$ " recordings. Other applications which will benefit from the use of the H & V Enhancer include video camera taping and film-to-tape transfers.

The image enhancer features 2H processing of vertical detail, noise reduction and split screen

OPERATING CONTROLS

- Enhance/ Split-Screen/Bypass** Enable/Disable enhancer circuitry for total picture comparison
- Chroma, normal/ - 1H delay** The - 1H (minus one line delay) feature is especially useful when dealing with systems that introduce a one line chroma delay or smear i.e. PAL decoders, single tube color cameras, etc.
- Front Panel Power on/off**

VARIABLE CONTROLS

- Split-Screen position** . . . Operates only when Enhance/ Split-Screen/ Bypass switch is in the Split-Screen mode
- Horizontal Detail** Controls horizontal enhancement of only low amplitude textural picture information
- Horizontal Aperture** Controls horizontal enhancement of high frequency picture information
- Vertical Aperture** Controls amount of vertical enhancement
- Enhancement Noise Reduction**
- Coring** Used to minimize noise amplified by enhancement
- Black** Reduces enhancement in areas of low picture luminance which decreases the visibility of enhancement-amplified noise

comparison. 2H processing utilizes information from three successive lines to form a symmetrical enhancement signal. Noise usually increased by enhancement is minimized by a combination of two techniques: coring which reduces noise in all areas of the picture and a Level-Dependent circuit which suppresses enhancement in the darker areas of the picture where noise is more visible. A split screen mode allows side-by-side comparison of unenhanced and enhanced video. **\$1295.00**

SPECIFICATIONS

- Video Input Level**5 to 1.5 V (1 V p-p nom.)
- Video Output Level** Unity in reference to input
- Frequency Response** Within +1, - 3 dB to 4.5 MHz (NTSC). Y/C crossover 2.9 MHz (all variable controls counter-clockwise, enhance switch in enhance position)
- Maximum Enhancement** Greater than +12 dB for H. Detail, H. Aperture, or V. Detail
- NOTE:** Excess enhancement is clipped above 20% of peak video white and below 25% of sync (referenced to back porch). Clippers will adapt to changes of video level within the limits of the video input specification. Enhancement is gated off during both horizontal and vertical blanking intervals.
- Vertical Tilt** Less than 2%
- Video Inputs** 1 (high impedance loop-thru w/75 ohm termination switch)
- Video Outputs** 4
- Connectors** 1 special (enhance signal on 50% setup with sync) BNC (standard)—RCA Phone Connectors available
- Power** 110 Vac 20 Watts—220 Vac available on request
- Cabinet Type** Rack-mount with detachable mounting brackets
- Dimensions** Height 1 $\frac{3}{4}$ "
Width 17"
Depth 11 $\frac{3}{8}$ "
Weight 7 lbs.
- Shipping Weight** 14 lbs.
- PAL (4.43 MHz)/SECAM available on request



SEG-100 Special Effects Generator

All transitions can be done automatically or manually. With the MANUAL feature, effect patterns can be retained on the viewing screen for setup prior to using the automatic (AUTO) function, or for creating vignettes, segues, and framing.

Standard fade-to-black and wipe-to-black are both possible with a variable color background matte in place of the black matte. Cut directly from one source to the other while retaining any background effects in the MANUAL mode.

Pattern edges are variable from a hard, clean transition to a soft, halo-like effect achieved by mixing the video information at the pattern edge.

The first eleven locations on the pattern keypad have two possible basic shapes; the ALTERNATE key selects the second pattern, which is not displayed on the keypad.

Pattern effects shapes are variable with SLANT. A virtually infinite variety of shapes are possible with the Special Effects Generator. ALTERNATE pattern shapes are also variable with SLANT.

Automatic transition time is variable from one-half second to as long as five seconds. Audio is faded with video when using AUTO; audio is retained when using the MANUAL function.

SEG-100 \$469.95

CHANNELPLUS™ Video Multiplexers

A ChannelPlus video multiplexer allows users to watch and/or record all of their video sources on all their TVs and VCRs without any switches or added wiring. Picture quality is often improved because ChannelPlus uses the direct video and audio outputs available from sources such as VCRs, VDPs, cameras, satellites, computers, etc. ChannelPlus assigns each source to an unused UHF channel, adding them onto the existing antenna or cable system. All TVs in the home view the added channels by simply tuning to them.

H2V Dual Channel Video Multiplexer. Accepts two composite video + audio (stereo or mono) inputs \$199.95

H3V Triple Channel Video Multiplexer. Accepts three composite video + audio (stereo or mono) inputs \$269.95

HRV Combo RF/Video Multiplexer. Accepts one video + audio input & one channel 3 or 4 input \$239.95



GUARD STABILIZER Copyguard Remover and Stabilizer

You will find a wide selection of movies, concerts and special programs available for rental or sale on prerecorded video cassette. Most of these video cassettes are copyguarded to prevent you from making your own copy. But no system is perfect; certainly not this one. In fact, the guard that keeps you from copying may also keep you from watching. Many television sets will not play prerecorded tapes because the copyguard makes the picture roll, jitter, turn to snow, or disappear all together. The GUARD STABILIZER stops this nonsense at the source, by completely removing the copyguard from the video signal. Simply connect the GUARD STABILIZER in line between your two VCRs... and feed the VHF output from the second VCR to the TV. Adjust the lock control for a stable picture. Once the control is set, the tape will play all the way through without further adjustment. If you have a TV monitor or TV projector with direct video input, you can also connect the GUARD STABILIZER in line between VCR and TV.

Guard Stabilizer \$69.00



IVE-100 Integrated Video Enhancer

Use the IVE-100 Integrated Video Enhancer to correct for sharpness and detail losses that occur during recording and viewing of video tapes, to improve sharpness and detail of live, off-the-air or video-camera pictures, to eliminate copyguard-induced vertical roll and jitter, to reduce the probability of vertical roll and breakup (due to dropouts) during dubbing (tape-to-tape recording), and to aid in the cutting of commercials.

The IVE-100 is designed for use with one or two VCRs. With one VCR it can be used while viewing to improve picture quality. With two VCRs, a tuner and one VCR, or a camera (equipped for RCA-phonop connection) and one VCR, it can be used to improve recordings as you make them.

The IVE-100 instruction Manual gives complete and easy-to-follow instructions for installation and use, including detailed instructions on how to use enhancement to improve your own recordings. It even includes beginner-oriented instructions on how to cut commercials.

IVE-100 \$229.00

0704 S.W. Bancroft St.
Portland, OR 97201
(503) 223-4884 TWX 910-464-5156



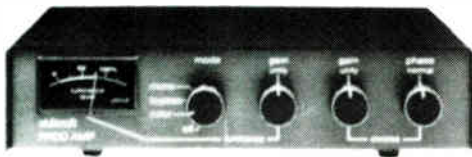
DETAILER III Video Image Enhancer

The Detailer III Image Enhancer seems to offer two of just about everything: Two systems for enhancement, two systems for enhancement noise reduction, and two systems for enhanced-vs-unenhanced picture comparison. 4 selectable video/stereo-audio inputs let you connect four separate video sources and switch back and forth between them. 4 video/stereo-audio outputs and video/audio distribution amplifier let you send a picture to 4 separate video devices without loss of video or audio level — make up to 4 identical recordings at the same time. Available now in black. **\$349.00**



RF MODULATOR Video to VHF Converter

The RF MODULATOR can adapt your TV receiver to accept direct video and audio inputs from any video component. This allows you to use an image enhancer with one VCR to improve tape playback or off-the-air viewing. Or to connect your camera, portable VCR or computer direct to your TV. Simply connect audio and video to the inputs on the RF MODULATOR... and the modulator RF output to the antenna terminals on your TV... or to one of the inputs on your RF switcher. You can also use the RF MODULATOR to feed the output of a single VCR to two TV sets at the same time with little or no signal loss. This allows people to watch the same tape at the same time in separate locations. In addition to the RF output, the modulator provides loop-through audio and video outputs. This allows you to make a separate output connection to a VCR or video monitor... or to any other component that has a video input. **\$149.00**



PROC AMP Color Processing Amplifier

The PROC AMP is a video processing amplifier designed to correct color and contrast errors. It can also be used to create fade-outs and fade-ins, or to remove color side effects from black and white programs. The chroma gain and phase controls adjust color level and tint, while the luminance gain control adjusts contrast/brightness in very much the same manner as the contrast and color controls on a TV set. The PROC AMP controls have greater range, however, and can operate during recording, not just during playback when it is often too late to make adequate correction. The luminance gain control is also supported by a level meter to insure accurate adjustment. Recordings exhibiting shifts in color saturation or tint, or recordings which appear too dark or too bright benefit greatly from PROC AMP correction. Camera-recorded scenes can also be adjusted for overall correction or to match one shot with another, or to balance one camera to another. Four distribution-amplified outputs are also provided for feeding multiple VCRs and/or monitors. **\$349.00**



STEREO SYNTHESIZER With DNR™ Noise Reduction

The STEREO SYNTHESIZER is a sophisticated sound processor designed to simulate the directionality and body of stereo audio in as natural a way as possible. The incoming monaural signal is separated by frequency division into five overlapping bands, which when delivered in varying proportions to the left and right channels, produce a continuously directional sound. Both high and low frequencies travel to each channel just as they would for an actual stereo recording. The sound placement can be altered using the two dimension controls, and the overall directionality adjusted using the separation control. In addition, DNR™ dynamic noise reduction is incorporated to suppress videotape hiss which would normally be reproduced when connecting VCR audio to a good sound system. Use the SYNTHESIZER to playback mono videotapes in synthesized stereo. Or to make synthesized stereo recordings on your stereo VCR. And use it to remove high frequency hiss for any tape, stereo or mono. **\$249.00**



SERIES II

Series II enhancement components give the VCR or video camera user a lot for a minimal price: quality and dependability; easy-to-follow instructions; simple, plug-in installation (for most applications); a two-year limited warranty. Available now in black.

The Series II Detailer® Image Enhancer is designed to improve picture detail and sharpness, and improve recordings as you make them. It incorporates enhancement and noise reduction features — and can be used between two VCRs, a VCR and an RF modulator/TV combination (for viewing purpose only), or a video camera and one VCR. **\$99.95**

The Series II Stereo Synthesizer is designed to improve TV and VCR sound quality for recording or listening purposes. It incorporates a patented stereo simulation system, a separation control, dimension controls, and a hiss filter — and can be used between a TV (with audio output), VCR, or other mono (monaural) sound source and a stereo receiver, stereo VCR, or stereo recorder. **\$129.00**

The Series II Integrated Video Enhancer is designed to improve picture detail and sharpness, eliminate copyguard, and improve recordings as you make them. It incorporates enhancement, stabilization, noise reduction, and RF modulation features — and can be used between a VCR, video camera, or video disc player and a VCR/TV combination (for recording purposes) or TV (for viewing purposes only). **\$159.00**

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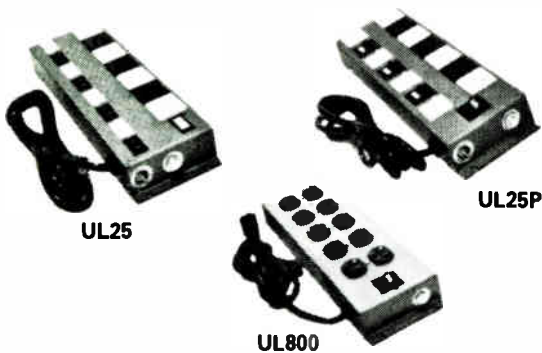
MULTIPLE OUTLET STRIPS



THE COMPACT GROUP

Model 602 has 5 outlets; Model 603 has 4 outlets; Model 605 has 3 outlets, on-off switch, and pilot light; Model 608 has 3 outlets on top, one outlet on one end (for "series stringing"), master on-off switch, and pilot light. All units have "U" ground outlets. Overall Size: 8-5/8"L x 2-3/8"W x 1-1/2"H. Mounting: Type I on 8-1/4" centers. Case Color: Gray.

Model	Protection	No. of Outlets	Cord Length Feet	Shpg. Weight Lbs.	Net Each 1-9
602		5	6	1½	\$14.25
602-15		5	15	2	17.25
603	Fuse	4	6	1½	18.35
603-15	Fuse	4	15	2	21.35
603CB	Circuit Breaker	4	6	1½	18.35
603CB-15	Circuit Breaker	4	15	2	21.35
605CB	Circuit Breaker	3	6	1½	20.15
605CB-15	Circuit Breaker	3	15	2	24.00
608CB	Circuit Breaker	4	6	1½	22.55
608CB-15	Circuit Breaker	4	15	2	25.55



THE DELUXE GROUP

Model 25 has 7 color-coded, individually switched outlet sets, a master on-off switch, and pilot light. All switches in the 25P Series are illuminated. Model 800 has 10 outlets and an illuminated, master on-off switch. All units have circuit breaker protection and "U" ground outlets. Overall Size: 13-7/16"L x 4-1/4"W x 1-1/2"H. Mounting: Type I on 13-1/8" x 2-7/8" centers. Case Color: Gray.

Model	Protection	No. of Outlets	Cord Length Feet	Shpg. Weight Lbs.	Net Each 1-9
25CB	Circuit Breaker	7	6	3	\$52.75
25CB-15	Circuit Breaker	7	15	3½	55.75
25PCB	Circuit Breaker	7	6	3	67.65
25PCB-15	Circuit Breaker	7	15	3½	70.65
800CB	Circuit Breaker	10	6	3	40.65
800CB-15	Circuit Breaker	10	15	3½	43.65



THE MID-LENGTH GROUP

Model 15 and 17 are designed for "series stringing" with an outlet on one end and the power cord on the other. Model 15 is the control unit, with on-off switch, pilot light, fuse (or circuit breaker), and 7 outlets. Model 17, with 9 outlets, is the slave unit. Model 18 has 9 outlets; Model 24 has 6 outlets, on-off switch, pilot light, and fuse (or circuit breaker). Model 32 has four color-coded, individually switched outlet sets with circuit breaker protection; the switches on the Model 32 are illuminated to serve as pilot lights. Overall Size: 13-1/8"L x 2-3/8"W x 1-1/2"H. Mounting: Type I on 12-3/4" centers. Case Color: Gray.

Model	Protection	No. of Outlets	Cord Length Feet	Shpg. Weight Lbs.	Net Each 1-9
15	Fuse	7	6	2	\$30.25
15-15	Fuse	7	15	2½	33.25
15CB	Circuit Breaker	7	6	2	30.25
15CB-15	Circuit Breaker	7	15	2½	33.25
17		9	6	2	21.55
17-15		9	15	2½	24.55
18		9	6	2	20.55
18-15		9	15	2½	23.50
24	Fuse	6	6	2	27.50
24-15	Fuse	6	15	2½	30.50
24CB	Circuit Breaker	6	6	2	27.50
24CB-15	Circuit Breaker	6	15	2½	30.50
32PCB	Circuit Breaker	4	6	2	40.65
32PCB-15	Circuit Breaker	4	15	2½	43.65

Maximum Rating: 15 A, 125 VAC, 60 Hz, 1875 Watts, Continuous Duty.



CORDGARD™ ELECTRICAL CORD DUCTING

A quick, inexpensive way to keep people from tripping over electrical cords that must be run across floors or flat surfaces. Comes complete and ready to use; includes double-faced adhesive tape to prevent sliding on smooth surfaces, or, it can be permanently attached with epoxy cement. For carpeted floors, ribbed slots on the bottom prevent movement. The ducting is made of tough, flexible vinyl and can be used indoors or outdoors. Measures 3"W x 9/16"H. Center channel will accept cords up to 7/16" diameter and is slit for easy cord insertion. The standard color is beige which will harmonize with every decor; other colors are available on special order.

Model	Color	Length Feet	Weight Lbs.	Net Each
G-6-BE	Beige	6	4	\$11.55
G-15-BE	Beige	15	9	25.40
G-50-BE	Beige	50	29	78.70

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These multiple outlet strips have passed the rigid testing of Underwriters Laboratories and bear the UL label. Many models also have CSA certification. All models are designed to exceed NEC requirements and meet OSHA standards. All units are rated 15 amperes, 125 VAC, 60 Hz, 1875 watts, continuous duty and have "U" ground outlets, circuit breaker protection, 14/3 SJT power supply cords, and grounded steel cases. CSA certified units are indicated by an asterisk following the model number.

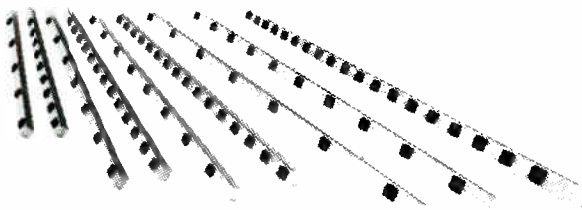
THE PREMIER GROUP



New designs feature a slim, contoured shape and color-coordinated case and components. Model ULA4E has 4 outlets; Model ULA4TME has 4 outlets and illuminated master switch; Model ULA6E has 6 outlets; Model ULA6TME has 6 outlets and illuminated master switch. All have circuit breaker protection. **Case Color:** Beige. **Model ULA4 Series—Overall Size:** 9 1/4" lg. x 2 3/8" w. x 1" h. **Mounting:** Type III on 8 1/4" centers. **Model ULA6 Series—Overall Size:** 12" lg. x 2 3/8" w. x 1" h. **Mounting:** Type III on 10 15/16" centers.

Model	No. of Outlets	Cord Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
ULA4E-6	4	6	2	\$19.40
ULA4E-15	4	15	2 1/2	22.75
ULA4TME-6	4	6	2 1/2	23.30
ULA4TME-15	4	15	2 1/2	26.65
ULA6E-6	6	6	2 1/2	24.65
ULA6E-15	6	15	3 1/2	28.00
ULA6TME-6	6	6	2 1/2	28.30
ULA6TME-15	6	15	3	31.85

THE PERMANENT-INSTALLATION GROUP



Designed to be wired into a fixed installation by means of the furnished wire nuts. They do not have a power supply cord nor a circuit breaker. The base is screwed down in the desired location, and the cover is fastened to the base with self-tapping screws. Knockouts for 1/2" fittings are provided on both ends of cover. **Overall Size:** 1 1/2" w. x 1 3/8" h. x length as in table below. **Case Color:** Blue.

Model	Outlet Centers, Inches	No. of Outlets	Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
4305	7	5	3	3	\$26.50
4309	3 1/2	9	3	3	29.40
4407	7	7	4	4	30.75
4413	3 1/2	13	4	4	39.50
4508	7	8	5	5	33.00
4515	3 1/2	15	5	5	45.15
4607	10 1/2	7	6	6	32.00
4610	7	10	6	6	37.15
4619	3 1/2	19	6	6	53.25

UL LISTED MULTIPLE OUTLET STRIPS

THE COMPACT GROUP



Model UL602CB has 5 outlets; Model UL603CB has 4 outlets; Model UL605CB has 3 outlets, on-off switch, and pilot light; Model UL608CB has 4 outlets (3 top outlets and 1 end outlet), a switch, and pilot light. All have circuit breaker protection. **Overall Size:** 8 5/8" lg. x 2 3/8" w. x 1 1/2" h. **Case Color:** Blue. **Mounting:** Type II on 5 13/16" centers.

Model	No. of Outlets	Cord Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
UL602CB-6*	5	6	2	\$21.50
UL602CB-15*	5	15	2 1/2	24.80
UL603CB-6*	4	6	2	20.35
UL603CB-15*	4	15	2 1/2	23.65
UL605CB-6*	3	6	2	23.15
UL605CB-15*	3	15	2 1/2	26.50
UL608CB-6*	4	6	2	24.80
UL608CB-15*	4	15	2 1/2	28.15

THE MID-LENGTH GROUP



Models UL15CB and UL17CB are designed for "series stringing" with a convenient outlet on one end. Model UL15CB is the control unit with on-off switch, pilot light, and 7 outlets; Model UL17CB is the slave unit with 9 outlets. Model UL18CB has 9 outlets on one plane; Model UL24CB has 6 outlets, on-off switch, and pilot light. Model UL24MCB has the same features as Model UL24CB, except that it has a 0-150 VAC voltmeter instead of a pilot light. Model UL32PCB has 4 color coded, individually switched outlet sets with built-in pilot lights. All units have circuit breaker protection. **Overall Size:** 13 1/8" lg. x 2 3/8" w. x 1 1/2" h. **Case Color:** Blue. **Mounting:** Type II on 10 3/8" centers.

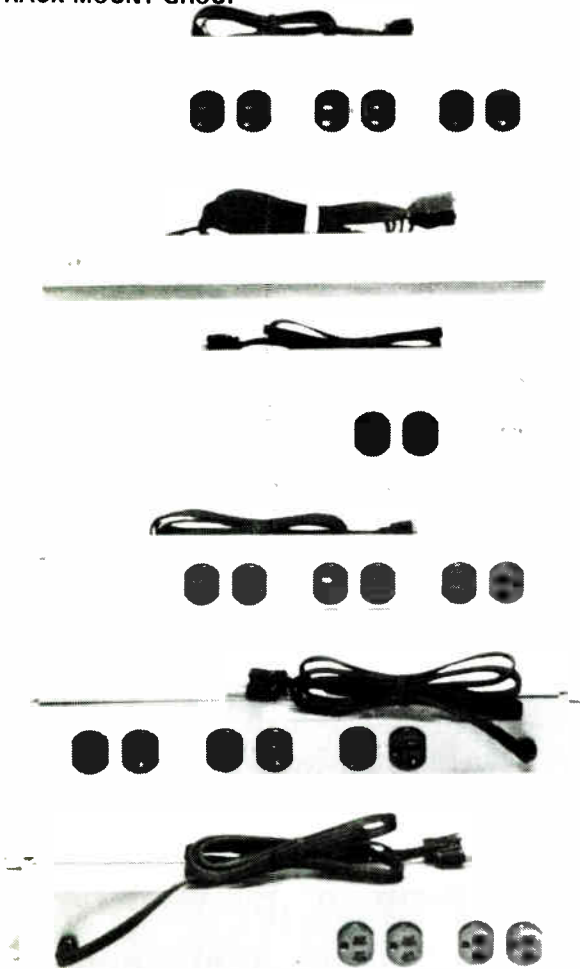
Model	No. of Outlets	Cord Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
UL15CB-6*	7	6	2 1/2	\$31.55
UL15CB-15*	7	15	3	34.90
UL17CB-6	9	6	2 1/2	29.75
UL17CB-15	9	15	3	33.05
UL18CB-6	9	6	2 1/2	31.05
UL18CB-15	9	15	3	34.40
UL24CB-6*	6	6	2 1/2	28.15
UL24CB-15*	6	15	3	31.50
UL32PCB-6*	4	6	2 1/2	42.75
UL32PCB-15*	4	15	3	46.05

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THE RACK MOUNT GROUP



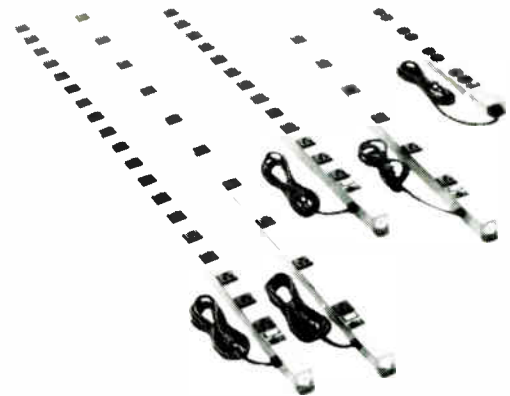
Rack mounted outlet strips offer instant power distribution either from the front, the back, or a combination of both. Model 900 has 6 outlets, circuit breaker, illuminated master on-off switch all on the front. Model 903 has the same features as Model 900 except in a slim-line version. Model 904 has a circuit breaker, illuminated master on-off switch, and 2 outlets on the front; it also has 4 outlets on the back. Model 911 has a circuit breaker and illuminated master on-off switch on the front and 6 outlets on the back. Models 900 and 904 — Overall Size: 19" lg. x 3-15/32" w. (front plate) x 2-3/8" d. Mounting Centers: 18-1/4" x 3". Models 903 and 911 — Overall Size: 19" lg. x 1-23/32" x 2-3/8" d. Mounting Centers: 18-1/4" x 1-1/4". Color: Black.

Model	No. of Outlets†	Cord Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
900CB†	6F	6	3	\$45.40
900CB-15†	6F	15	3 1/2	48.40
903CB†	6F	6	2 1/2	43.00
903CB-15†	6F	15	3	46.00
904CB†	2F, 4B	6	3	47.65
904CB-15†	2F, 4B	15	3 1/2	50.65
911CB†	6B	6	2 1/2	45.40
911CB-15†	6B	15	3	48.40

† All models protected by circuit breaker.
‡ F = front; B = back.

MULTIPLE OUTLET STRIPS

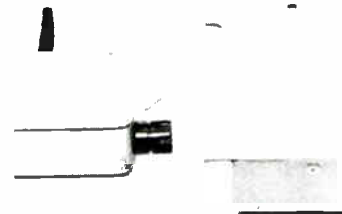
THE TRIM-LINE GROUP



Space-saving strips are ideal for racks, workbenches, and lab tables. Model 7408 is 4 feet long and has 8 outlets. Model 7415 is 4 feet long and has 15 outlets. Model 7610 is 6 feet long and has 10 outlets. Model 7619 is 6 feet long and has 19 outlets. All units have "U" ground outlets. Models 7408 and 7415 — Overall Length: 49-1/16". Mounting Centers: 48-3/4". Models 7610 and 7619 — Overall Length: 73-1/16". Mounting Centers: 72-3/4". Color: Gray.

Model	Length, Feet	No. of Outlets	Cord Length, Feet	Shpg. Wt., Lbs.	Net Each 1-9
7408	4	8	6	4 1/4	\$39.05
7408-15	4	8	15	5	42.05
7415	4	15	6	4 1/4	47.65
7415-15	4	15	15	5	50.65
7610	6	10	6	6 1/2	48.80
7610-15	6	10	15	7 1/4	51.80
7619	6	19	6	6 1/2	58.75
7619-15	6	19	15	7 1/4	61.75

MOUNTING STYLE



Type I

Maximum Rating: 15 A, 125 VAC, 60 Hz, 1875 Watts, Continuous Duty.

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POWER MASTER™ Line Monitor Power Conditioners

Solid-state electronic plug-in devices, whether they be a simple calculator, an expensive instrument, or a computer system, are subject to very hostile environments caused by electrical disturbances coming through the utility power lines that feed them, or generated by electrical equipment within a building. Usually, the solution to this problem has been the installation of a "dedicated" or separate power line to the wall receptacle that powers the sensitive equipment. Even with this expensive installation, equipment damage, memory failure, erroneous data input and output caused by thunderstorms, equipment switching, and other "electrical pollution", are still common occurrences.

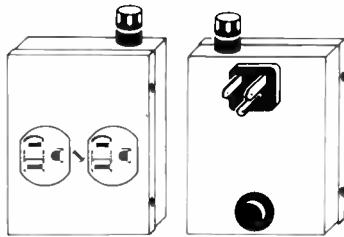
Power Master Line Monitor Power Conditioners eliminate the requirement of a separate, dedicated, branch circuit. They have the latest solid-state technology. Most models have multi-stage filter networks, continuous voltage spike protection, RFI, EMI, and EMP noise rejection, anti-ground loop design, shielded power cords, and more, all in

POWER LINE CONDITIONERS

one package. Your equipment can work without interruption even when the power conditioner is dissipating a high voltage spike. Also, all models have an easily resettable 15 amp circuit breaker in the rare case of a voltage spike that exceeds the design limits of the power conditioner.

Power Master Line Monitor Power Conditioners protect against spike damage by filtering both the hot line and the neutral line. In addition, the filter is bidirectional, it dissipates both incoming spikes and outgoing spikes created by your equipment. The Power Master filter system is passive, it operates only when a voltage spike occurs. When a spike is sensed, the Power Master instantaneously clamps or reduces the over-voltage to a level that is safe for use by your equipment. The spike, depending upon its voltage and the design of your Power Master, is harmlessly dissipated, either in the form of heat, through the grounding system, or both. All noise-protected models have a three-stage passive noise filter system, a high frequency filter and a low frequency filter that operate in the transverse mode, the common mode, or both. The high and low frequency filters overlap to give double protection in the mid-range frequencies where it is needed the most.

MODEL LM 1100



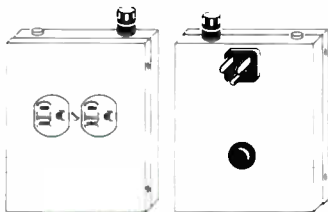
MODEL LM 1100

Model LM 1100 is a wall plug-in unit designed for use at the wall receptacle. Ready to use, just plug it in. Provides one "U" ground duplex outlet accommodating two plugs. Contains one metal-oxide varistor for spike protection. Case is steel with baked-on black finish; outlets are also black. Measures 4-1/8" x 3-1/4" x 1-5/16". Weighs just 1-1/2 lbs.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 6000 volts
- Clamping Spike Voltage: 325 volts
- Surge Current Clamping Ratio: No greater than 2.03:1
- Max. Spike Current: 2000 amps
- Clamping Response Time: 10 nanoseconds or less
- Environment: For indoor use in dry location

Model LM1100 Power Line Conditioner — Net Each \$39.95

MODEL LM 2100



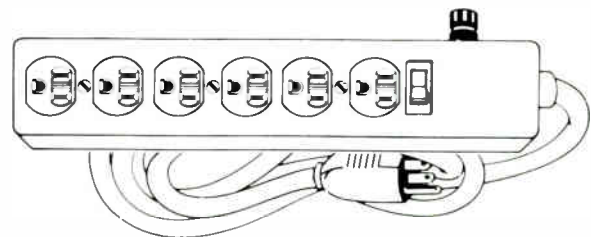
MODEL LM 2100

The Model LM 2100 is a wall plug-in unit designed for use at the wall receptacle. Ready to use, just plug it in. Provides one "U" ground duplex outlet for two plugs. Unit contains six-stage filter network providing isolated voltage spike and noise protection for each outlet. Case is steel with baked-on black finish; outlets are black. Measures 5-1/2" x 4-1/2" x 1-5/16" and weighs 4 lbs.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 7000 volts
- Clamping Spike Voltage: 225 volts
- Max. Spike Current: 2000 amps
- Surge Current Clamping Ratio: No greater than 1.5:1
- Clamping Response Time: 10 nanoseconds or less
- Noise Rejection Frequency Response: 1kHz to 100MHz
- Attenuation: 20 to 40dB (volt ratio)
- Noise Protection: Transverse mode
- Environment: For indoor use in dry locations

Model LM 2100 Power Line Conditioner — Net Each \$104.95

MODEL LM 1200



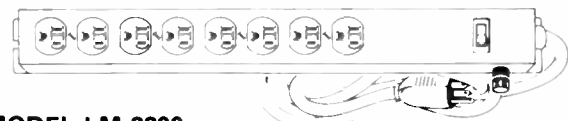
MODEL LM 1200

The Model LM 1200 is a strip type power line conditioner with 3 "U" ground duplex outlets accommodating 6 plugs. Contains 3 metal-oxide varistors for isolated spike protection. Case is steel with baked-on beige finish; outlets, power cord, and illuminated master switch are also beige. Measures 11-15/16" x 2-5/16" x 1" and weighs just 2 lbs. Mounts by means of keyhole slots on 10-15/16" centers. Power cord is 14/3 SJT 9 feet long.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 6000 volts
- Clamping Spike Voltage: 325 volts
- Surge Current Clamping Ratio: No greater than 2.03:1
- Max. Spike Current: 2000 amps
- Clamping Response Time: 10 nanoseconds or less
- Environment: For indoor use in dry locations

Model LM 1200 Power Line Conditioner — Net Each \$47.95

MODEL LM 2200



MODEL LM 2200

The Model LM 2200 is an outlet strip type power line conditioner providing 8 outlets, each of which has isolated spike protection. A six-stage filter network provides voltage spike and noise protection. Case is steel with baked-on beige finish; the outlets, power cord, and illuminated master on-off switch are also beige. Unit measures 20" x 2" x 1" and weighs 6 lbs. Power cord is 14/3 SJT 9 feet long. Mounts by means of end slots on 19-3/4" centers.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 7000 volts
- Clamping Spike Voltage: 225 volts
- Max. Spike Current: 2000 amps
- Surge Current Clamping Ratio: No greater than 1.5:1
- Clamping Response Time: 10 nanoseconds or less
- Noise Rejection Frequency Range: 1kHz to 100MHz
- Attenuation: 20 to 40dB (volt ratio)
- Noise Protection: Transverse mode
- Environment: For indoor use in dry locations

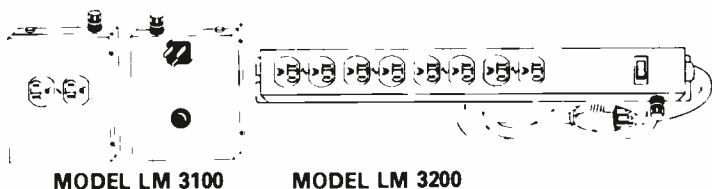
Model LM 2200 Power Line Conditioner — Net Each \$157.45

Prices and Specifications Subject to Change Without Notice.

SL WABER

DIVISION OF SL INDUSTRIES

300 Harvard Ave.
Westville, NJ 08093
(609) 456-5400 Telex 844509



LM 3100 SERIES

Model LM 3100

The Model LM 3100 is a wall plug-in unit designed for use at wall receptacle. Provides two hospital-grade outlets with isolated spike protection. A six-stage filter network provides voltage spike and noise protection. Case is steel with baked-on beige finish; outlets are also beige. Unit measures 5-1/2" x 4-1/2" x 1-5/16" and weighs 5 lbs.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 7000 volts
- Clamping Spike Voltage: 225 volts
- Surge Current Clamping Ratio: No greater than 1.5:1
- Max. Spike Current: 2000 amps
- Clamping Response Time: 10 nanoseconds or less
- Noise Rejection Frequency Range: 1kHz to 100MHz
- Attenuation: 20 to 40dB (volt ratio)
- Noise Protection: Transverse and common modes
- Leakage Current: Leakage to ground lead does not exceed 10 microamperes
- Environment: For indoor use in dry locations.

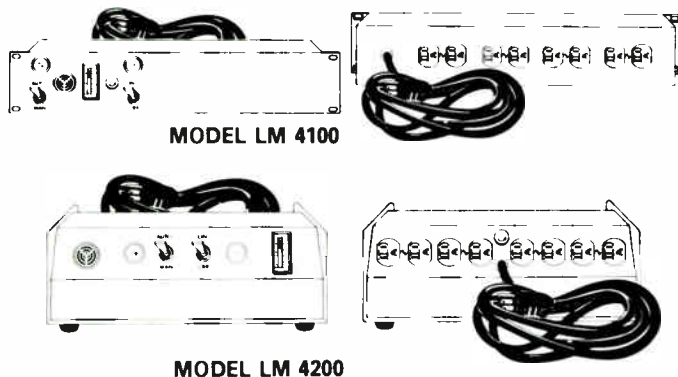
Model LM 3100 Power Line Conditioner — Net Each \$157.45

Model LM 3200

Model LM 3200 is a strip type power line conditioner providing 8 outlets. A six-stage filter network provides voltage spike and noise protection. Each outlet has isolated grounding and isolated spike protection. Case is steel with baked-on beige finish; the hospital-grade outlets are ivory, shielded power cord is black, master on-off switch has black housing and amber illumination. Unit measures 20" x 2" x 1" and weighs 7 lbs.

- Max. Spike Energy Dissipation: 50 joules one time, 25 joules with repeated usage, self-restoring
- Max. Spike Voltage: 7000 volts
- Clamping Spike Voltage: 225 volts
- Max. Spike Current: 2000 amps
- Surge Current Clamping Ratio: No greater than 1.5:1
- Clamping Response Time: 10 nanoseconds or less
- Noise Rejection Frequency Range: 1kHz to 100MHz
- Attenuation: 20 to 40dB (volt ratio)
- Shielded Power Cord Attenuation: Up to 60dB
- Noise Protection: Transverse and common modes
- Leakage Current: Leakage to ground lead does not exceed 10 microamperes
- Environment: For indoor use in dry locations.

Model LM 3200 Power Line Conditioner — Net Each \$262.45



POWER LINE CONDITIONERS

LM 4000 SERIES

Models LM 4100 and LM 4200 offer the best spike protection with the highest overvoltage handling capability and the quickest response time. The series also offers the best noise suppression in both the common and transverse modes. Both models have RFI-shielded power cords and isolated, hospital-grade, double-wipe, grounding outlets for additional protection against noise. Included in both models is an AC voltmeter with color-coded scale to visually indicate that an undervoltage condition exists. An undervoltage sensing and warning system is also included. When the incoming line voltage drops to 105 volts or less, the warning system, consisting of a red light and a buzzer, will activate. If the low voltage is still within the operating range of the equipment, the operator can then choose to shut off the buzzer by means of a cutoff switch. The red pilot light, however, remains on, acting as a constant reminder until the line undervoltage is corrected.

Model LM 4100

The Model LM 4100 is designed for rack or panel mounting with end slots on 18-1/4" x 3" centers. Eight hospital-grade, "U" ground outlets are provided on the back of the unit. The front of the unit contains the master on-off switch, voltmeter, auto-manual switch, warning buzzer, and warning light. Case is steel with baked-on black enamel finish; front cover is spun aluminum, outlets are ivory, power cord is black, switches are black, on indicator light is green, and undervoltage indicator light is red. A seven-stage filter network provides voltage spike and noise protection with each outlet having isolated spike protection. Front plate measures 19" L x 3-15/32" W; the back cover measures 17" L x 3-11/32" W x 2-3/8" D. Unit weighs 15 lbs.

- Max. Spike Energy Dissipation: 300 joules one time, 150 joules with repeated usage, self-restoring
- Max. Spike Voltage: 10,000 volts
- Clamping Spike Voltage: + / -20 volts as it appears on the sine wave; 190 volts, max.
- Max. Spike Current: 6000 amps
- Surge Current Clamping Ratio: No greater than 1.63:1
- Clamping Response Time: 5 nanoseconds or less
- Noise Rejection Frequency Range: 1kHz to 100MHz
- Attenuation: 40 to 60dB (volt ratio)
- Shielded Power Cord Attenuation: Up to 60dB
- Noise Protection: Transverse and common modes
- Leakage Current: Leakage to ground lead does not exceed 10 microamperes
- Environment: For indoor use in dry locations.

Model LM 4100 Power Line Conditioner — Net Each \$524.95

Model LM 4200

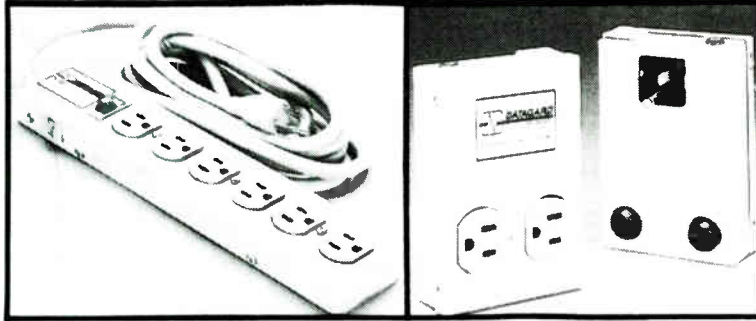
The Model LM 4200 is a console type unit with sloping front and back panels; the front panel contains on-off switch, auto-manual switch, voltmeter, "on" indicator light, undervoltage indicator light, and warning buzzer. The back panel contains 8 outlets and a circuit breaker. The eight outlets are hospital-grade, "U" ground type. Each has isolated spike protection. Case is steel with woodgrain vinyl finish; outlets are ivory, power cord is black, switches are black, "on" indicator light is green, warning indicator light is red. A seven-stage filter network provides voltage spike and noise protection. Unit measures 13-1/2" L x 4-1/8" W x 4-7/8" H and weighs 15 lbs.

- Max. Spike Energy Dissipation: 300 joules one time, 150 joules with repeated usage, self-restoring
- Max. Spike Voltage: 10,000 volts
- Clamping Spike Voltage: + / -20 volts as it appears on the sine wave; 190 volts, max.
- Max. Spike Current: 10,000 amps
- Surge Current Clamping Ratio: No greater than 1.63:1
- Clamping Response Time: 5 nanoseconds or less
- Noise Rejection Frequency Range: 1kHz to 100MHz
- Attenuation: 40 to 60dB (volt ratio)
- Shielded Power Cord Attenuation: Up to 60dB
- Mode Noise Protection: Transverse and common
- Leakage Current: Leakage to ground lead does not exceed 10 microamperes
- Environment: For indoor use in dry locations.

Model LM 4200 Power Line Conditioner — Net Each \$556.45

SL WABER
 DIVISION OF SL INDUSTRIES
 300 Harvard Ave.
 Westville, NJ 08093
 (609) 456-5400 Telex 844509

SPIKE AND NOISE SUPPRESSORS



DG115-S

DG115-P

DATAGARD® Spike and Noise Suppressors

Protects computers from system downtime, equipment failure, erroneous data and added service expense due to spike and electronic noise disturbances on the power line.

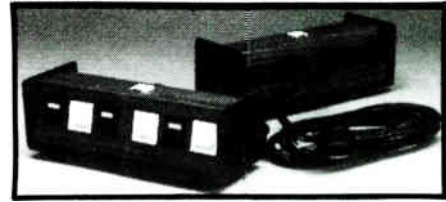
The DG115 Series includes 3 models:

- DG115-S 12" strip for multiple plug-in, 6 outlets
- DG115-P Wall plug-in unit, 2 outlets
- DG115-C Console unit, 6 outlets

All models have a single-stage spike filter and single-stage noise filter and provide protection to each outlet. Circuit breaker guards against power overloads.

LINEGARD™ POWER CONDITIONERS WITH SPIKE PROTECTION

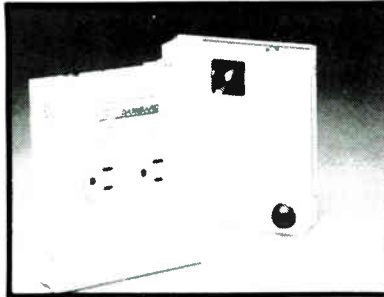
- DG115-P \$39.95
- DG115-S 49.95
- DG115-C 79.95



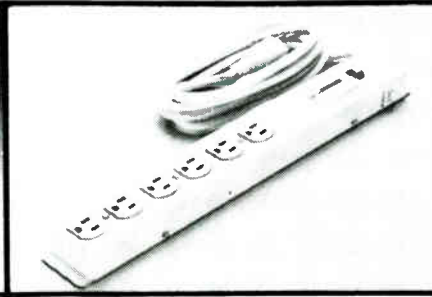
DG115-C

GENERAL SPECIFICATIONS

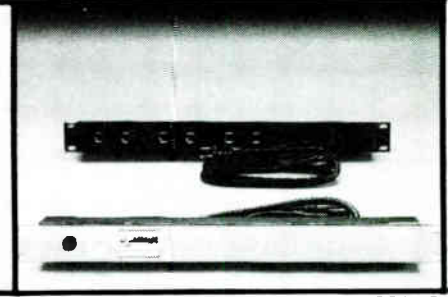
	Model DG115-S 12" Strip for Multiple Plug-in	Model DG115-P Wall Plug-in Unit	Model DG115-C Console Unit
Outlets:	Includes 3 "U" ground duplexes (6 outlets)	Includes one "U" ground duplex (2 outlets)	Includes 6 "U" ground outlets on back of unit
Power Supply Cord	9 foot 14/3 SJT	—	6 foot 14/3 SJT with molded plug
Male Load Plug	—	Conveniently plugs into any 120 Volt outlet (normal house current)	—
Voltage Spike Protection	Single Stage filter on each duplex	Single Stage filter	Single Stage filter for each outlet
Switches	Master switch with built-in pilot light	Pilot light shows when unit is operable	Each outlet controlled by a single switch with built-in pilot light
Overload Protection	15 Amp circuit breaker	15 Amp circuit breaker	15 Amp circuit breaker
Case	Seamless steel case with baked-on beige finish	Fabricated steel with baked-on beige finish	Wood-grained vinyl permanently adhered to metal, heavy steel base with baked-on black finish
Component Colors	Outlets — beige, circuit breaker — gray, power supply cord — beige, switch — beige, pilot light — amber	Outlets — beige, circuit breaker — beige, male load plug — black, pilot light — white	Outlets — black, circuit breaker — gray, power supply cord — black, switches — alternate black and white, pilot light — amber
Dimensions	11 15/16" L x 2 5/16" W x 1" D	4 27/32" L x 3 1/4" W x 1 5/16" D	9 1/4" L x 2 3/4" W x 2 3/4" H
Mounting	Keyhole slot flush mounting — 10 15/16" center	Plugs into wall receptacle	Four protective rubber feet, no provisions for mounting by fastening
Shipping Weight	2 lbs.	1 1/2 lbs.	4 lbs.



DG315-P



DG315-S



DG315-R

DATAGARD® Spike and Noise Suppressors

Protects computers from system downtime, equipment failure, erroneous data and added service expense due to spike and electronic noise disturbances on the power line.

DATAGARD 315 Series Spike and Noise Suppressors from SL WABER provide an industrial grade three-stage spike filter and four-stage noise filter, to protect against moderate to catastrophic spikes and virtually all unwanted noise interference coming through the wall outlet. Without DATAGARD, your computer may exhibit loss of stored data, false input/output and equipment failure. And that means system downtime and costly service calls...computer disasters!

The DG315 Series includes 3 models:

- DG315-P Wall plug-in unit, 2 outlets
- DG315-S 16" strip, 6 outlets
- DG315-R 19" Rack or panel mount, 6 outlets

All three models feature a seven-stage filter network (each outlet has spike protection) and 15 amp circuit breaker protection, to avoid power overloads.

- DG315-P \$99.95
- DG315-S 119.95
- DG315-R 129.95

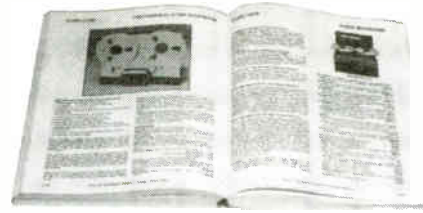
GENERAL SPECIFICATIONS

	Model DG315P Wall Plug-in Unit	Model DG315S 16" Strip for Multiple Plug-in	Model DG315R 19" Rack or Panel Mount
Outlets:	Includes one "U" ground duplex (2 outlets)	Includes 3 duplexes (6 outlets)	Includes 3 duplexes (6 outlets)
Male load plug:	Conveniently plugs into any 120 volt outlet (normal house current)	—	—
Power supply cord:	—	9 foot 14/3 SJT	6 foot 14/3 SJT
Voltage spike and noise protection:	Seven-stage filter network (each outlet has spike protection) Pilot light shows when unit is operable	Seven-stage filter network (each outlet has spike protection)	Seven-stage filter network (each outlet has spike protection)
Overload protection:	15 amp circuit breaker	15 amp circuit breaker	15 amp circuit breaker
Case:	Fabricated steel with baked-on beige finish	Fabricated steel with baked-on beige finish	Front plate — brushed chrome steel, back — fabricated steel with baked-on black finish
Component colors:	Outlets — beige, circuit breaker — gray, male load plug — black, pilot light — white	Outlets — beige, power supply cord — beige, master on/off switch — beige, housing with built-in amber pilot light, circuit breaker — gray	Outlets — black, power supply cord — black, master switch — black with built-in white pilot light, circuit breaker — gray
Case dimensions:	5 1/2" L x 4 1/2" W x 1 5/16" D	16 1/2" L x 2 1/4" W x 1" D	Front plate — 19" L x 1 23/32" W Back cover — 19" L x 1 23/32" W x 2 1/8" D
Mounting:	Plugs into wall receptacle	Key-hole slots — 14" centers	Mounting Centers 18 1/4" L x 1 1/4" W
Shipping weight:	5 lbs	5 lbs	7 lbs

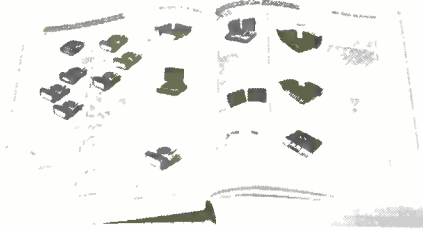
Prices and Specifications Subject to Change Without Notice.

VT-213

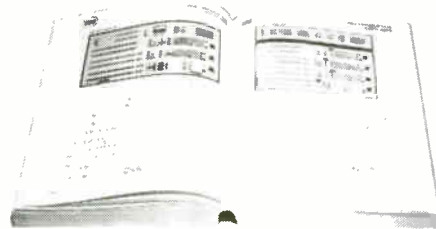
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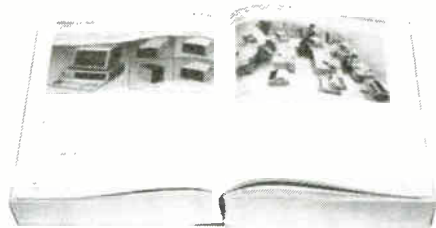
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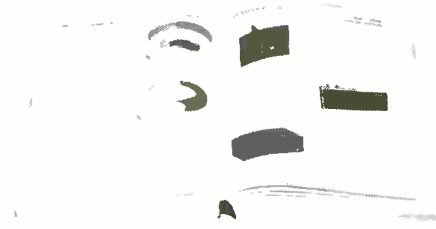
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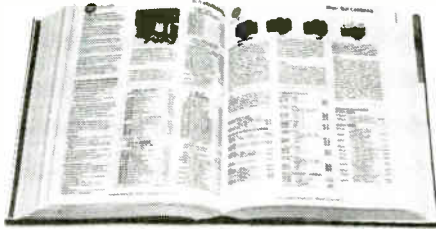
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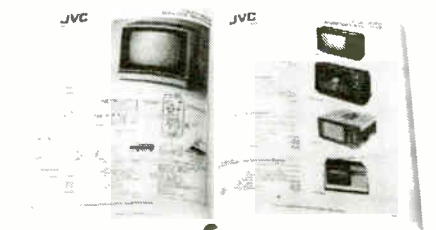
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SECURITY & CCTV EQUIPMENT Buyers Guide — For Industrial, Professional, Commercial & Business Applications. 1280 pages of controls, annunciators, power supplies, dialers, closed circuit TV, wire, cable & equipment for remote monitoring, space protection & central station. **\$95.00**



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Boyertown, PA 19512
(215) 367-6055

AUDIO PROGRAM MONITORS/ MONITOR AMPLIFIER

AMP-1 AND AMP-2 AUDIO PROGRAM MONITORS

The AMP-1 and AMP-2 offer a dual 3" x 5" speaker system for high quality audio reproduction and a VU meter to monitor audio line levels.

Conveniently packaged, only 3-1/2" high and 4" deep, these compact units may be used in portable, mobile and studio applications.

The single input AMP-1 may be ordered with either balanced or unbalanced inputs and the AMP-2 may be ordered in the same manner with switchable dual inputs.

The high performance and low cost of the AMP-1 and AMP-2 will make them welcome additions to your video production system.

AMP-1 Unbalanced Single Input	\$275.00
AMP-1B Balanced Single Input	285.00
AMP-2 Unbalanced Dual Inputs	315.00
AMP-2B Balanced Dual Inputs	335.00
AMP-2C Dual Balanced and Unbalanced Inputs, Switchable	360.00

SPECIFICATIONS

Inputs:	Single input balanced or single input unbalanced (AMP-1) Dual inputs balanced or dual inputs unbalanced (AMP-2) Dual inputs balanced or unbalanced, selectable (AMP-2C)
Connectors:	Balanced-XLR Unbalanced-RCA
Headphone Jack:	Front panel mounted 1/4" cutout type
VU Meter:	May be calibrated at 0 dBm, +4 dBm or +8 dBm at 0 VU
Power Output:	2.5 watts maximum at 1 kHz
Meter Response:	10 Hz to 50 kHz ± 3 dB
Amplifier Response:	25 Hz to 50 kHz ± 3 dB
Input Impedance:	Unbalanced 10K (typical) Balanced 600 ohms
Maximum Input:	AC: 3 Volts RMS (+12 dBm) DC: ±5 VDC
THD:	Typically less than 2% at 2 watts from 25 Hz to 20 kHz
Hum Rejection (balanced inputs only):	-45 dB
Size:	3.438" high x 19" wide x 4" deep
Weight:	7 lbs., 8 ozs.
Power:	110 VAC 50/60 Hz 20 watts max. Seven foot 3-wire AC cord supplied

AMP-3 AUDIO MONITOR AMPLIFIER

The AMP-3 is a compact, rack mounted audio monitor/amplifier designed for use in any system application where accurate monitoring of line audio is necessary.

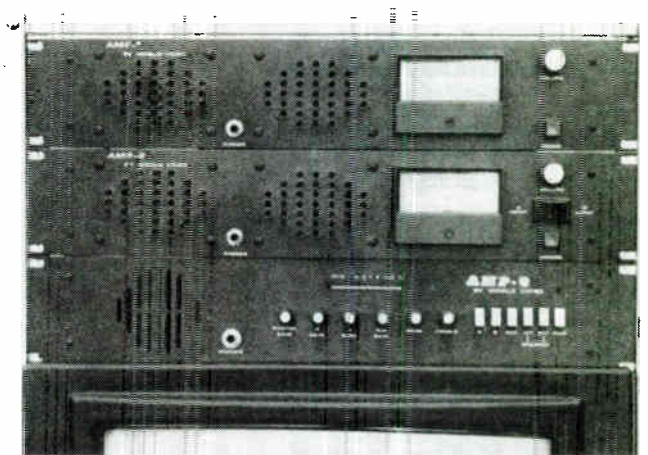
The three individually controlled channel inputs allow the AMP-3 to be used in editing suites with new generation VTRs or as a control room audio monitor with the third channel used as an intercom input.

A convenient push-button switch array enables the operator to choose between the three inputs, mix inputs and select internal, external or both speakers.

An easily visible, fast responding LED bargraph VU meter is incorporated into the AMP-3 and may be calibrated for different input levels.

The amplifier section provides an output to drive an external speaker with minimal distortion and extremely accurate audio reproduction. A high quality internal speaker is in a separate, acoustically insulated compartment within the unit. A front panel mounted 1/4" phone jack is also provided for headphone use.

AMP-3 Audio Monitor Amplifier	\$650.00
--------------------------------------------	-----------------



AMP-1
AMP-2
AMP-3

SPECIFICATIONS

Inputs:	Three, balanced (600 ohm) or unbalanced (10K ohm), selectable May be calibrated separately. Not displayed on meter and unaffected by tone control
Aux. Input:	Rear panel spkr. output — push type barrier strip
Connectors:	Balanced—XLR Unbalanced—RCA
Outputs:	Rear panel spkr. output — push type barrier strip Front panel headphone output — 1/4" phone jack, cutout type
LED Bargraph VU Meter:	May be calibrated at 0 dBm, +4 dBm or +8 dBm at 0 VU
Controls:	Pwr., int. spkr. select, ext. spkr. select; A input, B input, aux. input select switches Master gain, A gain, B gain, aux. gain; bass & treble
Freq. Response:	35-50 kHz, ±3 dB
Max. Power Output:	at 1 kHz 8 ohms — 8.82 watts 4 ohms — 13.32 watts
THD:	at 1 kHz 8 ohms .18% at 1/2 power .18% at full power
IMD:	.23% at -12 dBm below max. output
Hum Rejection of Balanced Inputs:	-45 dB
Crosstalk Between Balanced Inputs:	at 20 kHz -48 dBm average at 1 kHz unmeasurable
Gain:	at 1 kHz Ch. A +28 dBV Note: Unit calibrated at 0 dBm Ch. B +28 dBV Aux. +25 dBV
Size:	3.438" high x 19" wide x 8.125" deep
Weight:	10 lbs., 8 oz.
Power:	110VAC 50/60 Hz 30 watts max. Seven foot 3-wire AC cord supplied

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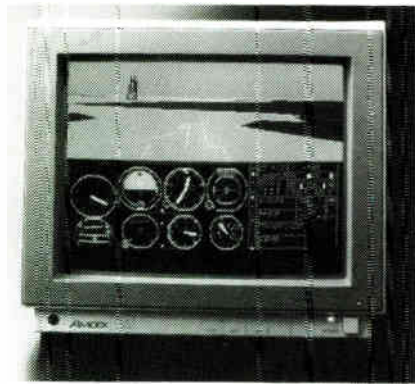
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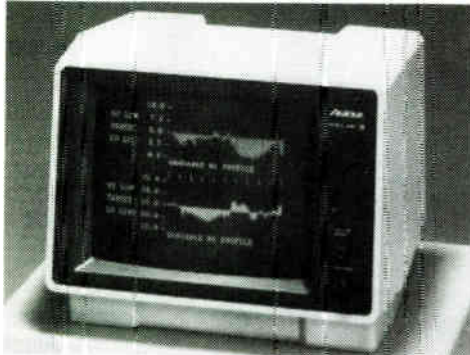
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COLOR 300



VIDEO 300



VIDEO 310A

COLOR 300

The Amdek Color 300 is a high quality, composite (NTSC) color monitor for use with a wide variety of personal computers. The inexpensive price of the Color 300 makes it the ideal alternative to a color TV in a home computer environment. The attractive cabinet makes the Color 300 aesthetically compatible with any home computer.

FEATURES

- Quality 260 (horizontal) dots x 300 (vertical) line resolution provides a vivid color display for games and graphics
- 13" black matrix (dark bulb) picture tube (CRT) provides for sharper contrast
- Built-in speaker and audio amplifier for those computers that do not contain speakers, but do have sound capabilities
- Head phone jack to facilitate educational applications or private audio
- Easy access, front-mounted operator controls
- Capable of providing up to 40 columns x 25 lines of text
- FCC and UL approved for use in the office or in the home
- Capable of supporting 1) A standard composite color video signal (NTSC) and, 2) Separate chrominance and luminance video signals such as those provided by the Commodore 64
- Optional tilt/swivel stand for more flexibility in viewing angles

Color 300 \$349.00

VIDEO 310A

The Amdek Video 310A has TTL inputs (intensity controlled) for compatibility with the IBM PC computer. The 12" screen produces sharp, vivid text or displays and may be ordered with green or amber phosphor CRT to suit your preference. The industrial grade cabinetry has a handy built-in carrying handle and is styled to enhance the appearance of any computer set-up. The screen surface is non-glare to reduce eye fatigue and distracting reflections. Other design features include a 18MHz bandwidth and 960 lines (center) resolution for a sharp, clear picture.

FEATURES

- Fully compatible with IBM Personal Computer monochrome printer card (includes intensity bit)
- 80 x 24 character display capability
- Non-glare screen, amber or green phosphor CRT
- 18MHz bandwidth
- Built-in handle for portability

Video 310A \$230.00

VIDEO 300

Everything about the Amdek 12" Video 300 monitor is designed for easy reading and operation. It's compatible with most personal computers, using a composite video signal to produce sharp, vivid text or displays. The Video 300 is styled to enhance the appearance of any system and the non-glare screen permits no-strain viewing without distracting reflections. The CRT may be ordered with amber or green phosphor to suit your preference. Other design features include an 18MHz bandwidth and 960 lines (center) resolution for a sharp, clear picture. Lightweight and portable, the Video 300 has industrial grade cabinetry with a built-in carrying handle. It's both UL and FCC approved.

FEATURES

- Green or amber phosphor for easier viewing
- Non-glare screen eliminates distracting reflections
- 18MHz bandwidth
- 80 x 24 character display
- Lightweight (17 lbs.)

Video 300 (Amber) \$199.00
Video 300 (Green) 179.00

VIDEO 300 COMPATIBILITY			VIDEO 310A COMPATIBILITY		
Computer	Video 300	Interface Cable	Computer	Video 310A	Interface Cable
IBM-PC	•	•	IBM-PC	•	•(included)
Apple III	•	•	Apple III		
Apple II	•		Apple II		
Atari-800	•	•	Atari-800		
VIC-20			VIC-20		
Commodore-64			Commodore-64		
TI-99			TI-99		
TRS-80	•	•	TRS-80		
Osborne	•	•	Osborne		

*Interface Cable Required

*Interface Cable Required

COMPUTER/CABLE COMPATIBILITY FOR AMDEK MONITORS

Computer	Video 300A (G)	Video 310A	Color 300	Color 500 (NTSC)	Color 500 (RGB)	Color 600	Color 700/710
Atari 800 + XL	AC200	-	AC900	AC900	-	-	-
Apple II +	AC100	-	AC100	AC100	***AC1000	***AC1000	***AC1000
Apple IIe	AC100	-	AC100	AC100	**AC1100	**AC1100	**AC1100
Apple IIc	AC100	-	AC100	AC100	*AC1100	*AC1100	*AC1100
Comm VIC-20	-	-	AC900	AC900	-	-	-
Comm 64	AC200	-	AC800	AC900	-	-	-
IBM PC/XT	#AC100	Cable included	#AC100	#AC100	*AC1000	*AC1000	*AC1000
IBM PC Jr.	AC100	-	AC100	AC100	*AC1200	*AC1200	*AC1200
Comp AQ	AC100	-	AC100	AC100	AC1000	AC1000	AC1000
Columbia	#AC100	1 Cable included	#AC100	#AC100	AC1000	AC1000	AC1000
Corona	#AC100	-	#AC100	#AC100	*AC1000	*AC1000	*AC1000

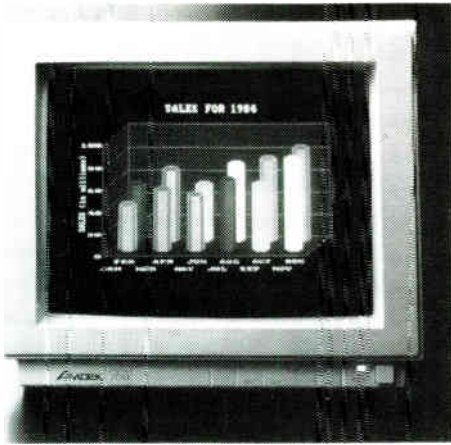
*RGB interface required

**DVM-III or DVM-80e RGB card required

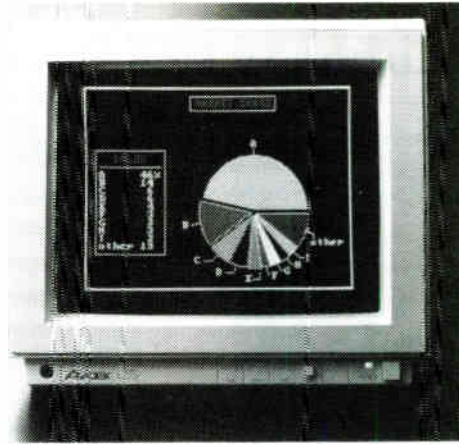
***DVM-II RGB card required

†Special power adaptor and monochrome TTL card required

#Requires composite adaptor card (may be part of RGB card)



COLOR 700



COLOR 600

COLOR 700/710 SERIES

The Amdek Color 700 Series consists of two models, the Color 700 and the Color 710. The 700 Series was designed to provide superior resolution. Both models include a .31mm dot pitch CRT for sharp text and graphics resolution. The attractive cabinet makes the Color 700 Series aesthetically compatible with any personal computer.

FEATURES

- Up to 720 (horizontal) dots x 240 (vertical) lines resolution with Color 700. Up to 720 x 480 (interlaced) no flicker due to long persistence phosphor CRT with Color 710. Ultra-high resolution for demanding color graphics applications
- 13" black matrix CRT (Color 700) provides for sharper contrast. High contrast, etched glass CRT (Color 710) limits glare to provide more comfortable viewing
- Switchable color matrix allows full 16 IBM (PC, XT, PC Junior or Apple) (II, IIc, IIe, III) colors
- A text switch changes text color from white to green for easier reading
- Easy access, front-mounted operator controls
- Capable of providing up to 80 columns x 25 lines of text display
- FCC and UL approved for use in the office or in the home
- Optional tilt/swivel stand for more flexibility in viewing angles

Color 700	\$699.00
Color 710	799.00

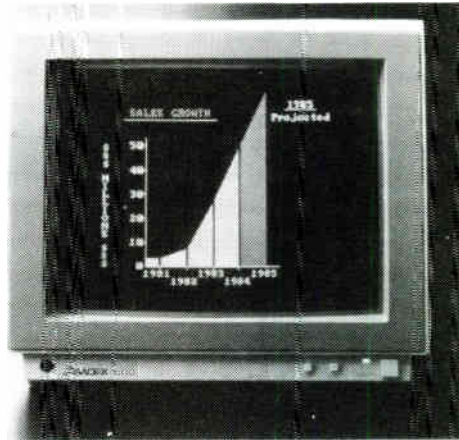
COLOR 600

The Amdek Color 600 is a high resolution, RGB video input color monitor for use with a variety of personal computers. Its 13 black matrix picture tube provides excellent text and graphic resolution. The attractive cabinet makes the Color 60 aesthetically compatible with any personal computer.

FEATURES

- Quality 640 (horizontal) dots x 240 (vertical) lines resolution provides a vivid color display for use in graphics applications
- 13" black matrix (dark bulb) picture tube (CRT) provides for sharper contrast
- Built-in speaker and audio amplifier for those computers with RGB output that do not contain speakers, but do have sound capabilities
- Head phone jack to facilitate educational applications or private audio
- Switchable color matrix allows full 16 IBM (PC, XT, PC Junior or Apple) (II, IIc, IIe, III) colors
- A text switch changes text color from white to green for easier reading
- Easy access, front-mounted operator controls
- Capable of providing up to 80 columns x 25 lines of text display
- FCC and UL approved for use in the office or the home
- Optional tilt/swivel stand for more flexibility in viewing angles

Color 600	\$599.00
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COLOR 500

COLOR 500

The Amdek Color 500 is a high quality, video monitor which is capable of supporting both RGB and composite (NTSC) video inputs. In addition, it also provides an auxiliary mode which enables the monitor to display inputs from a Video Cassette Recorder. This video input signal flexibility and other features make the Color 500 an ideal monitor for a variety of personal computers.

FEATURES

- Quality 560 (horizontal) dots x 240 (vertical) lines resolution in the RGB mode, and 320 (horizontal) dots x 240 (vertical) lines resolution in the composite (NTSC) provide a vivid color display for games and graphics
- 13" black matrix (dark bulb) picture tube (CRT) provides for sharper contrast
- Capable of providing up to 80 columns x 25 lines of text display in RGB mode; 64 columns x 25 lines in composite (NTSC) mode
- Comb filter feature provides improved text and graphics resolution in the composite (NTSC) video mode
- Built-in speaker and audio amplifier for those computers that do not contain speakers, but do have sound capabilities
- Head phone jack to facilitate educational applications or private audio
- Switchable color matrix in RGB mode allows full 16 IBM (PC, XT, PC Junior) or Apple (II, IIc, IIe, III) colors
- A text switch changes the text color from white to green for easier reading (RGB mode)
- Auxiliary mode allows the Color 500 to receive inputs from an alternate video source (e.g. VCR) and provide superior picture quality vs that offered by a television set
- Easy access, front-mounted operator controls
- FCC and UL approved for use in the office or in the home
- Optional tilt/swivel stand for more flexibility in viewing angles

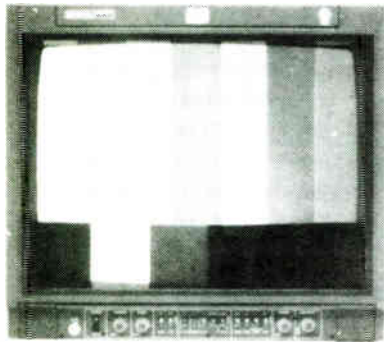
Color 500	\$525.00
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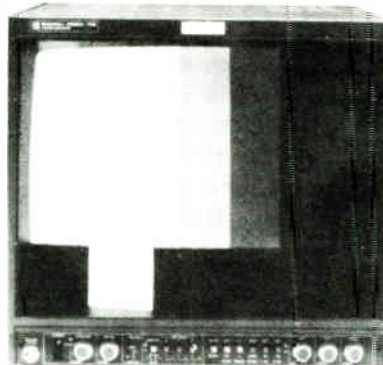
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 12509 Beatrice Street
 Los Angeles, CA 90066
 (213) 827-7144

MONITORS/SWITCHERS

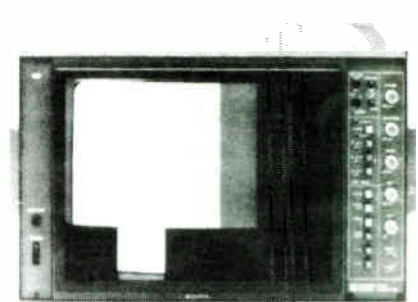
HIGH RESOLUTION TV MONITORS



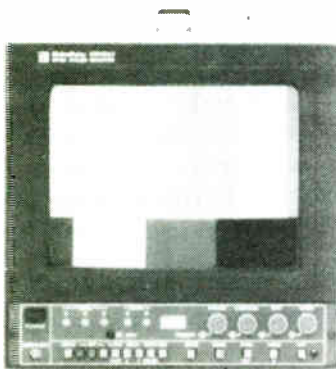
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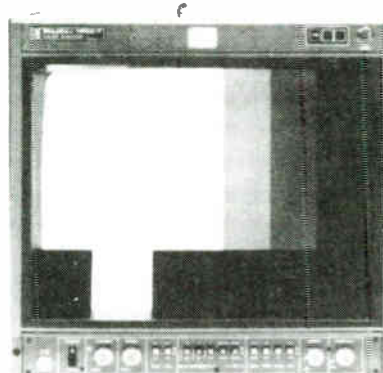
CMM 20-11



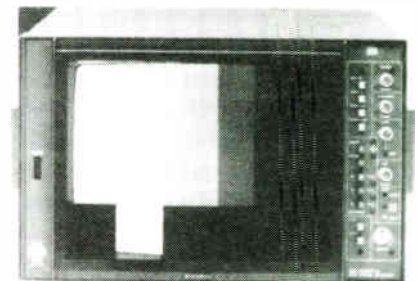
CMM 14-11



CM 99A



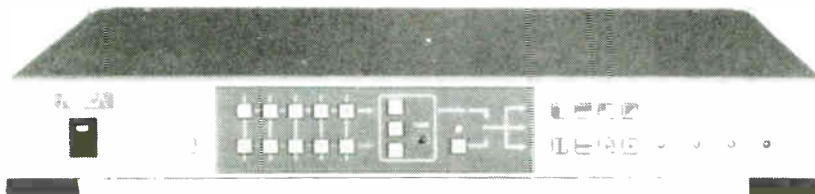
CMM 20-7



CMM 14-7

Asaca Shibasoku has a complete line of color monitors. 14", 20" and 26" Delta-9", 14" and 20" In-Line Dot Matrix-20" and 26" High Definition (1125 line system) and 14" and 20" Data Displays. Featuring comb filter, R-Y, B-Y, Y, I, Q, RGB, Y + R-Y, B-Y-Cross Hatch, plus a two year warranty on all parts and labor. Available in NTSC, PAL and SECAM.

PRODUCTION EQUIPMENT



ASW-300

ASW-300 Video Switcher

The ASW-300 provides up to 5 inputs of video for special effects for cuts and fades. It also utilizes an RS422 interface to permit use from a remote control panel.

For Complete Catalogs and Data Sheets, Please Call Asaca
 (800) 423-6347 — In California, call (213) 827-7144

AUDIOTRONICS

7428 Bellaire Avenue
N. Hollywood, CA 91605
(818) 781-6700

6VM917

Professional 6-inch American-made monitor features a 600-line horizontal resolution, 100% solid-state circuitry; compact desktop, rack-mount or console mount design; easily replaced regulator and deflection transistors; readily accessible components; rigidly constructed frame with easy-to-remove chassis assembly. Intercompartment shielding prevents cross-talk; coaxial connectors mounted at 60-degree angle; front-mounted major controls and adjustments; and external sync provisions. Metal cabinet. 7" x 5-7/8" x 10-7/8", 8-3/4 lbs. **\$380.00**

6VM917T

Triple-six monitor. Three 6-inch monitors in a row with rack/desk top metal cabinet. 7" x 17-1/4" x 10-7/8", 28 lbs. **\$975.00**

9VM967

Low price, general purpose 9-inch monitor features 700 line horizontal resolution, convenient up-front operating controls, simplified service adjustments and time lapse VTR capability. Heavy duty single chassis construction. 8-3/4" x 8-3/4" x 10-1/4", 16 lbs. **\$195.00**

12VM968

Economy priced 12-inch monitor features 12MHz bandwidth, 800 line horizontal resolution, carrying handles. Rear panel controls allow in-field underscanning. Metal cabinet. 11-1/2" x 12-1/4" x 12-1/4", 21 lbs. **\$235.00**

12VM968-02

With green phosphor screen. **\$245.00**

12DM973-04

Low-profile,, low-priced monochrome monitor features 18MHz amplifier bandwidth, 800 line resolution and 80 characters by 25 lines display capability. Ideal for computer word processing use. Standard green phosphor screen. 11" x 14-3/4" x 12-1/4", 13-3/4 lbs. . **\$159.00**

12DM973-03

With amber phosphor screen. **\$169.00**

14VM971

Low profile 14-inch monitor features 12MHz bandwidth, 800 line horizontal resolution and carrying handles. Metal cabinet. 10-3/8" x 15-1/2" x 12-7/8", 29 lbs. **\$299.00**

14VM971-03

With green phosphor screen. **\$310.00**

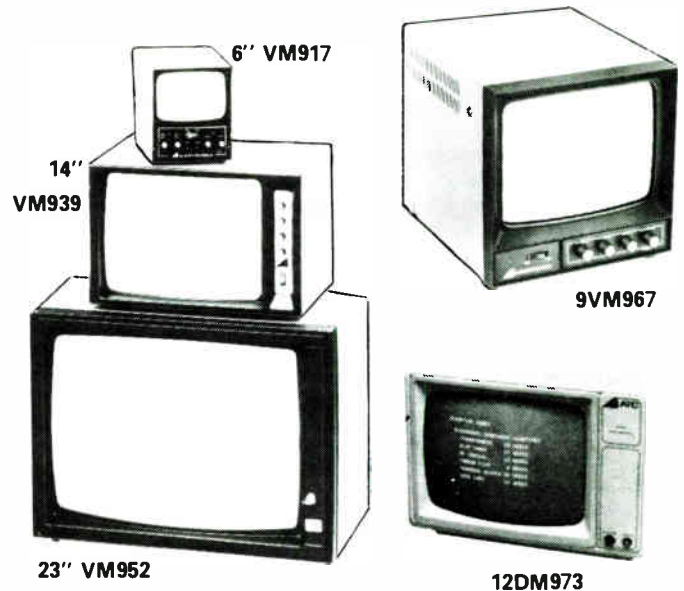
14VM939

The 14-inch screen offers top picture quality, solid-state reliability and unitized construction at modest cost. Styling is attractive, with shadow blue finish and aluminum control panels. Key features are: 100% solid-state circuitry, except for CRT; 800-line (or better) resolution; front-panel operating controls; regulated power supply; VTR compatibility; plug-in module incorporation of major components; CRT bleeder discharge system, and switchable D.C. restoration. The unit complies with federal rules governing X-radiation. Metal cabinet. 10-1/2" x 15-5/8" x 12-7/8", 29 lbs. **\$570.00**

17VM922

The 17-inch model features silicon 100% solid-state circuitry (except CRT) for maximum performance stability, long life reliability and low power drain and heat; 800-line (or better) resolution, front-panel operating controls, regulated power supply to counteract power line fluctuations, and fast AFC action for optimum VTR operation. The model also includes bleeder discharge systems for CRT, and black porch clamp DC restoration. All major components incorporated in plug-in modules for ease of maintenance and minimum down time. Metal cabinet. 15-1/2" x 16-1/4" x 11-7/8", 33 lbs. **\$625.00**

MONOCHROME VIDEO MONITORS & ACCESSORIES



23VM952

The 23-inch CRT display monitor features front "slide out circuitry" for reduced down time and instant on-the-spot servicing and also permits in-the-wall installation in areas where rear access is impossible. Silicon 100% solid-state circuitry provides maximum performance and stability, long life reliability and low power drain and heat. All major controls are front mounted for easy access and operation. Power supply is regulated to prevent raster size or brightness deviation due to line voltage fluctuations. The monitor features a superior gray scale and VTR capability. 17-3/4" x 22-1/2" x 16-1/2", 60 lbs. **\$830.00**

VC-809

High quality CCTV camera features automatic light control of 50,000:1 for remarkable clarity and detail even in the lowest light levels. 4-1/2" x 2-3/4" x 9-5/8", 3-3/8 lbs. Lens not included **\$219.95**

SK-976

Video Security Kit contains VC-809 camera lens, 9VM967 monitor, bracket and cable. 26 lbs. **\$545.00**

Lenses

VCL-0813	8mm f1.3 lens	..... \$ 85.95
VC-1614	16mm f1.4 lens	..... 59.95
VCL-1218VF	12.5mm - 75mm f1.8 macro zoom lens	..... 209.95
VCL-0618	6.5mm f1.8 lens	..... 159.95

Rackmounts

90-967 RMD	Dual rack mount for two 9VM967 monitors	..... \$45.00
14-971 RMK	Rack mount kit for 14VM971 monitor	..... 49.00
14-939 RMK	Rack mount kit for 14VM939 monitor	..... 49.00
17-922 RMK	Rack mount kit for 17VM922 monitor	..... 52.00
23-952 CYA	Ceiling yoke adaptor for 23VM952 monitor	..... 60.00

Monitor Options

External sync provisions and non-switchable underscan available for most models. Ask about availability.

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PROJECTORS

BARCODATA III

High Resolution Video/Graphics Projector

The Barcodata III is designed for critical computer imaging/video applications where compatibility with high scan rate graphics systems is a requirement. The Barcodata III creates superb large screen imaging of computer generated 80 column text and graphics on any flat or curved screen. All Barcodata III projectors are equipped with flexible remote control facilities and feature dual switchable horizontal/vertical scan frequency presets with remote control tuning of second preset frequencies.

FEATURES

- High light output: 440 lumens • Resolution: 875 lines in RGB, 475 lines in Video • Optional 30MHz wideband RGB amplifier for up to 1250 lines resolution in RGB • Variable screen size: 5 to 10 ft. diagonal
- Optional lens set for up to 20 ft. diagonal • Switch selection of: ceiling/desk mounting, front/rear screen projection • Multistandard composite video loop-through inputs (NTSC 3.58/NTSC 4.43/PAL/SECAM) • RGBS analog/TTL inputs • IBM-PC compatible, supports 16 colors • Dual switchable horizontal/vertical scan frequency presets with remote tuning capability • Scan ranges: Horizontal 15-32kHz, Vertical 50-100Hz.

- 90-00050** BARCODATA III with Delta II-D f/1.0 flat field high resolution lenses Minimum screen size 4 x 3 ft. Maximum screen size 8 x 6 ft. **\$16,250.00**
- 90-00050C** BARCODATA III with Delta II DT-AC f/1.0 flat field high resolution large screen lenses. Minimum screen size 5 x 3-3/4 ft. Maximum screen size 16 x 12 ft. **17,000.00**
- 90-00060** BARCODATA III - RGB with Delta II-D f/1.0 flat field high resolution lenses equipped with wideband RGB amplifier - provides 1250 lines resolution with 30MHz bandwidth (-3dB)* Minimum screen size 4 x 3 ft. Maximum screen size 8 x 6 ft. **16,250.00**
- 90-00060C** BARCODATA III - RGB with Delta II DT-AC f/1.0 flat field high resolution large screen lenses - equipped with wideband RGB amplifier - provides 1250 lines resolution with 30MHz bandwidth (-3dB)* Minimum screen size 5 x 3-3/4 ft. Maximum screen size 16 x 12 ft. **17,000.00**

* Deletes composite video input capability — accepts RGB signals only. Requires a stand alone chroma decoder for composite video applications.

BARCOVISION II

High Resolution Video/Graphics Projector

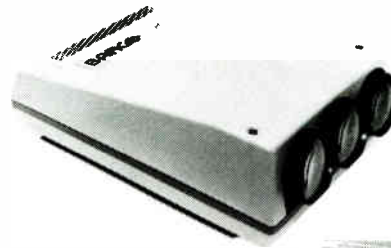
The Barcovision II is designed to provide exceptionally high light output and truly outstanding picture definition on any flat or curved screen. All Barcovision II projectors are equipped with flexible remote control facilities and are designed to accommodate a wide range of composite video and RGB sources.

FEATURES

- High light output: 440 lumens • Resolution: 850 lines in RGB, 475 lines in Video • Variable screen size: 5 to 10 ft. diagonal • optional lens set for up to 25 ft. diagonal • Switch selection of: ceiling/desk mounting front/rear screen projection • Multistandard composite video loop-through inputs (NTSC 3.58/NTSC 4.43/PAL/SECAM) • RGBS analog/TTL inputs • IBM-PC compatible: supports 16 colors • Dual switchable horizontal/vertical scan frequency presets. • Scan ranges: Horizontal 15-17kHz, Vertical 50-100Hz.

- 90-00070** BARCOVISION II with Delta II-D f/1.0 flat field high resolution lenses Minimum screen size 4 x 3 ft. Maximum screen size 8 x 6 ft. **\$9775.00**
- 90-00080** BARCOVISION II with Delta II-M f/1.0 large screen lenses. Minimum screen size 4 x 3 ft. Maximum screen size 14 x 10-1/2 ft. **9775.00**

- 90-00080B** BARCOVISION II with Delta II-M f/1.0 large screen lenses. Mechanically modified for larger screen sizes. Minimum screen size 4 x 3 ft. Maximum screen size 20 x 15 ft. **10,000.00**



BARCODATA III



BARCOVISION II

RCVDS

Remote Controlled Video/Data Source Selector

The RCVDS is a modular RGB/composite video switching system which allows up to ten input signals to be interfaced to the Barcovision II or Barcodata III projectors. The system consists of a main frame unit supplied with a hand held wireless infrared remote control unit and user selected input modules, and is designed to accommodate a wide range of input signals with varying display parameters and scan frequencies.

The RCVDS allows remote control of: input switching, contrast, brightness, color intensity/tint, input dim mode, scan frequency mode and projector off, and may be controlled by either a wireless infrared signal or hardwired remote connection. An optional hardwired remote infrared receiver is available for applications where remote control unit and RCVDS main frame are located in different areas.

- 98-25480** RCVDS main frame unit - 19" rackmountable . . **\$1425.00**
- 98-25760** MF Composite video input with stereo audio, for BARCODATA III **175.00**
- 98-25770** MF RGB TTL input module for BARCODATA III . **160.00**
- 98-25780** MF RGB Analog input module for BARCODATA III **230.00**
- 98-25640** DF Composite video input with stereo audio for BARCOVISION II **175.00**
- 98-25650** DF RGB TTL input module for BARCOVISION II . **160.00**
- 98-25660** DF RGB Analog input module for BARCOVISION II **230.00**
- 98-25840** Hardwired remote control cable **150.00**
- 98-25710** Remote infrared receiver **180.00**

ACCESSORIES

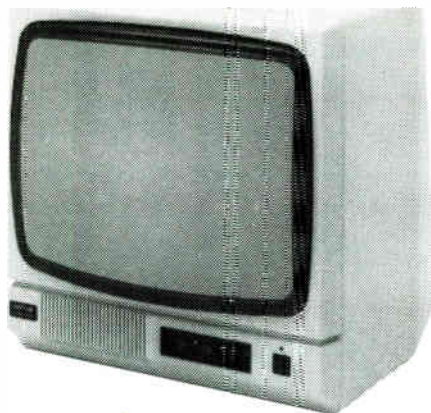
- 98-25350** TVDM 34 Off-Air Demodulator **\$800.00**
- PDC 3-N2** Precision Chroma Decoder **\$1900.00**
- Option 119**
- 98-25620** VSO 2 Source Selector **500.00**
- 98-25550** Ceiling mount bracket for BARCOVISION II, BARCODATA III **400.00**
- 98-25700** Re-useable padded heavy duty transit case for BARCOVISION II, BARCODATA III **500.00**
- 98-25410** Heavy duty projection cart with locking casters, adjustable height and tilt **500.00**
- 76-1168** 30MHz wideband RGB amplifier **350.00**
- 34-82455** Additional remote control cable - 40 ft. length . . **150.00**
- 34-82455S** Additional remote control cable - 40 ft. length (+ \$2.15/ft.) **150.00**
- 32955** Spare lens set Delta II-M f/1.0 **750.00**
- 32950** Spare lens set - Delta II-D f/1.0 **750.00**
- 32956** Spare lens set - Delta II DT-AC f/1.0 **750.00**
- 79-2009** Set of extender cards for BARCOVISION II, BARCODATA III **70.00**
- 79-2010** Extender Card for RCVDS **21.00**

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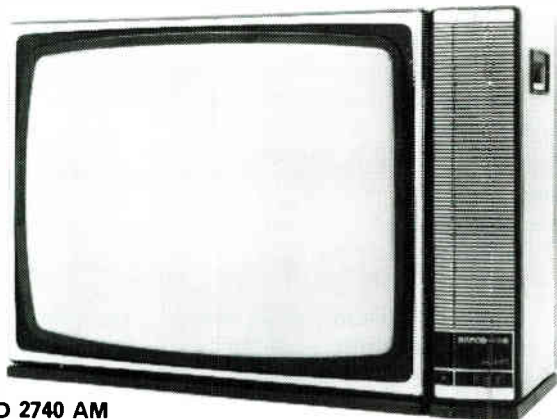
MONITORS



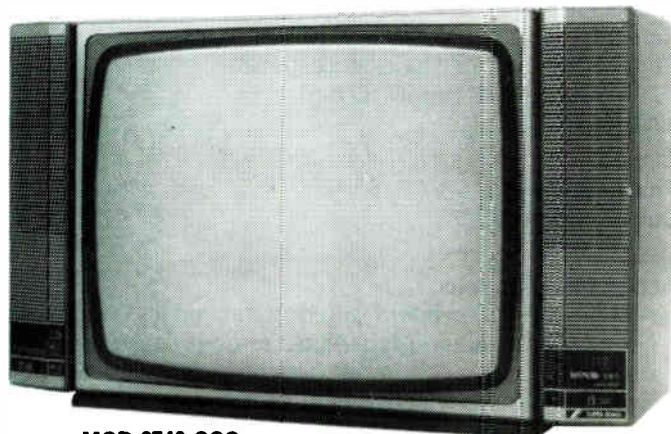
DCD 1640F



DCD 2740F



MCD 2740 AM



MCD 2740 SSQ

DCD SERIES 2740F/2240F/1640F COLOR DATA/VIDEO DISPLAYS

COMMON FEATURES TO ALL DCD SERIES

- Internal Source Selection Switch
- Video (NTSC 3.58/NTSC 4.43/PAL/SECAM)
- RGB (Analog/TTL) (10 MHz)
- IBM-PC Compatible
- Vertical Resolution: 575 Active Lines (interlaced)
- 3 Watt Built-in Speaker for Audio Monitoring
- Full Array of Video and RGB Inputs
- Stabilized Power Outputs for use in Custom Built Systems

DCD 2740F/2240F SHARE ALL COMMON FEATURES PLUS:

Display Capabilities: 64 characters/line (5 x 7 Dot Matrix) Total: 1600 characters
Pitch: 0.82mm

DCD 2740F

DCD 2740F features a 27" Auto-Converging Tube with Horizontal Resolution of 500 Pixels, 619W x 508H x 455mmD (32kg) \$950.00

DCD 2240F

DCD 2240F features a 22" Auto-Converging Tube with Horizontal Resolution of 400 Pixels, 535W x 446H x 411mmD (27kg) \$875.00

DCD 1640F SHARES ALL COMMON FEATURES PLUS:

Display Capability: 40 characters/line (5 x 7 Dot Matrix) Total: 1000 Characters
Horizontal Resolution: 360 Pixels
Pitch: 0.68mm
Portable, 400W x 393H x 405mmD (14kg) \$750.00

MCD SERIES

MULTI-PURPOSE COLOR DISPLAYS

- Automatic Sensing Quad Standard Decoders (NTSC 3.58/NTSC 4.43/PAL/SECAM)
- RGB (Analog/TTL) (10 MHz)
- Accommodates 2 Input Modules for Additional Switched Inputs
- Optional Video/RGBs Input Module
- 3 Watt Loudspeaker
- Models Available with All Band Tuner (VHF, UHF, CATV)
- Vertical Resolution: 575 Active Lines
- 22" has a Horizontal Resolution of 400 Pixels
- 27" has a Horizontal Resolution of 500 Pixels
- Self Converging CRT's (Pitch 0.82mm)
- Slot-mask In-line Picture Tubes 3 Screen Sizes (22", 26" and 27")
- Floating Earth Differential Input Amplifiers
- Looped through Input Sockets, Video and RGB
- 100% Solid State with Complete AC Chassis Isolation
- Multi-standard Receiver-Monitors (8N Transmission Standard BG, I, L, MN, DK)

RECEIVER MONITORS

MCD 2740 AR

Asymmetrical Cabinet (27" CRT) with a Stereo Sound Amplifier, Quad 8N Version \$1700.00

MCD 2240 AR

Asymmetrical Cabinet (22" CRT) with a Mono Sound Amplifier and Quad 8N Version \$1400.00

MCD 2240, SSQ/MCD 2740 SSQ

Super Stereo Models (22" CRT and 27" CRT) Quad 8N Version .. POR

MONITORS

MCD 2740 AM

27" CRT with Stereo Sound Amplifier Quad Version \$1125.00

MCD 2240 AM

22" CRT with Mono Sound Amplifier Quad Version \$1000.00

INPUT MODULES

Video-RGB \$ 75.00

BARCO ELECTRONIC n.v.

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P.O. Box 699 30 Chapin Road
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(201) 882-0584

ADVERTISING MONITOR



PAD 2740

PAD 2740 AND PAD 2240 PUBLIC ADDRESS DISPLAY

The BARCO PAD's are stand alone public address displays providing colorful timed cycling of messages and graphics.

Features

- Clearly Readable up to a Distance of 16 feet
- Easy Editing through Optional Typewriter-styled Keyboard
- Programmable Display Sequencing for 32 to 64 Pages in Non Volatile Memory
- Fully Automatic Start of Message Cycling after Switching on the Power
- Modular Construction
- Manual/Remote Programming

Applications

As an information and advertising medium in: shops, supermarkets, department stores, mobile shops, banks, cinema's, airports, hotels, post-offices, fuel stations, railway and bus stations, hospitals, exhibitions, fairs, shows, traffic info centers, plant and office signalling, sales instructions, advertisement in cars, vans, etc.

Versions

This version offers storing for 32 message frames. Kit for extension of up to 64 message frames optional. The 32 page version also offers video facilities (automatic

choice of video when activated) and an RS 232 port for data dump and load.

Data line transmission possible.

Display

12 lines of 40 characters or semi-graphics with 7 foreground and 7 background colors.

PAD 2740

Screen Size: 27" (67cm), max. screen size available. Set provided with suspension capability

619W x 508H x 455mmD: (32kg)

9330115\$1675.00

PAD 2240

Screen Size: 22" (56cm)

Set provided with suspension capability

535W x 446H x 411mmD: (27kg)

9330105\$1575.00

General

Power Supply: 115 VAC/60Hz

Consumption: 90W

Accessories/Options

- Alphanumeric keyboard offering full editing facilities: point by point-editing, character or page erase, flashing text mode\$350.00
- Expansion Kit from 32 to 64 Pages.....\$225.00

BARCO INDUSTRIES, INC.

195 Jefferson Drive
Menlow Park, CA 94025
(415) 328-4380

MONITORS

CM 22, CM 33 HRC, CM 51 HRC PROFESSIONAL COLOR MONITORS

Barco CM Series color monitors fulfill a wide range of display applications where good picture quality and stability are essential requirements. High resolution dot mask in-line gun CRT's provide precise stable convergence, eliminating the need for readjustments. All models are available with NTSC (PAL or SECAM optional) composite video and RGBS loop-through inputs, and employ Barco's advanced modular design concept to facilitate ease of maintenance.

Features

- Dot mask in-line gun CRT's • H/V delay/pulse cross display • Blue gun only mode • Switchable underscan
- Front panel cut-off/gain adjustments • Front panel preset • RGB/video fast insertion • Internal loudspeaker

Special Features of the CM 22:

- AKB auto color temperature stabilization • Switchable comb filter • AC/DC power operation

Common Specifications

Electronic Gun System:

High Focus Voltage Bipotential, In-Line Electronic Gun.

Scanning format:

Factory adjusted 4 to 3 aspect ratio underscan.
Normal scan switchable.

RGB Amplifier Performance:

15kHz to 7MHz + 1dB - 3dB
Gradual roll-off.

Power requirements:

120 V AC - 15% + 12%
45Hz to 65Hz.

Power consumption:

14" and 20":

With white field and beam current limiter working 135W.
With standard test pattern and controls to average position 95W.

Max. power consumption 135W.

9":

Max. 70W on 120V

Max. 77W on 14V

Average 60W

CM-22 Dimensions:

8.62H x 8.58W x 18.66D inch

Weight net: 22 lbs. (10kg)

CM 33 HRC Dimensions:

10.47H x 15.94W x 15.20D inch

Weight net: 37 lbs. (17kg)

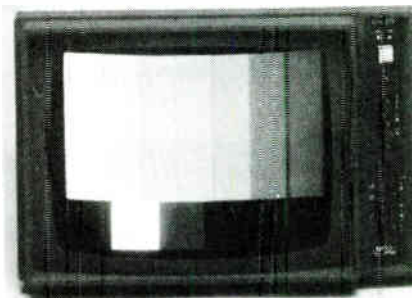
CM 51 HRC Dimensions:

17.72H x 18.31W x 21.85D inch

Weight net 77 lbs. (35kg)



CM 51 HRC



CM 33 HRC

CRT Size	Model Designation	Resolution		Inputs			Price
		CRT Pitch (mm)	TV Lines	Dual Video	Video	RGB	
9 inch 22 cm	CM 22 NTSC	0.30 mm	320	•		•	\$1900.00
13 inch 33 cm	CM 33 HRC-NTSC	0.43 mm	340	•			\$1800.00
	CM 33 HRC-RGB	0.43 mm	340		•	•	1900.00
	CM 33 C HR-NTSC	0.31 mm	550		•	•	1900.00
20 inch	CM 51 HRC-NTSC	0.43 mm	540	•			2800.00
51 cm	CM 51 HRC-RGB	0.43 mm	540	•	•	•	3000.00

NOTE: Most units available with PAL or SECAM video inputs at the same prices as NTSC versions.

ACCESSORIES

Model Designation	Description	Price
RM 33	19 inch rack mount kit for CM 33	\$150.00
RM 51	19 inch rack mount kit for CM 51	150.00
TR 22	19 inch rack mount tray; holds 2 CM 22's	150.00
SS 22	Sunshield for CM 22	100.00
SS 33	Sunshield for CM 33	100.00
-	Additional instruction manuals	50.00

BARCO INDUSTRIES, INC.

195 Jefferson Drive
Menlow Park, CA 94025
(415) 328-4380

MONOCHROME MONITORS

TVM 3 SERIES MONOCHROME MONITORS

The B.V.C. professional monochrome monitors are measurement instruments for use in broadcasting, industrial and educational applications where quality and reliability are most required.

Developed from the reliable CTVM series, these monitors have been designed to produce a sharp clear picture, free from distortion.

Two screen sizes are available: a 37 cm (14 inch) and a 51 cm (20 inch) monitor.

Facilities considered to be essential including colour subcarrier filter, pulse cross, size switch, remote control, internal/external sync offer broadcast-oriented operating features and controls.

The monitors are available as a table top unit or as a rack mountable unit for use in OB vans and in VTR monitor bridges.

FEATURES

Reliability:

High reliability has been designed into the B.V.C. TVM 3.

Modular construction:

All parts mounted on interchangeable plug-in boards.

Rugged construction:

All-metal case.

All solid state:

Fully transistorized circuitry.

Multiple inputs:

Provision for 2 composite inputs and external sync input.

Controls:

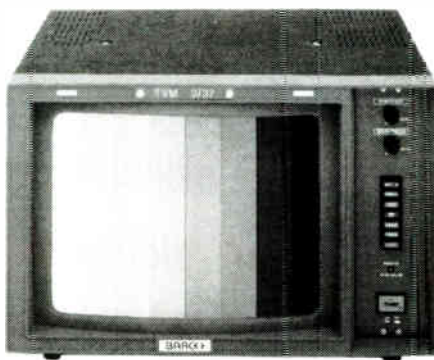
All primary controls are available on the front panel.

Remote control:

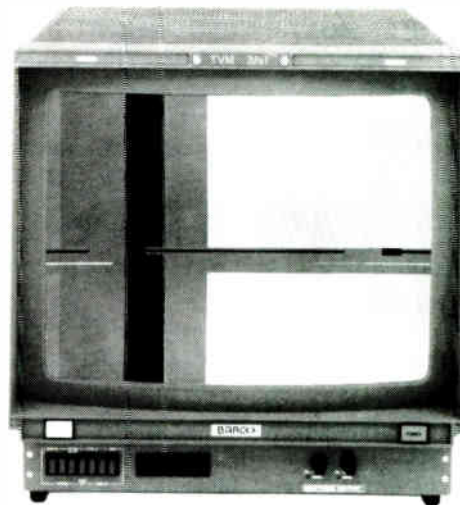
Remote input selection.

Maintenance:

Use of all plug-in modular construction allows for high speed on-location parts replacement.



TVM 3/37



TVM 3/51

MASTER CONTROL MONOCHROME MONITORS

37 cm (14") screen TV monitors; TVM 3/37/WA (ill. D) \$2325.00

51 cm (20") screen TV monitors; TVM 3/51/WA (ill. D) 3025.00

CHROMA DECODER UNIT (HOLDS UP TO 2 DECODERS)

CD3 N-2 Notch Plus Comb Filter Decoder \$2550.00

CD3 PAL Notch Filter PAL Decoder, B, M, N 2450.00

CD3 Secam Secam Decoder H/V 2450.00

AUTOMATIC SWITCHER

ASMD-3 Capable of switching up to 7 decoders \$1250.00

COMPLEX COMB FILTER DECODER

CD3 N-5 Two or Three Line Comb Filter \$4000.00

ACCESSORIES (19" RACKMOUNTABLE)

RM 3/37 15" Rackmount and Handle Kit \$200.00

RM 3/51 20" Rackmount and Handle Kit 200.00

RM ASMD3 Rackmount for Switcher 200.00

RM CD3 Rackmount for Decoder Units 200.00

TV DEMODULATORS

Multichannel, multistandard VSD 1 systems (BG/MN) or (BGH, CF, I, L) or (BGH, CF, DK, L) \$2040.00

Option

Input failure information outlet 90.00

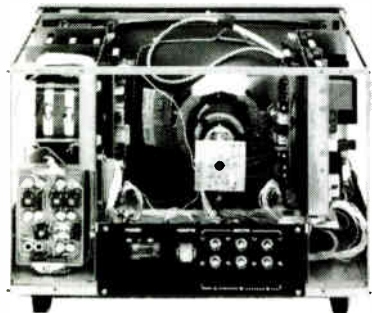
Multichannel, monostandard VSD 2 system MN or L or I or DK or BG 2200.00

Single channel, monostandard, quartz controlled VSD 2/X system M or N or L or I or K or D or G or B 2500.00

ACCESSORIES

19" rack mount kit — 56 0930 \$50.00

OTHER CONFIGURATIONS AVAILABLE UPON REQUEST.



630 Puente
Brea, CA 92621
(714) 871-4848



9060

9100

MODELS 9100/9060 Professional Series Oscilloscopes

Models 9100 and 9060 Oscilloscopes offer many similar features. Both include three channel vertical inputs; two with 5mV/Div. maximum sensitivity and the third with selectable 500 mV/Div. or 100mV/Div. sensitivity. There is a rear panel output for channel 1. This permits the user to conveniently monitor channel 1 with a counter or other device, eliminating the need to connect another test probe to the circuit. The horizontal section features dual timebases and a delayed sweep function. The trigger section includes a TV sync separator for improved triggering on complex video waveforms, plus a trigger view (CH 3) switch for looking at the trigger signal without changing probes or cables.

Several new innovations for these oscilloscopes include a Linear Focus control, Trigger Level Lock control and Dynamic Bias Circuitry. The Linear Focus control focuses the trace regardless of intensity. The Trigger Level Lock control makes trigger level adjustment automatic over a wide range of signals. Dynamic Bias Circuitry reduces power consumption by minimizing the power requirements during idle periods or for displaying low frequency signals. When high frequency signals are displayed, power consumption automatically switches to maximum.

Special features unique to the Model 9100 Oscilloscope include: Three DC to 100MHz vertical amplifiers. Up to 1mV/Div. sensitivity may be obtained at 20MHz bandwidth with the X5 Magnifier switch on. The horizontal time bases range from 0.5 Sec./Div. to 20nS/Div., and there is a X10 Magnifier switch to extend the range to 2nS/Div. Other features include a 6 inch (152mm) rectangular CRT with 18KV acceleration potential for brighter traces, plus an internal illuminated graticule.
..... \$1,595.00

Special features unique to the Model 9060 Oscilloscope include: Three DC to 60MHz vertical amplifiers. Up to 1mV/Div. sensitivity may be obtained at 20MHz bandwidth with the X5 Magnifier switch on. The horizontal time bases range from 0.5 Sec./Div. to 50nS/Div., and there is a X10 Magnifier switch to extend the range to 5nS/Div. Other features include a 6 inch (152mm) rectangular CRT for brighter traces, plus an internal illuminated graticule. Both oscilloscopes feature plug-in module construction for easier maintenance.
..... \$1,195.00

SPECIFICATIONS	MODEL 9100	MODEL 9060
CRT		
Screen	152mm (6-in.) rectangular with internal illuminated graticule	
Acceleration Voltage	Approx. 18KV dome-mesh	Approx. 12KV dome-mesh
Type Focus	Linear focus—one setting for a wide range of intensities.	
VERTICAL		
Bandwidth ¹	DC (AC:10Hz)-100MHz	DC (AC:10Hz)-60MHz
Rise Time	3.5nS (18nS. max. with X5 Mag. on)	5.8nS (18nS. max. with X5 Mag. on)
Ch1. Ch2 Sensitivity	5mV./Div.-5V./Div., 1mV./Div.-1V./Div. with X5 Magnifier	
Ch3 Sensitivity	0.1V./Div. and 0.5V./Div.	
Accuracy	±3% (±5% with X5 Magnifier)	
Input Impedance	1 Megohm ±1%, shunted by 25pF ±2pF	
Ch1. Ch2 Max. Input Voltage	300V. (DC + AC Peak)	400V. (DC + AC Peak)
Operating Modes	Ch1. Ch2, Ch3, Add, Alt./Chop	
Delay Line	Vertical delay approx. 20nS.	Vertical delay approx. 40nS.
Ch1 Output	50mV. minimum into 50 ohm load	
HORIZONTAL		
Sweep Times: A	A (main) Sweep 20nS./Div.-0.5 Sec./Div.	A (main) Sweep 50nS./Div.-0.5 Sec./Div.
B	B (delayed) Sweep 20nS./Div.-50mS./Div.	B (delayed) Sweep 50nS./Div.-50mS./Div.
Magnifier	X10 Mag., divides A and B Sweeps by 10	
Time Base Accuracy	±3%, ±5% (magnifier on), ±8% 20nS./Div. and 50nS./Div.	
Trigger: A Sweep	DC-10MHz: 0.4 Div. or less 10MHz-100MHz: 1.5 Div. or less TV: 2.0 Div. or less	DC-10MHz: 0.4 Div. or less 10MHz-60MHz: 1.5 Div. or less TV: 2.0 Div. or less
B Sweep	B (delayed) Sweep is triggered by A (main) Sweep source.	
Sweep Modes	Auto, normal, single (push to reset).	
Signal Source	Int., line, ext., ext. - 10	
Coupling	AC, DC, HF Reject, TV	
Level Lock	Included—automatically adjusts trigger level—saves time	
X-Y MODE		
Functions	Ch1:X, Ch2:y or Ch3 horizontal:X, Ch + Ch2:y	
Frequency Range	DC-2MHz, -3dB	
Phase error	3° or less, DC-100KHz	
CALIBRATOR		
	2V. P-P squarewave ±2%, 1KHz ±5%	
POWER REQUIREMENTS		
Voltage	Selectable, 100V, 115V, 215V, 230V. AC ±10% at 50/60Hz	
Power	65 VA (max.)	60 VA (max.)
DIMENSIONS		
Size	340mm (13.39-in.) wide 190mm (7.48-in.) high 450mm (17.72-in.) deep	340mm (13.39-in.) wide 190mm (7.48-in.) high 440mm (17.31-in.) deep
Weight	75kg (16.5 lbs.) typical	70kg (15.0 lbs.) typical
ENVIRONMENT		
	5°C to 35°C (41°F to 95°F) operating -20°C to 70°C (-4°F to 158°F) transport and storage	



BOSCH

2300 S. 2300 W.
Salt Lake City, UT 84119
(801) 972-8000 Telex 38-8352

COLOR MONITORS

MC 22 BA

Color Precision Monitor 9" High Resolution

FEATURES

- High resolution in-line-gun color picture tube
- Black matrix
- EBU or U.S. phosphors
- Color temperature 6500K, convertible to 3200K
- Beam current feedback
- Inputs: CCVS + RGB signals
- R, G, B, can be individually selected
- Remote control
- Portable, robust design
- Suitable for single or double installation in 19" racks or DIN cabinets (interchangeable with M 24 BA/BB)
- Mains or battery operation

The MC 22 BA monitor has been developed for assessing the quality of television pictures and can be used for all color standards by fitting appropriate PCBs. This new, portable, lightweight monitor can be powered directly from the mains or, optionally, from batteries. In the case of mains failure, the monitor switches automatically to battery operation (option). Thanks to its low weight and small size, the MC 22 BA is ideal for ENG/EPF work. For installation, i.e., in OB vehicles, two MC 22 BA monitors can be fitted directly side by side. The EBU phosphor coordinates of the MC 22 BA-A1 and the U.S. phosphor coordinates of the MC 22 BA-A2 correspond with the standards for professional color control. **POR**



MC 22 BA

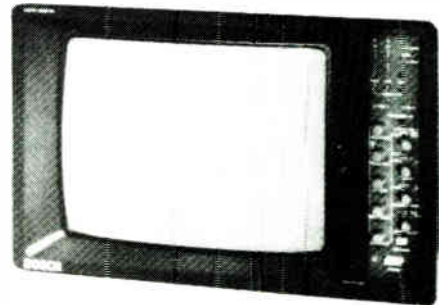
MC 37 BA-B2

Color Monitor 15" High Resolution

FEATURES

- High resolution delta gun color picture tube
- U.S. phosphor
- Black matrix
- Three CCVS input + RGB input
- NTSC comb filter
- Blue only display as black/white pictures
- Monochrome display
- Automatic and manual degaussing
- Active convergence switching with separate corner correction
- Color temperature switchable 6500K/3200K
- Pulse cross
- (R-Y) (B-Y) output for vector display

This monitor has been developed especially for precise measurement and viewing of television pictures. This monitor uses high resolution delta gun, black matrix, U.S. phosphor picture tube. The monitor is equipped with a comb filter decoder. Dual standard is available as an option. **\$5,770.00**



MC 37 BA-B2

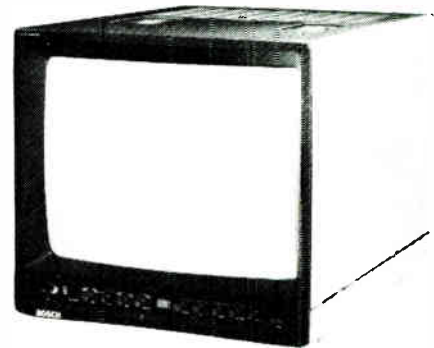
MC 51 BA-B2

Color Monitor 20" High Resolution

FEATURES

- High resolution delta gun picture tube
- U.S. phosphor
- Black matrix
- Color temp switchable 6500K/3200K
- Active convergence switching with separate corner correction
- Automatic and manual degaussing
- Blue only display as black/white picture
- Monochrome display
- Pulse cross
- (R-Y) (B-Y) output for vector display

This monitor is equipped with a high resolution delta gun color picture tube with U.S. phosphors and meets or exceeds standards set for professional broadcast color monitoring. It has three CCVS inputs and an RGB input which can be selected in the control panel. All the adjustment controls are easily accessible in a sliding tray which can be pulled out when necessary. It has a comb filter decoder and can be fitted with another set of decoders for dual standard operation. **\$5,398.00**



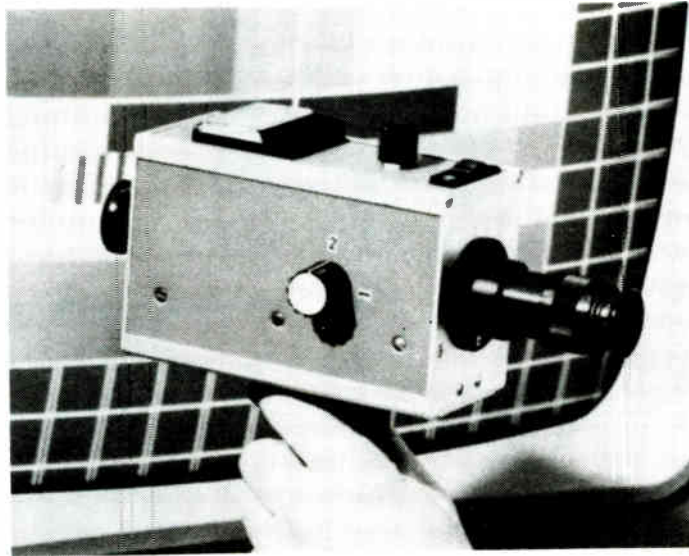
MC 51 BA-B2

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IRT COLOR MONITOR COMPARATOR



D6500°K MODEL MK II IRT COLOR MONITOR COMPARATOR

A Battery-Powered Visual Comparator for Quick and Precise Color Temperature Adjustment and Gray-Scale Balance of Color Monitors to the Recommended World Standard of D6500°K.

Features

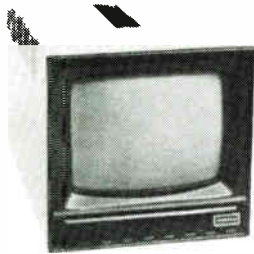
- Matching accuracy uninhibited by average ambient light, distracting colors, or other monitors
- Optical illusion that kine face and comparator are on the same plane
- Reference surface texture appears similar to kine face texture
- Device independent of phosphor variations
- Lever adjustment to change reference from high-light to low-light brightness
- Light weight, small size and tripod mount for convenience
- Long bulb life—built-in meter and potentiometer to adjust lamp current
- Endorsed by major Color Monitor Manufacturers

The IRT comparator is a simple auxiliary device which permits quick and accurate adjustments by direct color comparison of the TV kine. The comparator (which may be hand-held or tripod mounted) is presented to the face of the kine, displaying either a gray-scale or window signal. The operator, looking through the device's ocular, will observe a circular field where half of the area is a direct view of the kine face and the other half is the illuminant-D reference. This reference is produced by the reflected light emitted from a specially selected bulb and is filtered through conversion filters and stabilized by a control to a constant current. A neutral wedge filter is positioned in front of the reference area to change brightness in the comparator from peak white at 19 Ft. Lamberts to low-light brightness at 0.95 Ft. Lamberts. The operator adjusts the monitor's screen and gain controls so that the kine white balance will match with the comparator in both high-lights and low-lights.

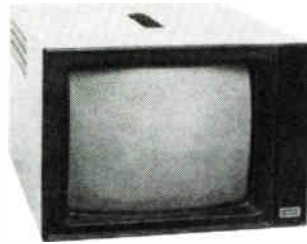
Specifications

- Color Temperature: D6500°K + /-200°K
- Battery-Powered by: 5 C-Cells
- Battery Life Expectancy: 15 hours
- Bulb Current Consumption: 90 %
- Tripod Mount: 3/8"-16"

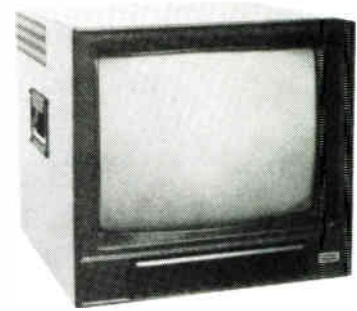
MK II \$1500.00



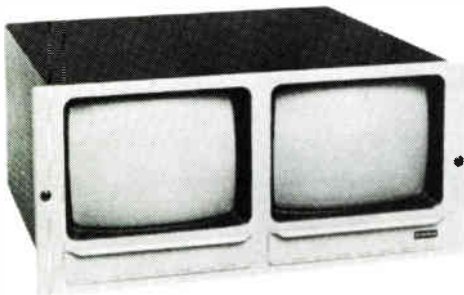
9-INCH CABINET MODEL



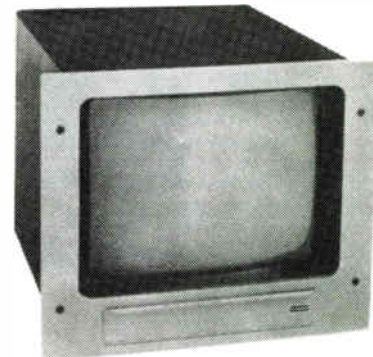
14-INCH CABINET MODEL



17-INCH CABINET MODEL



9-INCH DUAL RACK MODEL



17-INCH RACK MODEL

9600 SERIES MONOCHROME MONITORS

- Automatic Video Level
- 800-Line Center Resolution
- Back Porch Gated DC Restoration
- Interchangeable Solid-State Plug-in Modules
- Continuous-Duty Operation
- Loop-Through Input
- Regulated Power Supplies
- Differential Input Available by Jumper Selection
- 525/60 U.S. and 625/50 CCIR Scan Rates

The 9600 Series professional quality monochrome television monitors feature Cohu's exclusive Automatic Video Level Control. This feature makes it possible to maintain a set contrast level independent of signal strength. For example, in a CCTV system having multiple camera inputs, the monitor display will maintain the contrast level as set within monitor input requirement limits, regardless of which camera output is displayed.

All monitors have three modes of operation, automatic video level control with dc restoration, dc restoration only, and manual operation only. The operational mode is selected by a three position switch. In the automatic video level control mode, the blanking level and the contrast level are held constant. The dc restoration mode maintains a constant blanking level, however, the contrast level can vary as a function of input signal. The manual operation mode (OFF position) allows viewing of changes in both the blanking level and the contrast level as a function of input signal variation.

The monitors feature high quality cathode-ray tubes with excellent geometry, a P4 phosphor (9300K) with a gray filter glass, and 800-line center resolution. The monitors also incorporate differential video inputs in which long line/interference pickup on the cable shield is reduced by 25 dB with up to 4V p-p maximum hum component. They accept composite or noncomposite video inputs and external sync, when required, with all inputs having loop-through capability. They

operate at scan rates of 525 lines/frame (60 Hz/sec) and 625 lines/frame (50 Hz/sec) with input signals that meet EIA RS-170 specifications and CCIR specifications, respectively.

9600 Series TV monitors are of solid-state, modular construction with interchangeable plug-in circuit boards. The reliable, continuous-duty operation of the monitors makes them well suited for a wide variety of surveillance, industrial, computer, educational and broadcast applications. The series includes three picture tube sizes: 9-inch (22.86 cm), 14-inch (35.56cm) and 17-inch (43.18cm) which are available in both cabinet and rack models (the 9-inch is also available in a dual rack configuration). Available options include: (1) CRT Phosphors P31, P39 and P42; (2) left, right, and dual mounts for the 9-inch rack model; (3) rack slides for the 14- and 17-inch models; (4) a yoke mount for the 17-inch model; (5) remote contrast and brightness control; (6) external drive capability; (7) a tally light, and (8) an underscan switch.

The 9600 Series monitors are designed for long-term, stable operation with minimum downtime. Ease of maintenance is simplified by the plug-in modular construction.

9600-9C	9" Cabinet Model
9600-9R	9" Rack Model
9600-9N	9" Chassis only
9600-9/2R	9" Dual Rack Model
9600-9/RBL	9" Rack with left panel blank
9600-9/RBR	9" Rack with right panel blank
9600-14C	14" Cabinet Model
9600-14R	14" Rack Model
9600-14N	14" Chassis only
9600-17C	17" Cabinet Model
9600-17R	17" Rack Model
9600-17N	17" Chassis only
9600-17/YC	17" Yoke Ceiling Mount Model
9600-17/YW	17" Yoke Wall Mount Model

CONRAC CORPORATION

CONRAC DIVISION

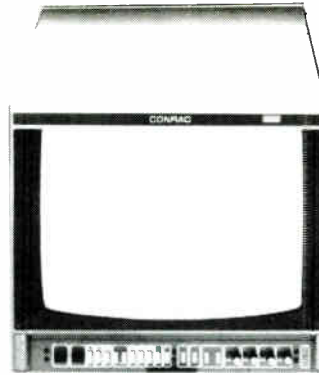
600 North Rimsdale Ave.
Covina, CA 91722
(818) 966-3511

COLOR MONITORS

6200 SERIES: 19 and 13-Inch Color

Class 1 master studio monitor incorporates fixed convergence precision in-line CRT, RGB and NTSC switchable inputs, optional comb filter and Conrac Colormatch™ phosphors. Other desirable professional features includes superb white field and brightness uniformities and pulse cross display. 19 and 13 inch models are available in cabinet, rack-slide or chassis-only configurations.

19" CRT		13" CRT	
NTSC with Comb Filter and RGB			
6242N19	\$4930.00	6242N13	\$4605.00
6242RS19	5120.00	6242RS13	4800.00
6242C19	5135.00	6242C13	4815.00
6242Y19	5185.00	6242Y13	4855.00
		PAL B European Factory Quote	



6200 SERIES

6100 SERIES: 19-Inch Color

The ultimate "master monitor" for professional broadcasting and teleproduction applications. Features a Colormatch, 625-line resolution, shadow-mask, CRT, beam current feedback, thirty-eight independent, and fully active convergence controls and optional comb filter which offers improved separation of chrominance and luminance and reduces cross-color distortions.

6100 Series Broadcast Color

19" CRT			
NTSC		Pal B European	
6122N19	Price \$6980.00	6123N19	Price \$7090.00
6122RS19	7170.00	6123RS19	7240.00
6122C19	7280.00	6123C19	7345.00
6122Y19	7330.00	6123Y19	7385.00
NTSC with Comb Filter		Accessories*	
6142N19	\$8090.00	M3	\$310.00
6142RS19	8275.00	M4	340.00
6142C19	8385.00	M5	180.00
6142Y19	8425.00		



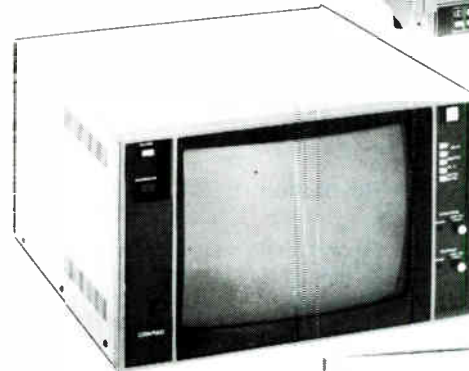
6100 SERIES

5700 SERIES: 13-Inch Color

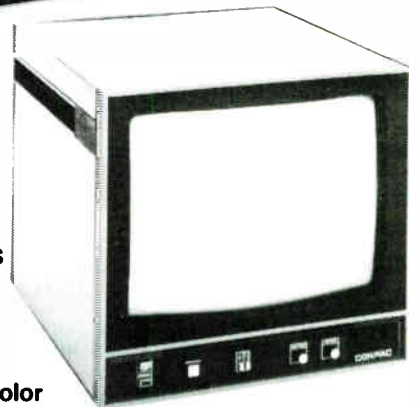
A compact, 500-line resolution Colormatch, shadow-mask picture or data display monitor, with special controls and configuration for VTR over-console applications. All convergence controls are located in a pull-out drawer for full front access. Also available in rack and portable cabinet configurations. Available in NTSC color transmission standards, with optional vector output.

5700 Series Broadcast Color

13" CRT			
NTSC		Pal B European	
5722N13	Price \$6450.00	5723N13	\$6620.00
5722RS13	6605.00	5723RS13	6770.00
5722C13	6660.00	5723C13	6820.00
5722Y13	6695.00	5723Y13	6860.00
NTSC with Comb Filter		Accessories*	
5742N13	\$7675.00	M3	\$310.00
5742RS13	7830.00	M4	340.00
5742C13	7885.00	M5	180.00
5742Y13	7920.00	M8	365.00
NTSC with Vector Output		M9	230.00
5732N13	\$7210.00		
5732RS13	7340.00		
5732C13	7435.00		
5732Y13	7465.00		



5700 SERIES



5200 SERIES

5200 SERIES 25-Inch Color

The 5200 Series display monitors are for audience viewing, corporate communications, and instructional applications. They feature a shadow-mask CRT, and preset controls for contrast and brightness. Available in NTSC color transmission standards, or in an RGB version for computer data/graphics applications.

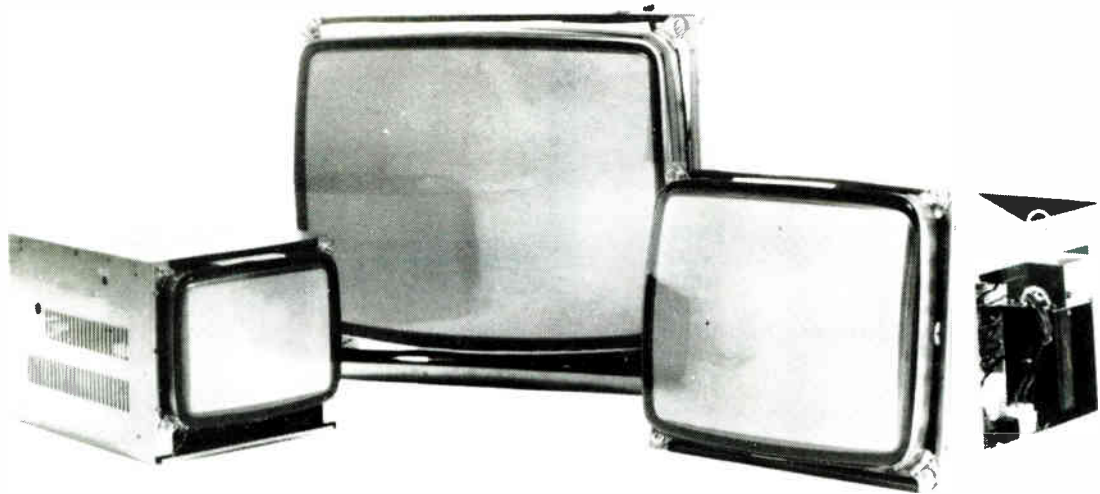
25" CRT		25" CRT	
NTSC	Price	RGB	Price
5222C25	\$5795.00	5211C25	\$5065.00
5222Y25	5825.00	5211Y25	5095.00

CONRAC CORPORATION

CONRAC DIVISION

600 North Rimsdale Ave.
Covina, CA 91722
(818) 966-3511

MONITORS



7000 SERIES COLOR VIDEO DISPLAY MONITORS

7000 SERIES: 19, 13 and 9-Inch Color High Resolution Video Display Monitors

Cost effective high resolution video displays ideally suited for business graphics, process control, CAD/CAM workstations and personal computers. Features 8 colors, precision in-line (PIL) CRT technology, high density shadow mask CRT, modular electronics, scan rates from 24kHz to 32kHz, TTL level signal inputs and optional cabinet.

7000 Series Color

9" CRT	
7011N9 24.8kHz	\$665.00
13" CRT	
7011N13 24.8kHz	\$865.00
7011N13 31.2kHz	895.00
19" CRT	
7011N19 24.8kHz	\$1495.00

2600 SERIES: 19, 15 and 9-Inch Monochrome Video Display Monitors

The 2600 Series of video display monitors is designed to bring high reliability, easy maintenance and superior picture quality to a wide variety of broadcast and computer graphics systems. With its high performance and high resolution, the 2600 meets the demands of computer aided design (CAD), computer-aided manufacturing (CAM), medical imaging, CATV, process control and other graphics systems.

2600 Series Monochrome

15" CRT	
2600N15	\$1220.00
2600C15	1340.00
2600NR15	1380.00
2600Y15	1460.00

Options

Dual Video Input	\$ 65.00
Inverted Video (switchable)	30.00
Pulse Cross	65.00
Normal to Underscan Switchable	45.00
Separate Horizontal and Vertical Drive	30.00
Rack Slides	130.00
Rack Shelf	60.00
Tally Lights	60.00
AFC Switchable	25.00
High Line Rates (specify)	125.00
Direct Etch CRT	30.00

Phosphors:

D6500°K	\$155.00
P31, P39, P45	85.00
AR Filter (OCLI)	

CONRAC CORPORATION

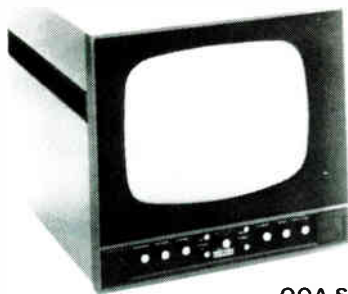
CONRAC DIVISION

600 North Rimsdale Ave.
Covina, CA 91722
(818) 966-3511

MONOCHROME MONITORS



SNA SERIES



QQA SERIES

QQA SERIES:

15, 17 and 21-Inch Monochrome

A very high resolution, dynamic focus, monochrome display which is adjustable to lock on any field rate from 37 to 60 per second. It will lock on any three pre-selected, switch-selectable horizontal rates between 15 kHz and 37 kHz. Aspect ratio and frame size are continuously variable.

QQA Series High Resolution Monochrome		Options	Model QQA	Price
15" CRT	Price	Video Reverse (Switchable)		\$225.00
QQA15/N	\$3260.00	Separate Horizontal and Vertical Drive		250.00
QQA15/C	3490.00	Dual Video Input A/B		280.00
QQA15/Y	3500.00	600 μ sec vertical retrace option		100.00
QQA15/RS	3570.00	Accessories*		
17" CRT		M3		\$310.00
QQA17/N	\$3745.00	M4		340.00
QQA17/C	4090.00	M5		180.00
QQA17/Y	4100.00	M8		365.00
QQA17/RS	4185.00	M9		230.00
21" CRT				
QQA21/N	\$4395.00			
QQA21/C	4750.00			
QQA21/Y	4760.00			
QQA21/RS	4855.00			

DZB SERIES:

15-Inch Monochrome

A professional monochrome monitor designed for VTR over-console mounting. Front panel selector switch allows two matched video inputs to be viewed for picture comparison.

DZB Series Broadcast Monochrome		Options	Model DZB	Price
15" CRT	Price	Accessories*		
DZB15/N	\$2195.00	M3		\$310.00
DZB15/RS	2300.00	M4		340.00
DZB15/C	2360.00	M5		180.00
DZB15/Y	2390.00			

SNA SERIES:

9, 15, 17 and 23-Inch Monochrome

A family of 800-line high resolution monitors for broadcast, industrial and educational applications. Horizontal AFC time constant is compatible with helical-scan video tape recorders. Quick-disconnect circuit modules are common to all models. The 17-inch display features dynamic focus. Designed for operation at either 525 line, 60 field, or 625 line, 50 field, sync rates without modification. Also optionally available for high line rate operation.

SNA Series Monochrome	Price	Options	Model SNA	Price
9" CRT		Yoke Rotation, 90° or 180°		\$100.00
SNA9/N	\$1095.00	Separate Horizontal and Vertical Drive		110.00
SNA9/C	1200.00	Tally Light		110.00
SNA9/RBL	1240.00	Non-Synchronous Operation		
SNA9/RBR	1240.00	9", 17", 23" (Std. on 15")		145.00
SNA9/RC	1275.00	Dynamic Focus 15"		170.00
SNA9/RXL	1275.00	Back Porch Clamp		195.00
SNA9/RXR	1275.00	Square Raster 9", 15"		
SNA9/RKL	1275.00	(Std. on 17" and 23")		195.00
SNA9/RKR	1275.00	Normal to Underscan		
SNA9/2R	2220.00	Switchable		195.00
15" CRT		20MHz Video Amplifier		265.00
SNA15/NC	\$1375.00	Differential Input		265.00
SNA15/NR	1445.00	High Line Rates as available		310.00
SNA15/R	1525.00	Pulse Cross (not available on 23")		310.00
SNA15/C	1540.00	Video Reverse (switchable)		325.00
SNA15/RS	1630.00	Dual Channel		
SNA15/Y	1590.00	Video Input		365.00
17" CRT w/Dynamic Focus		Etched CRT		30.00
SNA17/N	\$1560.00	Accessories*		
SNA17/R	1680.00	SNA 17"		
SNA17/RS	1805.00	M3		\$310.00
SNA17/C	1805.00	M6		285.00
SNA17/Y	1850.00	M7		220.00
23" CRT w/Dynamic Focus		SNA 23"		
SNA23/C	\$1790.00	M8		\$365.00
SNA23/Y	1790.00	M9		230.00

ENA SERIES:

9 and 12-Inch Monochrome

A cost effective, 650-line resolution monochrome display for industrial, data processing, and educational installations. Meets all EIA RS-170 specifications. Horizontal AFC is optimized to meet the requirements of industrial tape recorders. Chassis, rack or cabinet models available. A dual 9-inch model will fit in a 19-inch rack and requires only 8-3/4-inch of vertical rack space.

ENA Series Monochrome	Price	Options	Model ENA	Price
9" CRT		External Sync Input (switchable)		\$ 65.00
ENA9/N	\$ 640.00	Laminated Anti-glare		
ENA9/C	740.00	CRT Panel		65.00
ENA9/RBL	750.00	Non-synchronous		
ENA9/RBR	750.00	Shielding		125.00
ENA9/RKL	785.00	Differential Input		165.00
ENA9/RKR	785.00			
ENA9/2R	1335.00			
12" CRT				
ENA12/N	\$670.00			
ENA12/C	825.00			
ENA12/R	840.00			

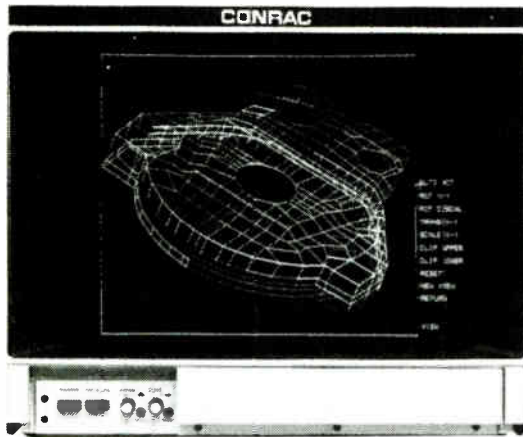
NOTE: Letters in part number signify configuration: N for chassis-only ("naked"); RS for rack side; C for cabinet; Y for yoke mounting.

Prices and Specifications Subject to Change Without Notice.

VM-17

CONRAC DIVISION

600 North Rimsdale Ave.
Covina, CA 91722
(818) 966-3511



MODEL 7211

Model 7211 High-Resolution Color CRT Display

Conrac's finest color display offers our proprietary high-resolution circuitry, shadow mask CRT design, 0.31mm dot pitch, and 1080 horizontal pixels (at 1225-line scan), and accepts RGB composite video inputs in both EIA RS170 and EIA RS343 formats. 13" and 19" CRT models are available.

Here is why the 7211 keeps you in the forefront of technology...PIL technology. Conrac's Precision In-Line Gun provides easy setup and minimal maintenance. The gun design in the 7211 eliminates time-consuming reconvergence adjustments by a combination of very close gun manufacturing tolerances and corrections built into the tubes's yoke. As a result, when compared to a delta-gun design, the 7211 has fewer parts and needs less service.

Adaptive packaging...The 7211 size and compact shape are designed for greatest integrating flexibility. Our 19" display comes in two front panel heights—17.5" or 15.75"—and fits into the same space as our high-resolution monochromatic CRT display. For still greater flexibility, you can order the 7211 with no front panel and relocated controls, giving a 14-inch front height. Other configurations include rack-slide or cabinet options.

- 40 MHz video bandwidth
- Dynamic focus
- Designed to minimize service downtime
- Selectable scan frequencies
- Weight-saving aluminum frame improves heat dissipation
- Preset calibration controls
- High-density shadow mask CRT
- Worldwide power adaptability

13" CRT

High Resolution Color

7211N13	\$3590.00
7211RS13	3800.00
7211C13	3825.00

19" CRT

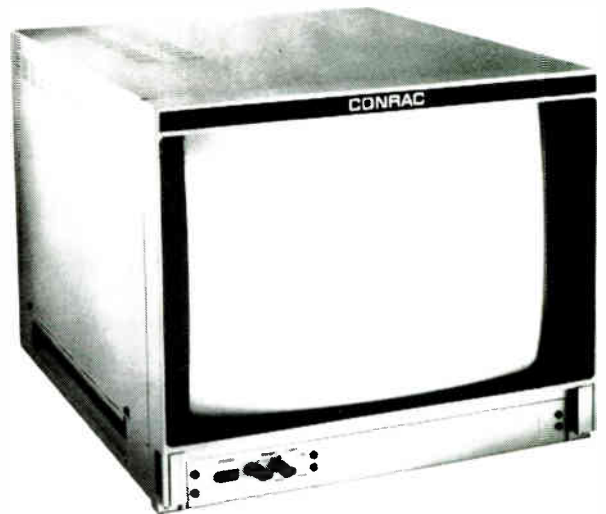
High Resolution Color

7211N19	\$3850.00
7211RS19	4065.00
7211C19	4090.00

Options

Long Persistence Phosphor	\$150.00
Direct Etch CRT	100.00

Homalite Filter	135.00
AR Filter (Laminated)	275.00
Differential Input	85.00
Separate H & V Drives	100.00
Dark Body CRT (19")	25.00
Dark Body CRT direct etch (19")	125.00
Dark Body CRT LP (19")	175.00
Dark Body CRT LP & direct etch (19")	300.00
Internal/ External Sync	
Select Switch	50.00
Tilt & Swivel Base	130.00
Touch System	2995.00



MODEL 2400

Model 2400 High-Resolution Monochrome CRT Display

With features that represent the current state of technology, Conrac's best monochrome monitor meets the needs of many diverse applications for a high-resolution display. These include computer graphics and alphanumeric for CAD/CAM, process control, and similar systems. When equipped with its inverted video option, the 2400 is extremely well suited for medical imaging systems. Color-quality glass...A particularly impressive attribute of the 2400 is its combination of brightness with nearly perfect corner-focus characteristics. The reason is Conrac's use of color-quality glass, which permits higher voltages to enhance both focusing and brightness.

- Dynamic focus
- Selectable scan frequencies
- Application versatility
- Wide video amplifier bandwidth
- Preset calibration controls
- Electronic raster centering
- Differential video input
- Modular electronics packages
- Choice of cabinet, rack-slide, or chassis-only configurations

19" CRT

High Resolution Monochrome

2400N19	\$2900.00
2400RS19	3115.00
2400C19	3135.00

13" & 15" CRT Factory Quote

Options

Dual Video Inputs	\$110.00
Inverted Video	95.00
Front Panel Selectable	
Scan Rates	165.00
Switchable Underscan	95.00
Option Combinations	Factory Quote
P-31, P-39, P-40, P-45	
Phosphor	100.00
AR Filter (Laminated)	275.00

CONRAC CORPORATION

CONRAC DIVISION

600 North Rimsdale Ave.
Covina, CA 91722
(818) 966-3511

COLOR MONITORS

7351

65 kHz Raster Scan Color Graphic Display Monitor

FEATURES

- 65 kHz horizontal scan rate
- 60 Hz vertical refresh rate
- 1083 non-interlaced lines per frame
- Self-diagnostic status indicators
- 110 MHz wideband video amplifier

APPLICATIONS

19-inch display for finely detailed, non-interlaced images generated for computer-aided design (CAD), computer-aided engineering (CAE), architecture, engineering and construction (AEC), computer-aided design and drafting (CAD/D) and other applications demanding highest resolution in full color.

Model 7351 can be supplied in full cabinet, rack-slide or chassis-only configurations, and can be custom-configured to meet specific OEM requirements.

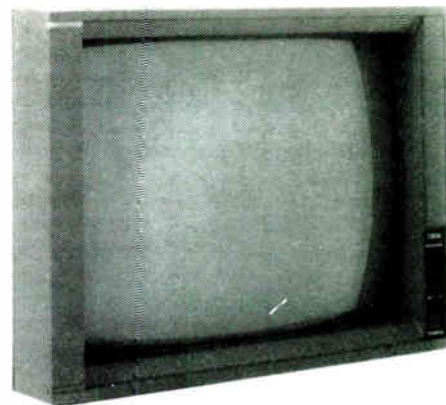
19" CRT

Ultra High Resolution Color

7351C19	\$4575.00
7351RS19	4550.00
7351N19	4325.00

Options

Long Persistence Phosphor	\$150.00
Direct Etch CRT	100.00
Homalite Filter	135.00
AR Filter (Laminated)	275.00
Tilt & Swivel Base	130.00
Internal/External Sync Select Switch	50.00



7351

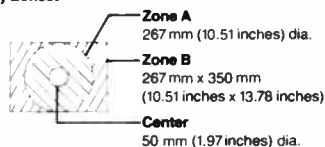
SPECIFICATIONS

Visual Performance

Resolution	1280H x 1024V format (non-interlaced)
CRT Pitch	0.31 mm.
Linearity and Geometry	Within a centrally located 10.5" (267 mm) circle, no point deviates by more than 2% from its proper position (Ball Chart Method).
Raster Size Regulation	Less than 1% change from zero to 100% APL at 20 fL.
Brightness	20 fL nominal - 45 fL maximum.

CONVERGENCE

Maximum Error by Zones:



Maximum Convergence Error:

	Center	Zone A	Zone B
	0.15 mm (0.006 in.)	0.4 mm (0.016 in.)	0.6 mm (0.023 in.)

Max CRT Display Area	Height 297 mm (11.6 inches) Width 396 mm (15.5 inches) Area 11598 mm ² (180 inches ²)
Aspect Ratio	4 to 3 standard. 11, 5:4 available within 350 mm x 267 mm rectangle.

Circuit Performance

Pulse Performance	Rise time = 3 nsec Fall time = 3-1/2 nsec
Black Level	Black level shift less than 1% change of peak

Stability	luminance from 10% to 90% APL
Interlace Performance	Better than 90%
Scan Rates	Horizontal — 65 kHz ± 2.5 kHz Vertical — 47 Hz - 63 Hz
Horizontal Retrace Time	3.0 μsec maximum
Vertical Retrace Time	600 μsec maximum
SYNC SELECTION	
Sync Selection	Jumper plug on video processor board permits selection of either internal or external sync.
Internal	Composite horizontal and vertical sync combined on green video channel.
External	BNC connector for external composite horizontal and vertical sync.
Input Connections	Three separate BNC connectors for RGB inputs, each parallel-wired with a second BNC connector for loop-through operation, and switch-selectable impedance matching — high Z or 75 ohms.
External Sync	Single BNC connector for external sync input with parallel-wired second BNC connector for loop-through operation. Switch-selectable impedance matching — high Z or 75 ohms.

INPUT SIGNAL CHARACTERISTICS

Composite RGB Video	1 V p-p nominal. 1 V ± 6 db acceptable. Sync negative.
Non-composite RGB Video	7 V p-p nominal. 7 V ± 6 db acceptable. Black negative.
External Sync	4 V p-p nominal. 1.0 V to 8 V p-p acceptable Negative going pulses.

CONTROLS

Operator Controls	Power, Degauss, Brightness.
Maintenance and set-up controls	Located on PCB's.

General

OPERATING ENVIRONMENT

Temperature	32°F (0°C) to 122°F (50°C).
Humidity	10% to 90% relative non-condensing.
Altitude	Up to 10,000 Ft (3,000 meters).

POWER REQUIREMENTS

Voltage	90-132 VAC/180-265 VAC selectable.
Frequency	50-60 Hz ± 10%
Power Consumption	200 watts maximum @ 117 VAC

WEIGHT

Cabinet	68.00 lb. (30.91 kg).
Rack Mtg.	59.00 lb. no slides (26.82 kg) 66.00 lb. with slides (30.00 kg).
Chassis only	56.00 lb. (25.45 kg).

OPTIONS

- Naked, Cabinet or Rack Slide version.
- Anti-glare screen/contrast filters available.
- External horizontal and vertical drive 1-8 V negative.
- Digital Degaussing, On-Off & Brightness, remote or on chassis.
- Hard Copy output.
- External anti-glare filters: Polaroid, Sunflex, OCLI, Homolite.
- Direct etch CRT.

SUPER WONDER-LITE® VIDEO SCREENS

Da-Lite makes choosing the right projection screen easy with a video line designed in appropriate video formats and projection surfaces that reflect the projected image at its best and brightest.

Super Wonder-Lite is Da-Lite's exclusive new silver lenticular screen surface created for Video Data Projection. It's available in popular sizes

on tripod, wall/ceiling and Fast-Fold® portable models.

Da-Lite's matchless variety of models in correct formats and picture surfaces meet the many varied requirements of video projection. Choose from wall and ceiling models, electric screens, Da-Lite Polacoat® in-wall rear projection, heavy-duty tripod and portable Fast-Fold.



PICTURE KING

Model: Picture King

Type: Extra heavy duty tripod

Construction: Spring roller in embossed metal case; Camlok Metal Roller System; Automatic fabric lock, automatic leg lock, extra heavy extruded gable type constructed aluminum legs, full range height adjustment, plunger locks for positive stops, built-in keystone eliminator.

Picture Surface: Super Wonder-Lite silver lenticular for Video projection. Video format. Black masking borders on all four sides.

Nominal Diagonal Size	Over-All Screen Size	Approx. Shipping Wt.	Price
60"	37" x 50"	23 lbs.	\$258.00
6'	45" x 60"	28 lbs.	298.00
100"	64" x 84"	39 lbs.	446.00
10'	72" x 96"	41 lbs.	490.00

Accessories: Zipper type carrying cases \$24.00 - \$37.50

Model: Challenger

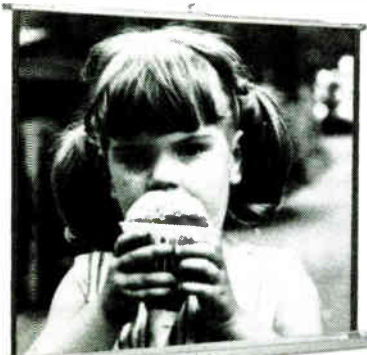
Type: Automatic push-button tripod

Construction: Spring roller in embossed steel case; Camlok Metal Roller System; heavy duty steel tripod, leg lock, fabric lock, full range height adjustment, optional keystone eliminator.

Picture Surface: Super Wonder-Lite silver lenticular for Video projection. Video format. Black borders on all four sides.

Nominal Diagonal Size	Overall Screen Size	Approx. Shipping Wt.	Price
60"	37" x 50"	18 lbs.	\$198.00
6'	45" x 60"	25 lbs.	248.00

Accessories: P-69 keystone eliminator \$ 6.00
 Carrying cases \$16.75 - 17.75



CHALLENGER

DA-LITE SCREEN COMPANY, INC.

VIDEO PROJECTION SCREENS

3100 State Road 15 North
 P.O. Box 137
 Warsaw, IN 46580
 (219) 267-8101 Telex 23-2649

SUPER WONDER-LITE® VIDEO SCREENS (CONT'D)

Model: Versatol

Type: Automatic push-button tripod

Construction: Spring roller in embossed hexagon steel case; Camlok Metal Roller System heavy duty steel tripod, leg lock, full range height adjustment, optional keystone eliminator.

Picture Surface: Super Wonder-Lite silver lenticular for Video projection. Video format. Black masking borders on all four sides.

Nominal Diagonal Size	Overall Screen Size	Approx. Shipping Wt.	Price
60"	37" x 50"	15 lbs.	\$165.00
6'	45" x 60"	22 lbs.	205.00

Accessories: P-69 keystone eliminator \$6.00
 Carrying case \$16.75 - \$17.75

Model: Deluxe Model B

Type: Wall or Ceiling Model

Construction: Embossed metal case; Camlok Metal Roller System; spring roller with embossed metal case, automatic fabric tensionizer holds screen in open position.

Picture Surface: Super Wonder-Lite silver lenticular fabric for Video projection. Video format. Black masking borders on all four sides.

Nominal Diagonal Size	Over-All Screen Size	Approx. Shipping Wt.	Price
60"	37" x 50"	15 lbs.	\$180.00
6'	45" x 60"	17 lbs.	210.00

Accessories: Extension wall mounting brackets
 No. 23 adjustable\$20.00
 No. 11 non-adjustable 14.50
 No. 6 non-adjustable 7.50
 T-Bar Scissor Clip for dropped ceilings: \$6.50 per pair.

Model: Fast-Fold

Type: Free Standing Portable Frame

Mounting: Screen is grommeted and suspended in frame on springs.

Construction: Frame and legs 1" square hard alloy structural aluminum tubing etched and anodized; frame height adjustable on legs in 6" increments. Folding frame can be tilted for keystone elimination.

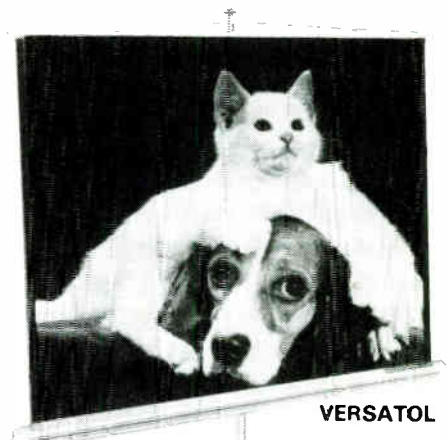
Picture Surface: Super Wonder-Lite silver lenticular with 8" black masking borders on all four sides for Video projection. Video format.

Nominal Diagonal Size	Over-All Screen Size	Approx. Shipping Wt.	Price
100"	63" x 84"	54 lbs.	\$945.00
10'	72" x 96"	55 lbs.	1045.00

Accessories: Presentation accessories of skirt and wings in velour draperies.

Note: Prices include frame, legs, Super Wonder-Lite picture surface and carrying case.

Cut-to-Size
 36 Square Feet Minimum Per Sq. Ft. \$5.00



VERSATOL



DELUXE B



FAST-FOLD

Prices and Specifications Subject to Change Without Notice.

DRAPER SHADE AND SCREEN COMPANY

411 South Pearl Street
Spiceland, IN 47385
(317) 987-7999

FLAT SCREENS FOR VIDEO

FLAT SCREENS FOR VIDEO

Draper proudly presents the first comprehensive line of flat screens especially designed for video projection. A complete range of sizes are available for front or rear projection, portable or permanent mounting and manual or electrical operation. All are in 3:4 video format, with special video masking.

VIEWING SURFACES

Roller Operated Screens

- **Fiberglass Matt White.** Our most popular viewing surface. Offers a broad viewing angle, uniform light distribution, and excellent resolution. Gain 1.0. Easy to clean. Recommended for use with ceiling mounted projectors.
- **Fiberglass Glass Beaded.** Narrower viewing angle, some loss of resolution. Gain 1.5. Cannot be cleaned - not recommended for areas where cigarette smoke accumulates.

Cinefold and Cineperm

- **Flexible Matt White.** Vinyl with a delicate emboss for uniform brightness. Excellent resolution. Easy to clean.
- **Cineflex Rear Vision.** Vinyl film impregnated with miniscule optical lenses. Excellent resolution. Gain 2.5. Medium viewing angle.

Cinescreen Rigid Rear Screens

Available in glass or acrylic substrate. Optical coatings for every application.



DRAPER SCREENS IN VIDEO FORMAT

Viewing Area	27' x 37'	36' x 48'	45' x 60'	54' x 72'	63' x 84'	72' x 96'	81' x 108'	90' x 120'	99' x 132'	108' x 144'	117' x 156'	126' x 168'	135' x 180'	144' x 192'	153' x 204'	162' x 216'	171' x 228'	180' x 240'	
FRONT SCREENS																			
<i>Electric Screens</i>																			
Targa		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Envisy			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rollomatic			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wall Ceiling Screens																			
Luma		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Luma 2																			
Cineperm*								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Free Standing																			
Diplomat		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cinefold*																			
REAR SCREENS																			
Portable																			
Cinefold*																			
Permanent																			
Cineperm*																			
Cinescreen																			

*These screens are available in larger sizes with truss style construction
†Cinefold and Cineperm viewing areas are slightly smaller in these sizes

HOW TO ORDER VIDEO SCREENS

Specify:

- 1 — Model name and viewing surface
- 2 — Diagonal measurement
- 3 — Request "Video Masking"

The overall and viewing area dimensions shown here are for your information. We do not need them to fill your order.

Our Most Popular Models and Sizes are included in this price list.

We can manufacture all of our screen models in 3:4 formats with video masking. We will be pleased to quote on your special requirements.

Special sizes are our specialty — No requirements too large or too small.

This information is based on manufacturers published literature. Inclusion in this chart does not constitute an endorsement. Draper welcomes literature and information on any products which may have been omitted.

VIDEO PROJECTORS

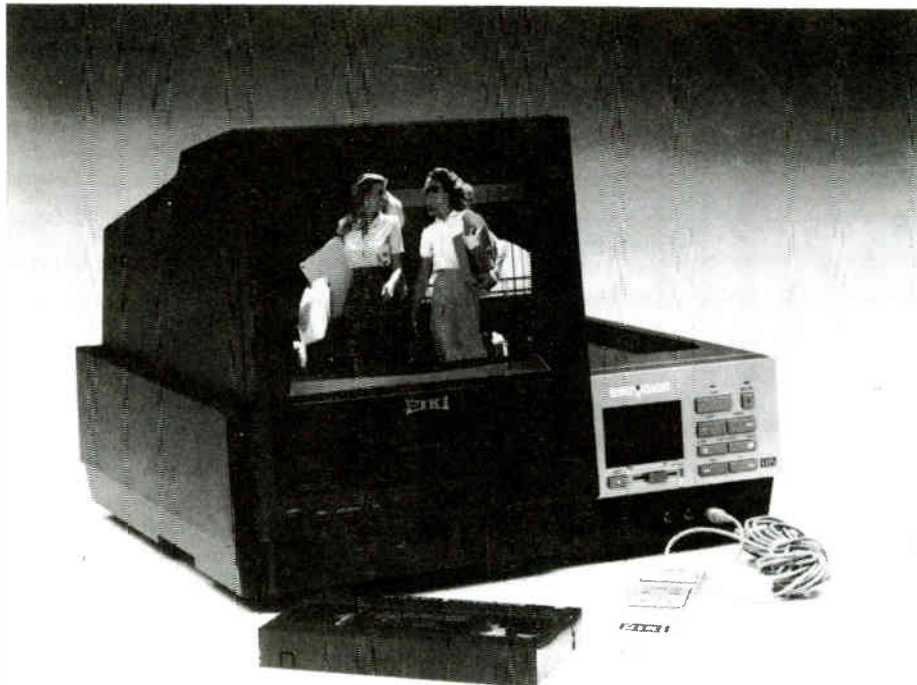
NOMINAL DIAGONAL	4'	5'	64"	6'	7'	7.5'	100"	10'	11'	12'	170"	15'	17.5"	20'	22.5"	25'	
ARCTURUS MODEL 3 *																	
ELECTROHOME EDP-57 *																	
ELECTRONIC SYSTEMS PRODUCTS																	
AQUARAY *																	
AQUASTAR IIIC *																	
IMI 3000 *																	
MAGNA IMAGE **																	
INFLIGHT V. STAR 5 *																	
BARCODATA *																	
KLOSS NOVABEAM MODEL ONE																	
MODEL TWO																	
PANASONIC CT 6100M																	
CT 10010M																	
CT 17000M																	
CT 17100M																	
CT 17200M																	
V.S. RUNCO CINEMABEAM *																	
CINEMABEAM II *																	
SONY VPH 772Q *																	
VPH 1020Q *																	
THOMSON TVP 01 A *																	

* Adaptable to rear projection † Rear projection only ‡ Adjustable within indicated range
✓ May be pre-set to indicated size --- May be set for larger sizes

EIKI INTERNATIONAL, INC.

27882 Camino Capistrano
Laguna Niguel, CA 92677
(714) 831-2511

SELF-CONTAINED VHS VIDEO SYSTEM



EIKIVISION 1/2" VHS

Features:

- Big 9" Color Monitor
- Standard 1/2" VHS. The world's most popular video format with up to 8 hours of continuous play with T-160 tape (6 hours with T-120 tape).
- 7-Day Touch-Button Programming
- Rugged Tape Handling Mechanism. With industrial quality direct drive motors and a minimum of belts to wear out.
- Pause control for discussion and review
- Video search to locate important program sections, at five times normal tape speed, forward or reverse
- Convenient Optional Remote Control
- Headphone jack for private listening
- Front-Load convenience. Inserts and ejects tapes quickly and easily.

TAPE SPEED	PLAY/RECORD TIME	
	T120	T-160
SP 33.35 mm/sec.	2 hours	2 hours 40 minutes
EP 11.12 mm/sec.	6 hours	8 hours

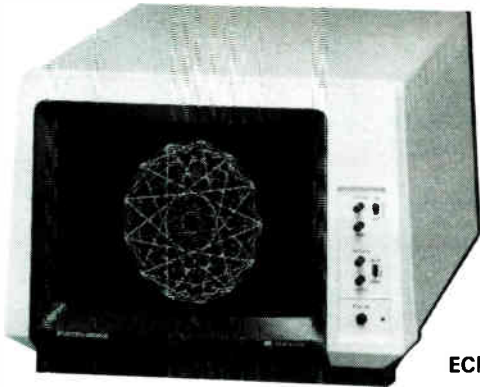
OPTIONAL ACCESSORIES:

REMOTE CONTROL:	PLAY, STOP, FORWARD AND REVERSE SEARCH, PAUSE. 16' (5 METER) CABLE
CARRYING CASES:	A). LIGHTWEIGHT KORDURA FABRIC CARRYING CASE WITH SHOULDER STRAP. B). REUSABLE, HEAVY DUTY SHIPPING CASE WITH OR WITHOUT REMOVABLE CASTERS

Specifications:

POWER REQUIREMENTS:	120 VOLTS 60 HZ, 70 WATTS
TELEVISION SYSTEM:	EIA STANDARD 525 LINES 60 FIELDS N.T.S.C. COLOR SIGNAL
PLAYBACK/RECORD SYSTEM:	V.H.S. (1/2" CASSETTE FORMAT) LUMINANCE: FM AZIMUTH RECORDING CHROMINANCE: CONVERTED SUBCARRIER, DIRECT RECORDING
VIDEO SEARCH:	5 X EP-11.12mm/sec
TAPE COUNTER:	MECHANICAL 4 DIGITS
VIDEO INPUT:	.5 to 2.0 V-P-P, 75 OHMS, RCA type jack
VIDEO OUTPUT #1	1.0 V-P-P, 75 OHMS, RCA type jack
VIDEO OUTPUT #2:	1.0 V-P-P, 1.0 K OHMS, RCA type jack
CRT DISPLAY:	9" COLOR MONITOR (diagonal measure)
AUDIO AMPLIFIER:	1.0 WATT
SPEAKER:	8 CM
AUDIO INPUT:	.078 V RMS, 50 K OHMS, RCA type jack
AUDIO OUTPUT:	.38 V RMS, 1 K OHMS, RCA type jack
OPERATING TEMPERATURE:	41° f to 104° f (+5° c to +40° c)
OPERATING HUMIDITY:	35% to 80%
STORAGE TEMPERATURE:	4° f to 140° f (-20° c to +60° c)
SIZE:	13 1/2" H x 17 3/4" W x 15 1/2" D
WEIGHT:	37 LBS. (17KG)

EV-10	Eikivision Video Display System	\$1395.00
1100	Eikivision Demo Tape	20.00
2000	Eikivision Remote Control	20.00
1500	Eikivision Soft Carrying Case	99.00
1501	Eikivision Hard Case w/Wheels	266.00
1502	Eikivision Hard Case w/o Wheels	216.00



ECM 1301

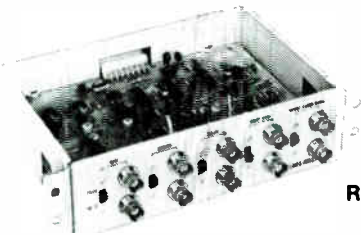
ECM 1301 HIGH RESOLUTION COLOR VIDEO MONITOR

Designed with the discriminating user in mind, ECM 1301 provides high performance with an extra degree of flexibility. At the leading edge of monitor technology, this quality display readily moves from one applications segment to another as a result of inherent design features and selective interface modules. Now there is a monitor to meet the following array of video display requirements:

- Business productivity microcomputers
- Scientific desk top computers
- End user/O.E.M. CAD/CAM Graphics systems

FEATURES

- 13" RGB display
- Self-converging, in-line 90° CRT
- .31mm pitch
- 720 x 512 pixels
- 25MHz bandwidth
- 14.5 to 25KHz horizontal scan
- Horizontal phase CTL
- Long persistence phosphor
- 80 character resolution
- 8 user controls
- Flexibility through custom interfaces
- Attractive styling
- All metal enclosure
- 13"H x 17.5"W x 17.2"D (33 x 44.5 x 43.7cm)
- Weight: 52 lbs. (23.6Kg)



RGB/RS170

INTERFACE MODULES RGB/RS170

INPUTS

- RGB with separate or combined horizontal/vertical sync
- RGB with sync on green
- 75 ohm termination — switchable
- Video loophthrough
- Inputs adjustable to 5 volts peak to peak video
- Power supply — 12 volts
- Automatic Sync selection
- Connects to ECM-1301 via 8 Pin Molex connector

Additional Modules

1. IBM PC
2. APPLE III

IBM is a registered trademark of International Business Machines Corporation. In Canada, IBM is a registered user.

Apple III is a registered trademark of Apple Computer Inc.



SM-36

SM-36 MODULATOR

The new Electrohome Model SM-36 is today's answer to Modulator design. Its full output +56 to 62dBmV in any desired channel from 54-300MHz makes stocking installing and backup 36 times easier. It uses synthesis for stability and total agility in your cable system.

FEATURES

- Total agility means that only one unit has to be stocked that will cover all channels in the low, mid, high and super bands.
- SAW filtered for adjacent channel operation.
- Front panel metering of output channel, audio deviation and video modulation.
- R.F. mute on channel change.
- Only 1.75" high in standard E.1.A 19" rack — 13" deep.
- Simple "on the job" setup.
- Canadian Standards Association (C.S.A.) certified.



SR-24

SR-24 SATELLITE RECEIVER

The Electrohome model SR-24 is the ultimate in satellite receivers designed exclusively for the cable systems market.

FEATURES

- Microprocessor control for ease of operation and optimum performance.
- Frequency synthesis for both video and audio eliminates frequency drifting, while continuous tuning ensures the ultimate in noise-free reception.
- Interference problems are under total control with this receiver. Individual channel fine tuning, synthesized oscillators and IF loop, combine with the SAW filter to minimize your terrestrial problems.
- A full 30MHz SAW filtered IF bandwidth for state-of-the-art performance — compatible with today's and tomorrow's scrambling systems.
- Continuously variable audio synthesized from 5.0-8.0MHz.
- If that were not enough, consider these extras:
 - RF loophthrough to simplify multiple receiver installations.
 - Redundant LNB powering for increased reliability.
 - Level meter — Analog and Digital for maintenance and ease of installation.
 - Keyboard lock to prevent unauthorized tampering.
 - Non-volatile memory to protect against power failures.
- Canadian Standards Association (C.S.A.) certified.

Prices and Specifications Subject to Change Without Notice.

VM-25

ELECTROHOME ELECTRONICS

809 Wellington, St.
N. Kitchener, Ontario, Canada N2G 4J6
(519) 744-7111 Telex 069-55449

MONOCHROME VIDEO MONITORS

Electrohome's full range of monochrome video monitors is designed to international performance standards. Cabinets are constructed of a new Steltex textured steel for added durability. Attractive beige and earth brown tones have been utilized to further enhance the styling of each monitor design.

FEATURES

- Front operated A—B switching
- 18 MHz bandwidth
- Scanguard* circuit for size stability
- Primary and major secondary controls front accessible
- Internal/External sync capability
- Excellent black level stability
- Common mode rejection
- AC cord winder (9", 12", 15", 17")
- Switchable power supply for 110/220/240 volt operation
- Universal AC interlock
- Long life LED pilot light
- Wide variety of options

*Scanguard is a special Electrohome development for EVM 19/20 models to keep picture sizes constant over a wide range of brightness changes.

EVM-920	9" Monitor, 20 lbs.	\$ 571.00
EVM-920P31	9" Monitor P31, 20 lbs.	607.00
EVM-1220	12" Monitor, 33 lbs.	645.00
EVM-1220P31	12" Monitor P31, 33 lbs.	683.00
EVM-1519	15" Monitor, 39 lbs.	711.00
EVM-1719	17" Monitor, 48 lbs.	792.00
EVM-2319	23" Monitor, 80 lbs.	939.00
EVM-2319AG	23" Monitor with anti-glare, 85 lbs.	971.00
EVM-2319P31	23" Monitor P31, 80 lbs.	987.00
EVM-2319P31AG	23" Monitor with anti-glare, 85 lbs.	1029.00

ACCESSORIES

ECM-3	Ceiling Mount for 17" and 23", 16 lbs.	\$ 75.00
EWM-1	Wall Mount Adaptor for ECM-3, 13 lbs.	65.00
EMS	Mobile Stand, 24 lbs.	175.00
RAK-9A	9" Rackmounting Kit, 7 lbs.	70.00
WMA-9	Waveform Mounting Kit for use with RAK-9A, 5 lbs.	35.00
RAK-12	12" Rackmounting Kit, 9 lbs.	70.00
RAK-15	15" Rackmounting Kit, 9 lbs.	70.00
RAK-17	17" Rackmounting Kit, 10 lbs.	70.00

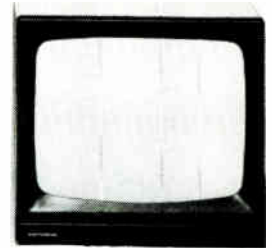
	CRT Diagonal (Phosphor)	CRT Display Area	Unit Weight (Unpacked)
EVM 920	8.55 in. 217.4 mm	38 in. ² 245.2 cm ²	17 lbs. 7.65 kg.
EVM 1220	11.69 in. 296.9 mm	74 in. ² 477 cm ²	25 lbs. 11.2 kg.
EVM 1519	13.86 in. 352.0 mm	100 in. ² 645 cm ²	29 lbs. 13.0 kg.
EVM 1719	16.25 in. 412.75 mm	141 in. ² 909.4 cm ²	39 lbs. 17.5 kg.
EVM 2319	22.31 in. 566.7 mm	282 in. ² 1819 cm ²	71 lbs.* 31.9 kg.

*Add 5 lbs. extra for face plate on tubes with antiglare panels.

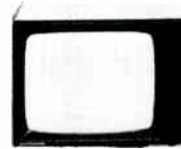
RAK 9A 18.97"(L) (482.0 mm); 8.75"(H) (222.0 mm); 5 lbs. (2.3 kg.)
RAK 12 18.97"(L) (482.0 mm); 10.47"(H) (266.0 mm); 7 lbs. (3.2 kg.)
RAK 15 18.97"(L) (482.0 mm); 12.20"(H) (310.0 mm); 7 lbs. (3.2 kg.)
WMA 9 3 lbs. (1.4 kg.)



EVM 1719



EVM 2319



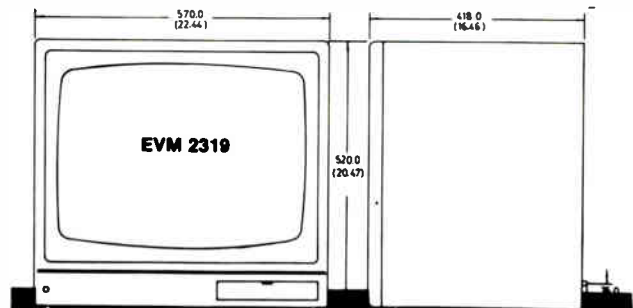
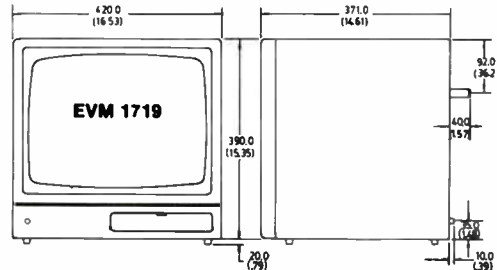
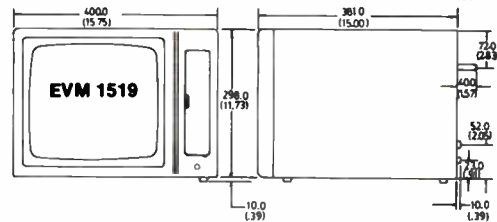
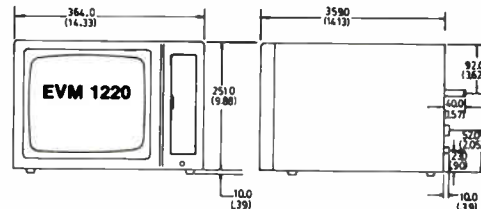
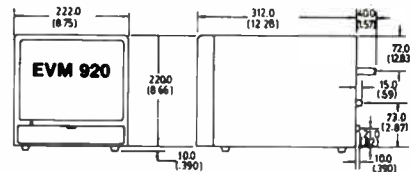
EVM 1519

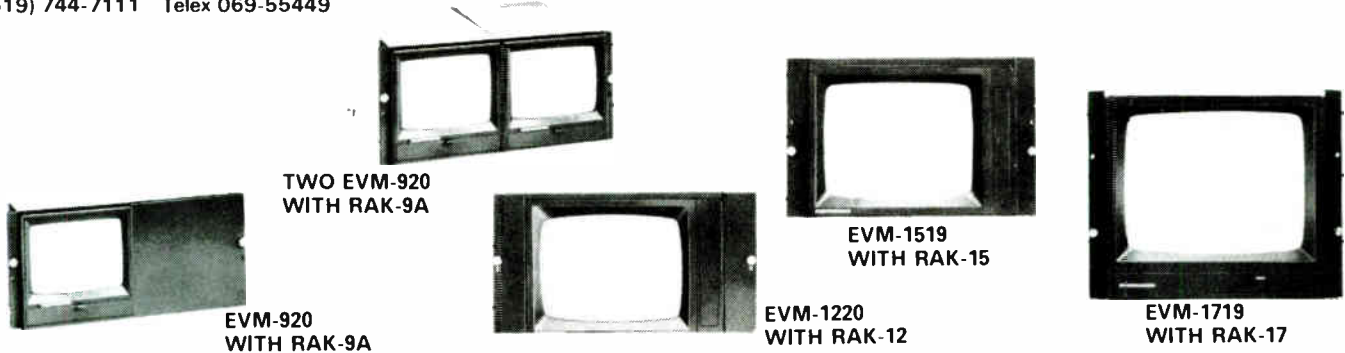


EVM 1220



EVM 920





Operating and Service

Front Controls and Features:

On-off Switch
LED Pilot Light
Reduced Scan Switch
VTR Switch
Horizontal Hold
Focus (screw driver adjust)
Vertical Hold
Height (screw driver adjust)
Brightness
Contrast
A-B Switch
Volume Control (only with optional audio module)

Rear Panel:

Input "A"-2 BNC Connectors.
loop-through
Input "B" or Ext Sync
2 BNC connectors, loop-through
2 Termination Switches
Ext -Int Sync Switch
AC Connector
Fuse Holder
Width Control

Internal Controls:

Preset Contrast
Preset Brightness
Black Level Control
Vertical Linearity
Horizontal Frequency centering Control
Horizontal Phase (video centering)
AC-DC Coupling Link (Factory set to DC position)
Voltage Regulator Control
Size Regulation Control
Reduced Scan Width Coil

Video Circuits

Input Circuits:

Input via BNC connectors with isolated signal ground
Termination: $75\Omega \pm 5\%$
Return Loss: $\geq 26\text{db}$
Common Mode Rejection better than 40db up to 6Vp-p

Video Amplifier:

Input Signal 0.5-2Vp-p sync negative
Gain: 35db
Bandwidth: 9" & 12" CRT: 100Hz-18MHz $\pm 3\text{db}$ at 30Vp-p at CRT cathode.

15" CRT: 100Hz-18MHz $\pm 3\text{db}$ at 30V p-p
17" CRT: 100Hz-18MHz $\pm 3\text{db}$ at 35V p-p
23" CRT: 100Hz-18MHz $\pm 3\text{db}$ at 30V p-p

Deflection Circuits

Vertical Deflection:

Adjustable from 130% to 65% of scan
Adjustment by size switching circuits and height control
Vertical Rate: Adjustable from 40Hz to 65Hz by vertical Hold control
Vertical Retrace: 650 μsec

Horizontal Deflection:

Adjustable from 115% to 80% of scan
Adjustment by size switching circuits and width controls
Horizontal scan rates:
Standard 15.75 KHz to 18KHz
Option 18 KHz to 22.5 KHz
Horizontal Retrace 7.5 μsec

Deflection Angles:

9" & 12" CRT's 90°
15" & 23" CRT's 110°
17" CRT 114°
NOTE: For operation of the monitors at horizontal scan rates other than standard TV rates consult the Service Manual.

Display

Display:

All monitors have 4:3 aspect ratio
Front switchable from 105% to approx 85% of full picture size
Vertical linearity: $\pm 2\%$ of picture height
Horizontal linearity: $\pm 2\%$ of picture height

Geometry:

$\pm 2\%$ by EIA Ball chart.
Interlace: 45/55 non tunable
Picture Size Stability: $\pm 2\%$ change from 0 to 30ft/l
peak brightness at 90% APL
Resolution: (Polished face plate and P4 phosphor)
15", 17" and 23" CRT's: 1000 TV

lines centre, 800TV lines corners at 30 ft/l (300 lux)
Standard 9" CRT's 750 TV lines centre 600 TV lines corners at 30 ft/l (300 lux).
Standard 12" and Optional 9" CRT's. 800 TV lines centre, 650 TV lines corners at 30ft/l (300 lux)

Power Supply

High Voltage:

9" & 12" CRT's 12KV at 0 μa
15" CRT's 17.5KV at 0 μa
17" CRT's 18KV at 0 μa
23" CRT's 19.5KV at 0 μa

Input Power:

9" & 12 CRT's 120V (220-240V), 50/60Hz 45 Watts
15", 17" & 23" CRT's 120V (220/240V) 50/60Hz 60 Watts

Asynchronous Operation:

All V19 and V20 monitors are designed for asynchronous operation e.g. there is no discernible movement of the display if the vertical and power line frequency differ

Environment

Maximum Operating Range:

0° C to +50° C
Humidity: 90% non-condensing
Altitude: to 10,000 feet (3040 meters)

Storage:

-40°C to +65°C

Electrohome's policy is to meet or exceed safety standards and regulations of: CSA, HWC, FCC, DHHS, UL
Television standards: EIA, CCIR.

All performance specifications apply for line variations from 100 to 132V (200-260V)
Due to constant research and product improvement, specifications are subject to change without notice

ELECTROHOME ELECTRONICS

809 Wellington St.
N. Kitchener, Ontario, Canada N2G 4J6
(519) 744-7111 Telex 069-55449

VIDEO PROJECTION SYSTEMS

Model EDP-58 Large Screen Monochrome Projection Monitor

The Electrohome EDP-58 monochrome projection monitor is specifically designed for large screen, high resolution video displays of alphanumeric and graphic information from computer generated signals. It is uniquely designed to synchronize with almost all CRT-type computer terminals available today.*

Extremely compact, the high brightness monochrome projector permits large group viewing in normal office lighting environments. Crisp, big picture impact replaces the need for several conventional sized monitors.

The EDP-58 is ideal for demonstrations of new computer hardware and software developments. Classroom teaching of computer programming is made easy. It is equally dramatic for customer or trade show presentations.

Lightweight, it can be moved from room to room. A precision f/1.0 lens is user focusable for 4 ft. to 10 ft. (1.2m to 3m) diagonal screens. The EDP-58 also features a scan reverse switch for rear screen projection.

This modular, solid state unit is versatile, rugged and reliable, matching today's fast moving information needs. Set-up and operating ease, even by non-technical personnel, is inherent in the design of the EDP-58. It eliminates audience fragmentation and permits each viewer to enjoy maximum impact from data/graphics presentations.

The versatile, solid state EDP-58 projection monitor is a compact, 24.75" x 14" x 8" (69cm x 36cm x 21cm) and weighs only 45 lbs. (20.4kg). Designed for ceiling, pedestal or desk stand mounting, the unit offers tremendous flexibility for display presentations.

Stylish, the case and trim are made of textured steel and molded plastics. There is a rear carrying handle. A front trim protects the precision lens.

Precision optics and high speed electronics provide up to 1300 line resolution capability for sharp data/graphics display, exceeding 80 characters/line.

Easy to use operator controls are on the rear panel; service controls are accessible through the control panel. Also featured is video loop thru, keystone adjustment and D.C. restoration.

Data approved P53 green phosphor is standard. Optional phosphors available to match terminal manufacturer standards.

The versatile EDP-58 may be used on many different screen materials and sizes, including flat and rear projection screens. Electrohome offers an accessory 6 ft., (1.8m) high gain, curved screen for viewing in higher ambient light areas. Rugged and durable, it features a washable reflecting surface. The screen has adjustable wall mounting hardware. Accessory legs are available for freestanding display applications.

Electronic circuitry in the EDP-58 data/graphics projection monitor permits interfacing with almost all CRT computer terminals on the market today. The unit employs stabilized power supplies and picture-size circuitry that allows operation over a wide range of scanning frequencies without internal modifications.

For some terminals not supplying composite video outputs, an economical Electrohome designed interface module may be used. The module simply supplies the necessary composite video (via coaxial cable) to the input on the EDP-58.

The functional, easy to use control panel (shown) features convenient loop-thru BNC inputs to interface directly either with video terminals or the interface module.

Convenient user controls located on the rear control panel include Power Switch, Brightness and Contrast.

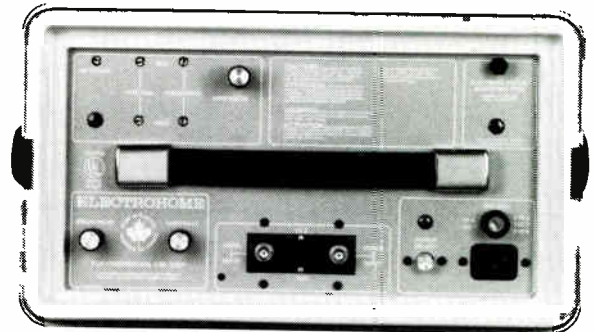
Other less frequently required set-up controls—Electrical Focus, Keystone Correction, Picture Size, Vertical, Horizontal Hold—are



EDP-58

recessed to allow access for set-up adjustments. Easy rear panel optical focusing of the lens permits use with various screen sizes.

The EDP-58 video projection monitor is compatible with composite video signals in NTSC, PAL, CCIR and SECAM systems. Large monochrome pictures may be displayed directly from most VTR, Videodisc and television camera outputs.



EDP-58*	Projection Monitor	\$3895.00
IM-56	Interface Module	155.00
Harness	Wiring Harness	85.00
PB-56	Pedestal Base	390.00
DS-58**	Desk Stand	150.00
MY-56	Ceiling Mount	65.00
VS6-56	Curved Screen 6 feet	495.00
SL-1000	Elevating Legs	145.00
CC-56	25' BNC/BNC Coaxial Cable	35.00

*Special order phosphors (other than green P1)
—A minimum of 10-12 weeks lead time prior to product shipment
—A premium of \$600.00 per unit

**Desk stand requires a Ceiling Mount (MY-56)

*An optional Interface Module may be needed for your particular CRT terminal.

809 Wellington St.
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(519) 744-7111 Telex 069-55449

EDP-58 (Cont'd)

PERFORMANCE DATA AND SPECIFICATIONS

Resolution

- Up to 1000 lines resolution

Brightness

- 300 footLamberts peak on axis on a 6' (1.5m) diagonal 10 gain screen
- 500 lumens total light output (Std. P53 Phosphor)

Display

- Green P53 phosphor standard, other phosphors available on special order
- Throw distance approx. 1.25x screen diagonal size
- Continuously focusable from 4.5' (1.4m) diagonal projected picture to 10 ft. (3m) diagonal
- Aspect ratio 3:4
- Keystone circuitry to correct picture for projection angles up to $\pm 10^\circ$ vertically from screen axis

Operating and Service Controls

Front External

- Curved/flat screen lens focus adjustment

Rear External

- Single knob optical lens focusing
- Power on-off switch
- Brightness control
- Contrast control
- Video input 75 Ω termination switch
- AC power input
- Electrical focus

Rear Internal (accessible)

- Keystone correction
- Vertical size (height)
- Vertical hold
- Horizontal size (width)
- Horizontal hold
- Primary fuse (1.5A slow blow std.)
- Reversed Scan Switch for rear screen projection

Internal

- 120/220/240/AVC plug connection (120 VAC std.)
- Vertical Linearity adjust
- Dynamic Focus adjust (Horizontal)
- Dynamic Focus adjust (Vertical)
- Horizontal Video Centering adjust
- D.C. Restoration switch: 1. back porch clamp (STD) 2. sync tip clamp
- G2 bias supply adjust

Video Circuits

Input

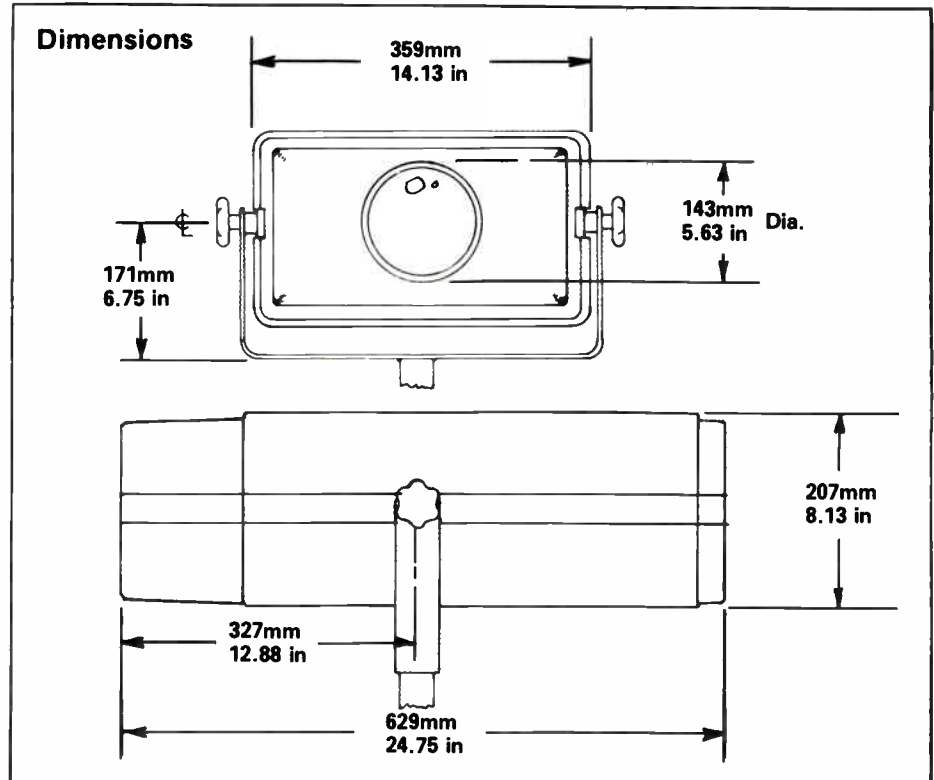
- 2 BNC connectors (looped through)
- 75 Ω $\pm 1\%$ terminated
- 25k ohm shunted by 12pf open
- Input level 0.5 to 2.0V p-p sync negative
- Differential (floating) input rejects 14 V p-p of power line hum voltage

Frequency Response

- 20MHz bandwidth $\pm 3dB$

D.C. Restoration

- Back porch keyed clamp internally switchable to sync tip clamp



Gain

- Min. video gain 40 dB or 100X
- Max. video output 110V p-p drive

Deflection Circuits

Vertical Deflection

- Size: adjustable from 20% overscan to 10% underscan
- Frequency range: from 45 Hz to 80 Hz
- Retrace time less than 0.5 milliseconds

Horizontal Deflection

- Size: adjustable from 20% overscan to 10% underscan
- Frequency range: 15 kHz to 33 kHz
- Retrace time: less than 6 microseconds

High Voltage

- 32.0 KV regulated to better than $\pm 1\%$

Power Requirements

- 120 VAC $\pm 10\%$ can be internally re-connected for 220 VAC $\pm 10\%$ or 240 VAC $\pm 10\%$
- Line Frequency 50 or 60 Hz nominal
- Power 120 watts max.

Environment

Maximum Operating Range

- Temperature: 0° to 35°C
- Humidity: 0-90% non condensing
- Altitude: 0-10,000 ft. (3,000m)

Storage

- Temperature: -30° to 65°C

One year parts and labor warranty.

Due to constant research, specifications are subject to change without notice. Manufacturers of television display equipment in monochrome and color standards for data, industrial, commercial and educational users.

This product is designed to meet or exceed safety standards and regulations of: FCC, DHHS, HWC and is CSA certified and UL listed.

This product is covered by U.S.A. patents 4414494, 4393336. Other patents pending.

**COLOR LARGE SCREEN
DATA/GRAPHICS
VIDEO DISPLAY**

**Model ECP 1000 + Color Projector for Computer
Graphics/Data or Video Tapes**

Electrohome ECP 1000+ is the ideal projection system for ceiling mounted installation.

But it is also very portable—unlike other color projection units.

The difference results from our breakthrough in Laser Aligned Dichroics (LAD) that automatically converges colors within the unit and projects a brilliant image through a single lens.

So it takes only a few minutes for a non-technical person to set up ECP 1000+ for a perfect presentation.

Other systems have three lenses and dozens of controls that must be separately and meticulously adjusted to converge colors on the screen. Since that can take hours of work by a trained technician, those other systems weren't really designed to provide portable convenience and versatility.

Whether you use it in a permanent installation or as a portable system, ECP 1000+ performance must be seen to be believed.

It projects computer graphics in brilliant color and sharp detail. High resolution, together with 40 and 80 character display, makes computer data easy to read.

The most advanced system for today is so advanced, it's ready for tomorrow. Because it was designed as a computer projection system, it also provides the ultimate performance from video tapes, video discs and off-air signals. In fact, ECP 1000+ is ready for the next generation of high definition video. And because it's so portable and can be set up in minutes, any room can be a teleconference center.

• **Conveniently portable or convenient ceiling mount.**

You can make frequent use of your ECP 1000+ system because you can readily move it from room to room and from meeting to meeting. The easy-rolling cart has a compressed system for precise and effortless height adjustment. A special ceiling mount is available for more permanent installations.

• **Readily adapted to most color and monochrome computers.**

ECP 1000+ is compatible with most corporate and personal computer terminals. Because it can project monochrome as well as color, you can benefit from ECP 1000+ portability and superb projection of video tapes even before you make the move to color computers.

• **No guess work about what plugs into where.**

No one can possibly make a mistake when setting up an ECP 1000+ presentation. One cable plugs all computer and video tape signals, as well as remote control, into the projection unit. Other systems not designed for portability have as many as twelve cables that confuse the set-up and clutter the meeting room.

• **Only three operating controls.**

Once again—there's no guesswork. The on/off brightness and contrast controls are clearly identified and readily accessible at the rear of the unit. Or they can be operated with the remote control unit.

• **Adaptable to various screens.**

For further versatility, your ECP 1000+ can be operated with front and rear screens of various sizes—including those you may already be using for your film and slide presentations. Or for ultimate performance, use the special Electrohome curved high brightness screen. ECP 1000+ electronically adjusts the image size to different screen sizes at the turn of a knob.

• **Automatic positioning in relation to screen.**

As with all color computer and video tape projection systems, the unit must be correctly positioned in relation to the screen for precise optical focus.

With other systems that can be a matter of trial and error. But there's no guesswork with ECP 1000+ and it takes only seconds. Two rangefinder lights project arrows on the screen. When the two arrows meet to form an X, you know the projection unit is in the correct position for proper focus.



• **One external lens makes the portable difference.**
This is the most dramatic breakthrough that makes ECP 1000+ so portably different from comparable systems. Laser Aligned Dichroics (LAD) converges all colors within the unit and projects the image through a single lens. Other systems have three separate lenses and dozens of controls that must be meticulously adjusted by a technician to converge colors on the screen.

• **No need to dim the lights.**
The image is bright and clear even with normal or partially subdued lighting—especially if you use the curved high brightness screen.

• **One-button remote control automatic switching between computer and video tape images.**
You just touch one button to move back and forth between computer and video tape segments of the presentation. The effect is smooth and professional with no delays or adjustments because image frequency and size are locked in as you switch from computer to video.

• **Removable modules simplify service.**
Most functions are contained in four modules that are readily removed by a service technician to simplify maintenance procedures.

ECP 1000 +	\$13,995.00
ECP 1000 + NTSC Decoder	1,290.00
ECP 1000 + Cart	550.00
ECP 1000 + Ceiling Mount	200.00
Extension Cable (For NTSC Decoder 25')	90.00
VS6-56 Curved 6 ft. Screen	495.00
SL-1000 Elevating Legs	145.00
BNC to 10-pin Cable Accessory	155.00
General Purpose Color Interface Wiring Harness (for above)	85.00

ECP-1000 + (cont'd)**PERFORMANCE DATA AND SPECIFICATIONS****Brightness**

- 140 ft.-lamberts peak on axis on a 6 ft. diagonal 10 gain screen.
- 260 lumens total peak white output

This measurement taken under actual operating conditions with a focused raster of a data signal — not maximum unfocused, non-usable brightness

Resolution

- Optical resolution 600 lines.
- Electronics are capable of synchronizing up to 1000 line systems.

Display

- Single lens dichroic design converges colors accurately inside the projector, not at the screen.
- High gain front and rear screens may be used with no color shift due to viewing angle.
- May be used with flat screens.
- Electronic pincushion circuits correct separately for top, bottom, and side pincushion for flat screen display.
- Throw distance of 87-1/2" (internally adjustable).
- Wide electronic size control allows 2 knob easy adjustment of picture size from 5 ft. through 7 ft. diagonal.
- Aspect ratio of 3:4.
- Keystone circuitry to correct picture for projection angles up to ± 15 degrees vertically from screen axis. Easy 1 knob adjustment.
- Range finder lights will assist in positioning the projector at the right distance from the screen for the best optical focus.

Video Circuits**Input**

- Input level 0.5 to 2.0V p-p, sync negative or positive. $75 \Omega \pm 1\%$ terminated.
- Differential (floating) input rejects 14 V p-p of power line hum voltage.
- Automatically switches to separate sync or sync on green.
- Separate sync is automatically accepted in either polarity.
- 10 pin multi connector for RGB sync and remote brightness and contrast.

Frequency Response

- 30MHz bandwidth ± 3 dB.

D.C. Restoration

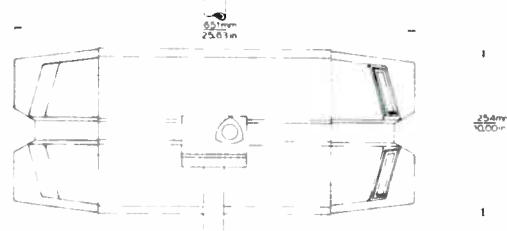
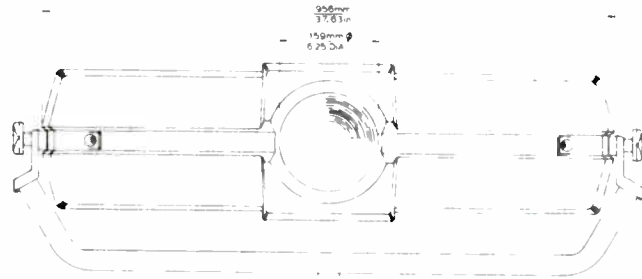
- Back porch keyed clamp (internally switchable to sync tip clamp).

Gain

- Minimum video gain 40dB or 100X.
- Maximum video output 120V p-p drive.

Deflection Circuits**Vertical Deflection**

- Size: automatically regulated over frequency range and adjustable from 20% underscan to 20% overscan.
- Frequency Range: automatically locks from 45 Hz to 100 Hz.
- Retrace Time: less than 0.5 milliseconds.

**Horizontal Deflection**

- Size: automatically regulated over frequency range and adjustable from 20% underscan to 20% overscan.
- Frequency Range: automatically locks from 15KHz to 33KHz.
- Retrace Time: less than 7 microseconds.

High Voltage

- 32.0 Kv regulated to better than $\pm 1\%$.

Power Requirements

- 90 VAC to 132 VAC can be internally reconnected for 180 VAC to 264 VAC.
- Line frequency 50 to 60 Hz nominal.
- Power 250 watts maximum.

Operating and Service Controls**Control Module (Upper Right)**

- Power on/off switch (3.5 AMP circuit breaker).
- Contrast control
- Brightness control
- Range finder lights switch
- RGB drive levels (screwdriver adjust)
- Remote brightness/contrast LED's (lit in remote function).

Set-Up Module (Upper Left)

- R & B horizontal centering controls.
- R & B vertical centering controls.
- Normal/test switch (cross hatch pattern).
- RGB cut-off switches.
- RGB screen controls (screwdriver adjust).
- Master electrical focus control.
- RGB individual electrical focus controls (screwdriver adjust).
- Red & blue raster rotation (screwdriver adjust).

Deflection Module (Lower Right)

- Keystone correction control.
- Vertical hold control.
- Vertical hold auto/manual switch.
- Vertical size control (height).
- Vertical linearity control (screwdriver adjust).
- Horizontal hold control.

- Horizontal hold auto/manual switch.
- Horizontal size control (width).
- Horizontal phase control (video centering, screwdriver adjust).

Convergence, Module (Lower Left)

- Top Pincushion control (N-S).
- Bottom Pincushion control (N-S).
- Side Pincushion control (E-W).

All controls below are screwdriver adjust.

- Red vertical and horizontal bow.
- Red & blue vertical keystone.
- Red & blue horizontal linearity.
- Red & blue skew.
- Red & blue height.
- Red, green, blue horizontal linearity.
- Red, green, blue width.
- Blue vertical bow.

Input Panel

- Top to bottom optical focus adjust.
- Signal input connector.
- A.C. power input.
- Power ON pilot light.

Environment**Maximum Operating Range**

- Temperature: 0 to 35°C.
- Humidity: 0 to 90% non-condensing.
- Altitude: 0-10,000 ft. (0 to 3000m)

Storage

- Temperature: -30°C to 65°C.

Regulatory Approvals

- UL approved
- Meets FCC and DHHS requirements.
- CSA certified

Weight

- 75 lbs.
- Shipping Weight: 107 lbs.

Accessories Included

- 25' signal cable, 10 pin keyed.
- RGB and Sync splitter for BNC connections.
- Projector mounting studs and knobs.

ELECTRONIC SYSTEMS PRODUCTS, INC.

One Tico Road
Titusville, FL 32780
(305) 269-6680
Telex 56-7490 ESP TIVL

VIDEO PROJECTION

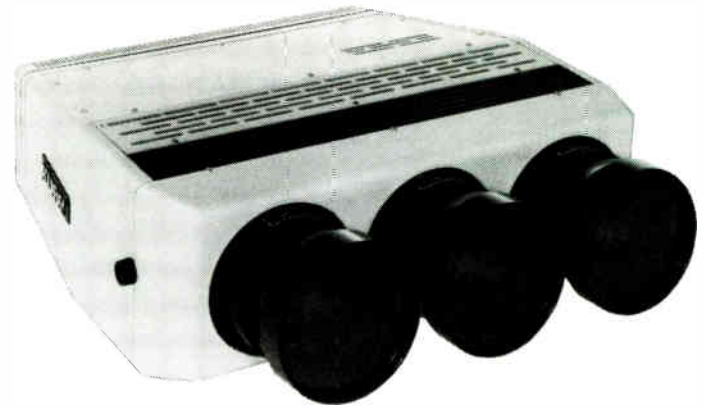
AQUARAY-RGB

- Compatible with most medium resolution computers
 - Smallest, Brightest Projector
 - Lowest Cost Per Lumen
 - Lightweight, Portable
 - Easy Installation, Quiet Operation
 - Exclusive Microcomputer Control
 - Self-Diagnostic Capability
 - Liquid-Cooled Tubes, Super Cooling Chamber*
 - High resolution coated lenses
 - Two-Control Throw Distance Adjustment
 - Modular Quick Change Tube Assembly
 - Overvoltage and Overcurrent Protection
 - Automatic NTSC/PAL sensing
 - Master Keystone Control
 - Interchangeable Electronic Assemblies
 - Pushbutton Remote Control
 - Simple Distance Adjustment
 - Front or Rear Projection
- (*Invented by ESP)

ELECTRICAL

- Microprocessor controlled including self-diagnostics
- Digital remote control using a small two-wire cable
- Digital numeric display for projector operating status
- Built-in test generator for set up and registration (16 functions)
- Complies with all HHS and FDA requirements
- Front or rear projection
- Automatic video gain control
- Integral comb filter for improved luminance resolution
- Band pass response to 16MHz
- Master keystone control; wide range correction (+/-20°)
- Liquid-coupled lens and liquid-cooled tubes
- Switch mode power supplies for efficiency, cooler operation and reduced weight
- Full-line isolation, photo-optically coupled high voltage regulator
- Overvoltage and overcurrent protection
- Slow high voltage turn on to protect against electrostatic arcing
- Automatic NTSC/PAL sensing
- 110-220V switchable international power control
- Full focus modulation for corner clarity
- Built-in crosshatch and crosshair generator to facilitate registration
- Differential video amplifier input

Light Output: 400 lumens peak white
 Resolution: 1000 lines per picture width (up to 800 scan lines)
 Video Input: NTSC composite video with negative sync (IVp-p typical)
 Video feed-through capability
 Differential amplifier input for hum rejection
 Video Sources: Computer and graphics terminals (NTSC/RGB signals)
 Video recorder (VCR)
 Remote tuner
 Satellite receiver (TVRO)
 Video disc player
 Camera
 Scanning Rate: 50Hz - 100Hz vertical frequency range/RGB mode
 15,000Hz - 20,000Hz horizontal frequency range/RGB mode (up to 800 scan lines)
 Minimum blanking time (6 microseconds)
 Cathode Ray Tubes: 35KV at 1 mA each (average current)
 Non-browning, strontium-filled glass
 Liquid-cooled phosphors
 Electrostatically focused
 Power Input: 115VAC 60Hz or 220VAC 50Hz
 Power Consumption: 300 watts (average)



REMOTE CONTROLLER

- Flat membrane keyboard with tactile feedback
- Serial digital transmitter using a two-wire cable
- Operator controls on front: on-off, stand-by, picture control, tint
- Set-up controls on back: centering for red and blue, brightness set, color set, test generator on-off and pattern selector feature
- Picture controls: brightness, contrast, color, tint
- Standby (blackout) feature
- LED power indicator

MECHANICAL

- Rugged—aluminum I-beam construction
- Easily accessible master board
- Simple throw distance adjustment
- Quiet operation
- Accessible, interchangeable electronic assemblies for easy maintenance
- Arc protected; encapsulated HV leads and connectors
- Quick change tube modules
- Easy inverted mounting:
7° lens offset for close ceiling mounting

Optics: High resolution coated f/1.0 lenses

Weight: 53 lbs.

Dimensions: 7½"H x 21"W x 24½"L

Throw Distance: 1.5 times image width
(6' W image is 9' throw distance)

Image Size: 4' - 20' wide image on flat or curved screen
(some variation depending on lenses used)

Cable Lengths: 6' AC power cord
25' remote control cable (easily extended)

Mount: May be mounted in almost any location;
floor, table, ceiling (full swivel)

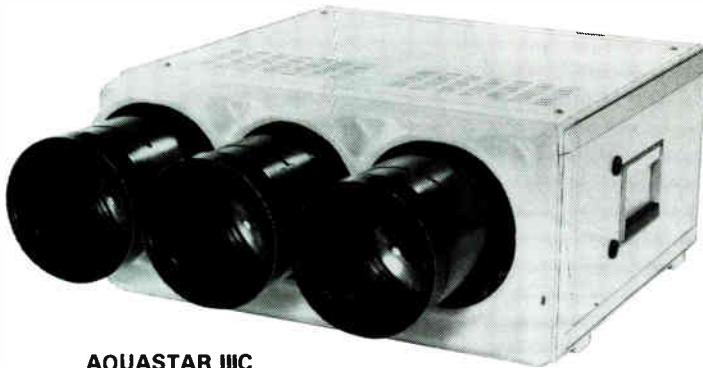
AQUARAY-RGB \$7495.00

OPTIONAL ACCESSORIES

f/1.0 wide screen lenses (4'-20') **\$830.00**
 Ceiling mount bracket **150.00**
 Special remote control cable lengths
 25 ft. **75.00**
 50 ft. **110.00**
 75 ft. **170.00**
 100 ft. **200.00**
 Optical wedges (for small screens) **500.00**
 Phone jack type cable lengths
 25 ft. **38.00**
 50 ft. **75.00**
 75 ft. **107.00**
 100 ft. **143.00**

ELECTRONIC SYSTEMS PRODUCTS, INC.

One Tico Road
Titusville, FL 32780
(305) 269-6680
Telex 56-7490 ESP TIVL



AQUASTAR III C

AQUASTAR III C

- Compatible with most High Resolution Computers
- Modular Quick Change Tube Assembly
- Liquid-Cooled Tubes, Super Cooling Chamber*
- Overvoltage and Overcurrent Protection
- Master Keystone Control
- Interchangeable Electronic Assemblies
- High Light Output — 500 Lumens
- Easy Installation & Registration
- Front or Rear Projection
- High Performance
- Wide Horizontal/Vertical Frequency Range
- Simple Distance Adjustment

(* Invented by ESP)

ELECTRICAL

- Compatible with most Medium and High Resolution Graphic Displays
- Front or Rear Projection
- Integral Comb Filter for Improved Resolution
- RGB Inputs with Separate Gain Controls, TTL Compatible
- Wide Band Pass Video Amps, Response to 30MHz
- Automatic Video Gain Control
- Separate Sync or Sync on Green
- Switch Mode Power Supplies for Efficient, Cooler Operation and Reduced Weight
- Full-Line Isolation, Photo-Optically Coupled High Voltage Regulator
- Complies with all HHS and FDA Requirements
- Interlaced and Non-Interlaced Syncs
- Overvoltage and Overcurrent Protection
- Slow High Voltage turn on to protect against Electrostatic Arcing
- Sensitive Components protected from High Voltage Static Discharges
- Independent RGB Gain Controls — Red, Green, Blue
- Master Keystone Control; wide range correction (+/-20°)
- Liquid-cooled Lens and Liquid-cooled Tubes
- Fully Regulated Focus, High Voltage and Registration Circuits
- Full Focus Modulation for Corner Clarity
- Built-in Crosshatch and Crosshair Generator to Facilitate Registration

- Light Output** • 500 lumens peak white
- Resolution** • 1350 lines per picture width (up to 1400 scan lines)
• 330 NTSC video
• Up to 200 characters per picture width
• Exceeds 1024 pixel rates

VIDEO PROJECTION

- Video Input**
- NTSC composite video with negative sync (1V p-p typical)
 - RGB inputs with separate syncs or sync on green
 - PAL, SECAM and modified NTSC decoders (optional)
 - Video feed through capability
- Video Sources**
- Computer and graphics terminals (NTSC/RGB signals)
 - Video recorder (VCR)
 - Remote tuner
 - Satellite receiver (TVRO)
 - Video disc player
 - Camera
- Scanning Rates**
- 25Hz to 180Hz vertical frequency range/RGB mode
 - 14,000Hz to 42,000Hz horizontal frequency range/RGB mode (up to 1400 scan lines)
 - Minimum blanking time — 6 microseconds
- Cathode Ray Tubes**
- 36KV at 1 mA (average current)
 - Non-browning, strontium-filled glass
 - Liquid-cooled phosphors
 - Electrostatically focused
- Power Input** • 115VAC 60Hz (220VAC 50Hz optional)
- Power Consumption** • 400 Watts

REMOTE CONTROLLER

- Power On-Off Switch; LED Power/Failure Indicator
- Standby (blackout) Switch
- Signal Source Selector Switch (RGB, composite video, test)
- Picture Controls—Brightness, Contrast, Color, Tint, Detail
- Master Focus
- Set-up Controls: Horizontal/Vertical Centering — Red, Blue
- Remote Control Box uses DC and Low Voltages for Long Distance Cabling Compatible with Common Electric Power Code Requirements

MECHANICAL

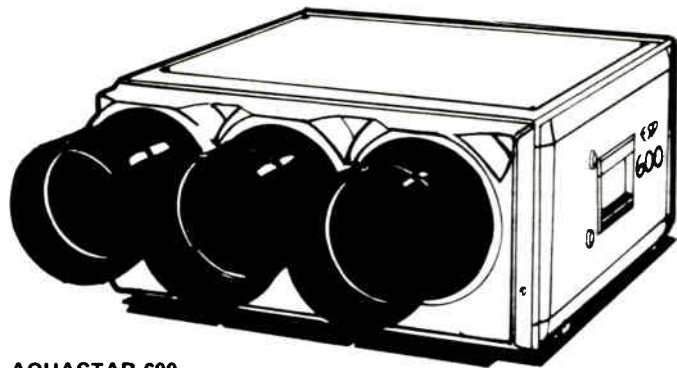
- Rugged — Aluminum I-Beam Construction
- Video Feed-Through Capability
- Accessible, Interchangeable Electronic Assemblies for easy Maintenance
- Parallel Lenses for Simple Screen Size Change (two-knob adjustment)
- Convenient Back Panel Registration Controls
- Quiet Fan

- Optics** • High resolution, coated f/1.0 lenses
- Weight** • 75 lbs; (33.7kg)
- Dimensions** • 9 1/2" H x 20" W x 28 1/2" L (22 x 51 x 72cm)
- Throw Distance** • 1.5 times image width (6' wide image is 9' throw distance)
- Image Size** • 4' to 12' wide image high resolution lenses on flat or curved screen (optional lenses available for larger screen sizes up to 25' wide)
- Cable Lengths** • 6' AC power cord
• 15' remote control cable (optional lengths available)
- Mount** • May be mounted in almost any location; floor, table, ceiling

Aquastar III C	\$9,995.00
OPTIONAL ACCESSORIES	
f/1.0 Wide screen lenses (4'-25')	\$830.00
Ceiling mount bracket	150.00
Special remote control cable lengths: 25 ft.	75.00
50 ft.	110.00
75 ft.	170.00
100 ft.	200.00
Optical wedges (for small screens)	500.00
Shipping/carrying case	500.00
Standard quad video decoder	995.00

ELECTRONIC SYSTEMS PRODUCTS, INC.

One Tico Road
Titusville, FL 32780
(305) 269-6680



AQUASTAR 600

AQUASTAR 600 COMPUTER/VIDEO PROJECTOR

Provides remote control capability of easily switching up to 8 RGB, and 8 NTSC and 8 stereo audio signals with no further need for adjustments...

FEATURES

- Simple installation and registration
- Front or rear projection
- Compatible with most high resolution computers
- Wide horizontal/vertical frequency range
- High light output—500 lumens
- Exceeds 1024 pixel rates
- Self-diagnostic capability
- Overvoltage and overcurrent protection
- Interchangeable electronic assemblies
- Modular quick change tube assembly
- Liquid-cooled tubes, super cooling chamber (invented by ESP)

Electrical

- Remote control of horizontal and vertical hold
- Storage of 8 preset horizontal and vertical hold values in RGB
- Integral comb filter for improved resolution
- RGB inputs with separate gain controls, TTL compatible
- Wide band pass video amps, response to 30MHz
- Automatic video gain control
- Separate sync or sync on green
- Switch mode power supply for efficient, cooler operation and reduced weight
- Full-line isolation, photo-optically coupled high voltage regulator
- Complies with all HHS and FDA requirements
- Interlaced and non-interlaced syncs
- Sensitive components protected from high voltage static discharges
- Master keystone control
- Fully regulated focus, high voltage and registration circuits
- Full focus modulation for corner clarity
- Built-in test pattern to facilitate ease of registration

Aquastar 600 **\$12,995.00**

Optional Accessories

Infra-red remote control	\$295.00
IBM PC interface box	395.00
f/1.0 wide screen lenses (4' to 25')	830.00
Ceiling mount bracket	150.00
Optical wedges (for small screens)	500.00
Floor stand	245.00
Projection screens: Front: 60 x 80"	1125.00
Rear: 38 x 50"	420.00
Rear: 47 x 62"	700.00
Quad standard decoder	995.00
Phone jack type cable lengths: 25 ft	38.00
50 ft	75.00
75 ft	107.00
100 ft	143.00

VIDEO PROJECTOR/ SWITCHER



ESP VIDEO SWITCHER

HIGH DEFINITION ESP VIDEO SWITCHER

FEATURES

- Up to 8 RGB, 8 video, and 8 stereo audio inputs
- Micro-processor controlled
- Micro-processor remembers up to 8 levels for horizontal, vertical scan rates and audio levels
- Horizontal and vertical frequency control with memory on any channel
- Computer terminal control via RS-232 input
- Stereo audio switching
- Stereo/mono switch
- All remote connectors are telephone modular connectors
- Gain and brightness level adjustment on each RGB input to match output levels between channels
- Bright LED channel indicator
- Modular design
- 19" rack-mountable or decor cabinet

This switcher has been developed for use with ESP's Aquastar 600 video projector to meet the needs of those who require wide bandpass, control, and distribution of computer (RGB), video, and audio signals.

The system may be housed in a 5-1/4" high, 19" wide rack-mountable enclosure or it may be supplied in an attractive decor cabinet for desk/table top installation.

The switcher is expandable to accommodate up to 8 computer (RGB) inputs and/or 8 video inputs with stereo audio (internally switchable to monaural). Paralleling switchers for more outputs is possible.

Individual preset for horizontal and vertical hold on each RGB channel allows easy switching between computers at the touch of a button, from personal computers to high resolution CAD/CAM systems. Individual gain and brightness controls match all output levels.

The system is micro-processor controlled, accessed by front panel controls or remotely via an optional wired remote control station or an infra-red wireless transmitter. The switcher may be controlled also by a computer keyboard via RS-232 interconnect.

Pushbutton operation offers automatic switching between input signal sources. The effect is smooth and professional switching with no delays or adjustments. Image and frequency are locked up as selections are made between channels. A bright LED digit channel indicator prominently displays which input has been selected.

ESP — Rackmount, basic 2-channel **\$2495.00**
ESP — Table-top, basic 2-channel **2695.00**

Optional Accessories

Infra-red or wired remote control	\$295.00
IBM PC interface box	395.00
Modular input assemblies for system expansion	each 325.00
Delta-II-tac 12 ft. high resolution lenses	1095.00

ELMO

70 New Hyde Park Road
New Hyde Park, NY 11040
(516) 775-3200

VIDEO SYSTEM

VP-10 ASTRON VIDEO PRESENTATION UNIT

FEATURES

- Compact, portable
- Weighs 18 lbs. with batteries
- 4" EIA standard color monitor
- Monitor elevates to 15° angle
- Separate controls for power/volume, contrast, tint, color, brightness, and vertical hold
- Built-in 3-inch speaker
- Video cassette recorder utilizes a 4-head video system driven by 4 quartz servo-controlled direct-drive motors
- Delivers studio quality reproduction of over 240 horizontal line resolution
- Noiseless playback even when using special effects mode
- The VP-10 can operate for 90 minutes on one charge
- With optional AC or car adaptor, VP-10 can record or play for up to 8 hrs.

VP-10 SNAP-IN RECHARGEABLE BATTERY PACKAGE

Complete Package Includes:

- ELMO Astron 4" Color Monitor, EM-10
 - Video Presentation Housing, SC-10
 - Astron Professional VHS Recorder, ER-10
 - Soft Carrying Case w/Shoulder Strap
 - 2 ea. BP10 Rechargeable Batteries
 - Charger for 2 Batteries Simultaneously, EA-BC10 (110/220V operating voltage)
 - 12-Function Remote Control
- 6200DC** \$1575.00

VP-10 AC PACKAGE

Complete Package Includes:

- ELMO Astron 4" Color Monitor, EM-10
- Video Presentation Housing, SC-10



VP-10

Astron Professional VHS Recorder, ER-10
Soft Carrying Case w/Shoulder Strap
2 ea. PA10 AC Adaptors (110/220V Operating Voltage)
12-Function Remote Control
6200AC \$1665.00

The capabilities of the ELMO Astron VP-10 can be expanded at any time with the addition of the following accessories.

- ELMO EC-10 Color Video Camera
- ELMO ET-10 Tuner/Timer
- Car Adaptor

ADDITIONAL ACCESSORIES

- 6604 EA-BC10** 2-Battery Charger (110/220V Operating Voltage) \$ 65.00
- 6601 EA-BP10** Snap-In Rechargeable Battery 42.50
- 6602 EA-PA10** AC Adaptor (2 required) 125.00
- 6605** Soft Carrying Case (as replacement) 49.90

EC-10 COLOR VIDEO CAMERA

FEATURES

- Under 2 lbs.
 - f/1.4, 4x zoom lens
 - 1/2" Saticon® tube
 - Automatic white balance
 - Exclusive FOCUSFREE™ control
 - Indoor/outdoor color temperature setting
 - VHS and Beta compatible
 - Scanning—525 lines
 - Built-in unidirectional condenser microphone
 - 56W x 230H x 270Dmm
 - 1.96 lbs.
- 6052** Color Video Camera \$499.95



EC-10

- 6555** TD-30A VHS to Beta adaptor cable, adapts EC-10 for use with Beta System recorders 75.00
- 6553** VHS extension cable, 33 ft. (for use with EC-10) 59.95
- 6503** Beta extension cable, 33 ft. (for use with Astron) 49.95
- 2955** Soft case for EC-10 26.20

ET-10 TUNER/TIMER

FEATURES

- 14 Day/4 program timer
 - One-touch timer recording (OTR)
 - Fluorescent liquid crystal display
 - 16 Function infrared remote control
 - 14 Position/107 channel cable ready
 - Automatic battery charging
 - 8-1/2"W x 2-3/4"H x 10-3/4"D
 - 7.1 lbs.
- 6600** Tuner/Timer \$425.00



ET-10

ER-10 VIDEO CASSETTE RECORDER, PORTABLE VHS

- #### FEATURES
- Under 6 lbs. including rechargeable battery
 - 4 Video heads plus quartz-servo direct drive motors
 - Special effect playback features—still, frame advance, variable slow motion, plus SP, LP, SLP playback
 - Multi-function fluorescent liquid crystal display
 - 2-Speed recording and 3-speed playback
 - 12 Function wired remote control
 - One-piece diecast chassis
 - Auto rewind
 - Permits video adding/audio dubbing
 - 2-3/4"H x 8-7/16"W x 10-3/8"D
- 6100** Video Cassette Recorder \$899.95
- 6602** EA-PA10 AC adaptor for cassette recorder, for use instead of tuner. Provides both AC and battery charging functions (110/220V Operating Voltage) 125.00
 - 6601** EA-BP10 interchangeable rechargeable battery for cassette recorder, requires either ET-10 tuner or EA-PA10 AC adaptor for recharging. Up to 2 hrs. use with 3 hour recharging; 6 to 8 hours recommended to maximum battery life 42.50
 - 6500** Carrying case for recorder with front pocket for camera and extra battery. 59.95

Prices and Specifications Subject to Change Without Notice.

VM-35

GALAXY AUDIO VISUAL

175 Commerce Dr.
Hauppauge, NY 11788
(516) 434-9467

SELF-CONTAINED VIDEO SYSTEM



\$1375.00

- 1/2" VHS Format
- Totally Self Contained
- 5" Color Monitor

The Galaxy 2200 Video Centre has a rugged industrial design for sales and training.

Galaxy Audio Visual's Small Contribution to Big Business

The Galaxy 2200 Video Centre is an easy-to-operate, tough, versatile combination color monitor with 1/2" VHS/VCR system, designed specifically for the professional salesman or trainer.

The Galaxy 2200 has all of the features you liked in the Galaxy 2100 plus a screen that is approximately 56% larger and much more... Built right into the front panel of the Galaxy 2200 are: Freeze action, Slow motion, Frame to frame picture advance, Forward and reverse visible search. In its own small way, it's a big help for any business. Weighing only 16 lbs., and about the size of a briefcase, it's truly portable. With its optional battery pack, it can be used anywhere in the world, or may be plugged into any car lighter, or wall socket.

Looking at its large built-in color TV screen, you can make intimate color TV presentations to small groups. With its built-in RF modular you can connect quickly to any large TV set, or multiple of sets, and give color presentations to larger groups. If you need to edit tape, the Galaxy 2200 gives you many of the options you'd get in a professional studio. It dubs audio, edits video, and does sound-on-sound mixing. And with any video camera, it records programs up to eight hours long, and does the same thing for on-air programming, with its optional tuner. Three industrial grade recording heads insure professional picture quality, and rugged design and video tape-component miniaturization are why Galaxy Audio Visual is so well known as the leader in building professional equipment for professionals. After all, with our famous Super-8 Desk-top Presenters, we revolutionized business presentations. In short, Galaxy 2200 Video Centre is a big surprise in a small package. Or a small wonder for big business.

SPECIFICATIONS

Video	NTSC color EIA standard 1/2" VHS cassette
Recording	Rotary 2 head helical scan azimuth recording
Monitor	Color 5" diameter monitor fine pitch flat face type 55° deflection
Speaker	8 x 12 cm, 16 ohm
Power	Three sources available: 1) 110V 60Hz AC wall current 2) Rechargeable battery pack 3) Car battery, DC 12V
Dimensions	16.9"W x 5.5"H x 11.0"D
Weight	16.5lbs.
Jacks	Video and audio input and output, RCA type. Camera, microphone, headset, DC 12V connector, RF and remote

FEATURES

- Micro-processor controls
- Swing away carrying handle
- Tape and/or accessory storage
- Earphone
- Matching 300-75 Ohm transformer
- Coaxial cable with RF connections
- Built-in RF modulator
- Humidity protection device
- Color, tint and bright controls
- Recording: SP for two hours; LP for four hours and EP for six hours. Eight hour recording possible with T-160 tape. Playback speed is automatically selected
- Automatic alignment control removes break-up from center of picture

Galaxy 2200™ Video-Centre w/AC Adaptor and Wall Plug

1/2" VHS Video Recorder with built-in 5" monitor and micro-processor controls. Three selectable recording speeds to record up to 8 hours. Playback speed automatically selected. Professional Studio features including audio dub, video editing and sound on sound mixing. Swing away carrying handle. Storage for tape and/or accessories. Weighs only 16.5 lbs. (7.5 kilos). Size: 16.9"W x 5.5"H x 11.0"D. Three way power available: A/C Adaptor included; Battery Pak, and Automobile Battery Cord are optional accessories. Record with any video camera or use TU-2201 color tuner. RF output: Channel 3 or Channel 4. Package includes cassette tape, earphone, matching transformers, coaxial cables.

ACCESSORIES

Color tuner — TU-2201 **\$325.00**

With programmable timer for VHF/UHF operation (select channels 2 thru 83). Unit can be set to automatically record 6 programs for two weeks. Quartz clock.

Master remote control — RM-2202 **\$45.00**

Palm-sized unit allows you to adjust the rate of slow motion and control the play, record, audio dub, freeze frame, fast forward, reverse, visible forward and reverse search, frame-by-frame advance and tracking functions.

Battery pack — BP-2203 **\$79.00**

Twelve volt rechargeable supplies approximately 60 minutes of continuous playback or recording per charge. Full charge takes approximately 6 to 8 hours.

Battery charger — BC-2204 **\$89.00**

For battery pack, operates off A/C power.

Car battery cord — DC-2208 **\$29.00**

For true portable power to operate Galaxy 2200 Video Centre from automobile lighter socket.

Travel-all bag — TB-2206 **\$79.00**

Cushioned Travel-All Bag. Convenient shoulder strap for easy carrying. Holds Galaxy 2200, tapes and accessory items.

Shipping case — SC-2207 **\$159.00**

Rugged shipping case with custom tailored foam interior. Holds Galaxy 2200, accessories and tapes.

Attache case — AT-2211 **\$120.00**

Deluxe Executive Attache case to carry the Galaxy 2200—extra room for accessories.

Heads 3 Video Heads—2 for SP/LP/EP, one for special effects. 1 full track audio video erase head. 1 combination head for control track, audio erase and audio record/play. 3 Heads/single housing

Tape Speed With T-120 Video Cassette:
2 hours playback/recording (SP)
4 hours playback/recording (LP)
6 hours playback/recording (EP)

RF Output Channel 3 or Channel 4

RF Input VHF 75 ohm UHF 300 ohm

Included Items 2— Coaxial cable with F-type connectors
1— Matching transformer 300-75 ohm
1— Matching transformer 75-300 ohm
1— Cassette tape
1— AC Adaptor
1— Earphone
1— RF isolator switch
1— Adjustment screwdriver

GENERAL ELECTRIC COMPANY

PROJECTION DISPLAY PRODUCTS OPERATION

Electronics Park 6-206
P.O. Box 4840
Syracuse, NY 13221
(315) 456-2152

PROJECTORS

TALARIA™ TELEVISION PROJECTION

For more than a decade, General Electric professional large screen video projectors have been helping groups understand, enjoy and remember presentation material. Through technology developed by General Electric engineers, projector performance has improved continuously.

The Talaria projector line, featuring General Electric exclusive light valve technology, offers models that can display presentations more powerfully, in more situations, to more people than any models offered before. This was accomplished by developing important new capabilities.

High Levels Of Brightness

General Electric has added three new color projectors with twice the brightness of the brightest color models previously offered. These new projectors are designed to perform where image size or room lighting would otherwise pose viewing problems. The high light output provides high contrast for crisp, clear pictures in any application.

With the new option of light output levels, you can buy the brightness capability you need. (See specifications for ratings of each model's light output). These projectors weigh no more than prior models — a very transportable 145 lbs.



Exclusive General Electric Design

The Talaria projector line uses an improved version of the exclusive General Electric single light valve system featured in our previous lines. All projectors are designed for trouble-free operation. In fact, some users program the projector to start up with an electric timer, and operators simply select the video input for the desired picture. The quality of the picture is consistent from use to use. With the General Electric unique light valve, no manual registration or convergence of colors is required.

Technical Description

General Electric professional Talaria television projectors accept electrical video signals which are converted into an optical image which is projected onto a screen using the single optical path light valve system.

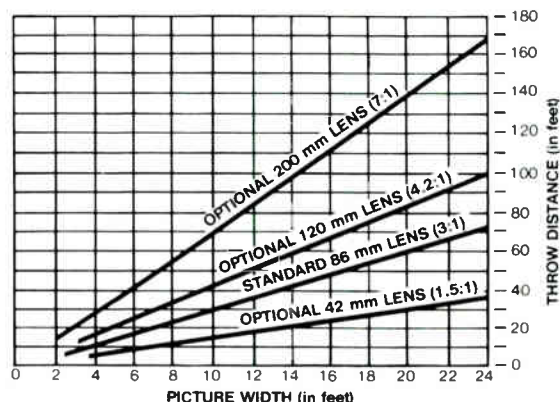
The projectors are completely self-contained, with all electronics, control, and power circuitry integrated into a single unit. They can be used for front or rear projection, using any conventional projection screen.

Signal Processing And Display

In color and monochrome models, input signals are used to amplitude modulate high frequency carriers which velocity modulate the electron beam, as it scans the raster. This results in a diffraction grating (three diffraction gratings for color projectors) being formed on a transparent fluid surface.

In color projectors, light passes through dichroic filters, input bar system, and fluid surface. Schlieren output bar system and projection lens produce color representations of the electrical video signal on the display screen surface. In monochrome projectors, the light path is similar but without color separation.

Throw Distance vs. Picture Width



Flexibility

As a result of developments in optics, the Talaria projector line offers a highly efficient lens system to provide the image size you require. Lens objectives are available in any one of the four throw distance to screen size ratios most convenient for your room dimensions with no picture degradation or loss of brightness. Lens objectives may be designed for special situations (i.e., Cinemascope — 3D — High Definition TV — Wide Screen).

Also offered is an optional system that automatically adjusts for any of the three most often used TV scanning and encoding standards in the world. When you use the projector in areas which do not employ the NTSC standard, you are not hampered by the need for extra hardware or signal conversions. All color projectors designed for 525 or 625 line operation have built-in video switchers and accept composite video or RGB video inputs. Among the signals accepted by Talaria projectors are outputs from tape, videocassette and video disk players, off-air TV tuners, video cameras, teletext, satellite receivers, closed-circuit television (CCTV) systems and most computer-generated displays that provide a television compatible signal, including alphanumeric and graphic data. Some computer-generated displays require an interface to provide signals for projectors.

GE Professional Large Screen Television Projector Specifications

COLOR PROJECTORS										
Model	Light Output in Lumens			White Pic. Resol.* in TV Li. per Pic. Height		Input Power Req.		Scan Standards***	Video Input**	
	Open Gate Min.	Modulated TV, Min.	Modulated TV, Typ.	Min. Horiz.	Min. Vert.	Max. Watts	Max. Volt-Amps			
PJ 5000	500	250	325	750	300	900	1350	525 li./60 fps, 625 li./50 fps	(1)	
PJ 5050	1000	500	650	750	300	1100	1550	525 li./60 fps, 625 li./50 fps	(1)	
PJ 5055▲	2000	1000	1300	750	300	1750	2600	525 li./60 fps, 625 li./50 fps	(1)	
PJ 5800	500	250	300	750	600	900	1350	875 lines/60 fps	(2)	
PJ 5850	1000	500	600	750	600	1100	1550	875 lines/60 fps	(2)	
PJ 5855▲	2000	1000	1200	750	600	1750	2600	875 lines/60 fps	(2)	
PJ 5100	500	250	300	750	650	900	1350	1023 lines/60 fps	(2)	
PJ 5150	1000	500	600	750	650	1100	1550	1023 lines/60 fps	(2)	
PJ 5155▲	2000	1000	1200	750	650	1750	2600	1023 lines/60 fps	(2)	
MONOCHROME PROJECTORS										
PJ 7000	900	600	750	800	400	900	1350	525 li./60 fps, 625 li./50 fps	(3)	
PJ 7050	1500	1000	1250	800	400	900	1350	525 li./60 fps, 625 li./50 fps	(3)	
PJ 7055	3000	2000	2400	800	400	1100	1550	525 li./60 fps, 625 li./50 fps	(3)	
PJ 7800	900	600	750	800	650	900	1350	875 lines, 60 fps	(3)	
PJ 7850	1500	1000	1250	800	650	900	1350	875 lines, 60 fps	(3)	
PJ 7855	3000	2000	2400	800	650	1100	1550	875 lines, 60 fps	(3)	
PJ 7100	900	600	750	800	750	900	1350	1023 lines, 60 fps	(3)	
PJ 7150	1500	1000	1250	800	750	900	1350	1023 lines, 60 fps	(3)	
PJ 7155	3000	2000	2400	800	750	1100	1550	1023 lines, 60 fps	(3)	

*Resolution measurements made with wide-band monochrome video input **Video Input Key(1) NTSC or RGB Standard, NTSC/PAL/SECAM Switchable as Option (2) RGB, (3) Wide-Band monochrome ***For use at other scanning rates, contact General Electric Projection Display Products Operation for special application/model information. Projector line voltage 105 to 132v or 190 to 260 volts 50/60 Hz except those marked (▲) above, which are 190 to 260 volts 50/60 Hz only

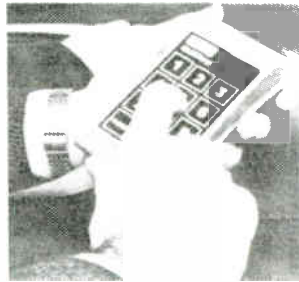
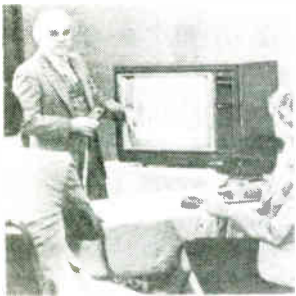
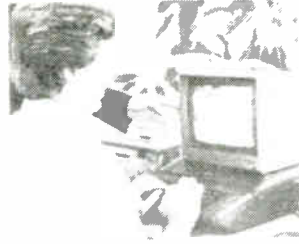
Prices and Specifications Subject to Change Without Notice.

VM-37

GENERAL TECHNICAL CORPORATION

4101 N. St. Joseph Avenue
 Evansville, IN 47712
 (812) 423-4200

COMPUTERIZED INTERACTIVE TELEVISION SYSTEMS



Computerized Interactive Television is an extremely powerful instructional delivery system.

GenTech's CIT systems allow educators, managers and trainers to use an exciting new technique to increase human productivity through more effective learning. The technologies of computers and television are combined in developing unique interactive video education programs that work like this:

A student views a segment of video...the computer presents questions on the material just viewed...the

student responds via a computer keyboard or hand-held keypad...if correct, a congratulatory message is received and the program continues...if incorrect, the material is automatically reviewed, or the student views a remedial portion of the video. Student responses are then assessed and can be stored for later retrieval by the instructor.

ETS-2000 INTERACTIVE TELEVISION SYSTEM (VIDEOTAPE)

The ETS-2000 is a one-on-one interactive instructional system that allows a student to respond to programmed questions while viewing a videotape program. The video controller (interface) card enables a microcomputer to precisely control a videotape player for interlacing educational video segments with computer-assisted instruction and testing modules.

ETS-2000 System Components: Interface Card, Instruction Manual, Connecting Cables and Operating Software **\$595.00**

LDI-2100 INTERACTIVE TELEVISION SYSTEM (VIDEODISC)

The LDI-2100 is a one-on-one interactive instructional system designed for use with laser videodisc programs and hardware. A student responds to programmed questions while viewing a videodisc program. The video controller (interface) card effectively marries the microcomputer with the speed and quality of the videodisc player for interlacing educational video segments with computer-assisted instruction and testing modules.

LDI-2100 System Components: Laser Disc Interface Card, Instruction Manual, Connecting Cables **\$399.00**

Application Software Available

MultiPoll™ Diskette and user guide **\$ 995.00**
 MultiTest™ Diskette and user guide **1295.00**
 MultiFeud™ Diskette and user guide **1295.00**
 MultiSurvey™ Diskette and user guide **1295.00**
 MultiPursuit™ Diskette and user guide **1295.00**

MTS-3000 MULTITERM GROUP RESPONSE SYSTEM (TAPE OR DISC)

The MTS-3000 System allows expansion of the ETS-2000 and LDI-2100 interactive systems from one-on-one modes to classroom or seminar modes. Up to 128 people may interact simultaneously via hand-held keypads (multiple systems may be linked for groups exceeding 128 people). MultiTerm may be used with or without television for group interaction with live lecture and demonstration.

MTS-3000 Starter Package Components: MultiLink Unit, ten (10) MultiTerm Keypads, 25 ft. Cable, Instruction Manual, RS 232 Connecting Cable, MultiTerm System Disk with hardware test and blind polling application and 2 MultiTap Junction Boxes . . . **\$4695.00**

MTS-3000 Expansion Package Components: Five (5) MultiTerm Keypads, 12 ft. Cable and MultiTap Junction Box **\$1495.00**

LIVE—THE LANGUAGE FOR INTERACTIVE VIDEO ENHANCEMENT

LIVE is a set of easy-to-use programming commands for implementing sophisticated interactive video programs. LIVE provides a very high degree of control of the videoplayer in extending the programming capabilities of Applesoft for interactive video. Extensive programming knowledge is not necessary to easily program interactive video modules. LIVE represents the industry's most advanced programming system for maximizing the computer in developing interactive video programs.

LIVE Components: Instruction Manual and Software Diskette (SuperPILOT, Applesoft or Pascal must be purchased separately) **\$295.00**



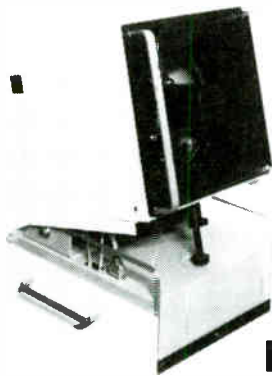
GOULD
Electronics

Large Screen Color Video Projector



IMI-3000

- Business Training, Disco, Video Theaters, Board Room, Surgical Training.
- NTSC or PAL
- 4 ¼ x 6 to 15 x 20 foot pictures.
- Floor or ceiling mount.
- Front or rear screen.



IMI-CDI

Large Screen Computer Display

- Computer Program Training, Board Rooms, Tele-Conferences, Stockholder Meetings, Trust Account Discussions.
- 3 x 4 to 15 x 20 foot displays.
- 80 Characters — 34 Lines.
- Front or rear screen.



IMI-3000CG

Large Screen Color Graphics Display

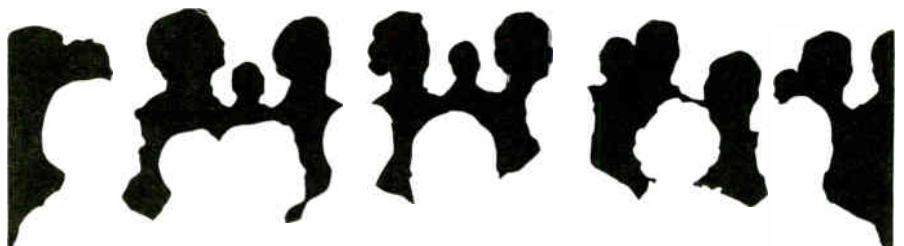
- Board Rooms, Stockholder Meetings.
- 6 x 8 to 15 x 20 foot display.
- Used in conjunction with Tektronix, RAMTEK, ISC and Apple Color Terminals.
- Front or rear screen.

All IMI Projectors Use Standard Screens

ONE YEAR WARRANTY ON ELECTRONICS.

EASE OF OPERATION.

1521 Airway Circle
New Smyrna Beach, FL 32069
(904) 427-5294



Prices and Specifications Subject to Change Without Notice.

VM-39

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

DIGITAL STORAGE OSCILLOSCOPES

VC-6041 40MHz/2 Channels 4000 Words/Channel

Features

- Suitable for repetitive frequencies up to 40MHz
- Storage of transient event of up to 10MHz with pre-triggering
- Storage of long-term data
- High-definition storage display
- CRT = 6" square with 12kV acceleration potential. Useful Screen Area: 8 x 10div (1 div = 10mm), Non Storage Function • Vertical Deflection = Bandwidth and Rise time: DC to 40MHz (-3dB), 8.8ns or less (normal), DC to 7MHz (-3dB), 50ns or less (magnifier), Deflection Factor: 5mV/div to 5V/div \pm 3%, 10 steps (normal), 1mV/div to 1V/div \pm 5%, 10 steps (magnifier), Modes: CH1, CH2, ALT, CHOP, ADD, DIFF • Horizontal Deflection = Time Base: 0.2 μ s/div to 0.2s/div \pm 3%, 19 steps. Maximum sweep rate to 20ns/div with magnifier extended • X-Y Operation (CH1: X, CH2: Y) = Phase Difference: 3° or less from DC to 50kHz, Digital Storage Function • Memory Capacity: 4.096 word/channel x two channels, Vertical Resolution: 8 bit, Horizontal Resolution: 400 steps/div, Maximum Sampling Speed: 40MHz (single trace mode), 20MHz (dual trace mode), 10MHz (single sweep mode) • Data Acquisition (Data update method) = Normal Storage Mode, Average Mode, Hold Mode, Single Sweep, Roll Mode, Data Save, Pretrigger, Data Output Analog Output, Digital Output, Cursor Display, X-Y Display • Power Supply = AC100V/120V/220V/240V \pm 10%, 50Hz or 60Hz • Dimensions = 13.1"W x 7.6"H x 18.7"D (330 x 190 x 470mm) • Weight = 15kg/31 lbs.

VC-6041UG (includes GP-1B) \$5855.00
VC-6041UX (less GP-1B) 4950.00

VC-6015 10 MHz 2 Channels 1000 Words/Channel

Features

- Usable as both a conventional oscilloscope and a digital storage scope
- Pretriggering allows capture of events before the trigger point
- Convenient free-run mode for use in recording repeating events
- A hold function maintains one stored waveform while another is captured
- Recording function enables a pen recorder to be used to create a hard copy of stored waveforms
- CRT = 6" square with 2kV acceleration potential Display Area: 8 x 10 div (1 div = 10mm) • Memory = Memory Capacity: 1000 words/channel (1 word = 8 bit), Writing Speed: 1 μ s/word to 10ms/word • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 5% 10 calibrated steps, Bandwidth: DC to 10MHz-3dB (oscilloscope mode), DC to 100kHz-3dB (storage mode), Modes: CH1, CH2, DUAL, ADD, DIFF (oscilloscope modes), DUAL, CH1 (CH2 HOLD), CH2 (CH1 HOLD) • X-Y Operation (CH1: X, CH2: Y) = Phase Difference: DC to 50kHz within 3° • Horizontal Deflection = Sweep Time: 1 μ s/div to 0.2s/div \pm 3% (oscilloscope mode), 0.1ms/div to 1s/div \pm 3% (storage mode), Max Sweep Rate: 100ns/div at x 10 Magnifier extends (oscilloscope mode) • External Output = Recorder: CH1, CH2 full-scale \pm 4V • Power Supply = AC100V/120V/220V/240V \pm 10% • Dimensions = 12.3"W x 7.1"H x 16.2"D (310 x 180 x 410mm) • Weight = 10kg/22 lbs.

VC-6015 \$2095.00

STORAGE OSCILLOSCOPE

V-134 DC 10MHz, Dual Trace

- CRT = 5" round with 2kV acceleration potential • Recording Speed = 25div/ms or more, Fast: 50div/ms or more • Vertical Deflection = Sensitivity: 5mV/div to 5V/div (10 steps) \pm 3%, Max. Sensitivity: 1mV/div to 1V/div (10 steps) \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 10MHz (-3dB), DC to 7MHz (-3dB) at x 5 Mode: CH1, CH2, DUAL, ADD, DIFF • Horizontal Deflection = Sweep Time: 2 μ s/div to 2 sec/div (10 steps) \pm 3%, Max. Sweep Rate: 200ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase error: 3° from DC to 50kHz • Dimensions = 10.9"W x 7.5"H x 15.8"D (275 x 190 x 400mm) • Weight = 10kg/22 lbs.

V-134 \$1620.00

VM-40

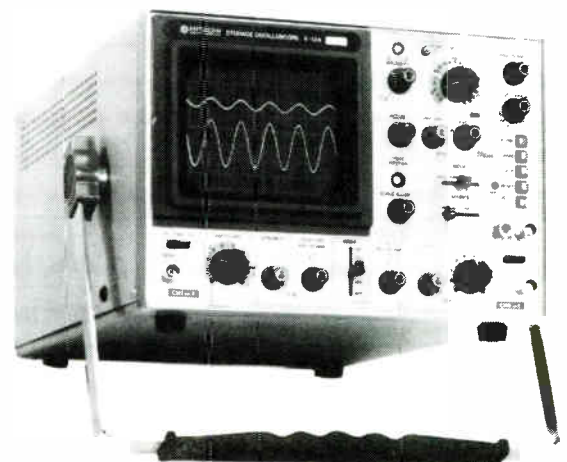
Prices and Specifications Subject to Change Without Notice.



VC-6041



VC-6015



V-134

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

READOUT OSCILLOSCOPE

V1100A DC ~ 100MHz 4 Trace, Delayed Sweep

Three Digital Display Functions

- The AC voltage (50Hz ~ 10MHz), DC voltage, and frequency (120Hz ~ 99.9MHz) of the Channel 1 input signal can be measured and the results displayed digitally on the CRT screen
- An electronic CRT screen cursor may be used to digitally display such values as ΔT , $1/T$, phase, ground potential (Vabs), ΔV , and ratio (%)
- The sweep and vertical axis sensitivity setting values are displayed digitally on the CRT screen
- Dimensions: 13"W x 6.3"H x 16"D
- Weight: 22 lbs.

V-1100A \$2490.00

V-1100A Specifications

Readout functions	Digital Measurement functions	DVM	DC voltage: Corresponds to screen AC voltage: 50Hz ~ 10MHz	CH1 only	Display: 3 digits + units
		Frequency counter	Frequency: 0.12kHz ~ 99.9MHz		
	Cursor Readout	REF. Δ cursors	Voltage Vabs: REF ~ GND Voltage V: Δ ~ REF Amplitude ratio: % (5 div = 100%) Time T: Δ ~ REF Phase: Deg (5 div = 360°) Frequency: $1/T = \Delta$ ~ REF		
Panel setting Value displays		Vertical axis: V/div, INVERT, ADD, BWL, UNCAL, MAG Sweep speed: s/div, UNCAL, MAG conditions Other:			
GND REF REFERENCE FUNCTION	Ground line display	CH1 and CH2 displays are possible (the ground level is displayed as an intensified line)			

V-1070 DC ~ 100MHz 4 Trace, Delayed Sweep

The V-1070, a low cost version of the V-1100, using the built-in micro-computer, displays the panel setting information on the CRT as follows:

Vertical deflection factors, uncalibrated warning, magnification warning, vertical input coupling, band limiter, CH2 inversion, horizontal sweep times for both A time and B time bases and trigger sources for both, uncalibrated warning for A sweep time, sweep magnification warning, delay time and 10X probe indicators for CH1 and CH2.

Further vertical deflection factors and sweep times are displayed on the CRT with the converted values at the magnificated modes automatically. Dimensions: 13"W x 6.3"H x 16"D. Weight: 22 lbs.

V-1070 \$1950.00

V-1050F DC ~ 100MHz, Quad Trace, Delayed Sweep

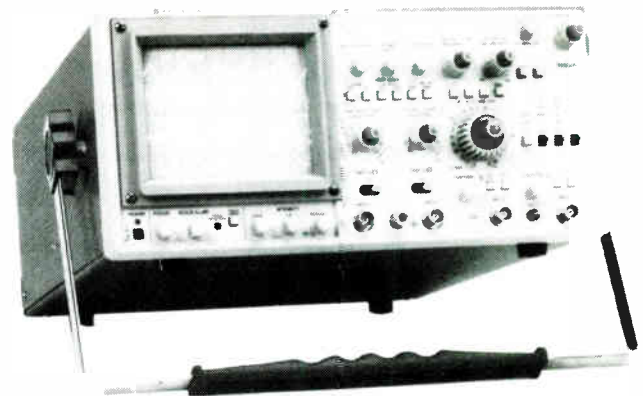
• CRT = 6" square with 20kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 2%, Max. Sensitivity: 0.5mV/div \pm 4% at x 10 Magnifier extends, Bandwidth: DC to 100MHz (-3dB), DC to 5MHz (-3dB) at x 10 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD (DIFF) • Horizontal Deflection = A Time Base: 20ns/div to 0.5s/div \pm 2%, B Time Base: 20ns/div to 50ms/div \pm 2%, Max. Sweep Rate to 2ns/div at x 10 Magnifier extends, Display Modes: A, Ainten, ALT, B • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 2MHz • Dimensions = 310W x 180H x 410Dmm • Weight = 9.3kg/20.5 lbs.

V-1050F \$1595.00

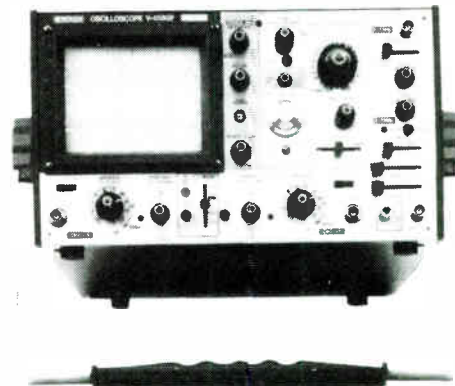
V-650F DC ~ 60MHz, Dual Trace Delayed Sweep

• CRT = 6" square with 10kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div \pm 5% x 5 Magnifier extends, Bandwidth: DC to 60MHz, DC to 60MHz, DC to 10MHz at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD (DIFF) • Horizontal Deflection = A Time Base: 50ns/div to 0.5s/div \pm 3%, B Time Base: 50ns/div to 50ms/div \pm 3%, Max. Sweep Rate: 5ns/div at x 10 Magnifier extends, Display Modes: A, A inten, B • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz • Dimensions = 12.2"W x 7.1"H x 16.1"D (310 x 180 x 410mm) • Weight = 9.3kg/20.5 lbs.

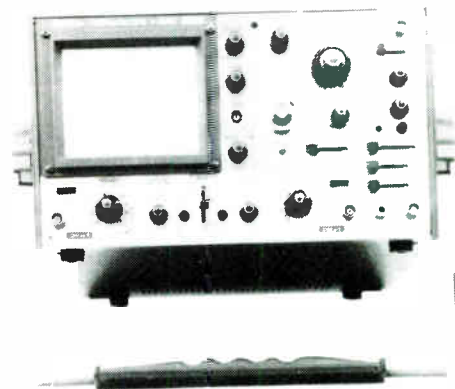
V-650F \$1195.00



V-1070



V-1050F



V-650F

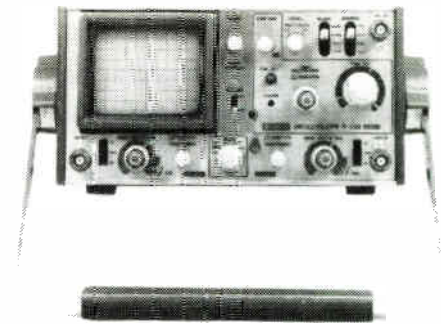
175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

PORTABLE OSCILLOSCOPES

V-509 DC ~ 50MHz, Dual Trace Delayed Sweep

• CRT = 3.5" square with 12kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div \pm 3% at x 5 Magnifier extends, Bandwidth: DC to 50MHz (-3dB), DC to 10MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD (DIFF) • Horizontal Deflection = A Time Base: 0.1 μ s/div to 0.2s/div \pm 3%, B Time Base: 0.1 μ /div to 2ms/div \pm 3%, Max. Sweep Rate: 10ns/div at x 10 Magnifier extends, Display Modes: A, A inten, B • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 100kHz • Dimensions = 8.5"W x 4.3"H x 13.8"D (215 x 110 x 350mm) • Weight = 5kg/11 lbs.

V-509 \$1399.00
AD-509 Battery Pack for V-509 300.00

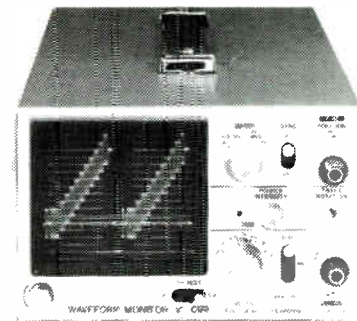


V-209

V-209 DC ~ 20MHz, Dual Trace

• CRT = 3.5" square with 1.5kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div \pm 3% at x 5 Magnifier extends, Bandwidth: DC to 20MHz (-3dB), DC to 5MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD (DIFF) • Horizontal Deflection = Time Base: 0.5 μ s/div to 0.2s/div \pm 3%, Max. Sweep Rate: 50ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 100kHz • Dimensions = 8.5"W x 4.3"H x 13.8"D (215 x 110 x 350mm) • Weight = 4.5kg/9.9 lbs.

V-209 \$945.00
AD-209 Battery Pack for V-209 75.00



V-099

V-059B DC ~ 7MHz, Single Trace

• CRT = 3.5" square with 1.5kV acceleration potential • Vertical Deflection = Sensitivity: 50mV/div to 2V/div \pm 3%, Max. Sensitivity: 10mV/div to 20mV/div \pm 3% at x 5 gain, Bandwidth: DC to 7MHz (-3dB), DC to 2MHz (-3dB) at x 5 gain • Horizontal Deflection = Time Base: 10 μ s/div to 20ms/div \pm 3%, Max. Sweep Rate: 1 μ s/div at x 10 Magnifier extends • Dimensions = 7.8"W x 3.35"H x 11.5"D (198 x 85 x 292mm) • Weight = 2.9kg/6.4 lbs.

V-059B \$1200.00
AD-058B Battery Pack for V-059B 200.00



V-089

TELEVISION WAVEFORM MONITOR

V-099 (Type NTSC)

• CRT = 3.5" square with 2kV acceleration potential • Vertical Deflection = Frequency Response at 1V Full Scale or 4V Full Scale: Flat ... Response from 25Hz to 5MHz within \pm 5% of response at 50kHz, IRE ... Response per 1958 IRE STD 23S-1 \pm 10%, 3.58 Band Pass ... Response at 3.58MHz does not vary between flat and 3.58 Band Pass by more than 1% • Horizontal Deflection = 2V Sweep: Equal to Frame Rate at applied Video or External Sync. 2V Mag Sweep: X20 within \pm 10%, 2H Sweep: Equal to half line rate of applied Video or External Sync, 1 μ s/div Sweep: \pm 3% (Accuracy) • DC Restoration = Clamp Time: Back Porch • Dimensions = 5.8"W x 3.5"H x 15.6"D (145 x 88 x 395mm) • Weight = 4kg/8.9 lbs.

V-099 \$1350.00
AD-099 Battery Pack for V-089/099 250.00

VECTORSCOPE

V-089 (Type NTSC)

• Chrominance Processing = Chrominance Bandwidth: Subcarrier Frequency (Fsc)/3.579545MHz Pull in Range: Within 100Hz of Fsc, Pull in Time: Within 1 second with subcarrier frequency within 100Hz of Fsc, Phase Shift with Subcarrier Frequency change: Less than or equal to 1° from Fsc to Fsc + 50Hz or from Fsc to Fsc - 50Hz, Change: Less than or equal to 1° from unity to 2 times unity or from unity to one-half unity • Amplifier = Maximum input Voltage: \pm 5V, VARGAIN Control Range: X0.5 ~ X5.0, Input Return Loss: Greater than or equal to 40dB down, 5MHz • External Sync = Input signal requirement 1.6 to 4.5V composite sync. input impedance 15K ohm \pm 10% • Dimensions = 5.8"W x 3.5"H x 15.6"D (145 x 88 x 395mm) • Weight = 4kg/8.9 lbs.

V-089 \$1684.00
AD-099 Battery Pack for V-089/099 250.00

175 Crossways Park W.
Woodbury, NY 11797
(516) 921-7200

V-211 DC ~ 20MHz, Single Trace

- CRT = 6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 40MHz (-3dB) DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: Single Trace • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Max. Sweep Rate: 100ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 10kHz
- Dimensions = 12.3"W x 5.2"H x 14.6"D (310 x 130 x 370mm)
- Weight = 6.0kg/13.3 lbs.

V-211 \$510.00



V-211 DC

V-222 DC ~ 20MHz, Dual Trace

- CRT = 6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 20MHz (-3dB) DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Max. Sweep Rate: 100ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz
- Dimensions = 12.3"W x 5.2"H x 14.6"D (310 x 130 x 370mm)
- Weight = 6.5kg/14.4 lbs.

V-222 \$715.00



V-222 DC

V-422 DC ~ 40MHz, Dual Trace

- CRT = 6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 40MHz (-3dB), DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Max. Sweep Rate: 20ns/div at x 10 Magnifier extends • X-Y operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz
- Dimensions = 12.3"W x 5.2"H x 14.6"D (310 x 130 x 370mm)
- Weight = 6.5kg/14.4 lbs.

V-422 \$925.00

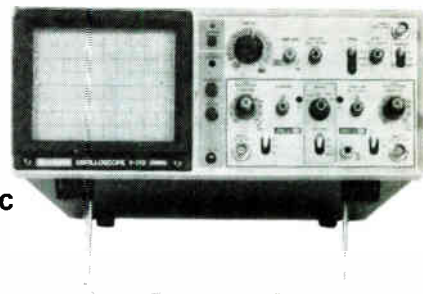


V-422 DC

V-212 DC ~ 20MHz, Dual Trace

- CRT = 6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 20MHz (-3dB) DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Max. Sweep Rate: 100ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz
- Dimensions = 12.3"W x 5.2"H x 14.6"D (310 x 130 x 370mm)
- Weight = 6.0kg/13.3 lbs.

V-212 \$615.00



V-212 DC

V-223 DC ~ 20MHz, Dual Trace Delayed Sweep

- CRT=6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 20MHz (-3dB), DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Delay Time: 1 μ s to 100ms, Max. Sweep Rate: 100ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz
- Dimensions = 310W x 130H x 370Dmm/12.3 x 5.2 x 14.6 in. • Weight = 7.0kg/15.5 lbs.

V-223 \$795.00

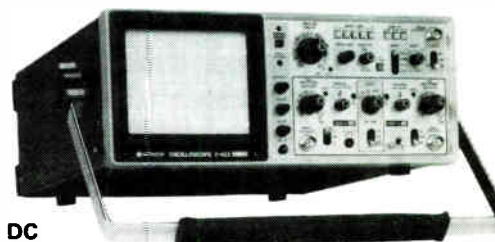


V-223 DC

V-423 DC ~ 40MHz, Dual Trace Delayed Sweep

- CRT=6" square with internal graticule • Vertical Deflection = Sensitivity: 5mV/div to 5V/div \pm 3%, Max. Sensitivity: 1mV/div to 1V/div \pm 5% at x 5 Magnifier extends, Bandwidth: DC to 40MHz (-3dB), DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1, CH2, ALT, CHOP, ADD • Horizontal Deflection = Sweep Time: 0.2 μ s/div to 0.2s/div \pm 3%, Delay Time: 1 μ s to 100ms, Max. Sweep Rate: 20ns/div at x 10 Magnifier extends • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz
- Dimensions = 310W x 130H x 370Dmm/12.3 x 5.2 x 14.6 in. • Weight = 7.0kg/15.5 lbs.

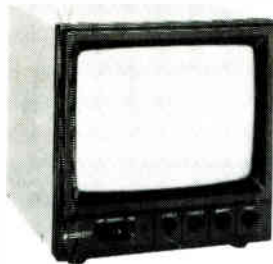
V-423 \$995.00



V-423 DC

Prices and Specifications Subject to Change Without Notice.

VM-43



VM-910A

VM-900A

B & W Solid State monitor with 500 lines resolution; Portable (9.6"W x 9.2"H x 9.3"D) and lightweight (13.5 lbs.) Deflection linearity of less than 2%. Other specs similar to VM-906A. **\$180.00**

VM-910A 9" Monitor

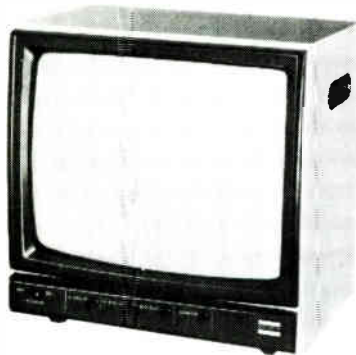
The Hitachi VM-910A is a solid state black and white video monitor that displays video signals from Hitachi CCTV cameras, VTRs and other signal sources.

FEATURES

- **Reliability**
Solid state circuitry using an IC and silicon transistors ensures high reliability.
- **500 lines horizontal resolution**
Horizontal resolution in excess of 500 lines is achieved at picture center.
- **Stable picture**
Even played back pictures of VTR can be displayed without jittering.
- **Looping video input**
Video input can be looped through with built-in termination switch.
- **External sync operation** (available as option for U and C types)
- **Compact construction**
Two monitors are mountable side by side in a standard 19-inch rack.
- **Front Panel Controls**
Brightness, contrast, vertical hold, horizontal hold, power ON/OFF.

Dimensions: 8.6"W x 8.6"H x 9.2"D (219 x 219 x 234mm)

Weight: 13.2lb. (6 Kg.) **\$225.00**



VM-173

VM-129 12" Monitor

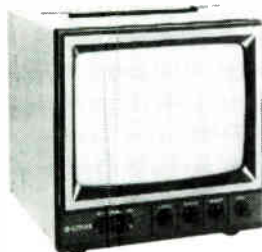
The Hitachi VM-129 is a solid state black and white video monitor that displays video signals from Hitachi CCTV cameras, VTRs and other signal sources. This model ensures stable picture with low distortion and high resolution. A DC restoration circuit is built-in.

FEATURES

- **Reliability**
Solid state circuitry using an IC and silicon transistors ensures high reliability.
- **700 lines horizontal resolution**
Horizontal resolution in excess of 700 lines is achieved at picture center.
- **Excellent linearity**
Deflection linearity is less than 1%.
- **Stable picture**
Even played back pictures of VTR can be displayed without jittering.
- **Looping video input**
Video input can be looped through with built in termination switch.
- **DC restoration switch**
- **External sync operation** (available by slight modification)
- **Front Panel Controls**
As on VM-910

Dimensions: 12.5"W x 11.2"H x 12.5"D (318 x 284 x 316mm)

Weight: 22 lb. (10 Kg.) **\$360.00**



VM-906A

VM-906A 9" Monitor

The VM-906A is an IC-incorporated, transistorized video monitor. It offers high resolution and high deflection linearity.

This model is a high-grade video monitor capable of fulfilling all requirements.

FEATURES

- **Reliability**
Solid state circuitry using an IC and silicon transistors ensures high reliability.
- **700 lines horizontal resolution**
Horizontal resolution in excess of 700 lines is achieved at picture center.
- **Excellent linearity**
Deflection linearity is less than 1%.
- **Stable picture**
Even played back pictures of VTR can be displayed without jittering.
- **Looping video input**
Video input can be looped through with built-in termination switch.
- **DC restoration switch**
- **External sync operation** (available as option for U and C types)
- **Compact construction**
Two monitors are mountable side by side in a standard 19-inch rack.
- **Front Panel Controls**
As on VM-910A

Dimensions: 8.6"W x 8.6"H x 9.2"D (219 x 219 x 234mm)

Weight: 14.3lb. (6.5 Kg.) **\$285.00**



VM-129

VM-173 17" Monitor

The Hitachi VM-173 is a solid state black and white video monitor that displays video signals from Hitachi CCTV cameras, VTRs and other signal sources.

FEATURES

- **Reliability**
Solid state circuitry using an IC and silicon transistors ensures high reliability.
- **700 lines horizontal resolution**
Horizontal resolution in excess of 700 lines is achieved at picture center.
- **Excellent linearity**
Deflection linearity is less than 2%
- **Stable picture**
Even played back pictures of VTR can be displayed without jittering.
- **Looping video input**
Video input can be looped through with built-in termination switch.
- **DC restoration switch**
- **External sync operation** (available as option for U and C types)
- **Front Panel Controls**
As on VM-910

Dimensions: 16.1"W x 15.2"H x 13.3"D (408 x 386 x 337mm)

Weight: 37.5lb. (17 Kg.) **\$395.00**

Rack Mount Adapters

VM-9-2RP Rack Panel (19") for mounting 2VM-910 or 906 **\$46.00**

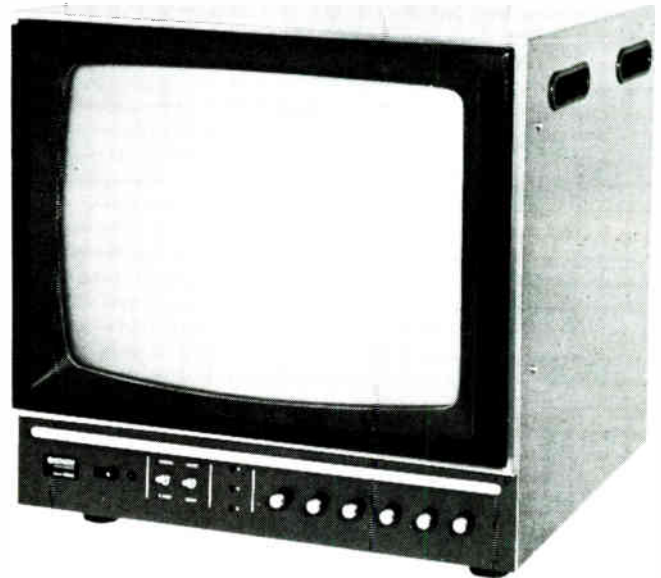
VM-12 RP Rack Panel (19") for VM-129 **68.00**

VM-17-RP Rack Panel (19") for VM-173 **68.00**

CM-182

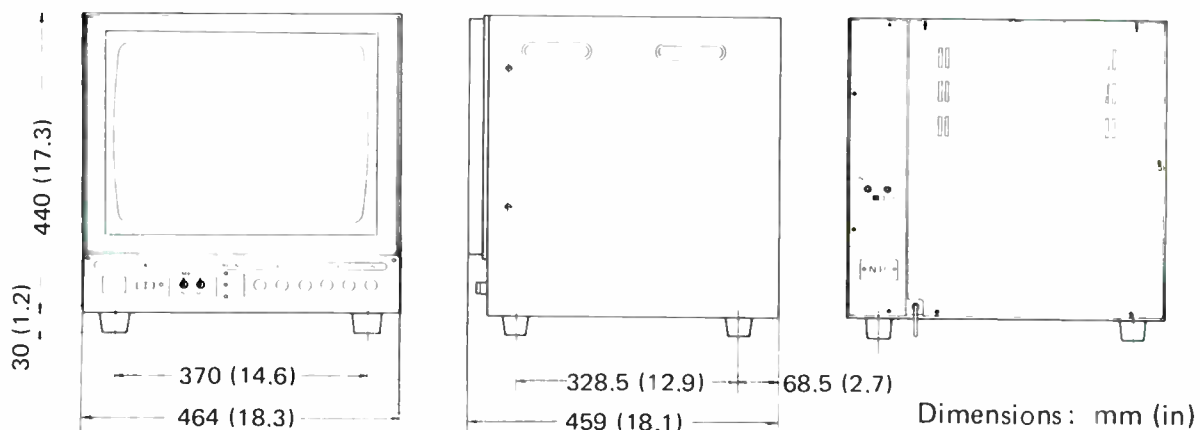
Hitachi 18" color video monitor (for NTSC) employing an in-line-type picture tube, provides sharp pictures with excellent color fidelity. Model CM-182 is ideally suited for broadcast and medical TV applications which demand accurate colorimetry. The CM-182 ensures a stable color presentation and excellent performance at a reasonable cost.

- Hitachi's innovative in-line-type color picture tube ensures reproduction of an extremely bright picture with vivid color.
- By incorporating integrated circuits, color synchronizing and color decoding circuits can reproduce and maintain delicate color hues.
- Aperture correction circuit offers sharp pictures without ringing.



Type	CM-182
Color System	NTSC
Color Decoding	3 axes decoding in narrow band
Video Input	1.0Vp-p (VBS) 75 ohms or high, BNC connector
Sync Input	
Resolution	Horizontal: More than 370 lines at center (at monochrome signal) Vertical: More than 350 lines at center
Signal-to-noise Ratio	More than 46dB
Deflection Linearity	Less than 2% (within the central zone of diameter = picture height)
CRT	18" In-line-type 90° Deflection 470EFB22 or equivalent
Ambient Temperature	0 to 40°C (32 to 104°F)
Power Requirements	U and C types 117 AC + /-10% 60 Hz, 80W
Dimensions (W x H x D)	464 x 440 x 459mm (18.3 x 17.3 x 18.1")
Weight	Approx. 30 kg (66 lbs.)

Model CM-182



CM-182 \$1980.00

Prices and Specifications Subject to Change Without Notice.

VM-45



CT1951
COLOR TELEVISION 19"

- Signal Tracker System
- Lighted Channel Indicator
- Quick-Start
- Memory Fine Tuning (VHF)
- Earphone and Record Jacks

Low Power Consumption

This powerful video system operates on only 88 watts average, 110-120 volts, 60 cycles AC.

Cabinet

Cabinet finish is wood-grain vinyl over wood products for beauty, strength and durability.

Dimensions: Model CT1951

Measures 25-1/4"W x 18-1/16"H x 18-3/4"D and weighs 48.5 lbs.

CT1951..... \$419.95

Quick-Start

Hitachi's Quick-Start feature provides the viewer with sound instantly and with the picture appearing in about 4 seconds after the set has been turned on. Hitachi is able to achieve this without having current flowing when the set is turned off.

Memory Fine Tuning (VHF)

Hitachi's Memory Fine Tuning means that the fine tuning only has to be set once for each channel. The television automatically memorizes the setting so the viewer never has to adjust it again, even when the channel is changed.

Solid State UHF Tuner

A special detent-type tuner on all Hitachi Color TV sets allows the viewer to select UHF stations

Dipole Antenna

This Hitachi set comes with a UHF loop and a Dipole antenna.

CATV/MATV

This Hitachi set comes complete with antenna connections providing for a conventional 300 ohm connection and for a 75 ohm connection used for cable television or master antenna distribution systems.

Earphone & Record Jacks

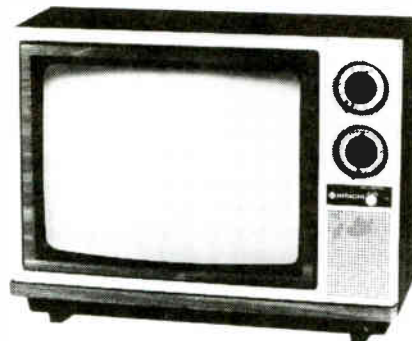
This Hitachi set comes equipped with a separate recording jack that provides for recording while listening to the TV sound. A separate earphone jack and earphones are included for private listening.

Lighted Channel Indicator

The channel selection indicator shows a large, lighted number making it easy to see which channel is on, even from across the room.

Listed by Underwriters Laboratories, Inc.

FCC Certified



CT1342
COLOR TELEVISION 13"

- Table model color TV/13" diagonal screen
- Private listening earphone
- Quick-Start system
- Signal Tracker system
- 100% solid state video system
- 10/2/1 limited warranty

Cabinet

The cabinet is constructed of durable wood-grain plastic.

Dimensions:

Measures 17-1/4"W x 13-3/4"H x 15-3/4"D and weighs 25.3 lbs.

CT1342..... \$349.95



CT1955
COLOR TELEVISION 19"

- VHF/UHF/36 Cable Channels
- Random Access Electronic Tuning with Infrared Remote Control
- Signal Tracker system
- Off timer
- On screen volume indicator
- Earphone and record jacks
- Last channel recall

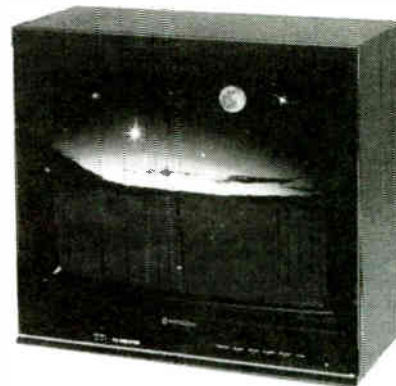
Cabinet

Cabinet finish is wood-grain vinyl over wood products for beauty, strength and durability.

Dimensions:

Measures 23-1/16"W x 18-7/16"H x 18-3/4"D and weighs 48.5 lbs.

CT1955..... \$609.95



CT1957 W/B
COLOR TELEVISION 19"

- VHF/UHF/69 Cable* Channels
- New Tinted Picture Tube
- MTS Multi TV Sound Jack
- Random Access Electronic Tuning with Infrared Remote Control
- Signal Tracker system
- Detachable Remote Control
- Channel and Time on Screen
- Earphone and Record Jacks
- Comb Filter
- Video and Audio Input/Output Jacks
- Distortion Free Circuit
- New ABL Circuit

Cabinet

Cabinet is vinyl over wood products for beauty, strength and durability. CT1957 B-Black Color CT1957 W-Wood grain cabinet and trim.

Dimensions

Measures 20"W x 19"H x 18-3/4"D and weighs 49.6 lbs.

CT1957W Walnut Cabinet..... \$709.95

CT1957B Black Cabinet..... 709.95



CT1958
COLOR TELEVISION 19"
MULTI TV SOUND BUILT-IN

- 139 Channel Capability
- Random Access Electronic Tuning with Infrared Remote Control
- Signal Tracker system
- Detachable Remote Control
- Comb Filter
- Channel and Time On Screen
- Earphone and Record Jacks
- Video and Audio Input Jacks
- Dual Speaker System

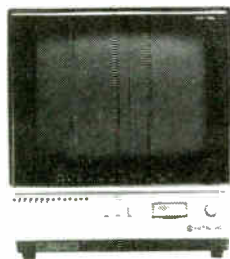
Cabinet

Cabinet finish is wood-grain vinyl over wood products for beauty, strength and durability.

Dimensions

Measures 28"W x 18-3/4"H x 19"D and weighs 55 lbs.

CT1958..... \$809.95



CT-0911 9" POLAR CHROME™
VIDEO SYSTEM

- 100% Solid State Polar Chrome™ Video System
- Electronic Bar Tuning
- Operates on AC or 12V DC
- Quick-Start system
- Automatic Frequency Control

Cabinet

The cabinet is constructed of durable high impact plastic with convenient carrying handle.

Dimensions

Measures 10-5/8"W x 11-3/4"H x 14-1/8"D and weighs only 16.5 lbs.

CT0911..... \$395.95



CT2550

CT2550 25" COLOR TELEVISION

FEATURES

- Multi TV Sound Jack • Signal Tracker System • VHF/UHF/36 Cable* Channels • Random Access Electronic Tuning with Infrared Remote Control • Detachable Remote Control • Channel On Screen

Cabinet The cabinet finish is wood-grain vinyl over wood products for beauty, strength and durability.

Dimensions: Measures 35-1/2"W x 22-7/8"H x 22-1/2"D and weighs 102.3 lbs.

Hitachi Video System All Hitachi Color Television sets feature a new generation, 100% solid-state video system. This system consists of miniaturized, high performance integrated circuits (IC's) similar to those used in advanced space flight technology. All the components have been matched and balanced to work together as a totally integrated video system. This system has been designed to use less electricity.

Multi TV Sound Jack The multi TV sound jack, with an optional MTS adaptor (model VTMS2) and your separate stereo Hi-Fi system will enable you to receive TV broadcasts with stereo sound. If the broadcast is bilingual, a touch of a switch on the MTS adaptor will change the language.

Signal Tracker System Hitachi's all new Signal Tracker System is the most technologically advanced color control system. Monitoring the signal the instant it enters the color TV, the Signal Tracker System adjusts and corrects to immediately compensate for incoming signal variations, including broadcast signal errors. The new Hitachi Signal Tracker System assures the best and most accurate picture at every instant.

Random Access Electronic Tuning with Infrared Remote Control Any VHF, UHF, or up to 36 cable* channels can be tuned instantly and precisely with pushbutton ease. Just enter any channel number and the channel changes quickly and silently.

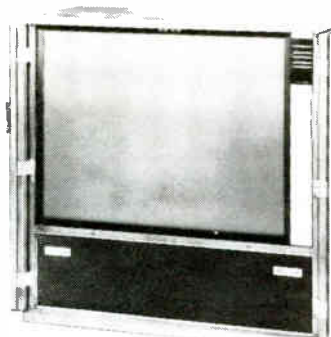
The channel immediately appears, tuned electronically to its exact frequency with crystal controlled accuracy. The circuit automatically locks on the signal to prevent drifting or shifting.

The advanced remote control system employs a precise infrared beam and has pushbutton controls for turning the set on and off, random channel selection, channel up and down, raising, lowering or muting the volume. When the set is turned on, a "memory" recalls the volume level and last channel viewed.

Detachable remote control hand unit slips into a special pocket on the front where it will fully control the set. It can also be removed to function as a remote control hand unit and a cover automatically covers the hand unit storage area to provide a finished design appearance.

Low Power Consumption This powerful video system operates on only 112 watts average, 110-120 volts, 60 cycles AC.

Channel On Screen Each time the channel is changed or when the recall button on the remote control is used the channel number appears in the lower right hand corner of the screen. This easy-to-read display lasts for just a few seconds and disappears automatically.



CT4532A

Contrast Picture Control This Hitachi feature allows the viewer to touch up the contrast, brightness and color simultaneously, even with the Signal Tracker engaged.

CATV/MATV This Hitachi set comes complete with antenna connections providing for a conventional 300 ohm connection and for a 75 ohm connection used for cable television or master antenna distribution systems.

Hitachi's Better Backing 10/2/1 Television Limited Warranty Hitachi's limited warranty covers transistors for 10 years, picture tube and parts (except cabinet and accessories) for 2 years, and 1 full year of free carry-in service (in-home for 19" and larger color TV). For the full provisions of Hitachi's limited warranty on this product, see the warranty sheet which is available upon request at any Hitachi dealer.

CT2550\$759.95

*Local cable companies may require special adaptors for receiving regular or d"premium" programs.

CT4532A 45" PROJECTION TELEVISION

Hitachi 45" Color Television has large 45" diagonal screen — over 3 times larger than a 25" screen. With a picture bright enough for complete, comfortable viewing in a well lighted room.

FEATURES

- 36 Cable* channel capability • High brightness, wide-angle viewing on 45" diagonal screen • Hi-Fi sound from two 5" woofers and two 2" tweeters • Random Access Electronic Tuning w/Infrared Remote Control • Comb filter • Full audio and video input jacks • 10/2/1 Limited Warranty • Signal Tracker System™ • Channel and Time on Screen • Swing-away doors

CT4532A\$2895.95

COMPONENT TV

Hitachi has developed a complete new system. Now you can have a complete component video system that integrates all functions; video tape recorders, video discs, stereo audio systems, games, computers and TV receivers. The CT2020/3020 is the nerve center since it is first a high performance 20"/25" color TV receiver with full function remote control. In addition, a set of jacks on the back and function switches on the front are provided for switching to any of the many video sources.

CT2020W/B 20" COMPONENT TV

FEATURES

- Multi TV Sound Jack • VHF/UHF/69 Cable Channels • Component TV 20" Flat Square Tube • Random Access Electronic Tuning with Infrared Remote Control • Comb Filter • Signal Tracker System • Channel and Time on Screen • Input-Output Jacks Switches from Video Tape to Video Disc to Regular TV

CT2020W Walnut Cabinet\$809.95

CT2020B Black Cabinet809.95

CT3020W/B 25" COMPONENT TV

FEATURES

- Multi TV Sound Jack • 69 Cable Channels • Random Access Electronic Tuning with Infrared Remote Control • Comb Filter • Signal Tracker System • Channel and Time on Screen • Input-Output Jacks Switches Video Tape to Video Disc to Regular TV

CT3020W Walnut Cabinet\$1049.95

CT3020B Black Cabinet1049.95

Prices and Specifications Subject to Change Without Notice.

HUGHES AIRCRAFT COMPANY

Industrial Products Division
6155 El Camino Real, Carlsbad, CA 92008
(619) 931-3000 TWX 910-322-1393

LARGE SCREEN DATA/GRAPHICS PROJECTOR

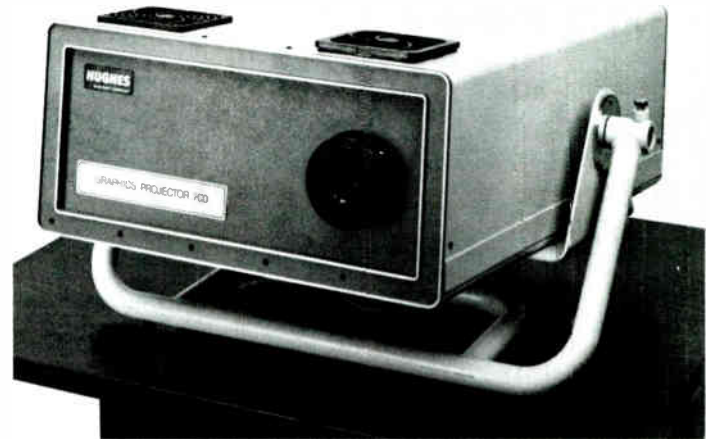
MODEL 700 GRAPHICS PROJECTOR

- High brightness, even in normal room light.
- High resolution.
- Real-time operation.
- Front or rear projection.

The Hughes 700 graphics projector combines high intensity illumination with the exclusive Hughes liquid crystal light valve to generate bright, high resolution, real-time projected displays ranging in size from 12 inches to 12 feet. It displays computer-generated alphanumeric, symbols and graphics in raster scan format. The inherent simplicity of this unique design results in a rugged, durable unit with long life and low maintenance cost.

For:

- Teleconferencing of all types.
- CAD/CAM design conferences.
- Computer assisted instruction.
- Computer training.
- Customer and sales support.
- Command and control.
- Simulation and modeling.
- Situation and status information.
- High resolution facsimile display.
- Graphics and alphanumeric displays for any large meeting.



Projection Mode:	Front or rear, operator selectable.	
Light Output:	Greater than 600 lumens (modulated, total useable area) Open gate: 1100 lumens.	
Display Characteristics:	Dark symbols on light background; operator may select colors, contrast and inverted modes.	
Contrast Ratio:	Greater than 20:1.	
Resolution:	Greater than 1000 TV lines per raster height.	
Input Signal:	Integral circuitry accepts most computer terminal video outputs including U.S. and European raster standards. Either composite video or video with external sync can be used.	
Total Raster Lines:	Field Rate	Interlace
250-625	50-75 Hz	1:1
525-1225	50-75 Hz	2:1
Video Amplifier Response:	30 MHz at 6 dB	
Line Power:	115 V, 1300 watts, 50/60 Hz	
Turn on Time:	Immediate; no warm-up period required.	
Mechanical:	Dimensions 10Hx20Wx27D in. (225Hx510Wx690D mm)	
Lamp Housing:	Pre-aligned modular unit.	
Cooling:	Ambient air fan directed 50°F to 104°F.	
Weight:	100 lbs (45 kg).	

Applications assistance in evaluating proposed uses is available.



IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR MONITORS

9-SERIES COLOR MONITORS — In Line Gun CRT Type

Now, broadcasters have a second line of high-resolution color monitors to choose from; IKEGAMI's 9-Series Color Monitors. Like the RH-Series, these monitors were built to serve the professional. The 9-Series offer you in-line gun CRT's that do away with the bother of always having to adjust the convergence. You'll find the 9-Series easier to maintain with convenient pull-out panels on the front of the monitors. And to put you in step with the 80's, the 9-Series have a new streamlined look coupled with the merit of low power consumption.

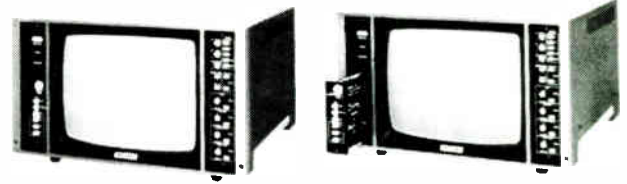
FEATURES

- In Line Electron Gun: The CRT has an in-line electron gun; thus eliminating the need for convergence adjustments.
- High-Resolution CRT: The display produces crisp, precise images because the monitors use a fine-pitch, dot-mask CRT. A black matrix effect is provided on the CRT screen, enabling pictures to be displayed with a high contrast ratio even under bright lights — more than 600 TV lines at center.
- Pulse Cross Circuit: For observing sync signals, a pulse cross circuit with three functions has been included V. DELAY, H. DELAY, and V.H. DELAY
- Protective Circuits: The power supply and high voltage circuits are equipped with excess-current and excess-load protection, to prevent the CRT from being damaged. Sweep failure detection circuits are also utilized for CRT protection
- Signal Generator: Internal cross-hatch signal generator facilitates a convenient means of checking deflection linearity
- Video Input System: A 3 video input system is used with a selector switch located on the front panel
- Signal Demodulation: The IQ standard is used for color signal demodulation; remarkably faithful color signals are reproduced
- Automatic Frequency Phase Control: Extremely accurate color locking is possible with AFPC system
- Keyed Back Porch Clamp System: A keyed back-porch clamp system is used, to prevent black level fluctuation.
- Comb Filter: The monitors have a comb filter for maintaining high-resolution in color images. Color trap/comb filter selection is possible
- Degauss Circuit: Internal degaussing circuit is provided. In addition, the CRT is equipped with a magnetic shield to prevent interference from external magnetic fields.
- Residual Subcarrier Test: A switch is provided for checking if residual subcarrier is present on the incoming signal
- Matrix Switching: A matrix switching circuit is provided to reproduce color similar to a TV receiver or NTSC standard
- Selectable Time Constants: Three types of horizontal-AFC time constants are selectable
- Optional Functions: RGB operation, Switching between RGB and NTSC operation

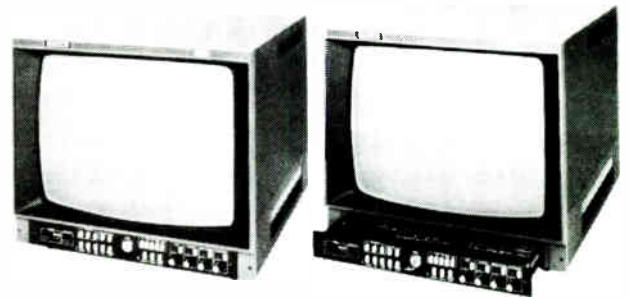
10" SERIES RH MONITORS

The TM10-9RH portable professional color monitor complements Ikegami's broad range of 14" (13V), 20" (19V) and 25" (23V) broadcast color monitors. Using a 10" (8.5V) high resolution shadow mask cathode ray tube with a self-converging in-line gun, the TM10-9RH can be operated from AC or DC Power and is available in cabinet or rackmountable versions. The rackmountable versions are 8-3/4" high and are furnished in single, dual, single with adjacent WFM space or single with adjacent Vectorscope space configurations.

American standard matched phosphors are utilized in NTSC versions of the TM10-9RH. Features including pulse cross, keyed back porch clamp, pre-set contrast/hue/saturation/brightness controls, on-demand degaussing, aperture correction, dual video inputs, sync mode selection, color/monochrome selection, individual electron gun cut-off switches, remote control capability, etc. are standard.



TM14-9RH



TM20-9RH

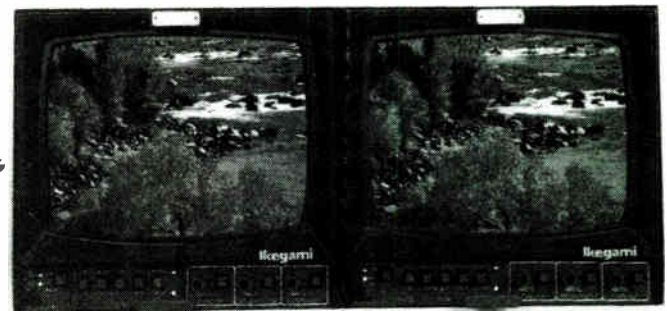
14" and 20" SERIES 9RH MONITORS — In Line Tube

TM14-9RH/N 14" NTSC - Rackmount
(less case and chassis tracks)

TM14-9RH/N/RGB 14" NTSC/RGB Rackmount
(less case and chassis tracks)

TM20-9RH/N 14" NTSC - Rackmount
(less case and chassis tracks)

TM20-9RH/N/RGB 14" NTSC/RGB Rackmount
(less case and chassis tracks)



TM10-9RH

IKEGAMI ELECTRONICS, INC.

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171

COLOR MONITORS

IKEGAMI 10-SERIES HIGH RESOLUTION DELTA GUN COLOR MONITORS

TM14-10RH/TM20-10RH

The 10-Series of high resolution color monitors were developed specifically for higher image quality in TV production and are available in 13V and 19V versions. The high-resolution delta-gun CRT has realized high-resolution, high brightness, and the newly developed convergence circuit greatly facilitates convergence adjustment and operation.

Functions include:

- 3 video inputs each with bridging BNC connectors
- External sync input with a bridging BNC connector
- Pulse cross for examination of horizontal and vertical blanking interval
- Underscan/overscan selection switch
- Switchable AFC time constants for 2 msec, 0.5msec, and 7msec
- Push-button control for degaussing CRT Shadow Mask
- Blue phase verification — The Blue Gun On/Off switch facilitates chroma level and hue adjustments
- Preset controls for contrast, brightness, chroma level, and hue
- Residual sub-carrier verification, for evaluation of input signal condition
- Color/monochrome selection switch, to facilitate white balance adjustment
- Trap/Comb selection switch
- Corrective Matrix permits rotation of color decoding vectors towards NTSC aim points
- Multi-turn potentiometers are used for RGB Background controls, GB Gain control, Preset controls, and Height/Width controls for easy operation
- A tally lamp is provided

19" Rackmountable

TM14-10RH's are available in cabinet or rack configurations occupying 10-1/2" height. The TM20-10RH configurations are available in cabinet or rack configuration occupying 15-3/4" height.

Remote Controls

Video A/B/C
Sync INT/EXT
Color/Monochrome
Tally On/Off
V-VS Control



TM14-10RH



TM20-10RH

Controls found in pull-out drawer

TM14-10RH	TM20-10RH
• Operate-Setup Select	• Height Width (Wide and U-Scan)
• Tally INT/EXT Power Select	• Delay Bright
• Height/Width (Wide and U-Scan)	• Aperture
• H/V Centering	• H/V Centering
• G/B Gain	• Convergence
• R/G/B Background	• R/G/B Background
• Convergence	• G/B Gain
	• Video Front Selector Cross Hatch
	• Video Local or Remote Select
	• AFC Select: 2ms or VAR (0.5ms or 7ms)
	• Residual Subcarrier Verification on/off
	• Trap-Comb Select
	• Operate-Setup Select
	• Matrix In-Out Select
	• Tally INT/EXT Power Select
	• Hue/Chroma/Brightness/Contrast Preset

RH SERIES COLOR MONITORS

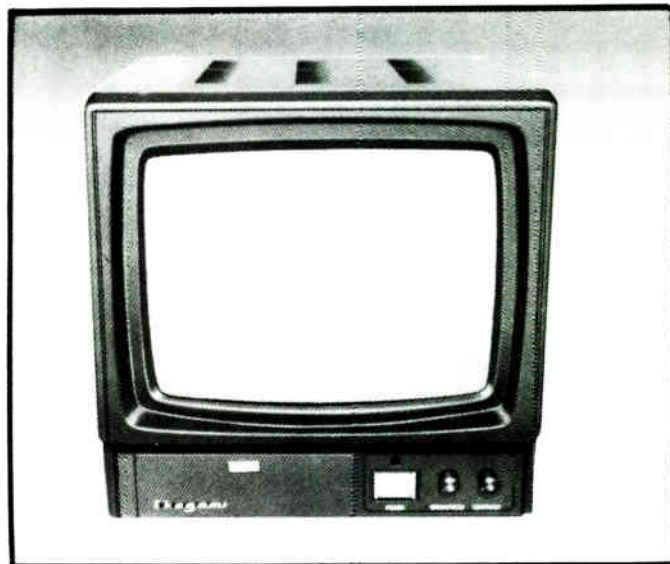
For professional high-quality color reproduction IKEGAMI "RH" Series Color Monitors TM14-2RHA and TM20-8RH.

These two high-resolution color TV monitors are faithfully serving hundreds of satisfied customers around the world where precise color monitoring is an absolute necessity. The comb filter in the decoder, the high-resolution CRT, the excellent stability and durability, and the facilitated maintenance . . . all these merits put the TM14-2RHA and TM20-8RH at the top of their field.

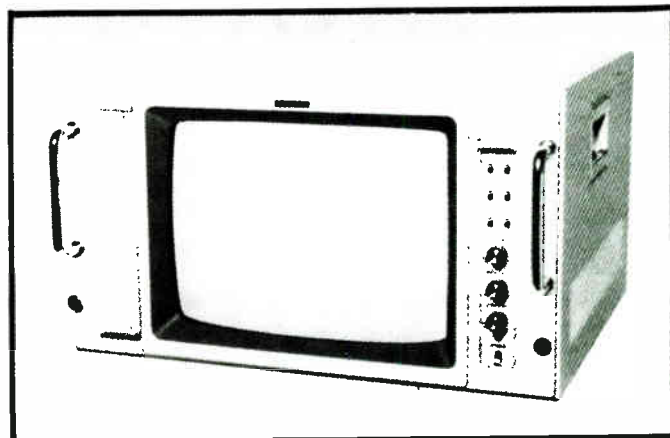
Installable in 19" rack mounts, IKEGAMI "RH" Series Color Monitors are widely applicable for color monitoring from the studio, control room, telecine room to remote O.B. van, and other uses.

FEATURES

- **High resolution CRT**
 High-resolution color cathode ray tube provides bright, clear pictures. Highly condensed dots (dot pitch: 1/2 (TM14-2RHA), 1/1.5 (TM20-8RH) of that of conventional color monitors) promise excellent picture quality — more than 600 TV lines at center.
- **19" rackmount**
 Installable in 19" rackmount by applying chassis tracks.
- **Comb filter**
 A comb filter prevents deterioration of resolution in reproducing color signals. The number of TV lines is more than 600 at the screen center.
- **AFPC system**
 An AFPC (Automatic Frequency Phase Control) system is adopted in the color lock circuit for accurately detecting color phase demodulation and ensuring faithful color reproduction.
- **Pulse cross circuit**
 A pulse cross circuit is contained to facilitate VTR sync signal checking. The vertical delay and horizontal delay can also be effected independently.
- **Sync gate lock system**
 The sync gate lock system in brightness pulse causes no influence on linearity. Also, since picture output is DC-restored by a feedback gate clamp, the black level is stabilized and input signals are always faithfully reproduced.
- **Normal/underscan function**
 A normal/underscan function is provided.
- **Preset brightness/contrast**
 By presetting, the fixed level of brightness and contrast can be gained merely by switching, resulting in easy operation.
- **Remote control**
 Color/monochrome selection, video input selection, sync selection, and black level compensation of setup signal can be remote controlled.
- **Active convergence circuit**
 Adopting an active convergence circuit, screen adjustment has been greatly facilitated.
- **Countdown pulse drive system**
 Employing a countdown pulse drive system in the vertical sync circuit, excellent interlacing is assured, while vertical sync regulation becomes unnecessary.
- **Degauss circuit**
 An incorporated degauss circuit avoids the influence of a magnetic field. Wherever a monitor is installed, by merely operating a switch, any magnetic influence can be shut out.
- **Optional functions**
 1. RGB operation
 2. Switching between RGB and NTSC operation
 3. R-Y and B-Y signal outputs (TM14-2RHA)



TM20-8RH



TM14-2RHA/N

14" and 20" Series 8RH Monitors - Delta Gun Tube

- TM14-2RHA/N. 14" NTSC Rack Mount, Less Case and Chassis Tracks
- TM14-2 RHA/N/RGB. 14" NTSC/RGB Rack Mount, Less Case and Chassis Tracks
- TM20-8RH/N. 20" NTSC, Less Case, Requires T-TM20 for Rack Mounting
- TM20-8RH/N/RGB. 20" NTSC/RGB, Less Case, Requires T-TM20 for Rack Mounting

Optional Accessories for Series RH

- T-TM14. Rack Mount Chassis Tracks for all TM14-2RHA
- T-TM20. Rack Mount Chassis Tracks for all TM20-8RH
- HC-TM14. Case for all TM14-2RHA
- C-TM20. Case for all TM20-8RH

37 Brook Ave.
Maywood, NJ 07607
(201) 368-9171

3-Series Monochrome Monitors

- New, professional monochrome monitor using high-resolution electron gun CRT
- IC and silicon transistor circuitry
- Excellent geometry and linearity
- Horizontal and vertical delay switches
- Underscan switch
- Keyed back-porch clamp system
- Two video inputs
- Modular construction, quick-disconnect circuit boards common to 9" and 14" CRTs
- Remote operation — Tally on/off, video A/B, and sync INT/EXT
- Switchable DC restoration

Ikegami's new 3-Series—the PM9-3H and PM14-3H—are professional monochrome monitors. The 3-Series have been designed to give a studio engineer the equivalent of a fine precision instrument for monitoring important reference pictures. The 3-Series offer superior performance, extremely high quality, and compact construction unmatched by other monochrome monitors. In addition, the 3-Series are built specifically for continuous operation in broadcast television applications.

The 3-Series monitors are a unique blend of high reliability, ease of maintenance, superior picture quality, energy efficiency, and low power consumption. The monitors provide years of service-free use. They employ only the best components. The monitors also incorporate the latest technology, ICs, and silicon transistor circuitry.

The 3-Series monitors have modular circuit boards which can be quickly disconnected for ease of maintenance and operation.

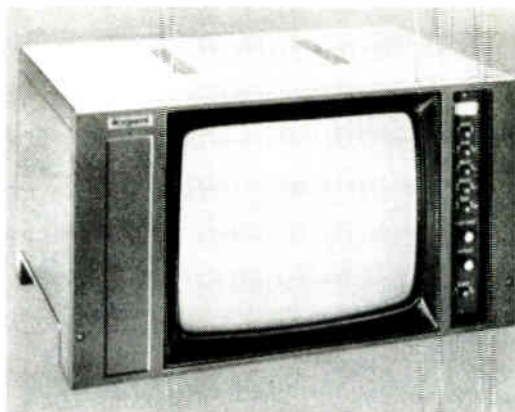
The PM9-3H is a 9" monitor available in a dual rack mount version. Either the left or the right positions can be left blank for insertion of a waveform monitor.

The PM14-3H is a 14" monitor with a cast aluminum front for improved rigidity and appearance. The design of the monitor is compatible with VTR over-console mounting applications. Rack mount versions are also available. Design and styling of the PM14-3H drop-in model are compatible with Ikegami TM14-9RH and TM14-2RHA color monitors. The video drive circuit of the monitors uses a keyed backporch clamp system to prevent black level fluctuations. The monitors also offer differential gain distortion of less than 5% with 30Vp-p of cathode-ray tube drive.

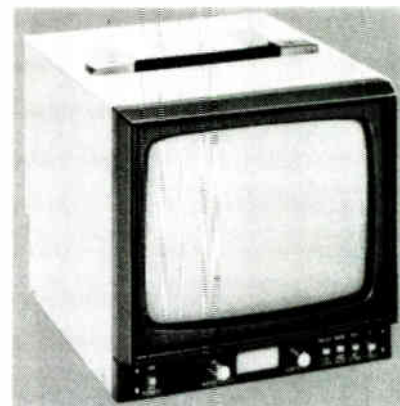
The PM14-3H provides horizontal and vertical delay switches for displaying a pulse cross pattern; the PM9-3H has a single switch for the same function. In this mode, brightness is automatically increased for better observation of the sync pulses.

Other standard features:

- Underscan switch — permits inspection of picture edges
- Tally light
- Two video inputs (A/B)
- 120/240V AC 50/60Hz operation
- EIA or CCIR scanning standards operation



PM14-3H



PM9-3H

Specifications

■ GENERAL

Power	AC 100-120-220-240V ±10% 50-60Hz approx. 30VA
Ambient temperature	15°C ~ +50°C 90% or less relative humidity (non condensing)
External dimensions	PM9-3 222(W) x 213(H) x 285(D) mm PM14-3 483(W) x 265(H) x 340(D) mm
Weight	PM9-3 approx. 7 kg PM14-3 approx. 15 kg
Connectors	Video input — BNC type (2 systems) Sync input — BNC type (1 system) Remote input
Front panel controls	Video A/B Sync INT/EXT H and V delay switches (single switch for PM9-3) Size NOR/WIDE Contrast Brightness Power ON/OFF

■ RATING

Input signal	2 video inputs 1 sync input
Input level	Video signal VS 1.0Vp-p or (±) 7Vp-p positive Sync signal 1~4Vp-p
Input impedance	Video input High impedance. Bridge connection (Return loss 40dB (100Hz~4.2MHz)) Sync input High impedance. Bridge connection (Return loss 40dB (5MHz))
Output level CRT	30Vp-p (at CRT drive voltage) PM9-3 230BTB4 PM14-3 340BK84
Phosphor colorimetry	P4 phosphor, 9300 K
Operation	continuous
Video display screen	NOR/UNDER switching system pulse cross circuit provided

■ PERFORMANCE

Mechanical vibration	No disturbance picture by shock, i.e. microphonic, etc., when dropped spontaneously from 50mm height
Resolution	Center More than 600TV Lines Corner More than 500TV Lines
Power voltage fluctuation	Should the power voltage fluctuates in the range of ±10% against the rated input voltage, monitor is operated stable and picture quality does not deteriorate

■ VIDEO CIRCUIT

Max. gain	Max. contrast More than 34dB
Frequency response	100kHz reference. 60Hz~8MHz +3dB (at 30Vp-p of output level)
Waveform	(When square wave of rise time (t _r) 0.05μsec is supplied at video input connector.) Rise time 250kHz, Less than 0.1μsec Overshoot 250kHz, Less than 8% Sag 60Hz, Less than 5% Less than 5% DG (at rated output 30Vp-p)
Linearity	
Noise	Coherent noise -46dB Hum noise -55dB Others -55dB (except blanking period) Aboves measured at output terminal in condition of terminating video input 75Ω and contrast VR maximum

■ DEFLECTION CIRCUIT

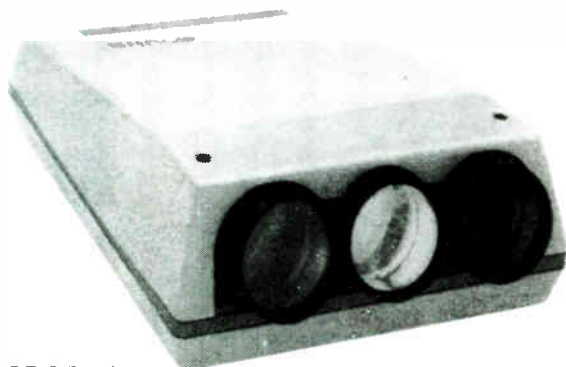
Sync stability	The stability of operation shall be met for the following conditions (1) Internal sync a Video input level changed against rated value. -10dB b For video amplitude changes of 4) to 120% and sync levels greater than -6dB (0.15 to 0.3V sync) (2) External sync Sync signal input level 1~4Vp-p
Horizontal AFC time constant	Approx. 2msec
Deflection distortion: High voltage circuit	less than 2% of picture height
(1) High voltage:	12kV
(2) High voltage fluctuation:	±2% in range of 0~350μA as 100μA reference

INFLIGHT SERVICES, INC.

485 Madison Avenue
New York, NY 10022
(212) 751-1800
Telex 126872 (800) 221-1297

BARCODATA VIDEO PROJECTION SYSTEM

Exclusive Distributors of all Barco/Barcodata Video Projectors in the Western Hemisphere.



BARCODATA 32 THREE-LENS REFRACTIVE OPTICS

Special Features

- Registration: 13-zone (1%).
- Accepts positive or negative logic.
- Horizontal syncs delay.
- High/low intensity.
- Improved computer blue resolution (green in blue ratio adjustable from 0 to 50%).
- Scanning rates: NTSC (525 lines, 60 field), CCIR (625 lines, 50 field).
- Horizontal: 15625-17500 (standard frequency); 16500-32000 (second frequency).
- Vertical: 50/60 Hz automatic adjustable up to 100 Hz (standard frequency); 60-100 Hz (second frequency).
- Interlaced or non-interlaced syncs.
- Self-diagnostic indicators.
- Keystone correction: $\pm 25^\circ$.

General Characteristics

- Model and Type: BARCODATA three-lens refractive optics.
- Video Format: Multi-standard—PAL, SECAM, NTSC 3.58, NTSC 4.43. Automatic sense and display.
- Size: 9.25" x 22.25" wide x 32.6" long.
- Light Weight: 81.5 lbs.
- Power Requirements: 110 VAC/220 VAC, + 10% -15%. Frequency independent 40 Hz to 100 Hz.
- Power Consumption: 250W maximum.

Optical Characteristics

- Light Output: maximum 450 lumens.
- Minimum Screen Size: 3' x 4'.
- Maximum Screen Size: Using Delta II-D lenses 6' x 8'. If Delta II-M lenses are used it will enlarge to 18' x 24'.
- Geometrical: Error measured horizontally and vertically $\pm 1\%$.
- Throw Distance: 1.5X screen width.
- Screen Application: Front or rear projection. Flat or curved screen (Flat screen—180° viewing angle without loss of brightness).
- Simplified Scan Reversal: Capable of ceiling, floor and rear-screen applications.

System Controls

Local

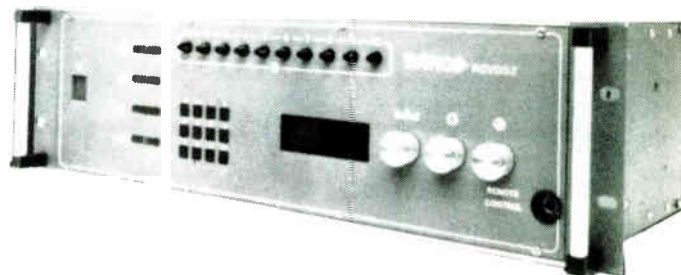
- 9-zone registration; focus—red, green, blue; tube cut-off switch—red, green, blue G2 voltage—red, green, blue; contrast; brightness; color; tint (NTSC mode only); decoder (NTSC 3.58/NTSC 4.43); video/RGB; fast/slow sync select (for VCR use).

Remote: (up to 300 feet).

- Controls on Remote Control Box: Brightness contrast, saturation and hue controls; switch for following modes: RGB Analog (S on green); RGB TTL; RGB Analog external S; video; (NTSC mode only); decoder (NTSC 3.58/NTSC 4.43); fast/slow sync select (for VCR use).

Vertical and horizontal scanning frequencies; standard and adjustable frequencies select.

List Price \$16,465.00 FOB,NY



"THE SWITCHER" VIDEO AND DATA SOURCE SELECTOR

FEATURES

- Especially designed for use with the BARCODATA projector offering a standard video and data frequency range (from 15kHz to 32kHz).
- Completely modular design adaptable to your needs.
- Accepts up to 10 plug-in input modules in any combination between Composite Video, RGB TTL and RGB Analog.
- Immediate remote controlled access to any input.
- Preset contrast level and picture positioning (phase) for each input.
- 19" rack compatible, 3 units height.

The Video and Data Source Selector is a tailor made solution offering immediate remote controlled access for up to 10 different sources (Video, RGB, TTL, RGB Analog) connected to the BARCODATA.

INPUTS

Composite Video

Video: BNC
Audio: DIN (stereo)

RGB TTL

D9 connector

RGB Analog

4 x BNC for RGB Sync.

Each input module can be plugged into every input slot. The BARCODATA is given all information to adapt to the corresponding input. An internal power supply provides the necessary voltage + 18 V and + 5 V.

OUTPUTS

Composite Video

Video: BNC
Audio: DIN (stereo)

RGB TTL

D9 connector

RGB Analog

4 x BNC for RGB sync.

List Price \$1,429.00 FOB,NY

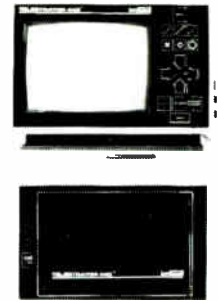
Prices and Specifications Subject to Change Without Notice.

VM-53

INTERAND CORPORATION

3200 West Peterson Avenue
Chicago, IL 60659
(312) 478-1700
Telex 91022-15279-INTERANDCO CGO

INTERACTIVE IMAGE COMMUNICATIONS SYSTEMS



DISCON® 1000 Integrated Videographic Teleconferencing System Camera Station/Control Center

DISCON 1000 is the most powerful member of the DISCON family. A fully integrated videographic teleconferencing system, DISCON 1000 offers all features inherent in other DISCON systems and more. Using ordinary telephone lines, users can touch a stylus to the DISCON Interactive Graphics Display to transmit and annotate any image that can be captured by a video camera or created by a video compatible professional computer. DISCON 1000 is the ideal communications tool for decision-making, problem solving, crisis management, and education.

DISCON 1000 provides a 19-inch interactive graphics display, separate video outputs for operator and audience, the ability to have two separate FastScan** transceivers, and substantial expansion capability. A typical DISCON 1000 configuration includes a Document Station and Control Center. Custom features, packaging, operating software, and room design are available.

The Control Center mounted graphics processor features multi-point communications controller, digitizing sensor surface with switching control for video input and output, seven color graphics option and color background image displayed on 19" RGB monitor.

DISCON 1000 Control Center \$62,000.00

The Camera Station includes viewfinder monitor, bogan lighting (high resolution color camera is extra).

DISCON 1000 Camera Station \$2,825.00

DISCON® 725 Compact Videographic Teleconferencing System

DISCON 725 is a compact, modular, integrated teleconferencing system designed for the small conference room, desktop, or even the plant floor. DISCON 725 combines the full-color, high resolution transceiver capabilities of FastScan™ with the seven color annotation capabilities of the DISCON 500.

Any image that can be captured by a video camera or created by a video compatible professional computer can be shared by decision-makers at remote locations. With a touch of the stylus to the DISCON Interactive Graphics Display, users can draw directly onto the video image and instantly transmit graphics over ordinary telephone lines. The DISCON display can also be used as a color display terminal for a professional computer.

DISCON 725 \$44,000.00

DISCON® 500 Videographic Annotation System

The DISCON 500 is designed to operate in conjunction with a customer's own pre-installed freeze-frame video conferencing system and provides the same interactive graphics capability as the DISCON 1000. It also operates as a stand-alone audiographics system utilizing the same unique color and symbol characteristics as described with the DISCON 1000. The DISCON 500 consists of a display unit including a stylus-controlled sensor surface, a color monitor and an electronic microprocessor module. While the DISCON 500 does not provide error correction and network control of the background images supplied by the customer's freeze-frame system, it does retain

these features for the superimposed graphics which conference participants add to such images. The DISCON 500 offers the same ability to annotate in multiple colors and symbols as the DISCON 1000. The DISCON 500 can also be used as an "electronic blackboard" in which there is no background image. Principal blackboard applications are expected to be in tele-teaching and as an added component to ordinary voice-only telephone conferences.

NTSC System \$23,300.00
PAL System 24,800.00

TELESTRATOR® 440

The Model 440 includes all of the Model 100 capabilities plus an ability to work in seven colors. The 440 also permits the use of a large number of standard and custom symbols for specialties, such as sports, weather, current events and business news, together with many other functions, such as automatic straight line-connect, automatically sized and shaped rectangles, and other drafting aids. In addition, Model 440 can be supplied with custom software capable of producing animated effects. This system is designed for pre- and post-production settings, as well as for "on-air" use.

FEATURES

- 13-inch diagonal color monitor • Stylus selection of modes and symbols • Symbol and mode indication in upper right corner of screen on Local display only • Local stylus-selectable crosshair for exact stylus positioning • Moving symbol mode ("write-thru" cursor) • Eraser with exact-size symbol • Adjustment-free stylus calibration • Digital accuracy and repeatability • Color options • Variable symbol size option • Variable symbol orientation option • Symbol animation option • Customized menu selection with personality modules • Remote control options • High resolution (1024 x 480) for smooth graphics

Basic System including 12 customer-specified standard symbols and expansion capability.

NTSC System \$19,600.00
PAL System 20,600.00

TELESTRATOR® 100 Monochrome Graphics (colorizable)

The TELESTRATOR systems allow television commentators and others communicating with video audiences to instantly add explanatory markings, annotations and symbols to live scenes, instant replays and pre-recorded video materials. The Model 100 is a simple to operate monochrome system that is a natural for use during live coverage of events, i.e., news, sports, presentations.

FEATURES

- 13-inch diagonal color monitor • All symbol and mode selection by stylus • Symbol and mode indication in upper-right corner of screen on Local display only • Local crosshair (stylus selectable) for exact stylus positioning • "Write-thru" cursor mode—moving symbol • Eraser with exact size symbol • Automatic stylus calibration—no adjustments required • Digital accuracy and repeatability • High resolution (1024 x 480) for smooth graphics

Complete NTSC (525 line, 60Hz) system \$13,500.00
Complete PAL (625 line, 50Hz) system 14,500.00

JENSEN SOUND LABORATORIES

4136 North United Parkway
Schiller Park, IL 60176
(312) 671-5680 (800) 323-0707

AUDIO/VIDEO COMPONENTS

AVS-3250 Video Monitor

Jensen Video Monitors are designed to provide color image reproduction usually found only in the professional studio. The precise definition and brilliant picture of the 25" Jensen Video Monitors are the result of uncompromising quality in every detail of engineering and manufacture. High technology active circuitry stabilizes the picture, while a comb filter is employed to enhance luminance and resolution. Color and image balance for key video parameters can be controlled by preset circuitry or manually varied. Offered in true monitor format, without audio or tuner circuitry, this monitor provides the maximum flexibility for use in video or personal computer applications.

AVS-3250 \$890.00

AVS-5250 Speaker System

Jensen's Audio + Video Speaker Systems embody the latest in loud-speaker technology and design. A specially designed low frequency system consisting of a 5-1/4", polypropylene cone driver along with a passive radiator produces bass response normally found only in the most sophisticated audio systems. Brilliant high frequency performance is ensured by the 1" soft dome driver with high energy samarium cobalt magnets. All driver magnetic structures are specially shielded to prevent interference with the operation of video monitors or television receivers.

AVS-5250 \$230.00/pr.

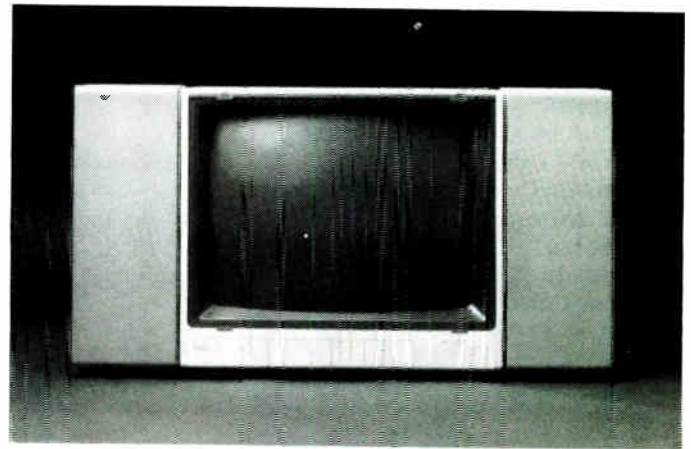
AVS-6200 Hi-Fi Stereo Videocassette Recorder (VHS)

GENERAL FEATURES

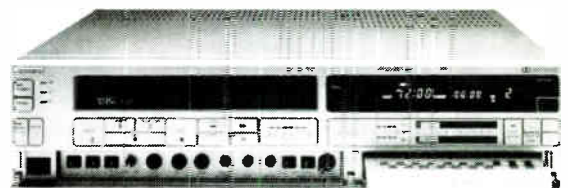
- 139-channel, cable-ready frequency synthesizer tuning with remote control channel selection and switchable automatic frequency control
- Wireless infrared remote control with all primary functions and direct access channel selection
- 8-event/14-day programmable recording with clock/timer featuring repeat function, tape speed selection and backup power for memory/clock functions
- 4-digit electronic tape counter/time remaining indicator for record and playback modes
- Instant record/sleep timer feature for recording up to 4 hours and 59 minutes
- Tape search using counter memory or auto-encoded cue signal detection for locating the start of desired programs
- Insert editing capability on video, Hi-Fi and selectable normal audio tracks
- Up to eight hours of continuous audio + video or audio-only recording
- Microprocessor-controlled tape transport with feather-touch operation
- Display dimmer switch
- Quartz-locked, direct drive head drum and capstan motors. Assures precise speed accuracy with low wow and flutter
- RF output for connecting AVS 6200 to TV (channel 3 or 4)
- Multi-pin input connector for remote video camera
- Rear panel AC outlet (unswitched)

VIDEO FEATURES

- Double-gap integrated 4-head configuration. Delivers high quality video recording and playback in normal and special effects modes
- Noise-free field-still, frame advance and slow-motion playback
- Dynamic Aperture Control (DAC) switch. Assures increased picture clarity
- High video signal-to-noise ratio (greater than 45dB). Provides improved picture quality



AVS-3250 VIDEO MONITOR w/AVS-5250 SPEAKERS



AVS-6200 HI-FI STEREO VCR

- Horizontal resolution at 240 lines. Delivers better image sharpness
- 8-speed tape transport with forward search and reverse speeds (1/40, 1/20, 1/10, 1/5, 1X, 3X, and 7X normal speed)
- Three playback speeds (SP, LP, and EP)
- Two recording speeds (SP, EP)
- Automatic backspace recording. Provides smoother transitions between scenes
- Normal and slow tracking controls
- Picture sharpness control

AUDIO FEATURES

- AFM (audio frequency modulation). Assures high fidelity, low noise, wide dynamic range audio recording and playback
- Dolby®B noise reduction for stereo normal recording and playback (compatible with conventional VHS equipment)
- Stereo simulcast recording capability
- Audio limiter. Automatically adjusts recording levels on normal and Hi-Fi tracks (switchable on Hi-Fi track)
- Two separate stereo audio outputs: Hi-Fi only, Hi-Fi/normal (mixed output, continuously variable from front panel)
- LED recording level and peak level indicators
- Stereo headphone jack for private monitoring of Hi-Fi, normal or mixed audio outputs
- Audio dubbing on normal tracks with separate left and right channel MIC inputs

AVS-6200 \$1399.00

PORTABLE BRIEFCASE SYSTEM TBR-160U

JVC®

FEATURES

- Custom Attache Case Housing — 18-1/4"H x 14"W x 6-1/2"D
- Built-In Compartment for Literature, Notes, Pens, etc.
- BR-1600U VHS Videocassette Recorder
- TM-63U 5" Color Monitor
- Self-Contained Battery Power



TBR-160U

TBR-160U VHS PRESENTATION SYSTEM

A complete VHS video system in a briefcase, the TBR-160U is ideal for sales presentations, training programs — any one-on-one video application. The TBR-160U consists of a super-small VHS recorder (BR-1600U) and a 5" color monitor (TM-63U), battery system and accessories — all wired and ready to go in an attractive briefcase.

Compact 2-6 Hour VHS Recorder/Player.

The BR-1600U is the smallest and lightest 2-6 hour videocassette recorder JVC has ever offered. It uses standard VHS cassettes (available everywhere) and can playback tapes recorded in the 2, 4, or 6 hour modes. Its 4 video heads assure top picture quality. Connections are provided for not only the system's 5" monitor, but also for an ordinary TV receiver. A plug-in remote control is also included.

5" Color Monitor. As a compliment to the compact video deck, JVC engineers developed a companion monitor that is not only compact in size, but has excellent picture quality. The TM-63U monitor contains a flat-surface 5" (diagonal) in-line picture tube for high resolution and vivid, true-to-life colors. Audio signals are reproduced clearly through a built-in 3-1/8" speaker.

Exclusive Power System. One key to the convenience of JVC's new briefcase system is the exclusive power pack which supplies power to both the VCR and to the monitor. Termed the BBTR-160U, this 2 ampere hour NiCad pack is designed to power both units for about 1 hour continuously, before recharging. A micro charger is supplied with the system. In addition, an optional AC adaptor (AA-P1663U) is also available.

Attractive Briefcase. All components are housed in an attractive briefcase. Also there's a compartment provided which is designed for papers, literature, etc. All necessary cables are provided, and the system is fully wired and ready to go.

Provided Accessories

BR-1600U Portable VHS recorder/player; TM-63U 5" Color Monitor; BBTR-160U Power system including: BB-16 NiCad battery, CB-16 Battery charger, SSB-16 Shoe Cable Adaptor, CN-100U Cable Assembly (RCA-RCA); ATTAC-10 Briefcase

PRICING/ACCESSORIES		Suggested List Price
TBR-160U	Portable Briefcase System	\$1620.00
TBR-160AC	Portable Briefcase System (AC version — includes AC Adaptor instead of DC Battery System)	1440.00
BBTR-160U	Rechargeable Battery System for TBR-160U	300.00
AA-P1663U	AC Adaptor for TBR-160U	120.00

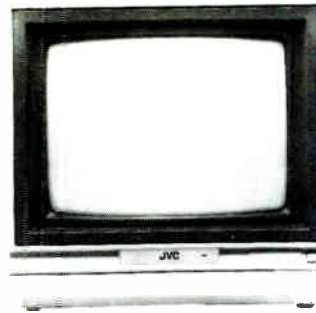
COLOR MONITORS

JVC

TM-13U COLOR MONITOR

13" diagonal screen; 90° deflection angle; Audio input; Ideal for video networking and internal communications systems; Attractive tan metal housing; Concealed front panel controls with pushbutton On/Off switch; Rack mountable

Suggested List Price \$360.00

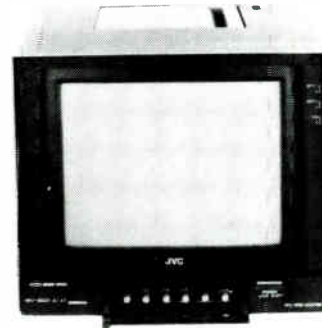


TM-13U

TM-90U 9" COLOR VIDEO MONITOR/RGB COMPUTER DISPLAY

9" flat-face, in-line, sharp-corner picture tube; RGB input terminals (TTL) for connection to personal computer; 2-way audio/video input and bridged output connectors; BNC, EIAJ 8-pin video connectors; 8-cm round speaker on top; Compact metal shield cabinet — smallest 9" color monitor available

Suggested List Price \$500.00

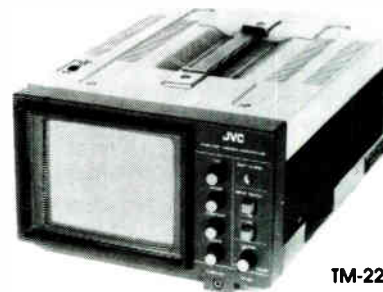


TM-90U

TM-22U 5" PORTABLE COLOR VIDEO MONITOR

In-line black stripe picture tube capable of accurate, well-defined color reproduction; Flexible AC/DC power supply — household AC or built-in exclusive rechargeable NB-P1 NiCad battery pack — enabling both indoor or outdoor use; Built-in speaker enabling simultaneous audio and video monitoring; Dual circuits provided for audio and video signals; 5" Diagonal AC Battery powered Color Monitor includes Hood, Power Cord, Earphone

		Suggested List Price
TM-22U	5" Portable Color Video Monitor	\$410.00
NBP-1U	NiCad Battery	75.00



TM-22U

TM-63U 5" PORTABLE COLOR VIDEO MONITOR

Compact size — ideal for sales presentations, promotions, etc.; Hidden Control Panel; Loop-thru video/audio input; Built-in audio with speaker; 12V DC Power Requirement

		Suggested List Price
TM-63U	5" Portable Color Video Monitor	\$415.00
AA-63B	AC Adaptor	45.00



TM-63U

JVC COMPANY OF AMERICA, Professional Video Communications Division, 41 Slater Drive, Elmwood Park, NJ 07407

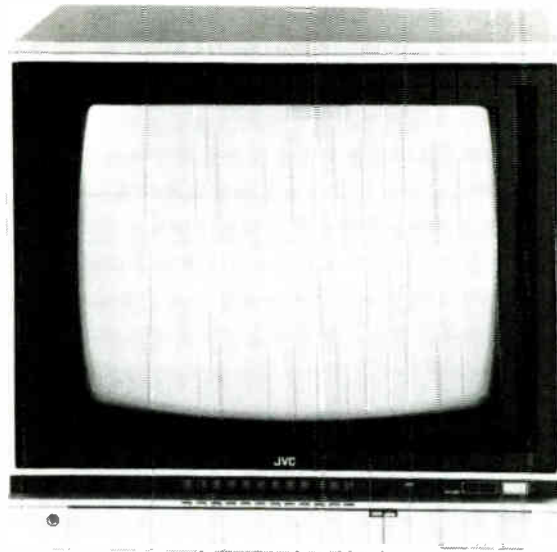
(201) 794-3900 (800) JVC-5825 VM-57

COLOR VIDEO MONITOR/RECEIVER C-2082UM

JVC®

FEATURES

- 19" Diagonal Color Monitor/Receiver
- Comb Filter for Improved Color and Detail
- Dual Audio Channels
- Skew Control
- VC-202U Monitor Cable Included



C-2082UM

C-2082UM 19" VIDEO MONITOR/ RECEIVER WITH STEREO SOUND

To separate the chrominance and luminance components, an improved comb filter is used — this results in better color and finer detail. With video signals, the C-2082UM has a maximum resolution of 350 lines, and with broadcast signals its maximum resolution is 330 lines.

Dual audio channels make the C-2082UM ideal for use with a VCR equipped with stereo sound. External speaker terminals are provided for the connection of a pair of component-quality speakers to make the most of the improved 2-channel audio amplification circuit; a switch is provided which allows switching between these external speakers and the built-in speakers.

And being a receiver, direct tuning of VHF and UHF broadcast frequencies is possible with 12 preset stations selectable by pushbutton tuning. Front panel controls are provided for switching between the sources connected to the three rear sets and one front panel set of video and audio jacks.

BNC connectors are used for the connection of video components, and a standard 8-pin input/output connector is provided for the connection of an additional VCR. The video and audio signals of the channel to which the C-2082UM is tuned are output from this terminal as well as from the TV Out Jack

A unique skew control is provided; this is to eliminate the distortion at the top of the picture which sometimes occurs when a stretched video tape is played back.

The two pairs of connectors are each linked for the bridge connection of video components; input and output components can be connected to either of each pair of connectors.

For convenience when working with monochrome video signals, color can be switched off.

Suggested List Price \$795.00

SPECIFICATIONS

Type:

Color Video Monitor/Receiver

Reception System:

NTSC system

Channel Coverage:

VHF 2 ~ 13
UHF 14 ~ 83
(twelve channel preset system)

Power Input:

AC 120V, 60Hz

Power Consumption:

Max. 110W; Avg. 83W

CRT Dimensions:

19" diagonally measured

Semiconductors:

ICs: 21

Transistors: 72

Audio Output:

Built-in speakers/3W + 3W
External speakers/5W + 5W

Speakers:

4" (10cm) round type x 2 ea.

Antenna Terminal:

VHF terminal (75 ohms), F-type connecting plug UHF terminal

External Speaker Terminal:

Impedance/8 ohms

Exterior Dimensions:

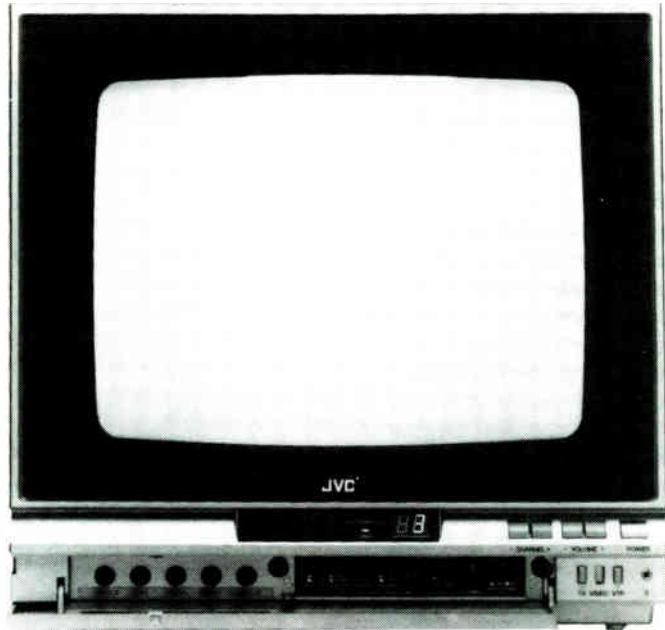
Width 21-1/4" (53.7cm)
30-1/2" (77.3cm) with reflectors opened to the maximum position.
Depth 19-1/2" (49.3cm)
Height 19-3/4" (49.9cm) including legs

Weight:

56.1 lbs. (25.5kg)



COLOR VIDEO MONITOR/RECEIVER C-1483UM



C-1483UM

FEATURES

- Modern, Professional Styling
- Wireless Remote Control with Volume, Channel Select, Power On/Off
- High Focus II CRT
- Comb Filter
- Electronic Tuner
- 8-Pin EIAJ Input
- BNC Video Input (Loop-Thru)

C-1483UM COLOR VIDEO MONITOR/RECEIVER

The C-1483UM is designed for use by institutions and videophiles who require more features, reliability and higher resolution pictures than those offered by a regular TV. It has an electronic VHF/UHF tuner, so 83 channels can be received and it has input/output and audio/video terminals for the connection in a comprehensive audio/video system. Features that add to its cost/performance are its improved resolution comb filter, digital display of channel and audio level and its full-function remote control, provided for ease of operation which is particularly useful when used in a visual training setup.

Newly-Developed U Mark-IV Chassis uses the high-density circuitry making possible compact styling, a lower power consumption and longer service life.

Comb Filter Resolution of 330 lines with video signals and 300 lines with broadcast signals for better color and finer detail.

83-Channel Electronic VHF/UHF Tuner with scan tuning from the remote control or front panel; 12 channels can be preset for direct tuning via the remote control.

Two Input BNC Connectors (each linked for the bridge connection) are available for the connection of video components, and an 8-pin EIA VTR socket is provided for the playback and recording of an additional VCR. The mode select buttons (TV, VIDEO or VTR) are provided on the front panel. The signal selected by the mode button is always output at the LINE OUT terminal on the rear panel for easy editing/dubbing/mixture of video sources.

Remote Control enables direct channel selection or scan tuning; it also makes possible volume control and instantaneous muting.

Front Panel Digital Display of channel and audio volume.

Superior Sound with improved audio circuit and 3" diameter circular speaker.



Suggested List Price \$590.00

SPECIFICATIONS

Type:
Color Monitor/Receiver

Reception System:
NTSC System

Channel Coverage:
VHF 2 - 13, UHF 14 - 83

Power Input:
AC 120V, 60Hz

Power Consumption:
AVG. 68W, MAX. 85W

CRT Dimensions:
13" Diagonally Measured

Video Input (EXT IN):
Video/1.0 Vp-p 75 ohms
Audio/390 mV rms (-6dBs)
High Impedance

VTR (EIA 8-Pin):
Input: Video/1.0 Vp-p 75 ohms
Audio/775 mV rms (0dBs)
High Impedance
Output: Video/1.0 Vp-p 75 ohms
Audio/150 mV rms (-14 dBs)
Low Impedance (at 50% mod.)

Line Output:
Video/1.0 Vp-p 75 ohms
Audio/150 mV rms (-4dBs)
Low Impedance (at 50% mod.)

Exterior Dimensions:
Width 14-3/4" (37.3 cm)
Depth 16-1/8" (40.9 cm)
Height 14-3/8" (36.3 cm) including legs

Weight:
25.6 lbs. (11.6 kg)

Accessories:
Remote control unit x 1
AAA-size dry cell batteries x 2
Channel sheet for remote control unit x 1

COLOR VIDEO MONITOR TM-R9U

JVC®

FEATURES

- Two Selectable Video Inputs
- Internal/External Sync, Comb Filter
- Underscan, Pulse Cross
- Blue Check Switch
- Tally Lamp
- Remote Control of Front Panel Switches
- AC or 12/24 VDC Power Supply
- .47mm Dot Pitch In-Line Picture Tube
- Carrying Handle
- Double Rack Mount Option



TM-R9U



TM-R9U 9" COLOR MONITOR

The TM-R9U is a multi-purpose monitor designed for a wide variety of applications and suitable for use in even the most demanding broadcast environments. Whether in a rack mount studio installation, or in a portable configuration, the TM-R9U offers the features that professionals demand in a high-performance, modestly priced monitor.

Excellent Picture Quality. A newly-developed color demodulator and comb filter provide accurate color reproduction along with excellent definition. The TM-R9U boasts a high resolution of more than 310 lines. Variations in black level are suppressed by a pedestal clamp system.

Dual Video Inputs, Sync Input. Separate loop-thru video inputs/outputs are provided for two separate video sources. These may be switched either from the front panel, or from an external remote control switch (customer provided) connected to the remote terminal on the rear panel.

A loop-thru input is also provided for Ext Sync. Termination (75 ohm) are provided for all loop-thru inputs.

Pulse Cross, Under Scan, Blue Check.

The pulse cross switch shifts sync phase so that the blanking portions of the video signal (horizontal and vertical) can be viewed on the screen.

For more accurate monitoring, the scan size can be switched to the underscan mode — either from the front panel, or by remote control. In addition, a blue check circuit facilitates adjustment with a color bar signal.

Metal Cabinet, Compact Size, Rack Mount.

The TM-R9U is the most compact 9" studio-type monitor offered to date. It is housed in a rugged, metal cabinet which can be mounted in a standard 19" rack, using the optional RK9U rack mount kit. With this kit, two TM-R9Us can be mounted side by side, or one TM-R9U can be mounted next to a waveform monitor (by adding the ADP9U adaptor).

PRICING/ACCESSORIES		Suggested List Price
TM-R9U	9" Color Monitor	\$700.00
RK-9U	Rack Mount Kit for TM-R9U Monitor.....	120.00
ADP-9U	RK-9U Adaptor for Waveform Monitor	95.00

SPECIFICATIONS

Input Signal:

Video x 2: VS 1.0V p-p or V 0.7V p-p (positive). Audio x 2: S 1-4V p-p or VS 1.0V p-p

Input Impedance:

Video signal: 75 ohm or high impedance (switchable)
External sync: 75 ohm or high impedance (switchable)

CRT:

9" stripe flat-face sharp-corner medium-high resolution tube

Active Screen Size:

Horizontal 173 (6-13/16")
Vertical 136 (5-3/8")

Power Supply:

AC 120V, 60Hz;
33W (typical) DC 12V/24V;
26W (typical)

Dimensions:

8-13/16"W x 8-3/4"H x 13-5/16"D
(223 x 222 x 348mm) (except rubber stand, connectors and power plug)

Weight:

23 8 lbs. (10.8kg)

Resolution:

More than 310 lines at center

Frequency Response:

Up to 5MHz more than -3dB with 100kHz as reference (including aperture correction)

S/N:

Better than 50dB (except sync noise)

FEATURES

- 350 Line Resolution
- Comb Filter
- Two Video Inputs (loop-through)
- 8-Pin EIAJ & BNC Connectors
- 4" Round Speaker (1 channel)

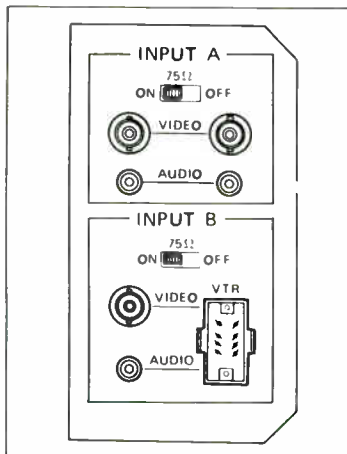


TM-2084U

TM-2084U

19" COLOR VIDEO MONITOR

People are increasingly using 1/2" video-cassette recorders for applications in which only a few years ago they would have used 3/4" U-format equipment; this is because of the ease of use of 1/2" recorders and the wide range of applications that they are suitable for, achieved with lower running cost and no loss in signal quality. However, the new high-quality multi-function 1/2" equipment uses connectors with a different standard; this is why JVC has developed the TM-2084U, a high-performance 19" video monitor with BNC as well as 8-pin EIAJ input terminals.



A special comb filter. Provided in the TM-2084U to separate the chrominance and luminance components more fully for greater detail and better color than a conventional monitor

Two pairs of bridge-connected video input terminals. One pair with BNC terminals and one pair consisting of a BNC terminal for output and an 8-pin EIAJ exclusively for input. Selection between the sources is done using front-panel pushbuttons with LED indicators showing which input is being used

Bridge-connection of video component. Using both pairs of terminals is possible, with switchable 75 ohm terminal resistors built into the TM-2084U; this is convenient, making it possible to connect to a multi-monitor system

Controls are provided. For adjustment of picture sharpness, color density and tint as well as brightness, contrast and V-hold

SPECIFICATIONS

Type:

Color Video Monitor

Color System:

NTSC system

Power Input:

AC 120V, 60Hz

Power Consumption:

Max. 108W; Avg. 82W

CRT Dimensions:

19" diagonally measured

Audio Output:

3W

Speaker:

4" (10cm) round type x 1

Input A Terminal:

Video terminal (BNC-type) x 2
Signal level/1.0V p-p, 75 ohms

Audio terminal (RCA-type) x 2
Signal level/390 mV rms
(-6dBs), high impedance

Input B Terminal:

Video terminal (BNC-type) x 1
Signal level/1.0V p-p, 75 ohms

Audio terminal (RCA-type) x 1
Signal level/390 mV rms
(-6dBs), high impedance

VTR terminal (EIAJ 8-pin) x 1

Video signal level/1.0V p-p, 75 ohms
Audio signal level/775 mV rms
(0dBs), high impedance

Exterior Dimensions:

Width 20-5/8" (52.2cm)

Depth 19-1/4" (48.8cm)

Height 19-1/8" (48.3cm) including legs

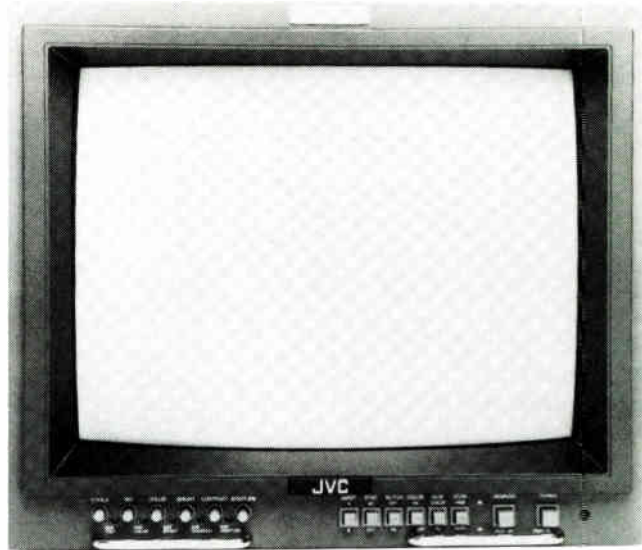
Weight:

53.1 lbs. (24.1kg)

Suggested List Price \$675.00

FEATURES

- 14" Flat Face, In-Line Sharp Corner Picture Tube
- 2 Composite Video Inputs (BNC Loop Thru)
- Separate RGB Analog Inputs (BNC Loop Thru)
- Under Scan
- Notch Filter with On/Off Switch
- Internal/External Sync
- Color/B & W Switch
- 400 Line Horizontal Resolution
- Remote Control Function
- Tally Light on Front Panel
- Degaussing Switch on Front Panel
- Comb Filter
- Metal Cabinet (Rack Mount Option)



TM-R14U

TM-R14U 14" COLOR VIDEO MONITOR

The TM-R14U is a compact, high quality multi-function color video monitor designed for a wide variety of broadcast and professional applications. It's two composite video inputs and RGB analog inputs allow it to be connected to almost any video installation.

Excellent Picture Quality. The TM-R14U utilizes a flat face, in-line sharp corner CRT with a dot pitch of 0.43mm for exceptional resolution. Picture sharpness is further assured through the use of a high quality comb filter which separates luminance and chrominance components. A notch filter (switchable) effectively eliminates chrominance interference, thus further improving picture quality. Horizontal resolution is greater than 400 TV lines.

RGB And Composite Video Inputs. Two pairs of loop-thru composite video inputs are provided, each with 75 ohm termination switches. In addition, non-composite analog inputs are provided for the individual red, green, and blue channels using BNC connectors. Signals from many graphics units and three-tube color cameras may be connected to the RGB inputs. When viewing composite video signals, the color circuits can be de-selected with the Color/B & W switch.

Internal/External Sync. A BNC connector is provided for an external sync signal. (External sync must be used in the RGB mode.) Switching between internal and external sync can be done either from the front panel, or remote control (not included).

Underscan, Blue Check. For more accurate monitoring, the scan size can be switched to the underscan mode — either from the front panel, or by remote control. (Remote control not included.) In addition, a blue check circuit allows viewing of only the blue portion of the composite signal. This is useful when adjusting the monitor with a color bar signal.

Remote Control Function. A multi-pin (XLR-type) connector is provided on rear panel for connecting an external remote control unit. Many front panel switches (input select, int/ext sync, notch, color on/off, blue check, scan size) can be remotely controlled by contact closures through this connector. (Remote control unit is not included.)

Metal Cabinet, Rack Mount Option. The TM-R14U is housed in a very compact, rugged, metal cabinet which can be mounted in a standard 19" rack, using an optional rack mount kit. AC power connections are made using a detachable grounded power cord.

Suggested List Price ¹²⁵⁰ 995 TBA

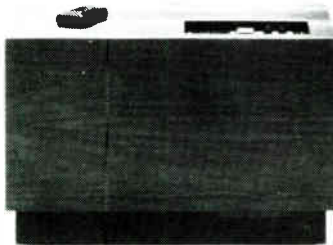
SPECIFICATIONS

Not
Available
At Press
Time

KLOSS VIDEO CORPORATION

640 Memorial Drive
Cambridge, MA 02139
(617) 577-1000 Telex 951948

VIDEO PROJECTORS



NOVABEAM® MODEL ONE

Receiver/Monitor

The Novabeam® Model One-A Receiver/Monitor, like a conventional TV set, comes with a built-in television tuner for off-air reception. Digital push-button selection of 105 UHF and VHF channels with random access is provided on the projector, along with all the usual color TV controls. In addition, a wireless infrared remote control lets you select individual channels, scan through them all, adjust volume, and turn the set on and off from your favorite viewing position.

Direct audio and video inputs are provided for two additional video program sources, while a third can be connected to the antenna terminals as with a conventional TV set (a convenient switch on the control panel lets you select among them). Audio and video outputs are provided for recording, as is a volume-controlled audio output that lets you play the sound of your video program sources through your stereo system if you prefer. To receive TV broadcasts, you connect your 75 or 300 ohm antenna to the projector as you would to any TV set.

Monitor

The Novabeam® Model One-A Monitor is ideal if you already have, or are planning, a system of several individual video components. It does not have a built-in TV tuner, letting you use the tuner built into your VCR, or a separate component tuner such as our T-1 or T-2, for off-air reception. That's not only flexible and convenient; it can save you money as well.

With the Model One-A Monitor, all controls and direct video and audio jacks for two video sources are located on a separate Video Control Center, rather than on the projector itself (inputs for a third source are provided on the projector). That lets you place the Control Center wherever it's most convenient, such as next to your other video components, and you'll never have to touch the projector. Because your video sources connect to the Control Center, there's only one cable connecting to the projector. And you can, if you wish, play the sound of your video sources through your stereo system.



**WIRELESS INFRARED
REMOTE CONTROL**

NOVABEAM® MODEL ONE RECEIVER/MONITOR Includes Tuner, Remote Control

	Screen Included	Floor Standing	Ceiling Mount
6½' Curved Screen Projector	Yes	\$3800.00	\$4300.00
10' Flat Screen Projector	No	\$4000.00	\$4500.00
15' Flat Screen Projector	No	\$4550.00	\$4850.00

NOVABEAM® MODEL ONE MONITOR ONLY Without Tuner, w/Vinyl Walnut Cabinet

	Screen Included	Floor Standing	Ceiling Mount
6½' Curved Screen Projector	Yes	\$3500.00	\$3800.00
10' Flat Screen Projector	No	\$3700.00	\$4000.00
15' Flat Screen Projector	No	\$4300.00	\$4600.00

Accessories

Wall Mount Brackets for 6½' Curved Screen	pair	\$ 20.00
Curved 6½' Screen (for ceiling mount)		360.00
T-1 Tuner w/Remote Control		250.00
Remote Extension Cable		45.00
		(plus \$1.50/ft.)
Screen Legs	pair	40.00

NOTE: Custom Wall Mounting & Ceiling Installation Additional.

Features & Specifications

PROJECTION SYSTEM

Three Novatron® projection tubes with f/0.7 reflective optics; magnetic focusing for ultra-sharp detail. Total light output, 200 lumens.

PROJECTOR SIZE

27.5"W x 22"D x 18.5"H (70 x 56 x 47 cm).

SOUND SYSTEM

Built-in wide-range loudspeaker with equalized power amplifier. May be bypassed when separate stereo system is used.

CIRCUITRY

All solid-state with comb filter for highest picture resolution.

PICTURE CONTROLS

Color, Tint, Brightness, Contrast, Detail (aperture correction).

SPECIAL CONTROLS

Built-in test pattern generator and easy-to-operate controls let you adjust convergence of the Novatron tubes in seconds.

POWER REQUIREMENTS

100W, 120VAC, 60Hz

6.5' HIGH-GAIN SCREEN

Projection surface: 65"W x 47"H x 6.5' diagonal measure (165 x 63 x 198 cm diagonal measure). Total height including legs supplied: 72" (183 cm). May be wall-mounted.

WEIGHT

Projector: 122 lbs. (55.34 kg), packed for shipping; 107 lbs. (48.53 kg) net.
6.5' High-Gain Screen: 50 lbs. (23 kg) packed for shipping; 41 lbs. (19 kg) net.

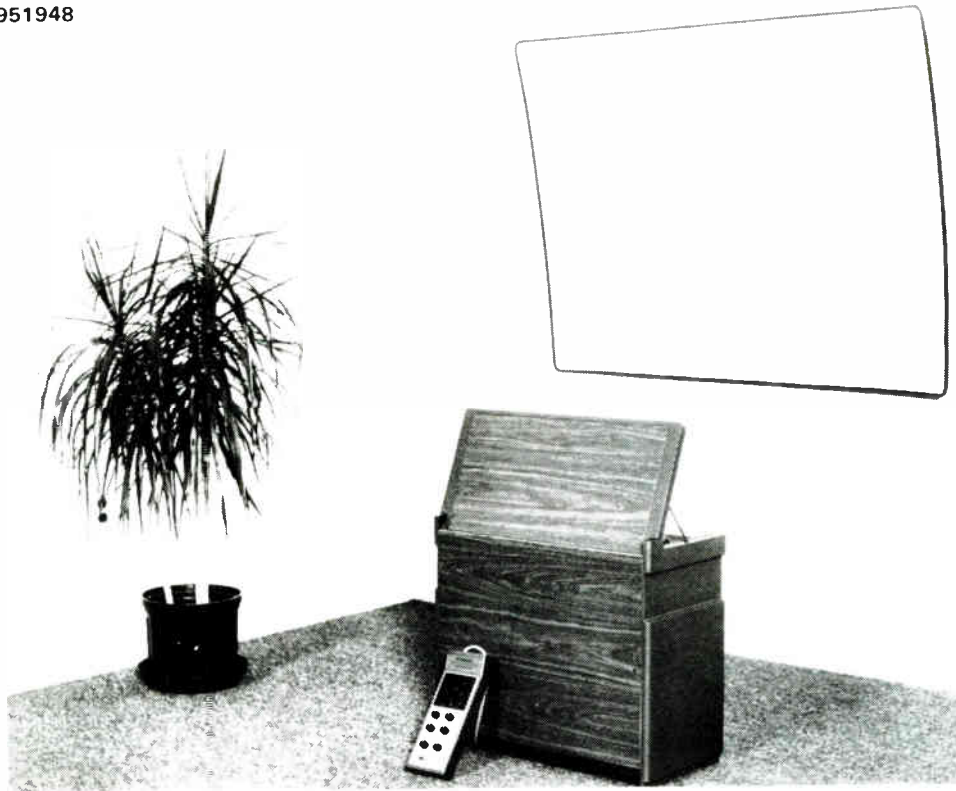
Prices and Specifications Subject to Change Without Notice.

VM-63

KLOSS VIDEO CORPORATION

640 Memorial Drive
Cambridge, MA 02139
(617) 577-1000 Telex 951948

LARGE SCREEN PROJECTOR/TUNER



KLOSS NOVABEAM® MODEL TWO WITH CURVED SCREEN

Novabeam® Model Two Portable Projection Monitor

Model Two Portable Projection Monitor comes complete with a separate 5' diagonal-measure high gain projection screen. The new two-piece system provides the brightest picture ever in Novabeam projection television, and has been designed specifically for use in well-lit surroundings.

The Model Two curved screen system consists of an ultra-compact video projection monitor essentially identical in form, size and function to the original Model Two video projection monitor, and a separate curved 5' screen for wall mounting (floor standing legs are available at extra cost). Where the original Model Two was designed to project a picture directly on a white wall or conventional flat screen for viewing in subdued room lighting, and thus minimize the impact of projection TV on the viewer's living space, the new system uses a separate high gain screen to provide an ultra bright picture in environments where lighting cannot be easily controlled. The high brightness combined with the screen's ambient light rejection properties means the picture can be viewed without significant loss of contrast in surprisingly well-lit environments. Since the difference between this Model Two and the original version are the tubes' field of focus, a specific projector must be ordered. They are not interchangeable

\$2800.00

The Novabeam Model Two curved screen system is a monitor design, without tuner, allowing the viewer to choose from a wide range of programming sources and accessories. Controls and program source inputs, like all Novabeam monitor sets, are provided on a separate Video Control Center which can be located wherever convenient. Only one cable connects the projection monitor to the control center, which features a full range of controls including contrast, brightness, color, tint, detail, video source selection, power, volume and convergence testing.

** Novabeam and * Novatron are registered trademarks of Kloss Video Corporation*



Model T-1 Component TV Tuner With Remote Control

The Model T-1 Tuner is a high performance, 105 channel component TV tuner, perfect for use with Novabeam projection monitors or other high quality monitors. It is supplied cable-ready, has a multiplex output and comes complete with an infrared remote control unit that features volume level adjustments as well as channel selection and scanning. The LED channel readout is bright and easy to read.

Dimensions: 11 1/2" W x 3" H x 9" D. Weight: 7 lbs., 4 ozs. (approx.)

Remote Control (Transmitter)

The Remote Control features Power ON/OFF, Direct channel selection by 10-key keypad, Channel search Up/Down selection, Volume Up/Down control and Audio Mute. Range of operation: 25 feet or more. Uses two (2) size AAA 1.5V batteries (5-1/16" L x 2-1/4" W x 5/8" D). Weight: 3.17 ozs.

\$250.00

Model T-2 140 Ch. Component TV Tuner

\$300.00

Model Two 5' Curved Screen

The Novabeam Model Two curved system's ultra bright picture results from its combination of 5' picture size, the high gain screen, and the high light output of the three tube Novatron® projection technology featured in all of Kloss Video's Novatron projection systems. In addition to its picture brightness, the system can fit with ease into a wide variety of viewing environments. Both screen and projector are of a manageable size, the projection distance (four feet) is comparatively short, and the ultra compact portable projector can be tucked out of the way against the wall when not in use and easily realigned by use of a unique system of crossfiring light beams. Yet it provides a truly big, 5' picture with an unparalleled combination of brightness and clarity, all at unprecedented low cost.

KLOSS VIDEO CORPORATION

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Cambridge, MA 02139
(617) 577-1000 Telex 951948

VIDEO PROJECTORS



VIDEOBEAM® MODEL 2000

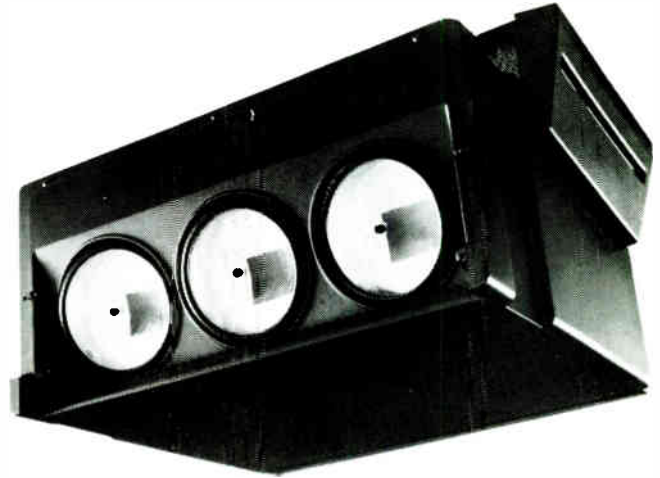
VIDEOBEAM® HIGH RESOLUTION, HIGH DEFINITION, 6.5' PROFESSIONAL VIDEO PROJECTOR

High resolution video projection monitor system specifically for the high quality display of computer generated color graphics and other video information. Featuring RGB inputs and high resolution, high-definition optics and electronics, the new VIDEOBEAM® Model 2000 is a two piece projection system capable of reproducing 132 characters per line complete with a 6.5' diagonal measure high gain screen for professional applications.

To provide a large, 22 square foot display unmatched in sharpness and clarity, the VIDEOBEAM Model 2000 employs a specially refined, high resolution version of the Novatron® projection tube technology designed and manufactured by Kloss Video for its Novatron projection television systems.

The high light output of the special Novatron projection tubes, ultra small high definition spot size, high resolution optics, and optimized video circuitry all combine to result in a unique combination of resolution, definition, and display brightness. A high gain 6.5' screen which rejects ambient light is supplied so that the display can be viewed without having to darken the room. Because a composite video input is supplied as well as RGB inputs, virtually any high quality video source can be used with the VIDEOBEAM Model 2000. **\$6000.00**

VIDEOBEAM™ is a trademark of Kloss Video Corporation. Novatron® and Novabeam® are registered trademarks of Kloss Video Corporation.



NOVABEAM® MODEL TWO, WITH CEILING MOUNT

NOVABEAM® MODEL TWO CEILING MOUNT PROJECTION TV

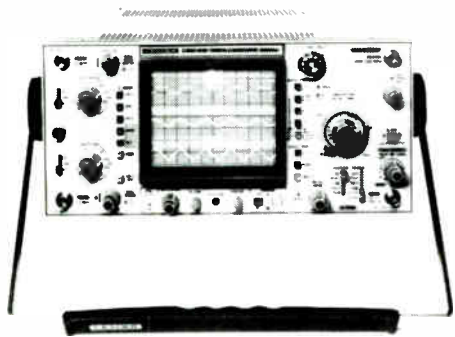
The ceiling mount version projects a 5'4" diagonal-measure picture directly onto a plain white wall or conventional flat projection screen. Unlike the original Model Two, which sits on the floor in front of the projection surface, the Model Two ceiling mount's ultra compact projector comes complete with the hardware necessary to mount the projector up out of the way on the ceiling. Thus the Novabeam Model Two ceiling mount takes up no floor space, and impacts less overall than any other system on the viewer's living space.

The new Novabeam Ceiling Mount, like the original floor standing model, is a monitor design without tuner, allowing the viewer to choose from a wide range of program sources and accessories. All controls and program source inputs are provided on separate video control center which can be located wherever convenient. In addition to the savings entailed by the monitor design, the cost of the new Model Two ceiling mount is kept low by its requiring no special screen, and by the manufacturing efficiency of Kloss Video's own highly automated Novatron projection tube facility. **\$3000.00**

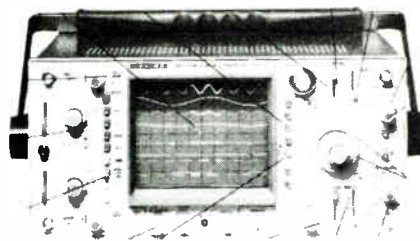
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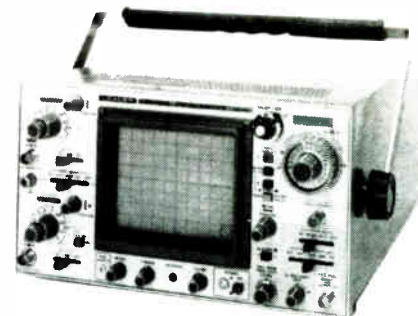
OSCILLOSCOPES



LBO-516



LBO-518



LBO-524/524L

LBO-513A 15 MHz, Single Trace, 1mV Sensitivity

LBO-514A 15 MHz, Dual Trace, 1mV Sensitivity

The single trace LBO-513A and the dual trace LBO-514A are compact 5-inch oscilloscopes that offer maximum performance at low cost. Equipped with both vertical and horizontal magnifiers, they have 1-mV sensitivity with X5 magnification and a maximum sweep speed of 0.1 μ s/cm (0.2 s/cm to 0.5 μ sec in 18 calibrated steps plus X5 magnification). Rise time of both oscilloscopes is 23 ns with normal and automatic, + or - triggering. The LBO-514 provides both chop and alternate dual trace displays.

The model LBO-514AP is available with a higher intensity CRT and internal graticule.

LBO-513A \$470.00
LBO-514A 595.00

LBO-516 100 MHz, Dual Time Base

The Dual Time Base Oscilloscope LBO-516 features full three channel capability, alternate triggering for simultaneous display of two asynchronous signals, alternate time base and eight trace capability. Excellent triggering sensitivity, along with HF reject, video sync separators, alternate channel triggering and trigger slope and level controls with preset make obtaining a jitter-free display a simple task. The LBO-516 also features variable trigger holdoff, line triggering for observation of line related signal components and auto, normal and single sweep modes. The vertical input section of this scope offers 500 μ V sensitivity, and add, subtract and X-Y modes. The dome mesh PDA CRT with 20 kV/2 kV accelerating potential provides a bright, crisp trace, even at high sweep rates. And, a CH-1 output is provided on the front panel so that an additional instrument, such as a frequency counter, may be easily connected.

LBO-516 \$1395.00

LBO-518 100 MHz, Four Channel, Dual Time Base

The LBO-518 is a versatile 100 MHz quad channel alternate time base oscilloscope. It features front panel four channel operation, individual or simultaneous display of main and delayed time bases and alternate channel triggering for simultaneous viewing of asynchronous signals. Separate, independent comprehensive triggering facilities for both main and delayed time bases include HF reject, LF reject, video sync separator, alternate channel triggering and trigger level control with preset. Also included are variable trigger hold-off, line triggering and auto, normal and single sweep modes.

A dome mesh PDA CRT with 20 KV accelerating potential allows critical observation of fast rise time signals at low repetition rates, events which are often difficult to observe due to limited trace intensity.

The vertical input section features 0.5 mV sensitivity, a 20 MHz bandwidth limiter, beam finder and add/subtract modes. Even with all these capabilities, the LBO-518 is still small enough to stow under your airline seat!

LBO-518 \$2050.00

LBO-522 20 MHz, Dual Trace, 0.5mV Sensitivity

The LBO-522 is an economical 20 MHz oscilloscope versatile enough for almost any lab or field work within its frequency range. The input sensitivity of 0.5 millivolts allows observation of extremely low level signals easily on its 8 x 10 cm rectangular CRT equipped with an internal graticule. Alternate triggering provides a stable display of two waveforms, unrelated in frequency, simultaneously. The unit features a full range of triggering controls including HF reject to filter unwanted noise from the display and line triggering for the observation of line frequency related signal components. A CH-1 rear panel output is standard which permits using the LBO-522 as a sensitive, accurate pre-amplifier to drive other less sensitive instruments. The units "human engineered" front panel ensures easy, error-free operation.

LBO-522 \$695.00

LBO-523 40 MHz, Dual Trace 0.5mV Sensitivity

The LBO-523 is a 40 MHz oscilloscope economically designed for applications requiring medium bandwidth and extensive triggering facilities where costly features such as delayed sweep and signal delay lines are impractical. Trigger controls include variable hold-off, alternate channel triggering, HF reject, vertical and horizontal TV coupling and line source triggering. The vertical input sensitivity of 0.5mV, add and subtract modes and a CH-1 output connector add to the unit's total capability. Complex waveforms can be viewed easily even at highest sweep rates without readjusting the front panel controls due to its bright PDA CRT with 7 KV accelerating potential and an auto focus feature. The LBO-523 is well suited for many design, production, repair and educational test requirements.

LBO-523 \$895.00

LBO-524/524L 40 MHz, Dual Trace Dual Time Base

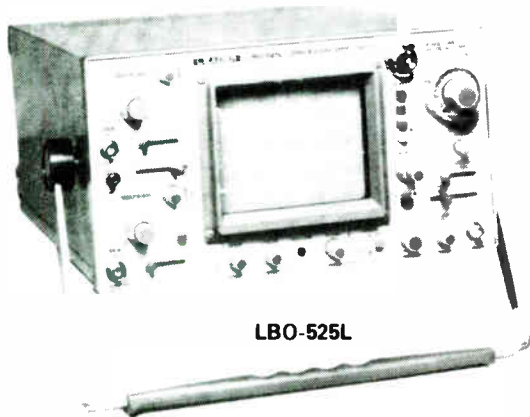
The LBO-524 is designed to meet a broad range of applications in design, testing and servicing of both analog and digital circuits and equipment. Its large 8 x 10cm PDA CRT provides sharp bright displays even at highest sweep rates. Comprehensive triggering controls including holdoff, alternate triggering and delayed sweep triggered functions permit stable displays for even the most complex signals. With 0.5 millivolt sensitivity, extremely low level signals can easily be observed. A channel 1 output is available on the rear panel to drive other less sensitive instruments such as a frequency counter with an input level as low as 500 microvolts. The dual time base permits accurate observation and time interval measurements of complex waveforms. The Model LBO-524L is also equipped with signal delay lines to allow observation of pre-trigger information.

LBO-524 \$ 995.00
LBO-524L 1050.00

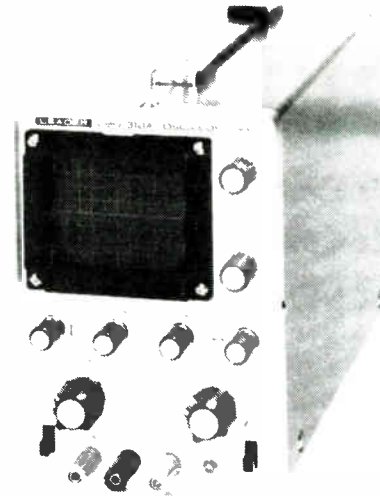
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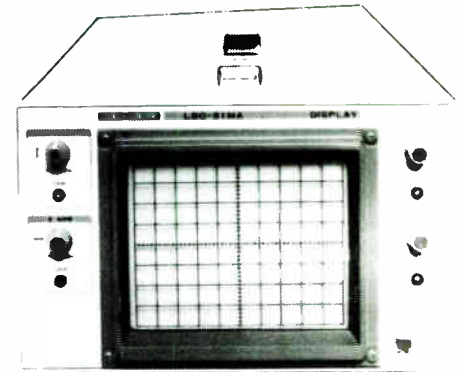
OSCILLOSCOPES



LBO-525L



LBO-310A



LBO-51MA

LBO-525L 50-MHz TWO CHANNEL DUAL TIME BASE

The LBO-525L is a simple-to-operate 50 MHz two channel oscilloscope that still offers all of the flexibility and advanced features required for critical applications.

The LBO-525L has a true calibrated delayed time base with both run after A and trigger after A modes for jitter-free operation. 500 μ V maximum sensitivity and 20 ns maximum sweep speed allow analysis of low level and high frequency signals, while still offering a maximum input rating of 600 V (DC plus AC peak).

The LBO-525L has an illuminated internal graticule for precise measurements and photography and 12 KV CRT accelerating potential for maximum trace intensity even when observing transients at high sweep speeds.

LBO-525L \$1195.00

LBO-308S/308PL 20 MHz, DUAL TRACE, 3" PORTABLE

The LBO-308S and 308PL deliver "lab performance" in a compact package that's perfect for field work. Its broad range of capabilities include 2-mV sensitivity, 17.5 ns rise time, X-Y operation with full sensitivity, and add/subtract modes not normally available in oscilloscopes of this size. It may be operated from either 115/230 VAC, 50-60 Hz, 12 VDC or a 1.5-hour battery pack (LBO-308S only). The battery pack mounts internally and is automatically charged whenever the unit is connected to a source of AC power. The 3-inch rectangular CRT has an internal graticule. The LBO-308S and 308PL have 18 calibrated sweep rates with a X5 magnifier (0.1 μ s/div. max) and calibrated 12-step attenuators. A rugged, compact scope with performance unsurpassed in its price range.

The model LBO-308PL offers a higher intensity CRT for viewing narrow pulses at low repetition rates and contains signal delay lines which permit viewing the leading edges of pulses.

LBO-308S \$ 950.00
LBO-308PL 1195.00

LBO-310A 4-MHz RECURRENT SWEEP

The LBO-310A is a compact, general purpose instrument designed to provide long, reliable service in production test, repair, and educational applications. Its simple front panel with a minimum of controls makes it ideal for use by production personnel, students, and non-technical operators. Its low cost opens up many applications where waveform monitoring might otherwise be economically prohibitive. Sensitivity is 20 mV/division. Sweep frequencies range from 10 Hz to 100 kHz.

LBO-310A \$305.00

LOC-7005 OSCILLOSCOPE CALIBRATOR

The LOC-7005 is an oscilloscope calibrator which combines the functions most needed to test, repair, and calibrate oscilloscopes into one compact instrument. The LOC-7005 provides three outputs:

- An amplitude output to calibrate the vertical axis of an oscilloscope. It provides a .25mV-100 V square wave in a 1-2.5-5 step sequence. Output frequencies are 100 Hz, 1 kHz and 10 kHz with a 100 ns rise time.
- A time marker output to calibrate the time base (sweep speed) of an oscilloscope. The marker interval is from 0.05 μ s-1 s in a 1-2-5 step sequence at 0.1 V p-p.
- A fast rise time square wave to check the pulse response and rise time of an oscilloscope. The rise time of the square wave is less than 3 ns at amplitudes of 20 mV, 40 mV or 80 mV. The output frequency is 100 kHz.

The LOC-7005's small size and versatility make it the ideal instrument for service and calibration facilities which must maintain their own field service and general purpose oscilloscopes.

LOC-7005 \$1395.00

LBO-51MA X-Y DISPLAY MODULE

The LBO-51MA features a large 8 x 10cm aluminized, post deflection acceleration CRT for a bright trace. An internal 8 x 10 graticule is optional. Input sensitivity is adjustable from 50 to 150mV/cm and the X and Y axis bandwidth is 3 MHz (-3dB). The input coupling (AC or DC) and polarity can be selected by internal switches. The Z-axis (intensity modulation) input has a bandwidth of 4 MHz, producing clear alphanumeric displays.

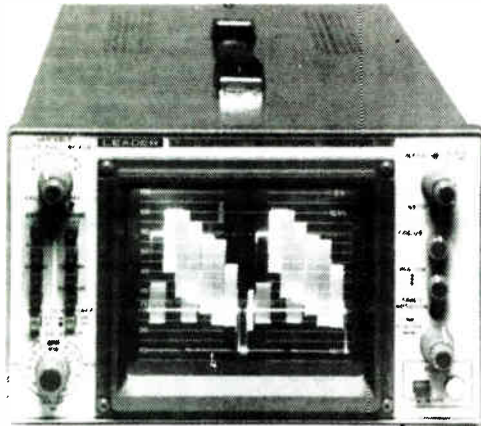
In its standard configuration, the LBO-51MA is designed for half-rack mounting and includes front panel controls for power, intensity, focus and horizontal and vertical position. Screwdriver adjustments are provided for vertical and horizontal gain, astigmatism and trace rotation. Special configurations are available with provisions for user-supplied controls, custom external graticules, other CRT phosphors, higher or lower input deflection factors, and other modifications to accommodate particular user requirements.

LBO-51MA \$995.00

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TEST EQUIPMENT



LBO-5860A

LBO-5860A/L WAVEFORM MONITOR

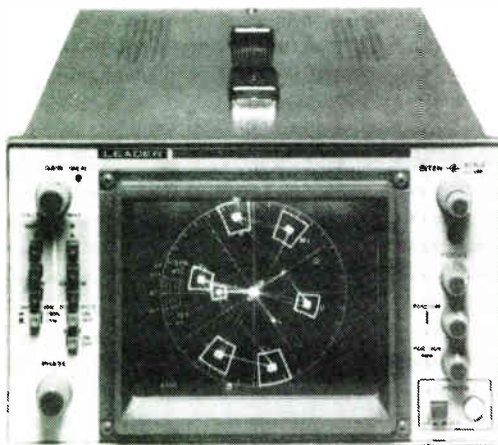
The LBO-5860A/L Waveform Monitor permits displaying the Vertical Interval Test and Reference Signals by a front panel line selector. Lines 14 through 21 ("A" model) or lines 7 through 21 ("L" model) can be selected from field one or two without interference from the active portion of the video signal, a feature normally available only on more expensive, full rack mount units. The instrument also has a blanking output to blank the companion Vectorscope during the active portion of the video signal, allowing differential gain and phase measurements to be accomplished easily. The CRT features an internal graticule and 7KV accelerating potential for bright, easy-to-read displays. Total RGB and YRGB (YRGB optional) capability is available and horizontal sweep speeds of 2 H (2 line), 1 μ /div (expanded 2 line), 2 V (2 fields) and 2 V MAG (expanded 2 fields) are standard. The LBO-5860A/L is half rack mountable and can be rack mounted side by side with the LVS-5850B Vectorscope. The LBO-5860A/L is also available in a PAL/SECAM version, the LBO-5861A.

LBO-5860A NTSC (Lines 14-21 Line Select) \$2050.00
LBO-5860L NTSC (Lines 7-21 Line Select) 2300.00

PAL VECTORSCOPE

Leader also offers a PAL version vectorscope, the LVS-5851A. This unit is suitable for broadcasting PAL systems using 625 horizontal lines (625 H), 50Hz vertical or field rate (50 V), 4.43MHz sub-carrier color systems and types B, C, D, G, H, I, and K synchronization standards. This unit is similar to Leader's LVS-5850B NTSC vectorscope, and all specifications are identical except where noted above.

LVS-5851A 2200.00



LVS-5850B



LBO-5825

LBO-5825 DIGITAL STORAGE OSCILLOSCOPE

The LBO-5825 is a versatile 35MHz, Two-Channel Digital Storage Oscilloscope. Packed with features that are not normally found on DSOs of its class, it has a true 5MHz digital sampling rate, allowing detailed observation of relatively short transients. Also, individual A/D converters for each channel ensure that a point-by-point comparison of channels may be made. The 1K word by 2 channel memory allows over 1000 points per channel to be stored. The Memory Protect feature allows storage of reference waveforms. For example, the upper and lower limits of an amplitude adjustment may be stored in memory. Also, a battery back-up of the memory is provided, so the scope may be transported while retaining the content of the memory for up to two weeks. X-Y recorder outputs are provided for hard copy of waveforms. Up to 9 div of pre-trigger view allows observation of critical pre-trigger events that often gives clues in determining the causes of transients. The AUTO/ERASE mode is used so that the screen may be constantly updated, and the ROLL mode provides the 5825 with a chart-recorder capability.

In addition, the LBO-5825 is a Two-Channel, 35MHz Real Time Oscilloscope. With many of the features of Leader analog Oscilloscopes, its 500 μ V sensitivity, coupled with Channel 1 output and complete triggering facilities allows this scope to be used in a number of conventional applications. Backed by Leader's outstanding reputation, the LBO-5825 is the perfect scope for research and development, service, and production environments.

LBO-5825 \$3850.00

LVS-5850B VECTORSCOPE

The LVS-5850B Vectorscope provides a convenient method for observing and measuring the relative phase and amplitude of chrominance signal components. It utilizes a unique technique which electronically displays the "inner boxes" which represent error limits of $\pm 2.5^\circ$ and ± 2.5 IRE units. This improves the accuracy of phase and amplitude adjustments by eliminating errors due to CRT non-linearities. The LVS-5850B includes three loop-through inputs including a dedicated external subcarrier reference input which is front panel selectable. Either of the two composite video loop-through inputs can also be selected as the reference signal and all three inputs can be displayed individually.

The unit is also equipped with a Z-axis blanking input to provide blanking during the active portion of the video signal and unblanking during the VITS signal for a stable, jitter-free display. A test circle pattern is also selectable for a quick calibration check of the instrument. Another front panel push button provides for either 100% or 75% amplitude levels. A gain control, with a detented calibrated position, provides for continuous amplitude adjustment. A phase control permits rotating the display through 360° . The LVS-5850B is supplied in a protective carrying case or in a 1/2" rack width configuration.

LVS-5850B \$2050.00

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GENERAL PURPOSE ACCESSORIES



LC-2043
Double banana to BNC,
1 m cable



LC-2021
Double banana to miniature
alligator clips, 1 m cable



LC-2022
Double banana to double
banana, 1 m cable



LC-2048
BNC to miniature alligator clips
1 m 50 Ω cable



LC-2028
Two single banana plugs
to miniature alligator clips
1 m cable



LC-2026
BNC to miniature alligator clips
1 m 75 Ω cable



LC-2027
BNC to BNC, 1 m 75 Ω cable



BNC-BP
BNC to single binding post
adapter



LT-2049
BNC 50 Ω in-line terminator



**LC-19 AC Current Clamp
Adapter**
For LDM-855, LDM-853A
Measurement Range
0.1-200 A ac, 50-60 Hz
Accuracy ± 3%

ACCESSORIES



LP-6 DC High Voltage Probe
For
Input Resistance
1000 M Ω ± 10%
Attenuation X1000 ± 10%
Maximum Input 30 kVdc



LP-11Y Three Point Probe
For LTC-906, LTC-906A



LPS-166F AC Adapter
For LCG-397, LDM-853A



LPS-169A AC Adapter
For LTC-906, LTC-906A,
LCR-740



CC-851 Carrying Case
LDM-853A,
LDC-831, LCG-397

Model No.		Price
LP-100X	100 MHz, X10 Oscilloscope Probe	\$ 70.00
LP-100X	(6 ea.) (6 Pack)	420.00
LP-050X	50 MHz Direct, X10 Oscilloscope Probe	50.00
LP-050X	(6 ea.) (6 Pack)	300.00
LP-16BX	40 MHz Direct/Low Cap Oscilloscope Probe	38.00
LP-16BX	(6 ea.) (6 Pack)	228.00
LP-17AX	40 MHz X10/X100 Oscilloscope Probe	60.00
LP-17AX	(6 ea.) (6 Pack)	360.00
LP-7X	Demodulator/Low Cap Oscilloscope Probe	19.00
LP-11Y	In Circuit Probe for LTC-906, 906A	19.00
LP-6	HV Probe for LDM-853A	48.00
LC-19	AC Current Clamp Adaptor for LDM-853A	40.00
LP-2017	Probe Pouch for LBO-518, 516, 5825	35.00
LP-2011	Probe Pouch for LBO-308S, 308PL	35.00
LP-2013	Probe Pouch for LBO-522, 523, 524, 524L, 525L	25.00
LP-2004A	Probe Pouch for LBO-513A, 514A	20.00
LC-2016	Front Cover for LBO-518, 516, 5825	50.00
LC-2014	Front Cover for LBO-513A, 514A, 522, 523, 524, 524L, 525L	40.00
LC-2006	Front Cover for LBO-308S, 308PL	40.00
LR-2402	Rackmount for LBO-518, 516, 5825	150.00
LRA-508	Rackmount for LBO-513A, 514A, 522, 523, 524, 524L, 525L	85.00
LR-2400AI	Rackmount for LVS-5850B, 5851A, LBO-5860A/L, 5861A, LBO-51MA, 51MV	180.00
LH-2015	Viewing Hood for LBO-518, 516, 522, 523, 524, 524L, 525L, 5860A/L	10.00
LH-2007	Viewing Hood for LBO-513A, 514A	10.00
LH-2008	Viewing Hood for LBO-308S, 308PL	10.00
CC-851	Carrying Case for LDM-853A, LCG-397, LDC-831	9.00
LC-2215	Carrying Case for LBO-308S, 308PL	35.00
LP-2054	Battery Pack for LBO-308S	75.00
LPS-166F	AC Adaptor for LCG-397, LDM-853A (5V DC)	8.00
LPS-169A	AC Adaptor for LTC-906, LCR-740 (9V DC)	9.00
LC-2021	Double Banana to Miniature Alligator Clips; 1m Cable	12.00
LC-2022	Double Banana to Double Banana; 1m Cable	9.50
LC-2026	BNC to Miniature Alligator Clips; 1m 75 ohm Cable	11.00
LC-2048	BNC to Miniature Alligator Clips; 1m 50 ohm Cable	11.00
LC-2027	BNC to BNC; 1m 75 ohm Cable	12.00
LC-2028	Two Single Banana Plugs to Miniature Alligator Clips; 1m Cable	11.00
LC-2043	Double Banana to BNC; 1m Cable	11.00
BNC-BP	BNC to Single Binding Post Adaptor	7.00
LT-2049	BNC 50 ohm In-Line Terminator	37.00
215-U01	Plug-In ROM Unit with Type 2716 ROM for LSG-215A, 216	80.00

Prices and Specifications Subject to Change Without Notice.

VM-69

Oscilloscope Glossary

Accelerating Potential—The potential applied to the CRT to accelerate the electrons emitted from the cathode. As a general rule, the higher the accelerating potential, the brighter the display. This is especially important at fast horizontal sweep speeds and multiple traces or to observe rapid transients.

Add/Subtract—These modes allow the displaying of the algebraic sum or difference of two signals. The subtract mode is especially useful in measuring signals not referenced to ground and eliminating unwanted signals common to both inputs such as hum.

Alternate Channel—A function that allows more than one channel to be displayed by alternately switching the vertical input to the CRT between two (or more) input channels at the end of each sweep. Used at sweep speeds of 0.2 mS/div or faster, this mode will result in a flickering display at slower sweep speeds. In this case, the Chop function should be used.

Alternate Time Base—A feature that allows the main and delayed time base to be displayed simultaneously.

Alternate Trigger—A function that allows the sweep to be triggered alternately by two different triggers, which, in conjunction with an alternate channel function, allows the display of two signals asynchronous.

Auto Triggering—A feature that allows the sweep circuit to free run and display a base line in the absence of an input signal. Automatically switches to triggered sweep mode when a signal is applied.

Oscilloscope Selection Chart

MODEL	BANDWIDTH	CHANNELS	TRACES	DISPLAY SIZE	MAX SWEEP SPEED	MAX SENSITIVITY	ACCELERATING POTENTIAL	ADD SUB.	SIGNAL DELAY	TRIGGER DELAY	ALT. TRIGGER	DELAYED TIME BASE	ALTERNATE TIME BASE	BATTERY EXT. DC POWERED	CH. OUTPUT	VARIABLE HOLD OFF
LBO-518	100MHz	4	8	8cm x 10cm	2ns/div	0.5mV/div	20kV	●	20ns	●	●	●	●		●	●
LBO-516	100MHz	3	8	8cm x 10cm	2ns/div	0.5mV/div	20kV	●	20ns	●	●	●	●		●	●
LBO-525L	50MHz	2	2	8cm x 10cm	20ns/div	0.5mV/div	12kV	●	20ns	●	●				●	●
LBO-524	35MHz	2	2	8cm x 10cm	20ns/div	0.5mV/div	7kV	●		●	●				●	●
LBO-524L	35MHz	2	2	8cm x 10cm	20ns/div	0.5mV/div	7kV	●	140ns	●	●				●	●
LBO-523	35MHz	2	2	8cm x 10cm	20ns/div	0.5mV/div	7kV	●		●					●	●
LBO-308S	20MHz	2	2	4.8cm x 6cm	100ns/div	2mV/div	1.5kV	●						●		
LBO-308PL	20MHz	2	2	4.8cm x 6cm	100ns/div	2mV/div	10kV	●	250ns					●		
LBO-522	20MHz	2	2	8cm x 10cm	40ns/div	0.5mV/div	2kV	●		●					●	●
LBO-513A	15MHz	1	1	8cm x 10cm	100ns/div	1mV/div	1.8 kV									
LBO-514A	15MHz	2	2	8cm x 10cm	100µs/div	1mV/div	1.8 kV									
LBO-310A	4MHz	1	1	4.8 cm x 6.0 cm	1µs/div	20mV/div	1.2kV									

VM-70

Prices and Specifications Subject to Change Without Notice.

Bandwidth—The frequency range of signals that an oscilloscope will display with less than a 3 dB rolloff in amplitude.

Chop—The Chop function switches the vertical channel input to the CRT, usually at a rate of approximately 250 kHz, to simultaneously display more than one channel. Used for sweep speeds of 0.5 mS/div or slower, the alternate channel function should be used at faster sweep speeds.

Common Mode Rejection—The attenuation of a common signal (in dB) that appears between the signal high input and ground and the low input and ground.

Coupling—The manner in which a signal or trigger is connected to the oscilloscope's internal circuitry. DC coupling allows all components of the signal to pass; AC coupling blocks any DC component. HF reject and LF reject insert high or low frequency rejection filters in the input circuitry.

Deflection Coefficients (Sensitivity)—The signal amplitude required for a vertical deflection of 1 division; adjusted by the vertical volts/division control. Sensitivity is the smallest amplitude signal that yields one major division of deflection.

Delay, Signal—The amount of time (usually nanoseconds) between the beginning of the horizontal sweep and the vertical input signal; allows viewing of pre-trigger phenomena. This is accomplished by inserting a delay line in the signal channel.

Delayed Sweep—A second time base (sweep) that can be started after a variable delay from the start of the main (undelayed) time base. This allows any selected portion of the main time base signal to be expanded and displayed over the entire CRT.

Dual Time Base—A feature that allows the sweep speeds of the two calibrated time bases to be set independently.

Graticule—A grid or scale either etched or overlaid on the CRT face for making amplitude and frequency measurements. An internal, illuminated graticule is parallax-free and required for precise measurements. It is also ideal for photography.

Hold-Off—Allows the operator to choose, by altering the dead time between the end of one horizontal sweep and the start of the next, on which trigger to synchronize in a complex trigger signal.

Jitter, Delay Time—The term used for describing the horizontal instability of a waveform displayed in the delayed sweep mode.

Lisajous Pattern—This pattern results when using external horizontal and vertical input signals in the X-Y mode. When the X and Y input controls are properly adjusted, the size and shape of the pattern allows phase shift to be measured.

Rise Time—The time it takes for an oscilloscope display to rise from 10% to 90% of the amplitude of an applied step voltage.

Trigger—The signal that starts the horizontal sweep. The trigger can be either derived from the vertical input signal or from a variety of external sources, either directly or harmonically related to the vertical input signal frequency.

Trigger View—A function that displays the signal being used for triggering the sweep.

TV-H, TV-V Triggering—Coupling modes that insert sync separators in the trigger circuitry to allow triggering at the vertical or horizontal sync rates of a composite video signal.

X-Y Mode—Instead of using the oscilloscope's internal circuitry to generate the horizontal sweep signal, an external signal is applied. This allows phase and swept frequency response measurements to be made.

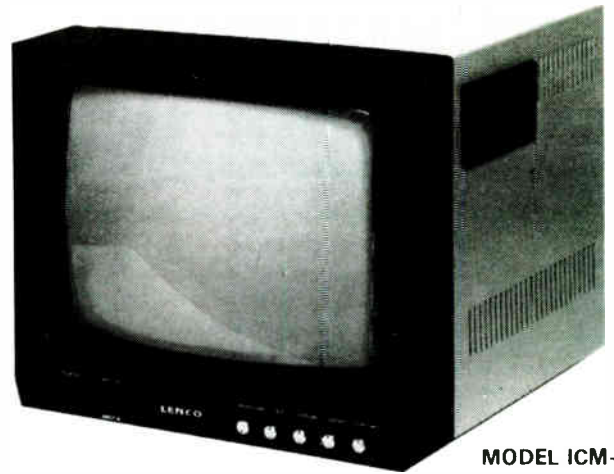
Z-Axis Modulation—Also known as intensity modulation, an externally applied signal is used to blank or intensify the trace. Typically used in video applications, in the X-Y mode, for time or frequency marking.



300 North Maryland St.
Jackson, MO 63755
(314) 243-3147 (800) 325-8494
TWX 910-760-1382



MODEL ICM-214



MODEL ICM-219

200 SERIES COLOR VIDEO MONITORS

The Lenco ICM NTSC color monitors are compact, stable studio monitors. They are designed for applications where a high quality monitor is needed and the expense of a calibrated test monitor is not justified. The latest technological design concepts using the modern PIL tube and discrete regulated high voltage power supply make these color monitors ideal for the broadcast, teleproduction and industrial markets.

The I.C.M. Series of color monitors have been engineered to exact specifications for performance and stability. The design criterion was to provide a high quality monitor for applications that do not require a calibrated test monitor. The design concept of this monitor makes it a very universal device for the broadcast, teleproduction and industrial environment.

Many of the features found in the ICM-214 and the ICM-219 color monitors center around the CRT. The ICM color monitors incorporate both 14" and 19" black matrix slot mask Precision-In-Line (PIL) tubes. Excellent resolution and simplified convergence are achieved with the use of this tube. Convergence controls, convergence amplifiers and a built-in cross hatch generator are eliminated by using the PIL tube. The CRT is capable of displaying a white window with a maximum usable brightness of 100 foot candles with a one volt peak-to-peak input signal.

The semi-modular design of the ICM color monitor series is constructed around six modules: horizontal and vertical sweep, low and high voltage power supplies, decoder and the video amplifier. Horizontal and vertical sweep and the low and high voltage power supplies are the same design as the modules used in Lenco's professional calibrated color monitors. The NTSC decoder used in the monitor has a decoding error of less than 2 1/2. This decoder coupled with a video amplifier that is mounted directly on the CRT provides excellent frequency response, resolution and a distortion free display. All of these combinations allow the

picture to be viewed without masking any distortions or noise.

The ICM series of color monitors use a discrete non-scan derived high voltage power supply. An unregulated DC voltage of approximately 34 volts DC enters the high voltage unit and outputs a regulated 25 KV supply for the CRT. With this power supply, raster size will change less than 1% of picture height from 0% to 100% APL at 35 foot candles. This ultra stable high voltage is independent of horizontal and vertical sweep, but with the loss of either sweep will shut off the high voltage unit and protect the CRT.

The quality of the color monitor starts at the inputs to the monitor where differential amplifiers are incorporated for maximum hum rejection. Other features of the monitor are automatic degauss, adjustable underscan and internal/external sync selection. Each time the monitor is turned on, the degaussing circuit is automatically activated to remove any built-up magnetic field on the CRT. Sufficient range was built into the horizontal and vertical size controls to produce a fully overscanned or underscanned display. An easy access internal/external sync selector switch is located on the rear panel of the monitor.

The 200 Series color monitors carry the Lenco two year warranty with the exception of the picture tube. The CRT has a one year warranty.

The cabinets were carefully selected for a modern and an aesthetically pleasing look. The tube mask around the tube is flat black for minimum screen reflection.

200 Series Equipment

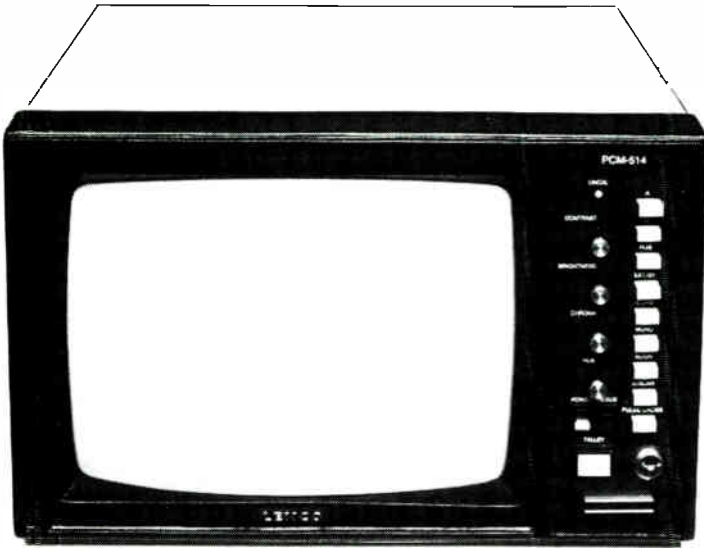
- ICM-214-6** 14" Color Monitor with 2 NTSC Inputs and Adjustable Underscan. .61mm Slot Mask CRT **\$1,700.00**
- ICM-219-6** 19" Color Monitor with 2 NTSC Inputs and Adjustable Underscan. .61mm Slot Mask CRT **\$1,900.00**



LENCO, INC., ELECTRONICS DIVISION

300 North Maryland St.
Jackson, MO 63755
(314) 243-3147 (800) 325-8494
TWX 910-760-1382

COLOR MONITORS



PCM-514

500 SERIES EQUIPMENT

PROFESSIONAL COLOR VIDEO MONITORS

The Lenco PCM-500 Series NTSC/RGB color monitors are compact, stable master studio monitors. They are designed to meet or exceed the most demanding of professional broadcast and teleproduction requirements.

These monitors are manufactured to the latest state of the art design using the modern PIL tube to meet the high standards for performance and stability. The Precision In-Line Gun (PIL) cathode ray tube has several advantages over the Delta-gun tube. The simplified convergence adjustments required with the PIL tube enhances the reliability and reduces the maintenance time of the monitor. The PCM-500 Series monitors, using the modern PIL tube, are ideal test instruments in the studio for adjusting cameras to prevent subtle changes in color scene content when switching from one camera to another.

PROFESSIONAL 14" COLOR MONITORS

The Lenco PCM-514 NTSC/RGB Color Monitor is a compact, stable, master studio monitor designed to meet or exceed the most demanding signal evaluation in broadcast and teleproduction. This monitor is also an ideal unit for instrumentation and for VTR monitor bridge applications.

Lenco color monitors are manufactured to the latest state of the art design using the modern PIL tube to meet today's high performance and stability standards. Due to the simplified convergence, enhanced reliability and reduced maintenance time of this PIL monitor, the PCM-514 becomes an ideal test instrument to adjust cameras and to prevent subtle color scene changes when switching between cameras.

Since required vertical rack space is only 10.5 inches, this monitor will ideally fit the overhead bridge of a VTR.

PCM-514-4 NTSC and RGB Color Monitor with Pulse Cross and Underscan, Standard CRT is .41mm Dot Mask Matrix **\$3990.00**



PCM-519

PCM-519 SERIES AND PCM-522

The Lenco PCM-519 Series NTSC/RGB color monitors are compact, stable master studio monitors. They are designed to meet or exceed the most demanding of professional broadcast and teleproduction requirements.

These monitors are manufactured to the latest state of the art design using the modern PIL tube to meet the high standards for performance and stability. The Precision In-Line gun (PIL) cathode ray tube has several advantages over the Delta-gun tube. The simplified convergence adjustments required with the PIL tube enhance the reliability and reduces the maintenance time of the monitor. The PCM-519 monitors are available with 0.4mm dot matrix Crt as well as a 0.6mm slot mask matrix CRT. The PCM-522 is available with a 0.6mm slot mask matrix CRT only. These monitors using the modern PIL tube are an ideal test instrument in the studio for adjusting cameras to prevent subtle changes in color scene content when switching from one camera to another.

Model PCM-519 is a cabinet unit that rackmounts in a standard 19" equipment rack simply by adding the optional slides. The PCM-522 is also a cabinet unit that can be rackmounted by adding slides, but it will require a 22" equipment rack. Tube description for the required CRT is available on the back page of the specification sheet.

PROFESSIONAL 19" COLOR MONITORS

PCM-519-4 NTSC and RGB Color Monitor with Underscan.
Standard CRT is .41mm Dot Mask Matrix. **\$5485.00**

PROFESSIONAL 22" COLOR MONITORS

Model PCM-522 is a cabinet unit that could be rackmounted by adding slides, but it would require a 22" equipment rack.

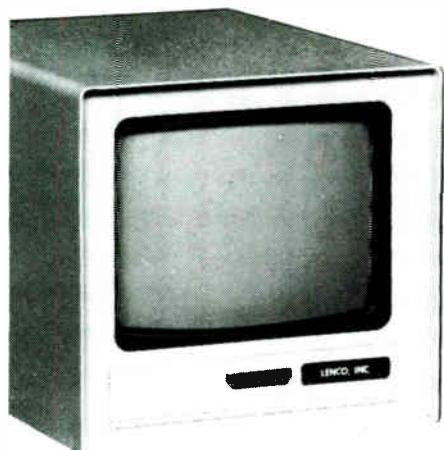
PCM-522 NTSC and RGB Color Monitor with Underscan.
CRT .61 Slot Mask Matrix **\$5200.00**



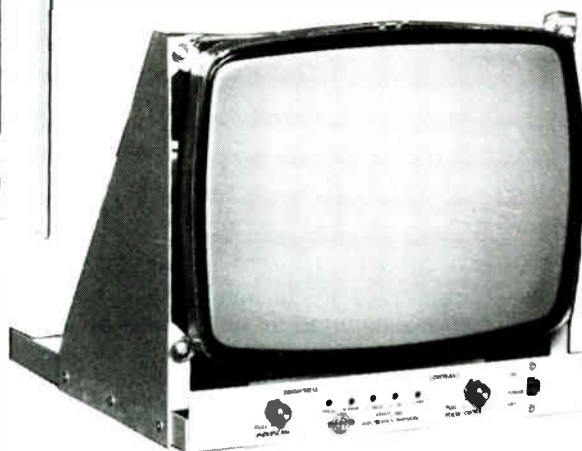
LENCO, INC., ELECTRONICS DIVISION

300 North Maryland St.
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(314) 243-3147 (800) 325-8494
TWX 910-760-1382

MONOCHROME MONITORS



PMM-911



PMM-920



PMM-942

Professional Quality PMM-900 Series Monochrome Monitors

FEATURES:

- Professional Quality
- Modular Construction
- Cross Pulse Option
- 900 Lines Resolution
- Underscan Option
- Regulated Low and High Voltage

The Lenco PMM-900 Series Monochrome Monitors are the most advanced design of professional monochrome video monitors in the industry. The 900 Series monitor is a high resolution display device for use in broadcasting, industrial, and educational facilities where quality and reliability are most required.

The 100% modular chassis consists of five individually shielded circuit modules that plug in directly from the rear of the chassis. This unique and exclusive feature simplifies any required servicing allowing for a minimum of down time. The five plug-in modules are common to all the 900 Series monitors regardless of CRT size.

The PMM-900 Series Video Monitors are designed for continuous operation and to give stable pictures without adjustment. The regulated low and high voltage power supplies maintains constant picture size and brightness with line voltages between 105 and 130 volts AC (or 210 to 260 volts AC).

The Lenco PMM-900 Series monitor's 900 line center resolution provides outstanding picture clarity which is necessary in most studio and educational facilities. This sharp, bright picture provides excellent viewing even under high ambient lighting conditions. This is extremely important to ensure full details when used in surveillance or observation systems.

Video response is down 3 dB at 20 MHz providing for 900 line center and 750 line corner resolution. Differential gain of the video amplifier is less than 5% for 50 volt kinescope drive. Size of the raster can be switched from the front to show all four sides and corners. Optional cross pulse features can be provided to display the sync signals in the picture area for analysis. DC restoration is standard and is switchable on the rear panel.

The PMM-900 Series Video Monitors meet or exceed all EIA RS-170 specifications and are compatible with 525/60 U.S. and 625/50 CCIR scan rates.

9" VIDEO MONITORS

PMM-910 Chassis Only	\$ 890.00
PMM-911 Cabinet	950.00
PMM-912 Dual 9" units, Rackmount	1870.00
PMM-913 Rackmount, Right Side Blank	1015.00
PMM-914 Rackmount, Left Side Blank	1015.00
PMM-915 Rackmount for TEK 529 or 1480 Right Side	1015.00
PMM-916 Rackmount for TEK 529 or 1480 Left Side	1015.00
PMM-917 Rackmount for TEK 528 on Right Side	1035.00
PMM-918 Rackmount for TEK 528 on Left Side	1035.00

12" VIDEO MONITORS

PMM-920 Chassis Only	\$ 950.00
PMM-925 Cabinet Slimline	1040.00

15" VIDEO MONITORS

PMM-930 Chassis Only	\$ 980.00
PMM-935 Cabinet	1145.00
PMM-932 Rackmount	1065.00

19" VIDEO MONITORS

PMM-940 Chassis Only	\$1125.00
PMM-942 Rackmount	1330.00
PMM-945 Cabinet Slimline	1380.00

MONITOR OPTIONS

PMM-001 Module Extender Set (HV module and standard module)	\$ 50.00
PMM-004 Rack Mounting Kit for PMM-925	60.00
PMM-005 Pulse Cross	260.00
PMM-006 Underscan	145.00
PMM-007 Crosstalk Shield Kit for PMM-912 Monitors	85.00
PMM-008 Rackmounting Kit for PMM-935	70.00

MONITOR REPLACEMENT MODULES

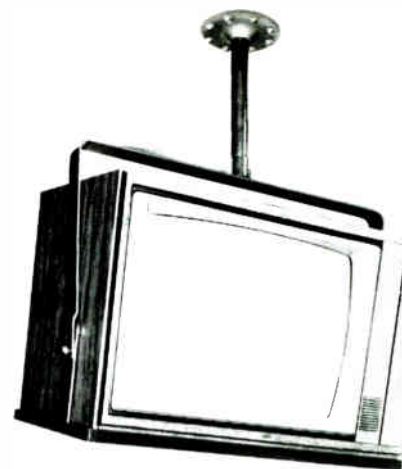
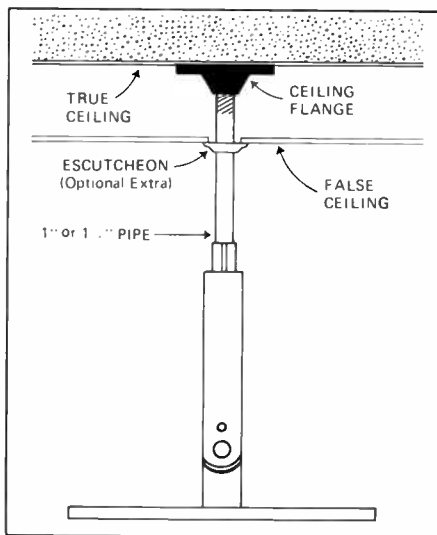
PMM-901 Power Supply/Regulator	\$165.00
PMM-902 Video/ Sync Amplifier	190.00
PMM-903 Vertical Deflection	175.00
PMM-904 Horizontal Deflection	165.00
PMM-905 High Voltage Supply	190.00
PMM-906 Vertical Deflection w/ Pulse Cross	225.00

Prices and Specifications Subject to Change Without Notice.

VM-73

Lucasey products for broadcast and video users are constructed of

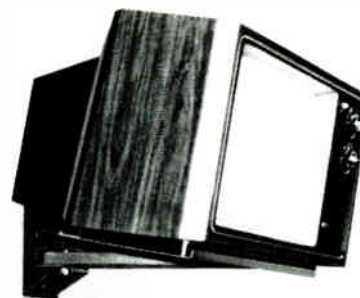
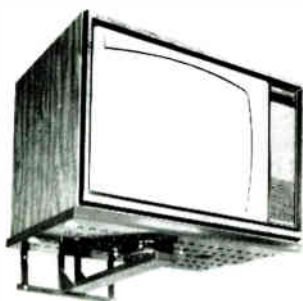
A SUPERIOR SELECTION OF NON-LOCKING, HEAVY-DUTY CEILING MOUNTS



MODELS CB-M19, CB-M20, CB-M25

This is the top of the Lucasey line — three models with different size platforms accommodate small, medium and large monitors. Each may be mounted on permanent ceilings or hung through false ceilings (mounting escutcheon furnished on an optional/extra basis). Each of the three ceiling mounts offers full 360° swivel and 45° tilt for universal viewing. Simple installation and clean-line appearance highlight the many features of these sturdy brackets.

WALL MOUNTS FOR HEAVY LOADS AND TIGHT SPACES



MODEL WB-M25

A tough wall bracket to exceed just about every overload requirement. Simple, positive installation features make this one a favorite with AV service personnel. Rugged swivel arm engineering.

MODEL WB-S78

Special engineering allows adherence to clearance codes in low ceiling rooms. Easy installation and removal with minimum 6½ foot clearance assured; fixed tilt and variable swivel make it a perfect choice for modern hospitals.

MODEL CB-M19

Swivel: 360°
Tilt: To 45°
Color: Chocolate Brown
Material: Heavy Gauge Steel
Vertical Dimension: 18" standard 1" pipe
Ceiling Flange: 7½" diameter; ¾" mounting holes (8); 1" pipe thread
Platform Size: 27½" x 15½"; 20½" height opening
Weight Load: Up to 150 lbs.
Non-Locking
Shipping Weight: 31 pounds

\$100.40

MODEL CB-M20

Swivel: 360°
Tilt: To 45°
Color: Chocolate Brown
Material: Heavy Gauge Steel
Vertical Dimension: 18" standard 1¼" pipe
Ceiling Flange: 7½" diameter; ¾" mounting holes (8); 1¼" pipe thread
Platform Size: 25½" x 18½"; 25½" height opening
Weight Load: Up to 175 lbs.
Non-Locking
Shipping Weight: 37 pounds

\$125.00

MODEL CB-M25

Swivel: 360°
Tilt: To 45°
Color: Chocolate Brown
Material: Heavy Gauge Steel
Vertical Dimension: 18" standard 1¼" pipe
Ceiling Flange: 7½" diameter; ¾" mounting holes (8); 1¼" pipe thread
Platform Size: 32" x 19½"; 25½" height opening
Weight Load: Up to 175 lbs.
Non-Locking
Shipping Weight: 42 pounds

\$125.00

MODEL WB-M25

Swivel: 0° to 75° (side to side)
Tilt: 5° (Fixed)
Color: Chocolate Brown
Material: Heavy Gauge steel
Projection: 27¼" (to and of mounting plate)
Knockout Holes: ¼"
Wall Plate Size: 10" x 18" on 16" hole centers
Platform Size: 32" x 19½"
Weight Load: 170 pounds
Non-Locking
Shipping Weight: 35 pounds

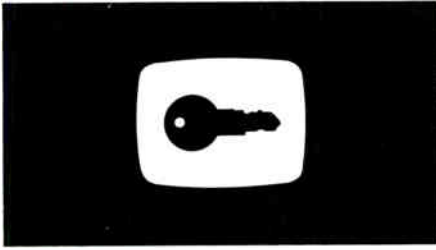
\$125.00

MODEL WB-S78

Swivel: 0° to 15° (side to side)
Tilt: 10° (Fixed)
Color: Chocolate Brown
Material: Heavy Gauge steel
Projection: 19½" (to end of mounting plate)
Platform Size: 23" x 10½"
Knockout Holes: ¼"
Weight Load: Up to 100 pounds
Non-Locking
Shipping Weight: 13 pounds

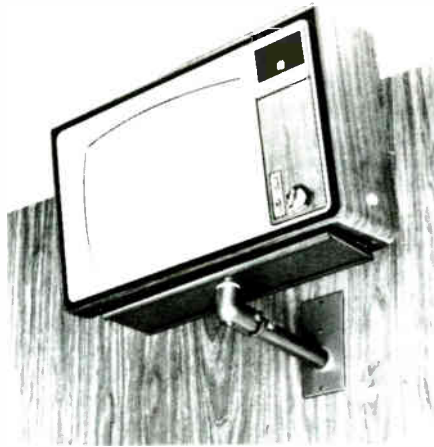
\$52.55

heavy gauge steel with baked-on epoxy finish — a true, lifetime investment.



The Lucasey Universal Security System is designed around a steel mounting plate with cutout configurations to fit most models. For non-locking requirements, the set is simply attached to the universal plate. To convert to a locking mode, the Lucasey locking kit is available. It includes a pin tumbler key, locking plug, and bottom holding plate. The assembled unit hides the mounting screws, blocking access to the mounting plate and receiver by unauthorized personnel.

The Lucasey locking principle is protected under U.S. Patent No. 3724798



MODEL 707

The pioneer bracket of the Lucasey line permits viewing from anywhere in the room by simply adjusting the clutch control. Platform rotates to a 360° swing with the widest angle swivel in the industry. Rugged, durable, tamperproof.



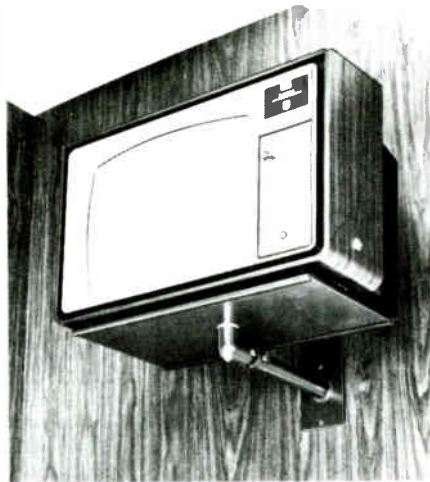
MODEL 1700

The 1700 Series offers fixed tilt in an economical bracket where total security is not required. It fills the need for key controlled, semi-security applications, without sacrificing Lucasey strength, clean-line styling and ease of installation.



MODEL 3100

Lucasey 3100 Series offers clean line styling and positive locking in a television bracket that may be installed quickly and simply. Designed to accommodate large or small sets, these brackets save valuable floor space.



MODEL 7100

This bracket has been designed for - and is being used in - modern institutions throughout the country. Lucasey has included all of their exclusive features in the Model 7100 - with load bearing capability to handle the largest color sets.



MODEL 9000

The Lucasey Model 9000 features full swivel, tilt and angle variations to allow viewing from any location in school, hospital or meeting rooms. Simply installed, this versatile unit releases floor and/or wall space for other uses.

MODEL 707

Swivel: 360°
Tilt: To 90°
Angle: ±15°
Color: Chocolate Brown
Material: Heavy Gauge steel and die-cast aluminum
Projection: 15"
Platform Size: 20" x 5"
Weight Load: 60 pounds
Locking: Five tumbler lock; keyed alike in singles or masterkeyed
Shipping Weight: 18 pounds

\$35.55

MODEL 1700

Swivel: 360°
Tilt: 15° (Fixed)
Color: Chocolate Brown
Material: Heavy Gauge steel
Projection: 19½"
Platform Size: 23" x 10½"
Weight Load: Up to 100 lbs.
Locking: Five tumbler lock; keyed alike in singles or masterkeyed
Shipping Weight: 13 pounds

\$44.50

MODEL 3100

Swivel: 360°
Color: Chocolate Brown
Material: Heavy Gauge steel
Projection: 20"
Platform Size: 18½" x 11½" (3100); 15" x 12" (3101); 23" x 10½" (3102)
Weight Load: Up to 100 lbs.
Locking: Five tumbler lock; keyed alike in singles or masterkeyed
Shipping Wt.: 16 lbs. (3100)
13 lbs. (3101)
16 lbs. (3102)

\$41.70

MODEL 7100

Swivel: 360°
Tilt: To 90°
Angle: ±15°
Color: Chocolate Brown
Material: Heavy Gauge steel and die-cast aluminum
Weight Load: Up to 100 lbs.
Projection: 20"
Platform Size: 22" x 12"
Knockout Holes: ¼"
Locking: Five tumbler lock; keyed alike in singles or masterkeyed
Shipping Weight: 18 pounds

\$75.20

MODEL 9000

Swivel: 360°
Tilt: To 90°
Angle: ±15°
Color: Chocolate Brown
Material: Heavy Gauge steel
Weight Load: Up to 100 lbs.
Vertical Dimension Standard 24" and 30" poles avail.
Ceiling Flange: 7½" diameter; 5/8" mounting holes (8); 1" pipe thread
Locking (optional): Five tumbler lock; keyed alike in singles or masterkeyed.
Shipping Weight: 17 pounds

\$75.20

Prices and Specifications Subject to Change Without Notice.

VM-75



MPO Videotronics

619 West 54th Street
New York, NY 10019
(212) 708-0560 (805) 499-8513

SELF-CONTAINED VHS VIDEO SYSTEMS



VHS 760/764

VHS 760 and 764 PORTABLE VIDEO SYSTEMS

These fully integrated single unit systems are designed to play or record, utilizing a standard 1/2" videocassette. 3-way power supply makes them especially easy to travel with, and each weighs only 22 lbs.

With a 7" diagonal screen mounted above the deck, the new VHS 760 and 764 are convenient for the viewer, as well. They each occupy only 9" of desk space. Although portable, the VHS 760 and 764 offer many functions normally found on a standard size VHS: 2, 4 or 6 hour speeds for record or playback; multiple remote functions; full TV reception and auto rewind. The VHS 764 employs a 4-head helical scan providing noiseless and jitter-free still picture and slow-motion special effects. Additional capabilities of both include large screen monitor hookup, RF in, audio/video in and out, and 10-pin camera input.

For sales, training or any business travel or office use, the VHS 760 and 764 offer a new combination of lightweight practicality and technical expertise.

SPECIFICATIONS VHS 760

Dimensions:

9" Wide x 12" High x 12" Deep

Screen:

7" Diagonal, NTSC Color. Positioned above VHS deck for easy viewing

Weight:

22 lbs.

Tape System:

Rotary 2-head helical scan. Standard VHS 1/2" tape deck

Features:

Choice of 2, 4 or 6 hour speeds for record/playback; Auto Rewind; Remote Control; Freeze Frame; Single Frame Advance; Slow Motion

3-Way Power:

AC and DC. Battery and auto lighter adaptor available

Additional Capabilities:

Hookup to large screen monitors. Full TV reception; RF out; Audio/Video in and out; 10 pin camera input

VHS 760 2-Head Rotary Helical Scan.

SPECIFICATIONS VHS 764

Dimensions:

9" Wide x 12" High x 12" Deep

Screen:

7" Diagonal, NTSC Color. Positioned above VHS deck for easy viewing

Weight:

22 lbs.

Tape System:

Rotary 4-head helical scan. Standard VHS 1/2" tape deck

Features:

Choice of 2, 4 or 6 hour speeds for record/playback; Auto Rewind; Remote Control

Noiseless Special Effects:

Freeze Frame; Single Frame Advance; Slow Motion

3-Way Power:

AC and DC. Battery and auto lighter adaptor available

Optional:

Continuous run switch

Additional Capabilities:

Hookup to large screen monitors. Full TV reception; RF out; Audio/Video in and out; 10 pin camera input

VHS 764 4-Head Rotary Helical Scan.

ACCESSORIES:

V-68 Battery Pack

12 volt 4 amp hour lead acid rechargeable battery. Clips on back of VHS 760/764, when attached fits in carrying cover. Approximate running time, 1 hour. Weight 3.2 lbs.

V-58 Battery Charger— Domestic .

Charges V-68 battery packs in 12-14 hours. Operates on 115 volts wall current.

V-60 Voltage Converter Step-Down Transformer .

V-63 Carrying Case

Textured Vinyl Carrying Cover padded soft construction, makes it easy to carry VHS 760/764, pocket for remote control.



V-64 Shipping Case

Shipping Case for VHS 760/764 Heavy gauge durable construction. Lined with 1/2" ester foam. Accommodates VHS 760/764 and Carrying Cover.



V-52 Cable .

Audio-Video Recording Cable allows for recording from VHS 760/764 built in TV monitor or external video player or monitor. RCA jack or BNC adaptable.



V-55 Car Battery Adaptor

Car Battery Adaptor provides power to VHS 760/764 using a car battery (via lighter socket) as the source.



MPO Videotronics

619 West 54th Street
New York, NY 10019
(212) 708-0560 (805) 499-8513

SELF-CONTAINED VHS VIDEO SYSTEMS



VHS 1200



VHS 1260/1264

VHS 1200 PORTABLE VIDEO SYSTEM

SPECIAL FEATURES

- Noiseless freeze frame
- All concealed controls—accessible from front
- RF out
- Audio/video out

This fully integrated, single unit system with 12" diagonal picture is designed for exhibits, in store POP, and training.

The VHS 1200 utilizes standard 1/2" videocassettes. It features as an option a unique end-of-program sensor. When set in its unattended mode, the videocassette automatically rewinds and replays. All controls are concealed, yet are accessible from the front of the unit.

The VHS 1200 is for playback only (no record feature)—consequently the price is relatively low.

SPECIFICATIONS

Dimensions:

11-3/4" Wide x 17" High x 14" Deep

Weight:

37 lbs.

Screen:

12" diagonal, NTSC color

Tape System:

Uses standard VHS 1/2" videocassette

VHS 1200 Video Playback-only System

(uses standard 1/2" videocassettes) \$1095.00

VHS 1200-C Special P.O.P. Model with end of program sensor,
auto rewind and replay 1155.00

Accessories:

V-61 Cordura Carry Case, Canvas \$ 105.00

V-62 Shipping Case 150.00

VHS 1260 & 1264 PORTABLE VIDEO SYSTEMS

Specifications apply to both models unless otherwise indicated. Model VHS 1260 utilizes a 2-head helical scan system; the Model 1264 employs a 4-head helical scan design which provides noiseless and jitter-free special playback effects.

Dimensions:

11-3/4" Wide x 16" High x 13" Deep

Weight:

30 lbs.

Screen:

12" diagonal, NTSC color. 250 line resolution. Positioned above deck for easy viewing.

Tape System:

Rotary 2-head helical scan (Model 1260 only) or rotary 4-head helical scan (Model 1264) only. Standard VHS 1/2" format tape deck.

Features:

Selectable 2, 4 or 6 hour speeds for record/playback. Auto rewind. Freeze frame, single frame action, slow motion. Basic function remote control (Model 1260 only), or full function remote control (Model 1264 only).

Special Effects:

"Noiseless" freeze-frame, single frame action and slow motion playback (Model 1264 only). All recorder functions may be operated by remote control.

Power Requirements:

117/120 VAC current.

Additional Capabilities:

Hookup to large screen monitor. RF output. Audio/video in and out. 10-pin video camera input.

Optional:

Continuous run switch for unattended program repetition.

VHS 1260 2-Head helical scan system \$1595.00

VHS 1264 4-Head helical scan system 1694.00

Accessories:

V-61 Cordura Carry Case, Canvas 105.00

V-62 Shipping Case 150.00

Prices and Specifications Subject to Change Without Notice.

VM-77

MITSUBISHI ELECTRIC SALES AMERICA, INC.

110 New England Ave. West
Piscataway, NJ 08854
(201) 981-1414 (800) 631-5377

COLOR TV/MONITORS

13" to 25" COLOR TELEVISION

COMMON FEATURES

Picture: Diamond Vision picture tube • Automatic Picture Latitude Circuitry (APLC) • Saw Filter
Tuning: 139-channel cable-ready • Frequency synthesizer, random access

13" CS-1352

Cabinet: Walnut-grain plastic • Tabletop styling
Tuning: Channel-Memory scan • Quick-View tuning
Dimensions: 13-5/8"H x 17-7/8"W x 14-3/4"D; Wt. 25 lbs.
CS-1352 \$320.00

13" CS-1384R WITH WIRELESS REMOTE

Cabinet: Pecan-grain, vinyl-clad wood • Contemporary tabletop styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: 2-speaker sound
Dimensions: 14-1/8"H x 21-3/8"W x 15-1/8"D; Wt. 40 lbs.
CS-1384R \$450.00

15" CS-1584R WITH WIRELESS REMOTE

Cabinet: Pecan-grain, vinyl-clad wood • Contemporary tabletop styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: 2-speaker sound
Dimensions: 15-3/8"H x 23"W x 16"D; Wt. 47 lbs.
CS-1584R \$500.00

19" CS-1960R MONITOR/RECEIVER WITH WIRELESS REMOTE

Cabinet: Silver vinyl-clad wood • Hi-tech contemporary tabletop styling
Dimensions: 19-3/4"H x 20-5/8"W x 18-3/4"D; Wt. 57 lbs.
CS-1960R \$630.00

19" CS-1973R WITH WIRELESS REMOTE

Cabinet: Pecan-grain, vinyl-clad wood • Tabletop styling
Tuning: Channel-Memory scan • Quick-View tuning
Dimensions: 18-3/4"H x 27-3/4"W x 19-1/2"D; Wt. 65 lbs.
CS-1973R \$550.00

19" CS-1984R WITH WIRELESS REMOTE

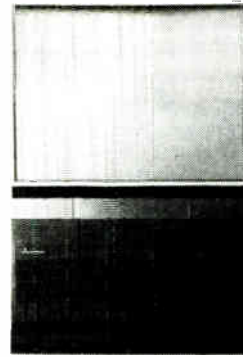
Cabinet: Pecan-grain, vinyl-clad wood • Tabletop styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: 2-speaker sound
Dimensions: 18-7/8"H x 28-1/4"W x 19-3/8"D; Wt. 70 lbs.
CS-1984R \$650.00

20" CS-2061R WITH WIRELESS REMOTE

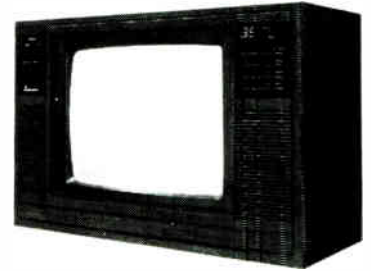
Tube: Special flat tube with computer input
Cabinet: Silver grid pattern vinyl-clad wood • Hi-tech contemporary tabletop styling • Compact design
Tuning: Channel-Memory scan • Quick-View tuning
Audio: 3D sound system with rear-mounted woofer
Dimensions: 18-7/8"H x 20-1/4"W x 19-1/4"D; Wt. 72 lbs.
CS-2061R \$820.00

21" CS-2184R WITH WIRELESS REMOTE

Cabinet: Pecan-grain, vinyl-clad wood • Tabletop styling or with optional pedestal base Model MP-216
Tuning: Channel-Memory scan • Quick-View tuning
Audio: Sealed enclosure 2 speaker sound
Dimensions: 21"H x 30-5/8"W x 18-1/2"D; Wt. 97 lbs.
CS-2184R \$750.00



VS-360R/
VS-360RA



CS-1384R

25" CK-2561R WITH WIRELESS REMOTE

Cabinet: Genuine oak veneer wood • Contemporary Vertical Console styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: Sealed enclosure 5-speaker sound (with super woofer) • 3 separate amplifiers
Dimensions: 36-3/8"H x 29"W x 22-1/4"D; Wt. 173 lbs.
CK-2561R \$1200.00

25" CS-2566R WITH WIRELESS REMOTE

Cabinet: Genuine oak veneer wood • Contemporary tabletop styling • Compact design
Tuning: Channel-Memory scan • Quick-View tuning
Audio: 3D sound system with rear-mounted woofer • External speaker terminals
Dimensions: 23-7/8"H x 27"W x 19-5/8"D; Wt. 114 lbs.
CS-2566R \$920.00

25" CK-2575R WITH WIRELESS REMOTE

Cabinet: Genuine oak veneer wood • Contemporary console styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: Sealed-enclosure 4-speaker sound
Dimensions: 30-5/8"H x 34-1/2"W x 21-1/2"D; Wt. 152 lbs.
CK-2575R \$800.00

25" CK-2587R WITH WIRELESS REMOTE

Cabinet: Genuine pecan veneer wood • Traditional console styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: Sealed-enclosure 4-speaker sound
Dimensions: 31-1/8"H x 43-1/2"W x 21-7/8"D; Wt. 179 lbs.
CK-2587R \$1100.00

25" CK-2588R WITH WIRELESS REMOTE

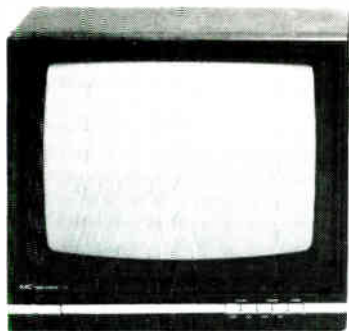
Cabinet: Genuine oak veneer wood • Contemporary console styling
Tuning: Channel-Memory scan • Quick-View tuning
Audio: Sealed-enclosure, 4-speaker sound
Dimensions: 30-3/4"H x 39-1/8"W x 21-3/4"D; Wt. 179 lbs.
CK-2588R \$1200.00

36" VS-360/VS-360RA REAR-PROJECTION COLOR TELEVISION WITH WIRELESS REMOTE

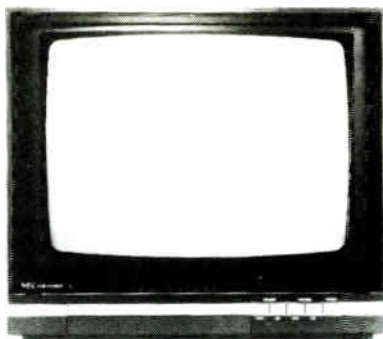
Cabinet: Pecan-grain, vinyl-clad wood • Contemporary styling
Picture: Washable, anti-reflective screen • 170 footLamberts of brightness • 110° viewing angle • Optically-coupled f/1.1 coated lenses • APLC
Tuning: 139-channel, cable-ready • Frequency-synthesizer, direct access • Channel-Memory scan
Audio: 2-speaker sound
Dimensions: 45-5/16"H x 30-15/16"W x 25-5/8"D; Wt. 159 lbs.
VS-360 \$2100.00

VM-78

Prices and Specifications Subject to Change Without Notice.



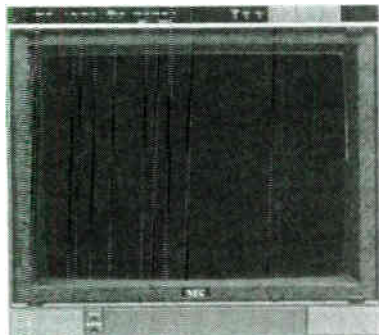
CM-1951A/CM-2551A



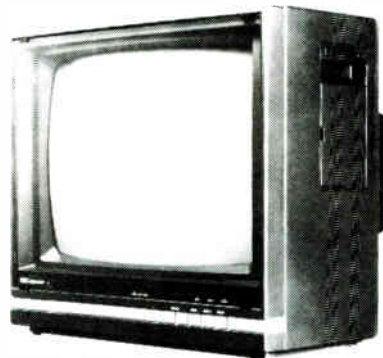
CT-2505A



CT-1305A (RGB)



CT-2020A



CM-2591A/CM-1991A



C12-202A

CT-1305A (RGB)

13" Color Receiver/Monitor; 134 Ch. CATV-ready Quartz PLL tuner; Random Access; Skip Memory; 90 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Multiple input/output connections; High efficiency circuitry; Infrared remote control. RGB Inputs. **\$549.00**

CT-2020A

20" Professional Color Monitor/Receiver; 142 Ch. CATV-ready Quartz tuner; Direct access tuning; Skip Memory; Black stripe picture tube for nearly distortion-free image; Smoked-glass, non-glare screen; Comb filter; Auto-flesh tone; Horizontal Resolution—350 lines; Built-in stereo amp and speakers; Multiple input/output connections; On-screen channel/time display; 20-function wireless remote control **\$799.00**

CT-2505A

25" Color Receiver/Monitor; 134 Ch. CATV-ready Quartz PLL tuner; Random Access; Skip Memory; 100 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Comb filter; Auto Flesh Tone; Stereo amp and speakers; Multiple input/output connections; High efficiency circuitry; Infrared remote control. **\$950.00**

C12-202A

12" Color Monitor; 90 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Built-in speaker; High efficiency circuitry; Compact design; versatile application. **\$350.00**

C25-900A

25" Color Monitor; Comb filter and wide-band video circuit for improved resolution (370 lines); RGB separate input and video composite input; RGB analog input for intermediate color tones; Built-in 4" speaker for sound monitoring; With the built-in 2-channel 7W + 7W audio output, this model can be hooked up to a hi-fi system for high-fidelity sound. The C25-900A also features outstanding reliability and a clean, sharp picture. **\$850.00**

CM-1951A

19" Color Monitor; 90 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Comb filter; Auto Flesh Tone; Built-in stereo amp; High efficiency circuitry; Multiple input/output connections. **\$550.00**

CM-2551A

25" Color Monitor; 100 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Comb filter; Auto Flesh Tone; Built-in stereo amp; High efficiency circuitry; Multiple input/output connections. **\$700.00**

CM-1991A (RGB)

19" Professional Color Monitor; With RGB Analog Inputs; 90 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Comb filter; Auto Flesh Tone; Built-in stereo amp; High efficiency circuitry; Multiple input/output connections. **\$750.00**

CM-2591A (RGB)

25" Professional Color Monitor; With RGB Analog Inputs; 100 degree deflection in-line picture tube with black stripe shadow mask; Smoked non-glare screen; Comb filter; Auto Flesh Tone; Built-in stereo amp; High efficiency circuitry; Multiple input/output connections. **\$1100.00**

TU-941EN

134 Ch., CATV-ready Quartz PLL video tuner; Random Access; Two input audio/video selection; Programmable timer; Stereo audio controls; Infrared remote control. **\$595.00**

ACCESSORIES

TS-1910E	19" Rack for all 19" Color TVs and Monitors . . .	\$115.00
TS-1911E	Rack for 19" TV/Monitors and SX-S25E Speakers . . .	149.00
TS-202AE	Rack for CT-2020A and an optional pair of speaker systems . . .	169.00
TS-2020AE	Rack for CT-2020A . . .	125.00
TS-2510E	25" Rack for all 25" Color TVs and Monitors . . .	130.00
TS-2511E	Rack for 25" TV/Monitors and SX-S26E Speakers . . .	190.00
SX-S25E	(2) Stereo Speakers for all 19" TV/Monitors . . .	115.00
SX-S26E	(2) Stereo Speakers for all 25" TV/Monitors . . .	130.00
SX-S27E	Custom-designed speaker system for CT-2020A (available in pairs) . . .	120.00

Prices and Specifications Subject to Change Without Notice.

VM-79

NON-LINEAR SYSTEMS

DIVISION OF KAYPRO CORP.

P.O. Box N
Del Mar, CA 92014
(619) 481-3900 Telex 249045

OSCILLOSCOPES



MS-15



MS-230



MS-215

Single-Trace Oscilloscopes

MS-15, 15MHz. • Portability — 2.7" H x 6.4" W x 8.0" D • Weighs only three pounds • Lowest price — batteries and charger included • External and internal trigger • Time base — 0.1 microseconds to 0.5 seconds-per-division • 21 time base settings • Automatic and line sync modes • Vertical gain — 0.01 to 50 volts-per-division • 12 vertical gain settings • Vernier controls — sweep and gain • Calibrated sweep and gain functions • Battery or line operation • Power consumption less than 15 watts • Internal calibrator.

The MS-15 Miniscope weighs only three pounds, is physically small at 2.9 inches high by 6.4 inches wide by 8 inches deep. Vertical bandwidth is 15 megahertz. The graticuled rectangular viewing area is four division high by five division wide. Division spacing is 0.25 inches.

Internal and external triggering are provided along with automatic and line synchronization modes as well as a horizontal input. There are 12 vertical gain settings from 0.01 volts to 50 volts per division. Twenty-one time base settings from 0.1 microseconds to 0.5 seconds per division are included. An optional 10-to-1 probe and a carrying case are also available. **\$466.00**

Dual-Trace Oscilloscopes

MS-215, 15 MHz. • Portable — 2.9" H x 6.4" W x 8.0" D • Weighs only three pounds including batteries • Moderately priced — batteries and charger included • Dual-trace — two channel capability • Separate, chopped or alternate sweep modes • External and internal trigger • Time base — 0.1 micro seconds to 0.5 seconds per division • 21 time base settings • Automatic and line sync modes • Vertical gain — 0.01 to 50 volts per division • 12 vertical gain settings • Vernier controls — sweep and gain • Calibrated sweep and gain functions • Battery or line operation • Power consumption less than 15 watts • Internal calibrator

This incredible dual-trace, 15-megahertz oscilloscope is battery or line operated and weighs only three pounds. Separate, chopped and alternate dual-trace sweep modes are included, as well as internal and external sync modes. The time base controls provide 21 settings with a range from 0.1 microseconds per division to 0.5 seconds per division. There are 12 vertical gain settings for each channel providing a range from 0.01 to 50 volts per division, for each.

Packaging size is a small 2.9 inches high by 6.4 inches wide by 8.0 inches deep.

The MS-215 is furnished complete with two input cables, battery charger and rechargeable batteries.

Options include a leather carrying case with neck strap and belt loop for versatile hands-free operation and a 10-to-1, 10-megohm probe. **\$596.00**

MS-230, 30 MHz. • Portable — 2.9" H x 6.4" W x 8.6" D • Weighs only 3.6 pounds including batteries • Moderate price — batteries and charger included • Dual-Trace — two channel capability • 30 — megahertz bandwidth • Separate, chopped or alternate sweep modes • External or internal trigger • Time base — 0.1 microseconds to 0.5 seconds per division • 21 time base settings • Automatic and line sync modes • Vertical gain — 0.01 to 50 volts per division • 12 vertical gain settings • Vernier controls — sweep and gain • Battery or line operation • Low battery indicator • Internal calibrator

Non-Linear Systems increased the number of its Miniscope oscilloscopes to three with the introduction of its Model MS-230, 30-megahertz, battery operated, dual-trace miniscope. Small package size is 2.9 inches high by 6.4 inches wide by 8.6 inches deep. Weight is 3.6 pounds, including batteries.

The MS-230 features alternate, chopped and separate sweep modes. Internal and external trigger modes are included. There are 12 vertical gain settings for each channel's range from 0.01 to 50 volts per division. Time base settings number 21 from 0.05 microseconds to 0.2 seconds per division. Verniers are provided for time base and vertical amplifier adjustment.

The MS-230 Miniscope includes a horizontal input channel and an internal calibrator. The graticule consists of 0.25 inch divisions arranged five across and four high. The MS-230 comes complete and ready to use. Included are input cables and a battery charger permitting battery or line operation.

Accessories include a 10:1, 10-megohm probe and a leather carrying case with shoulder strap and belt loop. **\$779.00**

748 W. Algonquin Rd.
Arlington Heights, IL 60005
(312) 640-3220

MODULAR TI-2000 TELE-IMAGER™

- Desk-Top Cabinet Design
- Full and Quad Screen Display Modes
- Three Transmit Speeds for All Requirements
- Exclusive "Pix-Alert"™ Signalling Feature
- Quick Installation — Uses Modular Phone Jacks
- Save Pictures on Ordinary Audio Tape
- Uses Standard CCTV Accessories
- Automatic Switching from Picture to Voice
- No External Phone Coupler Needed
- FCC Approved for Direct Telephone Connection
- Easy to Operate Pushbutton Controls
- Automatic Mode Sends Continuous Pictures

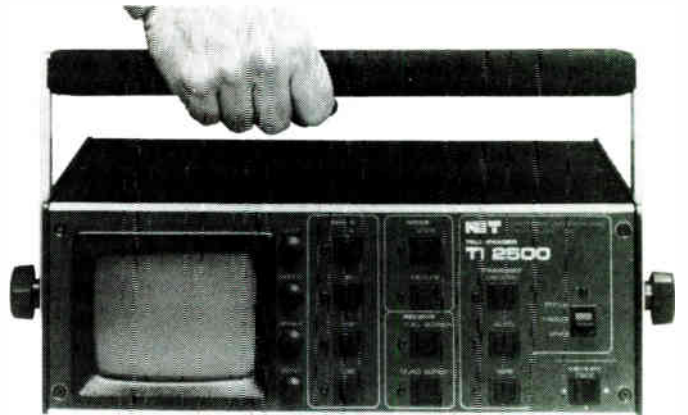


TI-2000

PORTABLE TI-2500 TELE-IMAGER

All The Features Of The TI-2000, Plus...

- Two Pages of High Resolution Memory
- Dual Video Outputs. View Both Pages At Once
- Self-Contained Video Monitor
- Lightweight and Compact
- Protective Front Panel Cover
- Built-In Line Cord Storage



TI-2500

The Tele-Imager

The first of a new generation of low cost freeze-frame video communications systems that can send and receive high quality "snapshots" of live video pictures over regular telephone circuits, twisted pair, or voice grade radio channels. The Tele-Imager can capture video frames from any standard monochrome or color video camera or video tape recorder. These captured images may be then saved and played back on any standard audio tape recorder such as cassette or reel to reel.

Compact and lightweight, the Tele-Imager utilizes state-of-the-art microprocessor technology. A simplified, lighted control panel has been designed with the user in mind.

TI-2000 \$2995.00
TI-2500 3750.00

SPECIFICATIONS

Memory Capacity: 1 page of 256 x 256 pixels (TI-2000)
2 pages of 256 x 256 pixels each (TI-2500)

Gray Scale: Pixels are quantized to 64 shades

Scan Rates: 8 seconds at 128 x 128
16 seconds at 256 x 128
32 seconds at 256 x 256

INPUTS

Video: Standard Composite Video — 525 line, 60Hz., 1.0 Volt p-p white positive, sync neg., 75 ohms BNC Type Input Connector.

Telephone: Standard RJ-11C Modular Jack for direct connection to single line U.S. telephone system and any FCC registered telephone instrument.

Audio Tape Recorder: 100 mV Nominal into 1,000 ohms

OUTPUTS

Video: Standard Composite Video — 525 line, 60Hz., 1.0 Volt p-p white positive, sync neg., 75 ohms BNC Type Output Connector.

Telephone: Standard RJ-11C Modular Jack for direct connection to single line U.S. telephone system and any FCC registered telephone instrument.

Audio Tape Recorder: 100 mV Nominal into 1,000 ohms

TI-2500 GENERAL SPECIFICATIONS

Size: 5.18"(H) x 15"(W) x 12.5"(D)

Net Weight: Approx. 15 lbs.

Power Requirements: 120 V AC 60Hz 25W

TI-2000 GENERAL SPECIFICATIONS

Size: 3.75"(H) x 12"(W) x 13"(D)

Net Weight: 7.5 lbs.

Power Requirements: 120 V AC 60Hz 15W

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

CT-10010M 100" Screen

Color Video Projection System w/Remote Control

The CT-10010M large screen color video projection system provides high image quality. Three 7-inch projection CRTs are used in an in-line configuration with f/1.1 lenses to attain a resolution of 450 lines using an NTSC input, which increases to a resolution of 550 lines (or 2000 characters) with an RGB input. New high voltage circuitry delivers 4.2 foot-Lamberts of luminance (screen gain = 1). Thus a bright, highly viewable picture can be displayed on almost any curved or flat screen.

The supplied wired remote control unit allows for convenient adjustment and switching of brightness, contrast, tint, color, sharpness, vertical hold, power on/off and static convergence (with a built-in crosshatch test pattern generator). In addition, the remote control unit incorporates a Line/VTR switch, Video/RGB switch and a Test switch. The CT-10010M can be installed for front/rear or ceiling/floor projection applications

Features:

- Three 7" projection lenses used in an in-line configuration
- Resolution: 450 Lines with NTSC input and 550 lines (or 2000 characters) with RGB input
- Standard accessory wired remote control
- Luminance of 4.2 foot-Lamberts and a luminous flux of 270 lumens at white peak
- High quality projection on almost any flat or curved screen up to 100" (diagonal)
- Comb filter improves resolution and reduces chroma noise

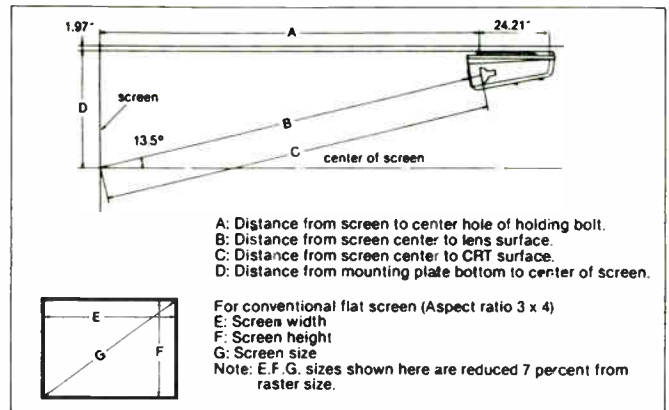
SPECIFICATIONS

Power Source: 120V AC, 60Hz
Power Consumption: 139W (average)
Projection Tubes: 7" high brightness CRTs (RGB)
Lenses: 138.32mm focal length
Resolution: 450 TV lines (composite); 550 TV lines (RGB)
Video IN/OUT Connector: BNC and 8-pin VTR
Video Input Impedance: 75 ohms/Hi-Z
Input Signals: NTSC; 1V p-p composite, neg. sync
 RGB; 1V p-p or TTL level
Screen Size: 50" to 100" diagonal
Luminous Flux: 270 lumens at white peak
Ambient Operating Conditions: 32° F to 104° F (0° C to 40° C); 20% to 80% humidity
Dimensions: 12 1/2" (H) x 24 1/16" (W) x 30 1/8" (D)
 318 x 614 x 767mm
Weight: 105.6 lbs. (48.0kg)
Included With Unit: ET-10R Remote Control Unit

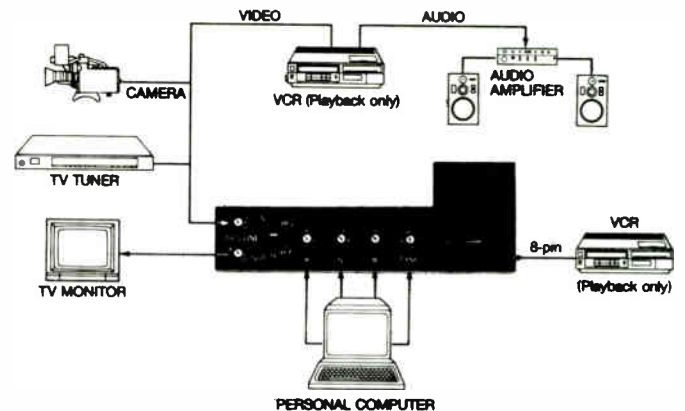
CT-10010M **\$6200.00**



CT-10010M



Screen Size (G)	Width (E)	Height (F)	A	B	C	D
100"	80.0"	60.0"	122.4"	123.3"	130.7"	37.2"
90"	72.0"	54.0"	111.0"	111.6"	119.0"	34.4"
84"	67.2"	50.4"	104.2"	104.6"	112.0"	32.8"
72"	57.6"	43.2"	90.6"	90.5"	98.0"	29.5"
60"	48.0"	36.0"	77.0"	76.5"	84.0"	26.2"
50"	40.0"	30.0"	65.7"	64.8"	72.3"	23.5"



Optional Accessories:

- ET-10C15 (49.2', 15m) remote control cable \$140.00
- ET-10C30 (98.4', 30m) remote control cable 210.00
- ET-10C50 (164', 50m) remote control cable 300.00

CT-130V VCR Monitor

Introducing the Panasonic CT-130V VCR/Monitor TV combination unit designed for high quality video presentations. The CT-130V is a space saving unit that measures only 15-1/2" across and 16" from front to back. The front loading VCR mechanism comes equipped with a 10-function wired remote control keypad and a locking front panel cover for tamper free operation. The CT-130V is easy to set-up and does not require any connections other than plugging it into an AC outlet. Operational modes include auto-repeat and noise-free still playback. Boasting a host of valuable features, the CT-130V can be a potent communications device in your organization. Applications range from employee training and education, to sales presentations and product demonstrations. Two (2) Auto Repeat modes; end of program and zero counter repeat.

CT-130V \$1395.00

Features Designed for Operational Convenience

- Auto-repeat for unattended presentations or guidance purposes
- Versatile noise-free playback modes including Still, Frame Advance, and Cue & Review (in the SLP mode)
- 10-function wired remote control
- SP/SLP tape speeds with 8-hour record capability (using NV-T160 cassettes in the SLP mode)
- Bright, clear 13" diagonal screen for excellent picture quality
- Front locking cover provided for tamper free operation
- Video input and monitor output
- Camera remote jack
- BNC-RCA adaptor

Specifications

MONITOR

Picture Tube: 13" diagonal, 90° deflection
Viewing Area: 11 1/8" (H) x 8 7/16" (V) [281mm (H) x 211mm (V)]
Power Consumption: 95W

VCR

Video Recording System: 2 rotary heads, helical scanning system
Luminance: FM azimuth recording
Color signal: Converted subcarrier phase shift recording

Audio Track: 1 track
Tape Format: Tape width 1/2" (12.7mm), high density tape
Tape Speed:
 SP 1 7/16" i.p.s. (33.35mm/s)
 SLP 7/16" i.p.s. (11.12mm/s)
FF/REW Time: Less than 4 min. 30 sec. with NV-T120



Operating Temperature: 41°F—104°F (5°C—40°C)
Operating Humidity: 35%—80%
Power Consumption: 29W

GENERAL

Power Source: 120V AC, 60Hz
Audio Output: 1.5W
Speaker: 3 7/8" (10cm) round
Dimensions (H x W x D): 17 1/16" x 15 1/8" x 16 1/8" (437 x 390 x 409 mm)

Weight: 49.2 lbs. (22.3 kg)

CONNECTOR

Video Output: 1 Vp-p, 75 ohms unbalanced
Audio Output: 0.5 Vrms (at 100% modulation)
Video Input: 1 Vp-p, 75 ohms unbalanced
Audio Input: 0.5 Vrms
Camera Remote Input: Short circuited (M2)

INCLUDED ACCESSORIES



10-function remote control



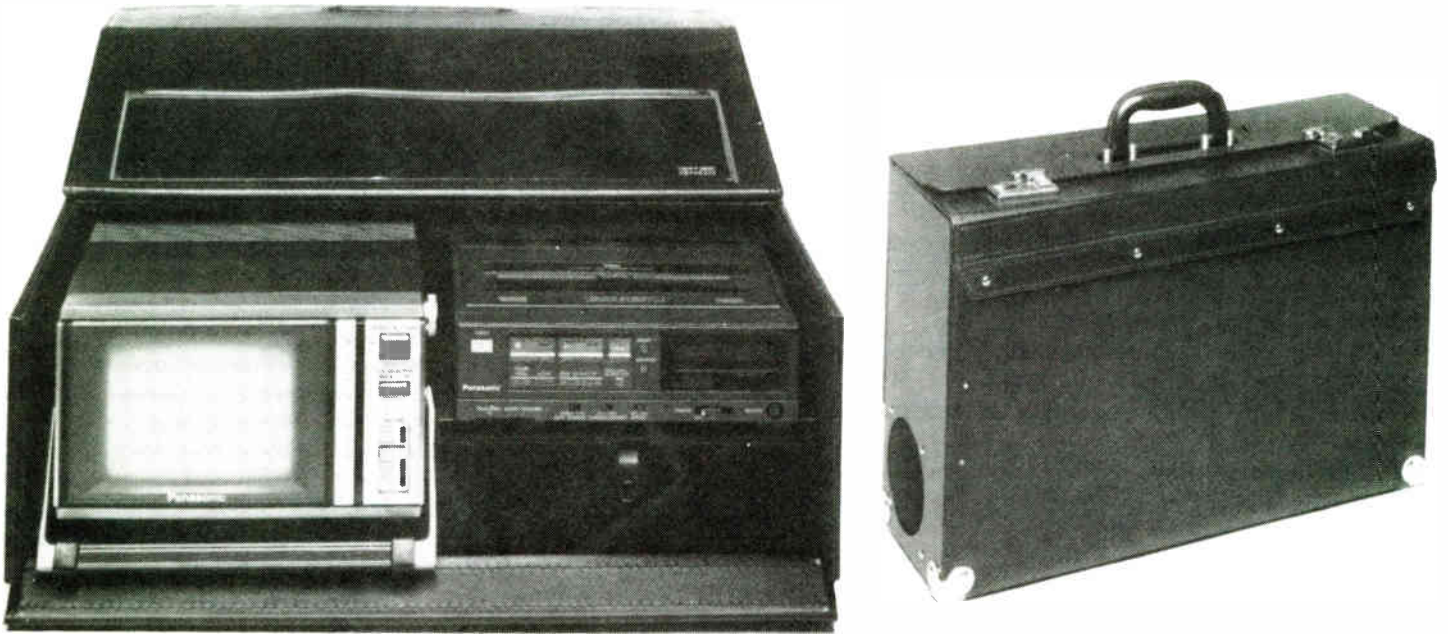
Front locking cover

AG-HT240 VIDPAK II CARRYING CASE

The AG-HT240 Vidpak II combines deck and monitor into a lightweight and functional portable video presentation system.

FEATURES:

- Designed for AG-2400 VHS Recorder, CT-500V Color Monitor and AG-B12 AC Adaptor
- Out-of-Sight Audio and Video Cables Included
- Special R.F. Barrier Prevents VCR-Monitor Interference
- Meets FAA Guidelines for Under-Seat Use on Airlines
- Facilitates Use of Components Separately or as Integrated Unit.



Panasonic introduces the AG-HT240 Vidpak Carrying Case. Designed to exclusively house the AG-2400 VHS recorder, CT-500V color monitor, and the AG-B12 plug-in AC power adaptor, the AG-HT240 Vidpak combines the deck and monitor into a functioning portable video presentation system. Its special out-of-sight cable connection design, easy access to controls, and light weight make the Vidpak ideal for point-of-sale presentations. The units are

easily removed for other applications and the case meets FAA size requirements for under-seat airline carrying.

The AG-HT240 Vidpak features a rugged construction with reinforced frame. A special metal recorder/monitor barrier prevents RF interference. Also included is a provision for two VHS tapes and 2 RCA cables for video and audio connection.

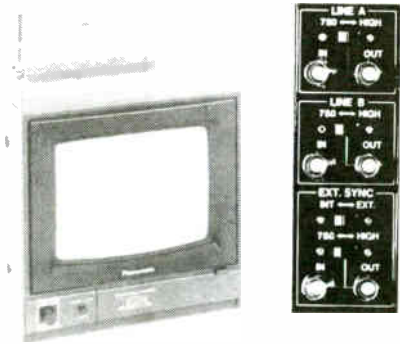
AG-HT240 **\$148.00**

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

BT-S700N 7" AC/DC Color Monitor

- Single lever selector for normal scan, pulse cross, under scan and blue-only operation
- AC/DC operation
- Built-in folding carrying handle
- Selectable BNC/VTR inputs via front panel pushbutton
- Audio monitoring facilities with built-in speaker

BT-S700N \$625.00



BT-S700N

BT-S701N 7" Color Video Monitor

- Line A/B selectable by front panel pushbutton
- External sync switch
- Front panel controls (concealed behind door)
- Single level selector for normal scan, pulse cross, under scan and blue-only operation
- Desk-top construction design

BT-S701N \$550.00



BT-S701N

BT-S702N Dual 7" Color Monitor

- Line A/B selectable by front panel pushbuttons
- External sync switch
- Rackmountable in standard 19" EIA rack
- Single lever selector for normal scan, pulse cross, under scan and blue-only operation
- Front panel controls (concealed behind door)

BT-S702N \$1150.00

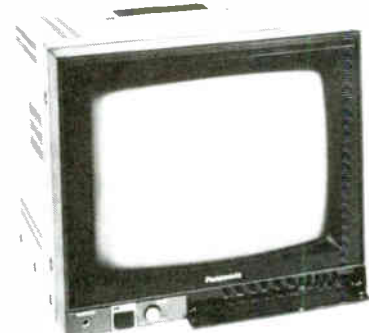


BT-S702N

BT-S1300N 13" Color Video Monitor

- High resolution CompuFocus picture tube w/Overlapping Field lens gun
- Line/VTR selectable
- Normal/underscan switch allows viewing of picture corners
- Blue-only switch defeats red and green signals and makes hue and chrominance adjustment simpler
- Pulse-cross display for easy observation of sync detail

BT-S1300N \$650.00



BT-S1300N

BT-S1900N 19" Color Video Monitor

- High resolution CompuFocus picture tube with Overlapping Field lens gun
- Line 1/2/VTR selectability
- External Sync switch for use with non-composite video signal
- Normal/underscan switch
- Chroma switch for black and white display
- Blue-only switch defeats red and green signals and makes hue, chrominance adjustment easier
- Pulse cross switch (H-delay, V-delay)
- Audio monitoring facilities w/built-in speaker

BT-S1900N \$795.00



BT-S1900N

Prices and Specifications Subject to Change Without Notice.

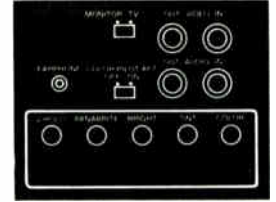
One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

CT-500V

5" Portable Color Video Receiver/Monitor

- Powered by AC, Car Battery or Rechargeable Battery
- ColorPilot Electronic Color Control System
- Quinatrix II In-Line Picture Tube with Quick-on
- RCA Connectors for Video & Audio Input/Output
- TV/Line Selector Switch
- 100% Solid-State IC Chassis
- Panabrite control for simultaneous contrast and brightness adjustment

CT-500V \$475.00



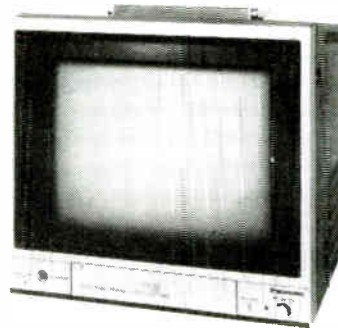
CT-500V

CT-110MA

10" Color Video Monitor

- Quinatrix II In-Line Picture Tube
- Switchable Line/VTR IN
- Selectable AFC time constant
- Metal cabinet and handle
- Built-in 3-inch Speaker & Earphone Jack
- BNC Video, RCA Audio & 8-pin VCR Connectors

CT-110MA \$475.00



CT-110MA

CT-1010M

10" Color Video Monitor

- Quinatrix II In-Line Picture Tube
- Quick-on Picture Tube eliminates long warm-up time
- 100% Solid-State IC Chassis
- Built-in 3-inch Speaker & Earphone Jack
- Panabrite controls contrast and brightness simultaneously

CT-1010M \$400.00



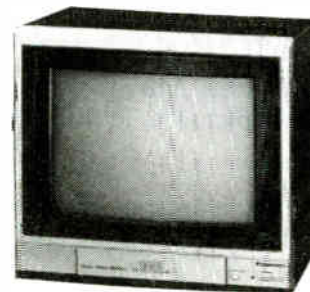
CT-1010M

CT-1020M

10" Color Video Monitor w/o Audio Facilities

- Quinatrix II In-Line CRT w/Black Matrix design & pre-focus lens for sharp resolution and natural color rendition
- Front Panel Controls for color, tint, brightness, Panabrite, and vertical-hold
- Panabrite simultaneously optimizes contrast and brightness
- Quick-on construction avoids long warm-up but uses no power when unit is off
- Commercial UL Listing

CT-1020M \$385.00



CT-1020M

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

CT-1330M

13" Color Video Monitor w/3-Source Inputs

- Full/Over scan-size switching lets you see entire camera view or only portion of picture seen on ordinary TV set and provides full character view from computer outputs
- 3-way audio monitoring: headphones, built-in speaker or optional external speaker. (Slide volume control provided)
- CompuFocus picture tube delivers high resolution picture
- Panabrite simultaneously adjusts brightness and contrast
- 10-channel preset electronic tuning with fine tuning control
- Rear panel controls for brightness, sharpness, and vertical-hold
- Tinted face glass
- Commercial UL listing

\$495.00



CT-1330M



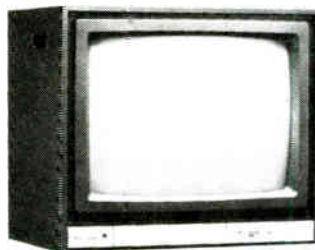
CT-1330V

CT-1330V

13" Color Video Monitor/Receiver w/Scan-Size Selector

- 3-source inputs with red LED indication
- Versatile rear panel facilities: 8-pin VTR connector, two sets of LINE input/output jacks, and monitor output
- Audio monitoring by headphones, built-in speaker, or optional external speaker. (Slide volume control provided)
- Full/Over scan-size switching lets you see entire camera view or only portion of picture seen on ordinary TV set and provides full character view from computer outputs
- Rear panel controls for brightness, sharpness and vertical-hold
- Tinted face glass
- Commercial UL listing

\$595.00



CT-1920M



CT-1350MG

13" Color Video Monitor with RGB Capability

- Quinrix II In-Line picture tube for superb contrast and excellent natural color reproduction
- ColorPilot automatically adjusts incoming color and tint signals to preselected levels
- Panabrite adjusts brightness and contrast simultaneously
- NTSC composite video or RGB video inputs
- Pushbutton NTSC and RGB select switch
- Automatic degaussing prevents magnetic build-up

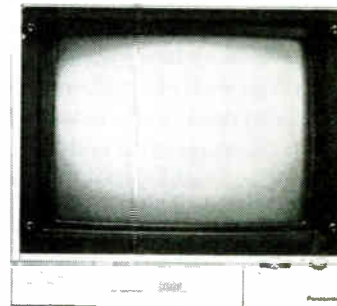
\$585.00

CT-1920M

19" Color Video Monitor w/Comb Filter

- Quinrix II In-Line picture tube for superb contrast and excellent natural color reproduction
- Automatic degaussing prevents magnetic build-up
- VTR/Line pushbutton selector
- ColorPilot automatically adjusts incoming color and tint signals to preselected levels
- Panabrite adjusts brightness and contrast simultaneously
- BNC connectors for NTSC composite video inputs

\$645.00



CT-1350MG

CT-1930V

19" Color Video Monitor/Receiver w/Scan-Size Selector

- Full/Over scan-size switching lets you see entire camera view or only portion of picture seen on ordinary TV set and provides full character view from computer outputs
- LINE connections can be bridged for connection to an additional monitor or other equipment
- Audio monitoring by headphones or built-in speaker, External speaker connection possible. (Slide volume control provided)
- 12-channel preset electronic tuning with fine tuning control
- Panabrite optimizes picture quality by simultaneously adjusting brightness and contrast
- Tinted face glass
- Commercial UL listing

\$795.00



CT-1930V

Prices and Specifications Subject to Change Without Notice.

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000

MT-1340MG

13" Diagonal Medical Video Monitor

- RGB Linear and Composite Monitor for Medical Applications
- Horizontal Resolution more than 400 Lines (RGB)
- .52mm Dot Pitch Data Grade Tube for Crisp, Fine Detail
- UL-544 Rating for Critical Environments
- 1.5 Volt P-P Linear RGB Input for True Rendition of Subtle Color Tones
- Built-In Audio Amp and Speaker

MT-1340MG.....\$625.00



MT-1340MG

CT-1400MG

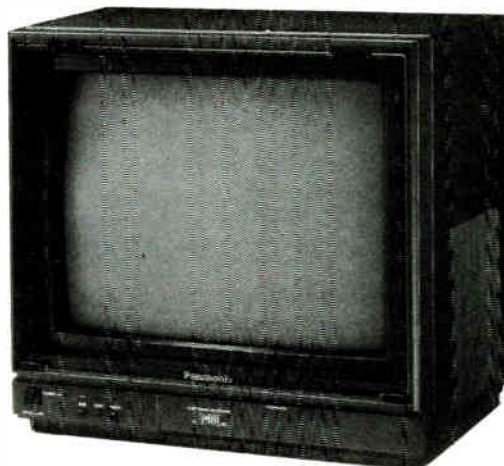
14" Diagonal Video/Data Color Monitor

- Resolution 370 TVL Composite; 580 Dots RGB
- 2000 Character (80 Column) Display with Square Corner Data Grade CRT
- RGB: Linear and TTL; and Composite Inputs with Separate Audio Inputs
- P.C. Compatible with Optional Cable
- YS and YM Inputs for Teletext Display
- Switchable Comb Filter for Clearer Color and Monochrome Pictures

CT-1400MG.....\$699.00

Optional

- Accessories:** ET-100C Interface Cable for IBM-PC Series and Panasonic Sr. Partner (length 3 ft.).....\$39.00
- ET-101C Interface Cable for Apple III (length 3 ft.).....40.00
- ET-102C Interface Cable for NEC PC-8001A and PC-8801A (length 3 ft.).....28.00
- ET-103C Interface Cable for ATARI-800, TI 99/4A and Commodore VIC20, C64 (length 3 ft.).....15.00



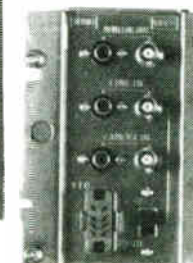
CT-1400MG

CT-2000M

19" Diagonal Color Video Monitor

- Quintrex II In-Line Picture Tube
- 4-System for International Use (PAL, SECAM, 3.58 NTSC, 4.43 NTSC (Simplifies use of different standard video signals and multi-standard VCR units)
- Connectors: BNC/RCA and 8-Pin
- 100% Solid State Chassis

CT-2000M.....\$995.00



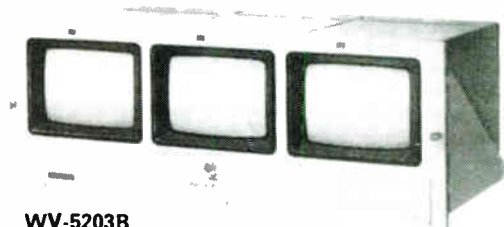
CT-2000M

WV-5200B, WV-5203B

- Power Source: 120V AC, 60 Hz
- Power Consumption: WV-5200B approx. 16 watts, WV-5203B approx. 48 watts
- Video Input: 1.0Vp-p composite (0.5p-p — 2.0Vp-p), 75 ohms or high impedance
- External Sync Input: 4.0Vp-p composite (2.0Vp-p — 5.0Vp-p negative), 75 ohms or Hi-Z looping through
- Video Frequency Response: More than 7MHz
- Horizontal Resolution: More than 600 lines at center
- H.AFC Time Constant: Short time constant for industrial VTRs
- Sweep Linearity: Less than 8%
- Sweep Geometry: Less than 2%
- Overscanning: Approx. 5%
- DC Restoration: Yes (switchable)
- CRT: 5" actual visual size
- High Tension: DC 8.5kV
- Operating Ambient Temp: 14°F to 122°F (-10°C to 50°C)
- Operating Ambient Humidity: Less than 90%
- Dimensions:
WV-5200B: 5-13/16"W x 7-1/8"H x 9-13/16"D (147W x 180H x 250Dmm)
WV-5203B: 19"W x 7"H x 10-5/8"D (480W x 177H x 270Dmm)
- Weight: WV-5200B approx. 6.7 lbs. (3.0kg), WV-5203B approx. 24.4 lbs. (11.0kg)



WV-5200B



WV-5203B

WV-5380, WV-5381, WV-5382

- Power Source: 120V AC, 60Hz
- Power Consumption:
WV-5380 approx. 24 watts
WV-5381 approx. 24 watts
WV-5382 approx. 48 watts
- DC 12V Operation/Power Consumption:
WV-5380 Yes — 24 watts
WV-5381 Yes — 24 watts
WV-5382 Yes — 48 watts
- Video Input:
0.5 — 2.0Vp-p composite/75 ohms or Hi-Z looping through
0.2 — 1.7Vp-p non-composite/75 ohms or Hi-Z looping through
- External Sync Input: 4.0Vp-p composite (2.0Vp-p — 5.0Vp-p negative), 75 ohms or Hi-Z looping through
- Video Frequency Response: More than 10MHz
- Horizontal Resolution: More than 750 lines at center
- Audio Input: 60mV
- Audio Output:
WV-5380: 1W/8 ohms, INT/EXT Speaker
WV-5381: 1W/8 ohms, EXT. Speaker
WV-5382: 1W/8 ohms, EXT. Speaker
- H.AFC Time Constant: Short/Long switchable for industrial VTRs (except pulse-cross mode)
- Sweep Linearity: Less than 5%
- Sweep Geometry: Less than 2%
- Overscanning: Approx. 5%
- Underscanning: Approx. 10% (switchable)
- Pulse-Cross: Vertical Delay: One half field, Horizontal Delay: 1/4 line
- DC Restoration: Yes — on/off switchable
- CRT: 8-1/4" actual visual size
- High Tension: DC 10kV
- Rack Mounting: WV-5381, WV-5382 only
- Operating Ambient Temperature: 14°F to 122°F (-10°C to 50°C)
- Operating Ambient Humidity: Less than 90%
- Dimensions:
WV-5380: 8-11/16"W x 8-15/16"H x 10-7/16"D (221W x 227.5H x 265Dmm)
WV-5381, WV-5382: 19"W x 8-3/4"H x 10-13/16"D (480W x 221H x 274.5Dmm)
- Weight: WV-5380: 11.7 lbs. (5.3kg), WV-5381: 18.0 lbs. (8.2kg), WV-5382: 29.0 lbs. (13.2kg)



WV-5380



WV-5381

BLACK AND WHITE VIDEO MONITORS

WV-5200B	5" Desktop Video Monitor	8.5	\$275.00
WV-5203B	Triple Video Monitors, Each 5", in a 19" Rackmount	34.0	\$25.00
WV-5380	8-1/4" Deluxe Desktop Black and White Video Monitor	19.0	\$395.00
WV-5381	8-1/4" Single Rackmount Black and White Video Monitor	29.0	\$445.00
WV-5382	Dual Deluxe 8-1/4" Rackmount Black and White Video Monitors	41.0	\$795.00

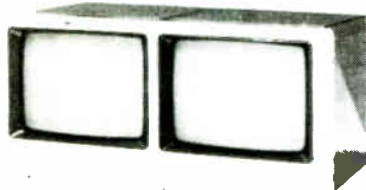
Prices and Specifications Subject to Change Without Notice.

VM-89

One Panasonic Way Secaucus, NJ 07094 (201) 348-7000



WV-5203B



TR-932



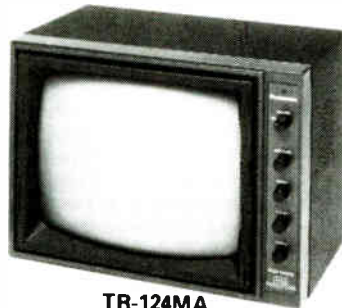
TR-930



WV-5370



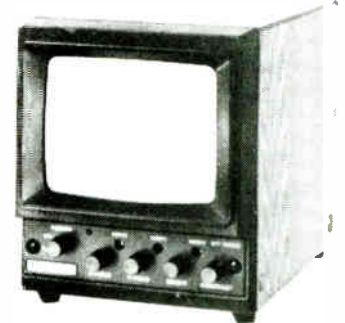
TR-196M



TR-124MA



WV-5410



WV-5200B

- TR-124MA**
12" (measured diagonally) monitor; resolution of 700 lines at center, desktop model, rack mountable with optional 19" EIA panel. 17.6 lbs. with Audio. \$250.00
- TR-930**
9" (measured diagonally) desktop monitor; front panel operating controls more than 700 lines at center; all solid state*. 11.2 lbs. \$185.00
- TR-931 (not shown)**
9" (measured diagonally) CCTV monitor in rack mount chassis with blank panel for additional equipment, front panel operating controls; more than 700 lines at center; all solid state. 17.2 lbs. \$220.00
- TR-932**
Dual 9" (measured diagonally) CCTV monitor in rack mount chassis; front panel operating controls more than 700 lines at center; all solid state*. 27.8 lbs. \$400.00
- WV-5200B**
16 sq. in. (5" diagonal), all solid state*; more than 600 lines at center; internal or external sync. Short H. AFC. 15.0 lbs. \$275.00
- WV-5203B**
Triple 16 sq. in. (5" diagonal), CCTV monitors for 19" rack; all solid state*. 42.0 lbs. \$825.00
- WV-5370**
9" (measured diagonally) desktop CCTV monitor, more than 750 lines at center; DC restoration; all solid state*; internal or external sync. 17.5 lbs. \$275.00
- TR-196M**
19" (measured diagonally) CCTV monitor, resolution of 750 lines at center with Audio. POR

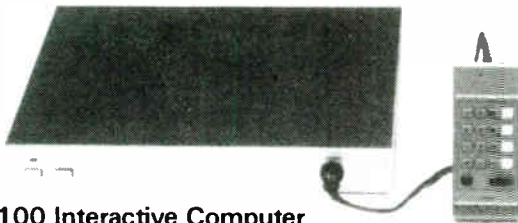
- WV-5371 (not shown)**
9" (measured diagonally) CCTV monitor in a rack mount chassis with blank panel for additional equipment; more than 750 lines at center; DC restoration; all solid state*. 28.1 lbs. \$320.00
- WV-5372 (not shown)**
Dual 9" (measured diagonally) CCTV monitors in rack mount chassis, more than 750 lines at center; DC restoration; all solid state*. 37.4 lbs. \$570.00
- WV-5410**
14" diagonal desktop monitor; 700 lines resolution at center; internal/external sync, DC restoration and short H. AFC time constant. Optional brackets WV-Q20 available for rack mounting. 28.6 lbs. \$350.00
- WV-5470 (not shown)**
17" desktop monitor; more than 850 lines at center, DC restoration, AFC time constant. Optional brackets WV-Q22 available for rack mounting; solid state*. \$450.00
- WV-5490 (not shown)**
20" deluxe studio monitor, more than 850 lines at center, DC restoration, short H. AFC time constant for VTR playback, looping through BNC connectors for video and sync input and output, internal or external sync, inputs are switchable from 75 ohms to Hi-Z. 40.7 lbs. \$525.00
- ACCESSORIES**
- TYK-124** 19" EIA rack mount panel for TR-124M \$ 50.00
- WV-Q22** WV-5400 rack mount angle bracket for standard 19" EIA rack. 3.2 lbs. 25.00
- WV-Q20** WV-5410 rack mount angle bracket for standard 19" EIA rack. 3.2 lbs. 25.00

*Except for picture tube

Prices and Specifications Subject to Change Without Notice.



Professionals know that interactive video is a faster, more effective training tool than linear instruction. After all, interactive video stimulates students to learn at their own pace. And, perhaps most important of all, interactive video increases comprehension. The result: A better-trained and more productive employee. Now Panasonic makes interactive video as easy for trainers as it is effective for trainees. With the only interactive video system that's easy to program, easy to use and easy on the trainer.



NV-K100 Interactive Computer

- The compact microprocessor-controlled computer is designed to easily interconnect with Panasonic solenoid-operated VHS Players or Recorders: NV8170, NV8200, NV8500; and Panasonic 3/4" Video Players or Recorders: NV9240, NV9600, AU700
- Other compatible VHS Players or Recorders to the NV-K100 are the AG-6100, AG-6200 and AG-6300
- Program data is recorded onto one of the tape's audio channels
- This program data is then decoded by the computer as the video tape is played
- Computer memory is constantly updated by the reading of the recorded data as needed
- This technique allows the system to have access to a large amount of program data without permanently recording program data into the computer memory, thus affording a very flexible cost-effective system.

STUDENT ADDRESS UNIT

- 18 button key pad that plugs into computer
- The unit is as simple to operate as a hand-held calculator.



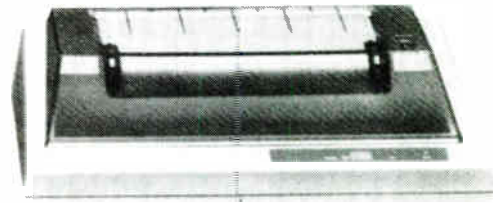
NV-K110 Master Tape Programmer

- Used with a video recorder and monitor
- Step-by-step instructions for master programming are displayed on a monitor
- The master tape programmer is used to identify the start and end points of each individual segment
- A cue tone is automatically recorded on the tape's audio dub channel at the start points of each segment
- The location address of each segment is automatically encoded on the audio dub channel in the first 90 seconds of the tape
- Entered answer data for each segment is encoded on the audio channel just behind the cue tone
- A choice of four questioning methods exists for each segment: VTR Play, VTR Pause, Workbook, and Character Display
- For each possible answer the Program designer can assign an individual score value and the access point or branch number to which, depending on the trainee's answer, the answer will proceed
- Partial Data Change Mode allows for easy updates and changes of Segment Answer Data
- Easily interconnects with 1/2" VHS Player/ Recorders NV-8200, NV-8500, AG-6200 and AG-6300; 3/4" Player/ Recorders NV-9240, NV-9600 and AU-700.



NV-K120 Text Writer

- A single page character generator, 32 characters across, 15 lines
- Information from the text writer is digitally encoded on the audio dub channel
- This saves valuable editing time by enabling text to be added after the video editing process is complete
- Through simple audio dubs the program designer can return to the tape at any time and revise questions, with no need for video editing
- By eliminating the need for more complicated and time consuming video edits, the program designer is afforded the ability to transform existing linear programs into basic interactive programs simply through the use of audio dubs.



KX-K150 Printer (Optional)

- Hard copy verification of all decisions made by the trainee
- Student ID#, date, title of program, degree of answer correctness
- Score achieved for particular question
- Time taken to make decision
- Total time taken vs. time allowed
- And total score vs. total potential score.

CT-1010M Color Video Monitor	\$ 400.00
AG-6300 VHS Video Cassette Recorder	1895.00
NV-K100 Computer w/Addresser	795.00
NV-K110 Master Programmer	2250.00
NV-K120 Text Writer	600.00
KX-K150 Printer	600.00
NV-U234 RF Converter	80.00

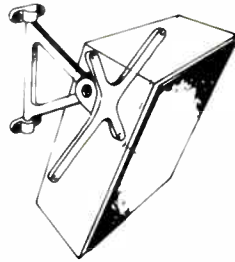
20 RAINBOW POND DRIVE, SUITE A-2
WALPOLE, MA 02081 / (617) 668-8770

Pivotelli wall brackets are made of the finest materials and offers a 5 year parts and labor guarantee. You can use Pivotelli Swivel Support Arms with complete confidence.

All Brackets are available in gloss white or matt black durable nylon coating. Prices subject to change without notice.

UNIVERSAL STEREO BRACKETS

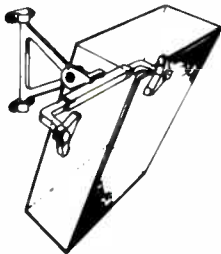
Wall mounted brackets designed to support two stereo speakers. Maximum weight: 88 lbs. (sold only in pairs)



WITH SCREW-IN BASEPLATES
Model PU \$69.50 Pair

UNIVERSAL STEREO BRACKETS

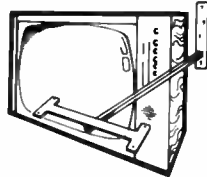
Wall mounted brackets designed to support two stereo speakers. Maximum weight: 88 lbs. (sold only in pairs)



WITH LIMPET BASEPLATES
Model PULUP (7 1/2"-11") \$89.50 Pair
Model PULUM (11"-17 3/4") \$99.50 Pair

SINGLE PIVOTELLI

Straight arm wall mounted bracket. Maximum weight: 176 lbs.

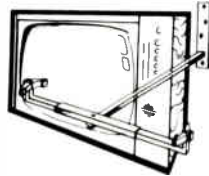


12" ARM WITH SCREW-IN BASEPLATE
Model M \$49.95

18" ARM WITH SCREW-IN BASEPLATE
Model S \$49.95

SINGLE PIVOTELLI

Straight arm wall mounted bracket. Maximum weight: 176 lbs.

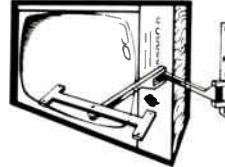


12" ARM WITH LIMPET BASEPLATE
MEDIUM (11"-17 3/4")
Model MLUM \$69.95
STANDARD (17 3/4"-30")
Model MLUS \$69.95

18" ARM WITH LIMPET BASEPLATE
MEDIUM (11"-17 3/4")
Model SLUM \$69.95
STANDARD (17 3/4"-30")
Model SLUS \$69.95
LARGE (27"-47")
Model SLUL \$69.95

DOUBLE PIVOTELLI

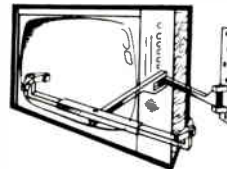
12" Double joint flex-arms (24" Total)
Maximum weight: 176 lbs.



WITH SCREW-IN BASEPLATE
Model D \$119.95

DOUBLE PIVOTELLI

12" Double joint flex-arms (24" Total)
Maximum weight: 176 lbs.



WITH LIMPET BASEPLATE
MEDIUM (11"-17 3/4")
Model DLUM \$139.95
STANDARD (17 3/4"-30")
Model DLUS \$139.95
LARGE (27"-47")
Model DLUL \$139.95

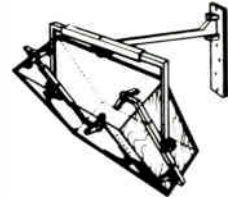
DOUBLE PIVOTELLI

Light Weight Model
12" Double Joint flex-arms (24" Total)
Maximum weight: 22 lbs.

WITH LIMPET BASEPLATE
MEDIUM (11"-17 3/4")
Model DSLUM \$99.95
STANDARD (17 3/4"-30")
Model DSLUS \$99.95

TRIPLE PIVOTELLI WITH WALL MOUNT

Provides viewing/listening direction adjustments in all three directions, including tilt.



MEDIUM
Fits cabinet heights (11'-17 3/4")
Fits cabinet widths (11'-17 3/4")
Model TMU \$179.95
STANDARD
Fits cabinet heights (11'-17 3/4")
Fits cabinet widths (17 3/4"-33 1/2")
Model TSU \$189.95
LARGE
Fits cabinet heights (17 3/4"-30")
Fits cabinet widths (17 3/4"-33 1/2")
Model TLU \$199.95

TRIPLE PIVOTELLI WITH TELESCOPIC CEILING

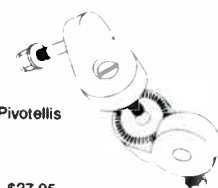


MEDIUM Model TTM \$179.95
STANDARD Model TTS \$189.95
LARGE Model TTL \$199.95

SWING 'N TILT UNIVERSAL JOINT

For use with 12", 18" and Double Pivotellis
To angle the TV, Speaker or Monitor up or down.

MODEL UL



\$27.95



CHOICE OF BASEPLATE?

SCREWTYPE—an effective way to support wood-based equipment. Support is provided by the "H" shaped baseplate to which equipment is fastened by four wood screws. Also if wood platform is desired.

LIMPET—The Pivotelli Limpet actually grips the cabinet of the equipment with rubber-lined clamps and is adjusted by you to support equipment in its exact center of balance.

Pivotelli wall brackets mount onto wood or metal studs and masonry walls.

PROTON CORP.

737 W. Artesia Blvd.
Compton, CA 90220
(213) 638-5151 Telex: 182391 FULETINTL

MONITORS/VIDEO TUNER/ PREAMPLIFIER



MODEL 619

Proton 600M Video Monitor

In the Proton 600M such factors as a high performance comb filter, precision-wound deflection yoke, high frequency flyback transformer, and a sophisticated power supply combine to accomplish the goal.

The quality of the picture is further aided by a system of "picture clarification" circuits which insure that the details of every picture are retained for reproduction. And a separate series of "color stabilization" circuits preserve subtle color nuances.

The screen itself is completely framed in a streamlined all-black cabinet. Every control is concealed. Nothing detracts from the image itself.

The Proton 600M provides you with a choice of three color modes. In the AUTO mode, the Proton 600M automatically adjusts itself for the most natural fleshtones.

In the VIR mode, the system calibrates itself to a color information signal contained within the program material.

In the MANUAL mode, all internal circuits are overridden and you take control.

With its OPC (Optimum Picture Control) circuitry engaged, the Proton 600M will interpret ambient lighting conditions and accurately adjust the picture brightness for the best viewing level.

The Proton 600M will shut itself down after five minutes without a video input—whether the tape ends or the station signs off the air.

The Proton 600M has a frequency response in excess of 4.7MHz and is able to actually provide more than 370 lines of resolution.

600M 19" Monitor.....\$650.00

Proton 302 Speakers

The Proton 302 two-way speaker system provides true hi-fidelity performance in a size that precisely matches the cabinet of the 600M monitor.

302pr. \$130.00

Proton 600T Video Tuner/Preamplifier

As a high performance video tuner, the Proton 600T offers you multi-band tuning capable of receiving 127 channels, including those from your cable system.

As a preamplifier of tremendous capabilities, the Proton 600T makes a most intelligent control center.

The Proton 600T stands apart from the competition in its complete dedication to excellent performance—both audio and video. It is certain to appeal to those of you who value sound as much as sight, and who place unrelenting demands on both.

- Dedicated Circuitry. Audio signals differ dramatically from video signals, so the Proton 600T makes no attempts to process the two together. Instead, separate IF stages are employed, and each has been carefully perfected for handling a specific type of signal. This results in an excellent signal-to-noise ratio for both audio and video.
- Rapid Accurate Tuning. Inside the Proton 600T, an advanced Frequency-Locked Loop tuning system combines extremely accurate

tuning with the fastest scanning rate of any system currently available. This convenient method of tuning seeks out and stops only on active stations.

- Multiple Inputs. Up to two RF sources and two composite video sources can be simultaneously connected to the Proton 600T. Build your own video system around any combination of tapes, discs, games, computers, cable, or off-air broadcasts.

- Multiple Outputs. The video signal selected by front panel or remote control is sent to two separate video outputs; one for viewing and one for taping, or two for viewing and two for taping. The option is yours.

- Multiplex Output for stereo TV decoder.

600T Tuner/Preamplifier\$400.00

Proton 619 19" Color Receiver/Monitor

PERFORMANCE SPECIFICATIONS

Monitor

- Overscan: Typically 5% • Picture Size Variation: less than or equal to 0.6% from 96 to 144V (Line Voltage) • Black Level Retention: DC Restoration via Keyed Back-Porch Clamping • Usable Luminance: greater than or equal to 800 LUX; typically 1350 LUX Peak White (Black Level at Detent) • Geometric Distortion: less than or equal to 2.5%; typically 0.7% • Video Bandwidth: approximately 4.7MHz (To estimate resolution capabilities [chassis], multiply video bandwidth by 80) • Horizontal Resolution: exceeds NTSC Broadcast Standard (4.25MHz)

Tuner/Preamplifier

- Tuning Range: VHF 2-13; UHF 14-83; Cable-Mid Band (A-1); Super Band (J-W); Hyper Band (AA-TT) • Tuning Speed (Scan Time): VHF/UHF less than or equal to 6 Seconds; Cable less than or equal to 5 Seconds • AGC Range: greater than or equal to 80dB, typically 90dB • Audio Frequency Response (VCR, Disc): 20Hz-30kHz +/- 1.5dB • Tone Controls: Bass and Treble + 10dB, -15dB • Inputs: RF1—VHF 75 ohms, UHF 300 ohms; RF2—(Cable) 75 ohms; Video 1—(VCR) 1.0V p-p Composite Video 75 ohms; Video 2—(Disc) 1.0V p-p Composite Video 75 ohms; Audio 1—(VCR) 150-300mV at 47K ohms 2 Channel (L and R); Audio 2—(Disc) 150-300mV at 47K ohms 2 Channel (L and R) • Outputs: Video 1—(VCR) Fixed Level 1.0V p-p Composite Video 75 ohms; Audio 1—(VCR) Fixed Level 2 Channel (L and R); Audio 2—(AUX) Variable Level 2 Channel (L and R) • Connectors: Video and Audio—RCA Phono Jacks • Power Requirement: AC 120V 60Hz 105W • Internal Audio System 3.5 Watt Mono Power Amp Built-in Full Range Speaker • Dimensions: Width 70.2cm/27.5"; Height 46.0cm/18.5"; Depth 49.6cm/20.5" • Shipping Weight: 70 lbs (31.8kg)

619 Receiver/Monitor.....\$850.00

Proton 602M 25" NTSC Color Video Monitor

FEATURES

- Remarkably Low Overscan (typically 5%) for up to 15% more of the image
- Exceptionally Stable Power Supply and DC Restoration for truer blacks and brilliant whites
- Superior Geometric Linearity (typically 99.3% accurate) for straighter lines and more precise shapes
- Exclusive Proton Deflection Yoke assures excellent convergence
- Video Bandwidth greater than 4.7 megahertz for Horizontal Resolution in excess of 380 lines
- Pure Black Cabinet for enhanced picture quality
- High Performance Comb Filter
- Automatic Shutdown
- Separate Video/Audio Inputs
- RGB Input
- 10 Watt Stereo Amplifier
- Video Output

602M Video Monitor.....\$1100.00

Proton 303 Speakers

The Proton 303 two-way speaker system provides true high fidelity performance in a size that precisely matches the 25-inch cabinet of the 602M.

303pr. \$150.00

Prices and Specifications Subject to Change Without Notice.

VM-93

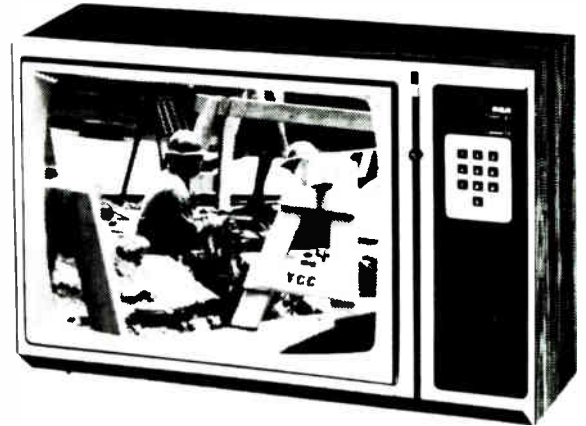


COLOR RECEIVER/MONITOR

RCA SERVICE COMPANY,
A DIVISION OF RCA
COMMERCIAL PRODUCTS MKT.
Bldg. 203-3, Route 38
Cherry Hill, NJ 08358
(609) 338-5973

RCA Model JKR-980W 19" Receiver-Monitor

- U.L. Commercial Listed
 - New improved all solid-state design
 - Keyboard frequency synthesized tuner with 127-channel capability
 - LED readout
 - Automatic Light Sensor (ALS)
 - Precision in-line slotted mask picture tube
 - Keyboard selectable Video-Audio input
 - Video/Audio bridging
 - 3-wire, type SJT, 10-foot line cord
 - Spill-proof back
- JKR-980W \$399.00



I. GENERAL SPECIFICATIONS

Color Standard 525 line NTSC Color
Chassis ColorTrak, CTC120 all solid state
Power Requirements 120 VAC \pm 10%, 60 Hz
Power Consumption 94 watts, avg., 120 watts, max.
Power Cord Type SJT 3-wire, 10 ft. long
Service Adjustments Accessible at rear of cabinet
Certification U.L. Commercial Listing

II. MECHANICAL SPECIFICATIONS

Height 17"; 43.2 cm.
Width 25 1/4"; 64.1 cm.
Depth 19 1/4"; 48.9 cm.
Shipping Weight 60 lbs.
Cabinet Simulated walnut finish on plastic
Picture Tube 19" COTY Precision In-Line, slotted mask, 90° deflection

FRONT PANEL CONTROLS

Power Switch
Channel Selector: Keyboard Color*
Tint*
Contrast*
Brightness*
Volume Control: Rotary
Automatic Light Sensor

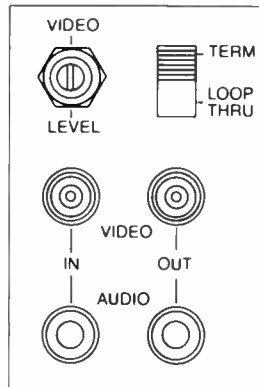
*Controls located behind hinged front access panel

REAR PANEL CONTROLS

Focus
Screen
Cable/Normal Switch
Red, Green, Blue Drive Controls
Red, Green, Blue Bias Controls
Vertical Height

VIDEO/AUDIO INTERFACE PANEL

Video: Type BNC female
Audio: RCA phono jacks
Video Level: Screwdriver adjustable potentiometer
Terminated—bridging slide switch



III. ELECTRICAL DESIGN SPECIFICATIONS

A. RF SPECIFICATIONS

Tuning System Type Multiband Frequency Synthesis
Band coverage VHF 2-6, 7-13
Midband A-5—I
Superband J—W
Hyperband (AA)-(QQ)
UHF 14—83
Frequency Coverage 54—402 MHz,
470—890 MHz.
Tuner Type Solid State
Channel Access Direct Access Keyboard
Channel Indicator L.E.D.
Antenna Input VHF—75 ohms
UHF—300 ohms

Noise Figure 6.0 dB max. Ch 2-13
14.0 dB max. Ch 14-83
6.0 dB max. Ch (A-5)—I
8.5 dB max. Ch J—Ch (QQ)
Image Rejection VHF—60 dB min. Ch 2-6
60 dB min. Ch 7-13
60 dB min. Ch (A-5)—I
40 dB min. Ch J—Ch (AA)
30 dB min. Ch (BB)—Ch (JJ)
26 dB min. Ch (KK)—Ch (QQ)
UHF—40 dB min. Ch 14-62
30 dB min. Ch 63-82
25 dB min. Ch 83
IF Rejection VHF—60 dB min. Ch 2—Ch (QQ)
UHF—80 dB min. Ch 14-83
Sensitivity VHF—1.14 pW
UHF—3.0 pW
RF IF Bandpass
Response Chroma —8 dB nominal
Pix —6 dB nominal
Co-Channel Sound Attn 41.25 MHz \pm 45 KHz
greater than 40.0 dB
Adjacent Sound Attn 47.25 MHz \pm 45 KHz greater
than 30.0 dB
Adjacent Pix Attn 39.75 MHz greater than 34 dB
Off-set Channel Pull-in
Range \pm 1.5, \pm 2.0 MHz
(Single Channel)

B. AUDIO SPECIFICATIONS

Audio Output 1 W (α 5% distortion (nominal))
Audio Distortion 2.0% typical
Speaker Type 3" x 5" oval
Speaker Impedance 32 ohms

C. VIDEO SPECIFICATIONS

Luminance Control
Range 6:1 max., 4:1 min.
D.C. Gain
Luminance Ch 90% nom. with blanking level clamp
Luminance Bandwidth with
8 dB peaking 3 dB (3.0 MHz.)
Hue Control Range \pm 50° nominal
Gain Ratios R-Y = 1:1
B-Y = 1.2 (\pm 0.2):1
G-Y = 0.33 (\pm 0.1):1
AGC Gain (Chroma) \pm 7 \pm 3.8 dB for \pm 14 dB
chroma input
 \pm 2.5 \pm 3.5 dB for \pm 6 dB
chroma input
Chroma Bandwidth 1.0 MHz at \pm 4 dB
Vertical Interface 45/55
Horizontal and Vertical
Size Tracking with
Beam less than 3%
Vertical Scan Capability full scan 105-135V RMS line voltage
(α max. beam
H.V. (α Zero Beam) 25.0 kV \pm 7.5%
A.F.C. Phase Response less than or equal to 10 lines



RCA SERVICE COMPANY,
A DIVISION OF RCA
COMMERCIAL PRODUCTS MKT.

Bldg. 203-3, Route 38
Cherry Hill, NJ 08358
(609) 338-5973

RCA Model JKR-985RR 25" Receiver-Monitor

- U.L. Commercial Listed
- Video Noise Reduction
- Full Resolution Color
- Automatic Color Balance
- Detail Processor

- ChanneLock Tuning
- 127-Channel Tuning
- Coty 29 Picture Tube
- BlackLock Contrast Circuit
- Stereo TV
- Dynamic Noise Reduction (DNR®)
- RGB Inputs
- 100° COTY 29 Picture Tube
- Digital Infrared Remote Control (Optional)

JKR-985RR \$689.00

COLOR RECEIVER/MONITOR



I. GENERAL SPECIFICATIONS

Color Standard	525 line NTSC Color
Chassis	CTC 131 all solid state, unitized
Power Requirements	120 VAC ± 10%, 60 Hz
Power Consumption	Not to exceed 157 watts. Av 134W
Power Cord	Type SJT 3-wire, 20 ft long, shielded
Service Adjustments	Accessible behind rear panel cover
Certification	U.L. Commercial

II. MECHANICAL SPECIFICATIONS

Height	21 3/4" . 55 2 cm
Width	25 1/4" . 64 1 cm
Depth	19" . 46 26 cm
Shipping weight	106 lbs
Cabinet	Rosewood Veneers on fiberboard
Picture Tube	25" 110 COTY Precision in-line with High Potential, Bipotential gun, Super Arched Shadow Mask and striped, pigmented phosphors

FRONT PANEL CONTROLS

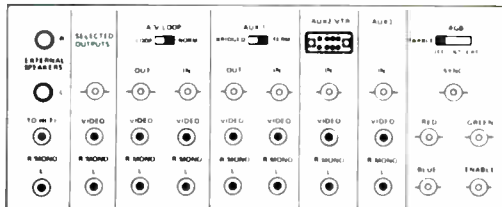
Power Switch: Pushbutton	Black Level*	Audio B*
Channel Selector: Keyboard	Volume Up Down	Stereo Mono*
Color*	Sharp*	DNR* Off*
Tint*	Bass*	Auto Color*
Picture*	Treble*	Cable Norm*

*Controls located behind front access panel

LED INDICATORS

POWER	AUDIO B-SET	DNR*
AUDIO B	STEREO	RGB

VIDEO AUDIO INTERFACE PANEL



III. ELECTRICAL DESIGN SPECIFICATIONS

A. RF SPECIFICATIONS

Tuning System Type	Multiband Frequency Synthesis
Band Coverage	VHF 2-6, 7-13 Midband (A-5)—I Superband J—W Hyperband (AA)-(QQ) UHF 14-83
Frequency Coverage	54-402 MHz, 470-890 MHz
Tuner Type	Solid State
Channel Access	Direct Access Keyboard
Channel Indicator	On Screen Display
Antenna Input	VHF—75 ohm UHF—75 ohm
Noise Figure	6.0 dB max. Ch. 2-13 14.0 dB max. Ch. 14-83 5.5 dB max. Ch. (A-5)—I 8.5 dB max. Ch. J—(QQ)
Image Rejection	VHF—60 dB min. Ch. 2-6 60 dB min. Ch. 7-13 60 dB min. Ch. (A-5)-I 40 dB min. Ch. J-(AA) 30 dB min. Ch. (BB)-(JJ) 26 dB min. Ch. (KK)-(QQ) UHF—40 dB min. Ch. 14-62 30 dB min. Ch. 63-82 25 dB min. Ch. 83
IF Rejection	VHF—60 dB min. Ch. 2—(QQ) UHF—80 dB min. Ch. 14-83

Sensitivity	VHF—1.14 pW UHF—3.0 pW
RF IF Bandpass Response	Chroma 8 dB nominal Pix 6 dB nominal
Co-Channel Sound Attn	41.25 MHz ± 45 KHz greater than 40 dB
Adjacent Sound Attn	47.25 MHz ± 45 KHz greater than 30 dB
Adjacent Pix Attn	39.75 MHz greater than 34 dB
Off-set Channel Pull-in Range	± 3.0 MHz, Cable ± 2.5 MHz 3.5 MHz Air (Single Channel)

B. AUDIO SPECIFICATIONS—per channel (stereo)

Audio Output	internal spkr: 1.8 W/ch (α 5% T.H.D) external spkr: 1.3 W/ch (α 5% T.H.D) (stereo) hi-fi outputs: 1.5 V RMS max. (volume controlled), 600 ohms impedance Selected output: 200 mV RMS max., 600 ohms impedance
Audio Inputs	680mV RMS, 16K ohms impedance
Frequency Response	50-15,000 Hz
Stereo Performance	BTSC System, 3 channels (stereo L, R, Audio B)
Stereo Mono Switching	Automatic
Speaker Type	2 ea —5" Woofer, 2" Tweeter
Speaker Impedance	internal: 16 ohms nominal external: 6 ohms or greater

C. VIDEO SPECIFICATIONS

Contract Range	5 : 1 min. (8 : 1 typical)
D C Gain	Luminanced Ch. 90% min. with blanking level clamp
Luminance Bandwidth	4.2 MHz (limit)
Resolution	350 lines
Video input output	1 Volt PP, 75 ohms, negative sync
Comb Filter Rejection	greater than or equal to 25 dB (3.58 MHz)
920 KHz Attenuation	45 dB min.
Hue Color Range	± 40° nominal
Color Matrix Angles (AutoColor Off)	B-Y + 2° R-Y + 93° ± 15° G-Y + 258° ± 15°
Gain Ratios	R-Y = 1:1 B-Y = 1.2 (± 0.2):1 G-Y = 0.33 (± 0.1):1
AGC Gain (Chroma)	+ 2 dB max. with -14 to + 6 dB chroma input
Chroma Bandwidth	Q 500 KHz, I = 1.5 MHz
Vertical Interface	40 60
Horizontal and Vertical size tracking with Beam	less than 3%
Vertical Scan Capability	full scan 105-135V RMS line voltage (α max beam)
H.V (α Zero Beam)	28.2 kV nom.
(α Max. Beam)	26.0 kV
AFC Phase Response	less than or equal to 10 lines
Light Output	Peak: 350 FT-L

D. RGB SPECIFICATIONS

Resolution	500 lines min.
Bandwidth	6.2 MHz
RGB Enable—TTL Compatible:	
Hi (color on)	min. 2.4 V. (no current required as Monitor has internal 3.65 V. pull-up voltage through 75 ohm resistor)
Lo (color off)	less than 1.5 V.; less than 50 ohms impedance; able to draw min. 30 ma.
Sync.	-0.25 V.—1 V. PP negative polarity.

Prices and Specifications Subject to Change Without Notice.

VM-95

RCA CLOSED-CIRCUIT VIDEO EQUIPMENT

New Holland Avenue
Lancaster, PA 17604-3140
(717) 397-7661

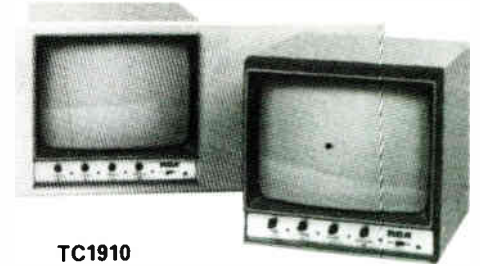
MONOCHROME MONITORS



TC1112



TC1115



TC1910

TC1105, TC1105X Monitors

Resolution More than 600 lines at center.
Amplifier Bandwidth Greater than 7 MHz
High Voltage 8.5 kV nominal
Sweep Linearity Better than 8%.
Sweep Geometry Better than 2%.
DC Restoration Selectable
Synchronization Internal or external. Switch selectable.
Picture Tube 5 in. diagonal. Rimband implosion protection.
Scanning Rate:
TC1105 — 60 fields/sec, 525 line
TC1105X — 50 fields/sec, 625 line.

Video Input:
Level — 1.0 V p-p video or composite, sync negative (0.5 to 2.0 V p-p). High Z or 75 ohm termination
Connectors — Two BNC Loop-through

External Sync Input:
Level — 4.0 V p-p negative. (2 to 5 V p-p). High Z or 75 ohm termination
Connectors — Two BNC Loop-through

Front Panel Controls:
Rotary Knob — Power On/Off with pilot light, Horizontal Hold, Vertical Hold, Brightness, Contrast
Screwdriver — Focus, Height, Width

Rear Panel Switches Video Termination (HiZ/75 ohm); DC Restoration (On/Off); Sync Selection (Int/Ext); External Sync Termination (HiZ/75 ohm)

Supply Voltage:
TC1105 — 120 V, 60 Hz
TC1105X — 220 V, 50 Hz.

Power 16 watts, approx.
Power Cord 3-wire with plug.

Operating Environment:
Ambient Temperature — +14 to +122° F (-10 to +50° C).
Humidity — Less than 90%.

Size 147 mm W x 180 mm H x 250 mm D (5.8" x 7.1" x 9.8")
Weight 3.0 kg (6.7 lbs).

TC1105MK Rack Mount Kit

For mounting one, two, or three TC1105 or TC1105X monitors in a standard EIA 19" rack.

Size 480 mm W x 177 mm H x 270 mm D (19" x 7" x 10.6")
Weight 2 kg (4.3 lbs)

TC1112 Video Monitor

General:
Fast warm-up time — less than 10 seconds

Resolution 700 lines
Amplifier Bandwidth 9 MHz or better
Synchronization Internally derived

Picture Tube 12 inch (31 cm) diagonal 90 deflection aluminized integral implosion protection.

Input 0.5 to 2.0 V p-p, sync-negative composite video High impedance or 75 ohm termination

Connectors Two BNC for looped-through video

VM-96

Supply Voltage 108 to 132 V, 60 Hz
Power 33 watts at 120 VAC
Power Cord 3-wire, 3-prong-plug
Cabinet:
Material — Metal with plastic front
Finish — Non-reflecting brown
Dimensions — 358 mm W x 261.5 mm H x 297 mm D (14.09" W x 10.29" H x 11.67" D)
Weight — 8 kg (17.6 lbs) approx
Shipping Information:
Weight — 9.2 kg (20.3 lbs) approx

TC1115 Video Monitor

Resolution 800 lines
Amplifier Bandwidth 15 MHz or better
High Voltage 14.0 kV
DC Restoration Switchable peak clamped
Synchronization Internally derived.

Picture Tube 15 inch (38 cm) diagonal, 110 deflection Integral implosion protection

Input 0.5 to 1.5 V p-p, sync-negative, composite video High impedance or 75 ohm termination

Connectors Two UHF for looped-through video

Supply Voltage 108 to 132 V, 60 Hz
Power 43 watts at 120 VAC
Power Cord 3-wire, 3-prong plug

Cabinet:
Material — Metal with plastic front
Finish — Non-reflecting brown
Dimensions — 398 mm W x 372 mm H x 310 mm D (15.7" W x 14.6" H x 12.2" D)
Weight — 12 kg (26.5 lbs) approx

TC1119 Video Monitor

Resolution 800 lines.
Amplifier Bandwidth 15 MHz or better
High Voltage 15.5 kV

Linearity 4% max
DC Restoration Switchable On Off
Synchronization Internally derived

Picture Tube 19 in. (diagonal) 184-sq in viewing area integral implosion protection.

Input 0.5 to 1.5 V p-p, sync-negative, composite video High impedance or 75 ohm termination

Connectors Two UHF for looped-through video

Supply Voltage 108 to 132 V, 60 Hz
Power 68 watts at 120 VAC
Power Cord 3-wire, 3-prong plug

Cabinet:
Material — Metal with plastic front
Finish — Non-reflecting brown
Dimensions — 526 mm W x 456 mm H x 370 mm D (20-11/16" W x 17-15/16" H x 14-9/16" D)
Weight — 27 kg (59.5 lbs) approx

TC1910 Video Monitor And Single/Twin Rack Mount

Resolution Better than 700 lines
High Voltage 11 kV
Linearity 2% or better
DC Restoration Front-Panel-Adjustable

Synchronization Internally derived
Picture Tube 9 V, 9-inch (diagonal) 90 deflection Aluminized Integral implosion protection 44-sq inch viewing area

Input 0.5 to 2.0 V p-p, sync-negative, composite video High impedance/75 ohm termination switch on rear panel

Connectors Two BNC for looped-through video

Supply Voltage - AC or DC:
DC — 12 to 16 V*
120 V, 60 Hz — 105 to 130 V
*DC Power Cord (optional) TC1313

Power:
AC Supply Voltage — 30 watts at 120 V, 60 Hz
DC Supply Voltage — 15 watts at 12 VDC

AC Power Cord 3-wire with grounded plug 6 ft

Cabinet Material:
Monitor — Brown, vinyl coated metal case with black plastic front
Rack Bezel — Sheet metal Light metallic grey finish

Dimensions:
Monitor — 8.69 in. W x 8.56 in. H x 9.80 in. D (220 x 217 x 249 mm)
Rack — See drawing

Weight:
Monitor — 12.4 lbs (5.64 kg)
Rack — 5.0 lbs (2.28 kg)

Humidity 10 to 80% relative, non-condensing
Altitude 10,000 ft (300 m)

Shipping Info:
Monitor —
Dimensions — 14.4 in x 13.1 in x 13.0 in (365 x 333 x 330 mm)
Weight — 13.8 lbs (6.25 kg)

TC1105	.....	\$275.00
TC1105MK	.....	45.00
TC1112	.....	250.00
TC1112MK	.....	50.00
TC1115	.....	320.00
TC1115MK	.....	65.00
TC1119	.....	400.00
TC1910	.....	200.00
TC1910MK	.....	45.00

Prices and Specifications Subject to Change Without Notice.



FROM SHARP MINDS
COME SHARP PRODUCTS

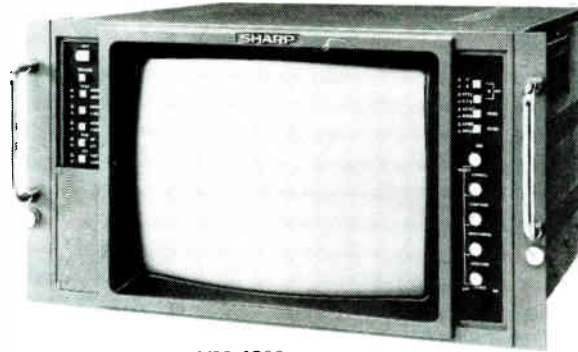
SHARP ELECTRONICS CORP.
PROFESSIONAL PRODUCTS DIVISION
10 Sharp Plaza
P.O. Box 588
Paramus, NJ 07652
(201) 265-6548

529-8731

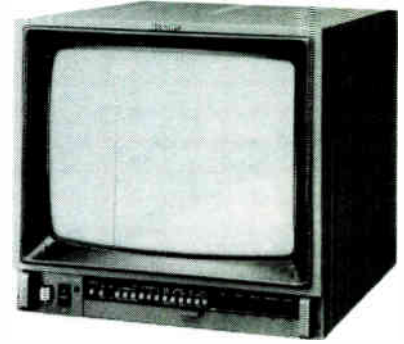
PROFESSIONAL COLOR MONITORS



XM-900



XM-1300



XM-1900

XM-900 9" PROFESSIONAL COLOR MONITOR

The XM-900 9" professional utility color monitor is designed for studio, field production and editing applications. The monitor is ideal for studio use or other fixed applications, but can also function on 12 to 24 volt battery power for complete portability.

An optional rack mount adaptor allows side-by-side mounting of either two XM-900s or one XM-900 and a WFM or vectorscope, by using an additional WFM mounting kit.

Frequent convergence adjustments are not necessary, since the XM-900 uses an in-line electron gun. Adjustments remain stable through wide temperature ranges and long periods of time.

Front panel controls include vertical hold, tint (hue), color, brightness and contrast, as well as sync, color and scan select switches. Blue check and pulse cross switches are also incorporated into the panel.

The blue check circuit cuts off the red and green guns. A color bar signal allows correct adjustment of color phase and level controls in this mode.

The XM-900 has an automatic/manual degauss circuit which degausses the monitor each time power is turned on. A 0.47mm phosphor trio pitch cathode ray tube and a comb filter combine to make 310-line resolution available at all times.

Normal or fast time constants for the deflection AFC can be selected by the rear panel skew switch. In the fast time constant mode, non-timebase corrected signals from a VTR can be displayed without flagging disturbance at the top of a picture.

The monitor itself is housed in a rugged metal cabinet to ensure durability. This also minimizes the effect of external magnetic fields.

XM-900 \$700.00
XM-9DR Double Rack Adaptor 120.00
XM-9WR WFM Adaptor Kit for XM-9DR 95.00

XM-1300 HIGH-RESOLUTION BROADCAST COLOR MONITOR

High-resolution CRT features 0.31mm dot pitch producing over 600 lines resolution. Standard U.S. controlled phosphors are used, assuring accurate color reproduction and matching with existing high quality studio monitors. Comb filter is provided for maximum resolution and to minimize cross color interference. A front panel switch allows for selection of either the comb filter or a notch filter, whichever is needed.

Two video inputs as well as direct RGB inputs are provided. The RGB signals can be from an analog video source or TTL for computer display. H-delay and V-delay functions are provided for a pulse cross display.

Fast (0.5ms) or slow (7ms) AFC time constants can be selected. This allows you to optimally view a noncorrected VTR signal or a signal with stable time base.

Normal and under-scanned picture modes are provided. Hue, chroma, contrast, brightness and aperture are individually adjustable or can be switched to preset for a precisely calibrated display.

White balance, black balance, individual gun switches and other service adjustments are located behind a separate hinged door on the front panel. This prevents accidental misadjustment of the monitor by non-technical people.

An automatic/manual degauss circuit neutralizes the XM-1300 from the effects of magnetic fields. With its low power consumption and highly reliable parts, including ICs, the high resolution picture remains sharp and stable even after many years of use. The diecast aluminum front mask is made for professional use guaranteeing excellent durability and reliability.

XM-1300 \$2995.00
XM-13RMK (Rackmount Kit) 120.00

XM-1900 19" HIGH RESOLUTION BROADCAST COLOR MONITOR

Type C controlled phosphor for precise colorimetry is incorporated in the new XM-1900 19", high resolution color monitor. A 0.44mm dot trio pitch allows an outstanding 600 lines of resolution. Reliable, durable ICs and other high quality components are used in the XM-1900. These not only ensure stable performance and long life for the monitor, but also reduce power consumption. Monitor ruggedness is further enhanced by a diecast aluminum front mask.

The XM-1900's unique comb filter minimizes cross color interference. The monitor detects the presence or absence of burst and automatically selects the optimum display mode. Manual controls are provided to handle unusual situations.

Picture quality is further enhanced by an automatic degauss circuit that removes magnetism due to external fields every time the power is turned on.

A hinged metal cover for service adjustment controls prevents accidental misadjustment. White and black balance and individual gun switches can be set without fear of inadvertent misadjustment.

Two video and direct RGB inputs can be selected by switches to allow input from cameras and peripheral equipment. The RGB inputs accept signals from both an analog-video source and TTL (transistor-transistor logic).

Other outstanding features of the XM-1900 include independent horizontal and vertical delay circuits and a cross-pulse mode if both are activated. Normal (7.0 msec.) or fast (0.5 msec.) time constants for the deflection AFC can be selected with the front panel AFC/fast/slow switch as well.

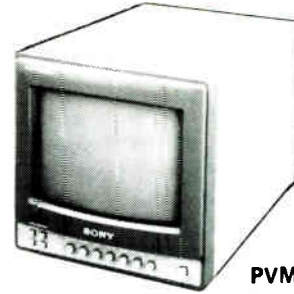
XM-1900 \$3500.00
XM-19CT Rackmount Slides 83.00



PVM-8200T



PVM-5300



PVM-8020



PVM-4000

PVM-4000 Trinitron®

4" Color Video Monitor/Viewfinder

- Dependable Trinitron® color system with 3.7" diagonal screen
- Advanced power supply switching regulator
- Sync signal checking via HV Delay (pulse cross) switch
- Blue-only picture display for hue and VTR playback checks
- Two separate video input connectors, rear panel selectable
- Tally lamp and LED tally indicator
- EIA standard 19" rackmountable with RMM-1800
- Intercom system
- Swing-out viewing stand
- Retractable utility grip
- Detachable anti-glare hood
- Optional VLC-4000 carrying case
- Weight: approx. 5 lbs., 8 oz. Approx. 5 lbs. 15 oz. with mounting adaptor and hood
- Dimensions: approx. 4-3/8"H x 4-1/4"W x 13"D including projecting parts and controls. Approx. 6-3/8"H x 4-1/2"W x 14-3/8"D with mounting adaptor and hood.

\$1000.00

PVM-5300 Trinitron®

Triple 5" Color Video Monitor

The PVM-5300, three high performance 5" (diagonal) monitors mounted side-by-side in a single housing. It is the ideal studio monitor for camera or preview monitoring.

- Fits 19" EIA standard rack
- External sync input terminals
- Loop-through receptacles for both video and sync
- Set-up switch for easy adjustment of white balance and horizontal static convergence
- Weight: 52 lbs., 7 oz.
- Dimensions: 7"H x 19"W x 16-1/2"D

\$2300.00

PVM-8200T Trinitron®

8" Color Video Monitor

This versatile 8" rack mount color studio monitor can be easily combined with a waveform monitor or vectorscope or with one more PVM-8200T for dual color monitoring.

- Line (A) Line (B) selection
- Easily mounted into an EIA standard 19" rack with an optional mounting bracket (MB-500) to hold two PVM-8200Ts
- External sync can be acceptable
- Loop-through connections for video and sync
- In place of two PVM-8200Ts, a waveform monitor or a vectorscope can be installed by using an optional mounting attachment (MB-501)
- BNC connectors allow simple and quick cable connection
- Available as a dual color monitor PVM-8200MB (two PVM-8200Ts and an MB-500)
- Weight: 26 lbs., 7 oz.
- Dimensions: 9-1/8"H x 8-1/2"W x 20-1/2"D

\$785.00

PVM-8200MB Trinitron®

Dual 8" Color Monitor

- Weight: 26 lbs., 7 oz.
- Dimensions: 9-1/8"H x 8-1/2"W x 20-1/2"D

\$1590.00

PVM-8020 Trinitron®

8" Color Video Monitor

The PVM-8020 is ideal for field production. It is a perfect companion to the DXC-M3A camera and the VO-6800 U-Matic recorder for location shooting.

- Microblack Trinitron® tube
- 3-way AC/DC operation
- Built-in stand
- Supplied hood
- Push-to-lock controls

- 2 video input/output
- 6-pin DIN connector for optional TU-1110 TV tuner
- Blue-only, normal/underscan and HV-Delay

\$620.00

MONITOR CABLES

- SMF-500** RGB cable for IBM-PC for PVM-1910/1911/1910Q/1271Q **\$57.00**
- VMC-3425** Cable for Videotext Unit VDX-1000 for PVM-1910/1911/1910Q/1271Q
- VMC-3P** 8-pin monitor extension cable 10' **22.00**
- VMC-25P** 8-pin monitor extension cable 82' **71.00**
- VMC-1MQ** 8-14 pin monitor connecting cable **35.00**
- VMC-1H** 8-pin female coupler **11.00**

MONITOR ACCESSORIES

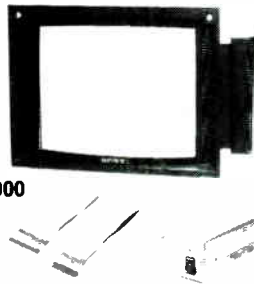
- MB-500** 19" rack mount for 2 PVM-8200Ts or 2 PVM-91s **\$120.00**
- MB-501** 2 unit mounting bracket for any combinations of PVM-8200T, PVM-91, waveform monitor or vectorscope **55.00**
- MB-502** 19" rack mount for PVM-1270Q and CVM-1271 **110.00**
- MB-503** Rack mount bracket for PVM-122 **110.00**
- SLR-101** Slide Rail for PVM-1960 **120.00**
- SLR-102** Slide Rail for MB-502 (PVM-1270Q, CVM-1271) **100.00**
- SU-530** Monitor stand for PVM-1910 **140.00**
- VF-500** Monitor hood for PVM-1910 **50.00**



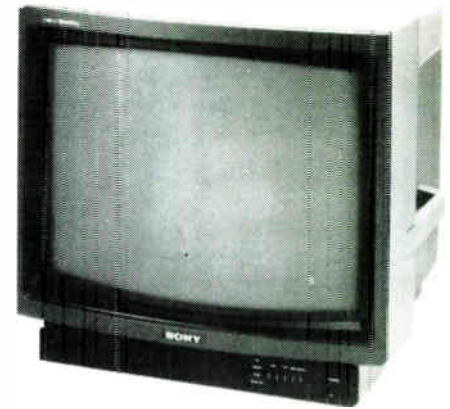
PVM-1271Q



PVM-1220



SFB-1000



PVM-1910

PVM-1911

19" Trinitron® Color Video Monitor with Built-in Touch Screen

- Built-in Touch Screen and Controller for fingertip location of any of 768 screen addresses • Line A (Tuner)/Line B/VTR/RGB/CMPTR
- Built-in interface for IBM-PC • Accepts Analog/Digital RGB • RGB loop through • RGB/NTSC Superimposition • Display Center adjustment for convenient adjustment of left side of display margin • Color TV Tuner (optional) can be connected by a single connecting cable • Comb Filter Select Switch (COMB/TRAP) • AFC (Automatic Frequency Control) Switch (Fast/Slow) • Built-in speaker • Removable Screen Frame/Shield • Weight: 66 lbs., Dimensions: 18-1/4"H x 19-1/4"W x 21-1/4"D

\$1485.00

PVM-1910

19" Trinitron® Color Video Monitor

- Line A (Tuner)/Line B/VTR/RGB/CMPTR • Built-in interface for IBM-PC • Accepts Analog/Digital RGB • RGB loop through • RGB/NTSC Superimposition • Display Center adjustment for convenient adjustment of left side of display margin • Color TV Tuner (optional) can be connected by a single connecting cable • Comb Filter Select Switch (COMB/TRAP) • AFC (Automatic Frequency Control) Switch (Fast/Slow) • Built-in speaker • Removable Screen Frame/Shield • Weight: 63 lbs. 15 ozs., Dimensions: 18-1/4"H x 19-1/4"W x 21-1/4"D

\$895.00

PVM-1910Q

19" Trinitron® Color Video Monitor PAL/SECAM/NTSC/NTSC 4.43/RGB

- PAL/SECAM/NTSC/NTSC 4.43 switches automatically • Line A (Tuner)/Line B/VTR/RGB/CMPTR • Built-in interface for IBM-PC • Accepts Analog/Digital RGB • RGB loop through • RGB/NTSC Superimposition • Display Center adjustment for convenient adjustment of left side of display margin • Color TV Tuner (optional) can be connected by a single connecting cable • Comb Filter Select Switch (COMB/TRAP) • AFC (Automatic Frequency Control) Switch (Fast/Slow) • Built-in speaker • Removable Screen Frame/Shield • Weight: 63 lbs. 15 ozs., Dimensions: 18-1/4"H x 19-1/4"W x 21-1/4"D

\$1050.00

Sony PVM-1220

Super Fine Pitch 12" Trinitron® Color Video Monitor

- High resolution—more than 550 lines • Comb filter improves picture quality—no color spill or color noise distortion • Three sets of video

- inputs (Channel A/B and TEST) enhance studio flexibility • Normal/underscan selection • Interval check for horizontal and vertical separately and horizontal plus vertical (cross pulse) in delayed scanning mode • Accepts external sync • Auto/color/monochrome selection • White-balance control inside quick-access slide-out drawer • Aperture control adjusts frequency response • Front panel tally lamp • Loop-through connectors for both video and sync allow multiple bridging • EIA standard 19-inch rack mountable • Weight: 55 lbs. 2 ozs., Dimensions: 11-1/4"H x 19"W x 20-1/4"D

\$2150.00

Sony PVM-1271Q

Super Fine Pitch 12" Trinitron® PAL/SECAM/NTSC/NTSC 4.43 Color Video Monitor

- High resolution—550 lines with video input and 600 lines with RGB inputs • PAL/SECAM/NTSC/NTSC 4.43 reproduction capability with automatic sensing of each color standard • 80-character, 25-line (2000 characters) computer display capacity • RGB inputs capable of accepting both digital and analog signals for high-resolution computer, videotext or teletext applications • VideoDisc superimpose capability (graphics and character display overlay on VideoDisc image) with Sony SMC-70 Microcomputer, SMI-7073 Superimpose Adaptor and LDP-1000 VideoDisc Player • Line-A/Line-B/VTR/RGB/MC (for SMC-70) input selector • Normal/underscan selection • AFC slow/fast switch • Switchable int./ext. sync • Switchable color temperature 6500°/9300°K • Comb filter improves picture quality—no color spill or color noise distortion • Video/sync/audio loop-through capability for multiple connections • Built-in speaker for audio monitoring • Rack mountable with optional MB-502 Rack Attachment plus optional SLR-102 Slide Rail • Weight: 32 lbs. 2 ozs., Dimensions: 13-13/16"H x 13-1/2"W x 15-3/16"D • IBM PC Compatible

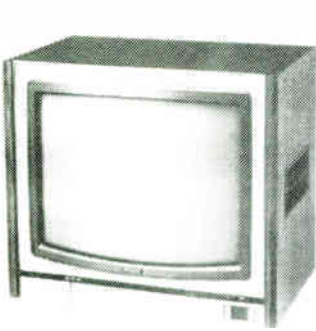
\$915.00

SFB-1000

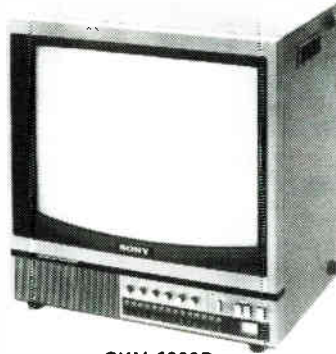
Touch-Screen For PVM-1271Q

- Converts PVM-1271Q to a touch-screen monitor ideal for interactive applications • Touch-screen attaches to monitor with just two screws • Menu selections can be made from the screen display with the touch of a fingertip • 768 switch screen matrix (32 horizontal x 24 vertical) • Two ranges of programmable coordinates: Model Zero (32 x 24), Mode One (64 x 48) • Switches activated by pressures from 20 to 180 grams • CX-564-080 (ROM 4 Kbyte) controller LSI • Baud rate from 1200 to 4800 Baud selected automatically by controller • Screen Weight: 1 lb., 5 ozs., Dimensions: 9-3/4" x 14-5/8" x 3-1/8" (HWD) • Controller Weight: 3 lbs., 15 ozs., Dimensions: 3-3/4" x 5-5/8" x 10-1/2" (HWD)

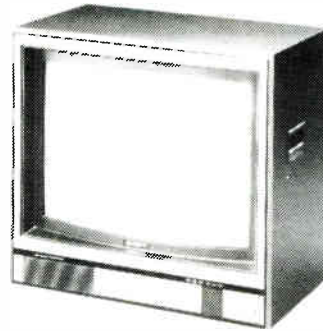
\$435.00



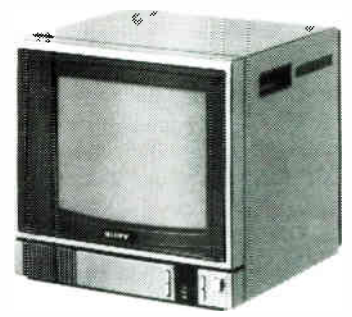
CVM-3000



CKV-1900F



CVM-2560



CVM-1271

CVM-3000

30" Color TV Receiver/Monitor

Enjoy the very best in studio viewing with the world's largest color video monitor. A 30" screen plus Sony's outstanding Trinitron® color system make it the perfect unit for large audience presentations or public events.

- Line/VTR/TV Selection
- VHF/UHF Synthesizer Tuner with Automatic Station Memory that holds up to 14 channels
- Velocity Modulation System and Comb Filter for improved Resolution
- Audio Power Output for External Speaker (10W)
- Front Panel Controls including CRT Adjustment and Manual Degauss
- Remote Commander (RM-503) controls power On/Off, Channel Selection, Sound Level and Sound Muting
- Loop through capability for Multiple Monitor Connection
- Weight approx: 275 lbs., 9 oz.
- Dimensions: 29-3/8"H x 33-7/8"W x 22-7/8"D **\$7800.00**

CKV-1900F

19" Color TV Receiver

- 19" diagonal Screen with Trinitron® Color System
- Independent F-type VTR-In Connector for Reproducing the Playback Picture and Sound from the RF/VHF Output of a VTR
- VTR/(RF)/TV Selection
- Synthesizer VHF/UHF Tuning System with Automatic Station Memory that holds up to 14 Active Channels
- LED Digital Channel Display
- Sub-Volume Control to Pre-Adjust Volume
- Side Panel Mounts for Safety Chain
- Weight: 61 lbs., 12 oz.
- Dimensions: 20"H x 20-1/2"W x 18-5/8"D **\$649.00**

CVM-2560

25" Color TV Receiver/Monitor

A large screen, 25" measured diagonally, full color monitor in a streamlined, compact design. This remote controllable

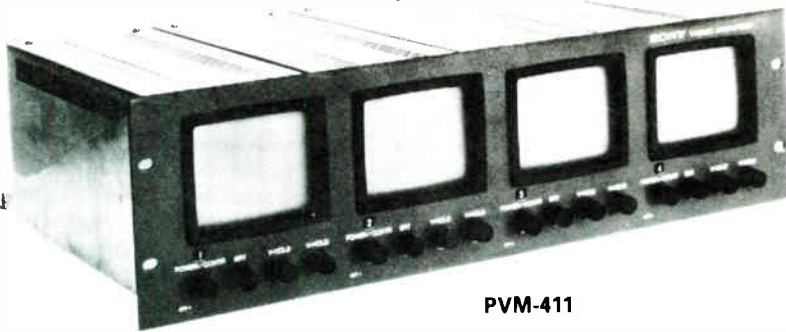
unit employs a velocity modulation system as well as a comb filter for distinctly improved resolution and is an ideal unit for studios, classrooms, public events or any other large screen type of information display.

- 390 Lines (Video), 340 Lines (TV)
- Line/VTR/TV Switchable
- VHF/UHF Synthesizer Tuner with Automatic Preset Tuning of up to 16 Active, Local Channels
- LED Digital Channel Indicator
- Velocity Modulation System and Comb Filter (COMB/TRP Filter Switch) for Improved Resolution
- Built-In Speaker (3W) plus External Speaker Output (10W)
- RM-606W Remote Commander Controls power On/Off, Channel Selection, Sound Level and Sound Muting
- Channel Lock Switch and Remote On/Off Switch
- Loop through capability for Multiple Monitor Installations
- Sub-volume Control for Presetting Initial Sound Level
- Versatile Output Connectors: TV Out, Monitor Out, Line Out
- Weight: 136 lbs., 6 oz.
- Dimensions: 25.5"H x 27"W x 19.2"D **\$1715.00**

Sony CVM-1271

Super Fine Pitch 12" Trinitron® Color TV Receiver/Monitor

- High Resolution — more than 500 Lines with Video Input
- 10-Key VHF/UHF Express Tuning™ plus Sequential Up/Down Channel Selector and LED Channel Indicator
- Line/VTR/TV Input Selector
- Monitor/Line/TV Video Outputs
- AFC Slow/Fast Switch
- Comb Filter improves Picture Quality — no Color Spill or Color Noise Distortion
- Up/Down Volume plus Sub-Volume Control for Presetting Initial Sound Level
- Rackmountable with optional MB-502 Rack Attachment plus optional SLR-102 Slide Rail
- Color Temperature Selector
- Weight: 32 lbs., 2 oz.
- Dimensions: 13-13/16"H x 13-1/2"W x 15-3/16"D **\$795.00**



PVM-411

PVM-411 Quadruple 4" Monochrome Monitor

Four independently controlled 4" screen (measured diagonally) monochrome monitors in a single rackmount unit. Fits EIA standard 19" rack. Individual unit shielding minimizes magnetic crosstalk distortion. Spot-killer circuitry prevents phosphor burns when bright images remain on-screen for extended periods. Loop-through capability enhances use in multiple location production and surveillance applications. Individual front-mounted contrast, brightness, V-hold and H-hold controls. Weight: 35 lbs. 4 oz. Dimensions: 5-1/4"H x 19"W x 12-1/2"D.

PVM-411 Quadruple 4" Monochrome Monitor **\$1275.00**

PVM-122 12" High Resolution Monochrome Video Monitor

- 1000 lines of horizontal resolution at center
- Selectable scanning systems: Normal/Underscan
- DC clamp switch provides a stable reference for black level
- External sync input
- Selectable A/B line inputs with front switch
- Loop-through BNC connectors for Line, A/B and Sync
- Built-in speaker for audio monitoring
- Tally lamp
- Weight: 21 lbs. 11 oz.
- Dimensions: 12-3/16"H x 12"W x 12-3/16"D

\$450.00

PVM-91

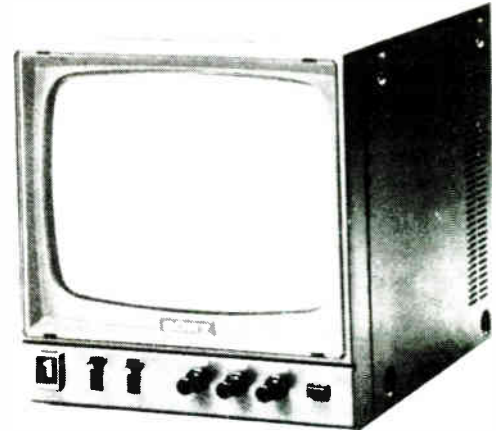
9" High Resolution Monochrome Video Monitor

A high resolution black and white monitor whose picture precision makes it an ideal unit for use as a computer display, a calibration device for color video cameras, CCTV applications and a studio control room monitor.

- 800 lines of horizontal resolution at center
- Selectable scanning systems: Normal/Underscan

- DC clamp switch provides a stable reference for the black level
- Accepts an external sync
- Loop-through BNC connectors for video and sync
- Can be installed/rackmounted as a dual video with the MB-500 optional mounting bracket monitor
- Can be installed with a waveform monitor or a vectorscope by using an MB-501 optional mounting bracket
- Weight: 12 lbs., 12 oz.
- Dimensions: 8-3/4"H x 9"W x 10"D

\$345.00



PVM-91



PVM-122

**VIDIMAGIC
FP-60 COLOR VIDEO PROJECTOR**

Sony has performed their magic on video again. They've combined a TV tuner, a Betamax® recorder/player and a revolutionary single lens video projector into one incredibly compact and lightweight presentation system. Advanced Sony design and technology means easy set-up, operation, and most of all, magical video presentation.

VIDIMAGIC FEATURES

- A complete video presentation system that is compact, lightweight, easy to set up and simple to use
 - Single lens color video projector
 - Betamax® recorder/player
 - 181 channel cable ready TV tuner
 - Public address system
 - Loudspeaker
- Revolutionary new 5.25" high-brightness Indextron™ designed for the single tube color projection system
- Super easy set-up with absolutely no registration headaches, just focus and it's ready
- Variable projection size allows use of screens from 30" to a giant 200" (measured diagonally). Even a white wall can be used as an instant screen
- Built-in Betamax recorder/player with Beta II & III record/playback, BetaScan®, Beta Skipscan™, linear time counter, external video in/audio in
- Built-in 181 channel VHF/UHF/CATV tuner with 10 key direct tuning
- Built-in public address system. The addition of the optional RM-27 Remote Control/Microphone allows for narration over the video playback/TV program as well as for use as an independent PA system
- RM-27 Remote Control/Microphone with remote control functions for the VCR (PLAY/STOP/REW/FF/PAUSE) & built-in microphone
- Motor-driven focusing system for accuracy and ease-of-operation
- Adjustable projection angle from 7 to 20 degrees makes picture positioning a snap
- MPX and audio outputs plus video and audio inputs facilitates connection with other audio/video equipment
- On-screen TV channel indication
- On-screen sound volume and picture bar displays
- Convenient built-in power cord retainer

INDEXTRON is a trademark of Sony Corporation
Vidimagic is a trademark of Sony Corporation
Betamax is a registered trademark of Sony Corporation
BetaScan is a registered trademark of Sony Corporation
BetaSkipscan is a trademark of Sony Corporation of America



GENERAL

Color System: NTSC System

Test Signal: Focus marker is incorporated

Speaker: 2" x 3 3/8" (5cm x 9cm)

Audio Output: 3W

Power Requirements: 120V AC, 60 Hz

Power Consumption: 110W

Dimensions: 9 3/4"H x 8 3/4"W x 26 3/8"D (246 x 220 x 668mm)

Weight: 34 lbs., 3 ozs. (15.5kg)

Inputs: VHF/UHF: 75 ohm/300 ohm antenna connector (F-type), VIDEO: 1V p-p, 75 ohms unbalanced, sync negative (phono type), AUDIO: -10dBs, high impedance (phono type), MIC: -60dBs, low impedance (mini-jack), REMOTE: 8-pin DIN

Outputs: AUDIO: adjustable -10dBs (max) low impedance phono type, MPX: 0.0775 Vrms (phono type), EARPHONE: 8 ohm earphone (mini-jack)

Remote Connector: 8-pin DIN, for connection with the optional RM-27 Remote Control Unit

FP-62	Stand alone Video Projector	\$2150.00
FP-60	Video Projector w/built-in Betamax	2995.00
VPS-60	55" High Gain Screen	300.00
VSS-60	Screen Stand	300.00
VLC-60S	Carrying Bag for Screen and Screen Stand	250.00
VLC-60	Carrying Bag for FP-60/FP-62	125.00
RM-27	Remote Control w/built-in Microphone for FP-60	45.00

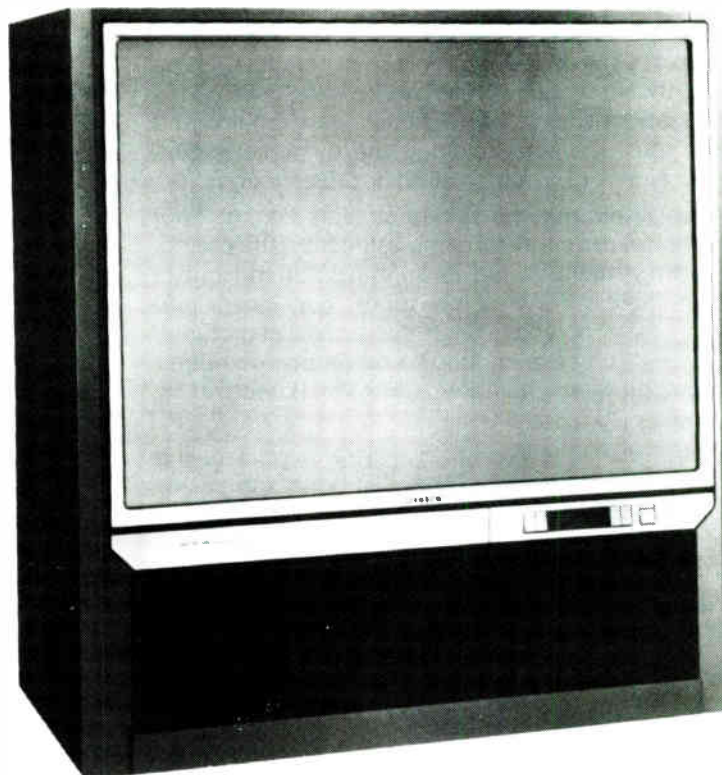
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RVP-460
High Resolution Rear Projection
Color Video System

The RVP-460 is an ultra-compact, high resolution rear projection video system with a giant 46" screen. Advanced projection tube, lens and screen technology create a picture sharp enough to reproduce computer-generated graphics and characters. Features include multiple video and audio input connectors including a separate RGB input.

FEATURES

- Ultra compact size with giant 46" screen
- Exclusive tri-fold optics system with unique and extremely compact Delta Lens
- Exclusive coolant-sealed picture tubes produce 30% brighter picture (100 Ft-L) and improve viewing in normal ambient light conditions
- Special front-coated mirrors and super bright f1.0 aspherical lens elements minimize light loss and yield brighter pictures
- One-piece acrylic screen with patented lenticular surface on one side and fresnel lens on other side reject ambient light and improve contrast
- Convertible screen provides choice of optical path angles to adjust to viewers eye level—standing or seated (± 1.8 degrees vertically)
- High resolution: RGB more than 500 lines, Video more than 450 lines, RF more than 340 lines
- RGB input accepts both analog RGB or digital RGB with 80 character x 25 line color display
- 10 key frequency synthesis express tuning system provides direct access to selected channel with no presetting necessary
- 105 channel cable-adaptable tuning circuitry with Cable TV-Midband (A-I), Cable TV-Superband (J-W), VHF (2-13) and UHF (14-83)
- Multi-Function Remote Commander[®] controls power, 10 key Express tuning, direct or sequential up/down Channel selection, volume, muting, brightness, color, hue, picture matrix sound on/off, tone enhance and antenna selection
- On-screen color bar tuning display
- Multiple video and audio inputs with 8-pin and BNC connectors facilitate easy connections with audio, video and computer systems
- Matrix Sound[™] with twin audio amplifiers (10W + 10W) and separately enclosed bass reflex speakers
- Built-in casters and handles permit simplified positioning anywhere in viewing environment
- Optional modular base elevates unit and provides handy locked storage



Inputs/Outputs:

Signal	Connector	Signal Level	Remarks
Video Input	[VTR] 8 pin pins 2 & 6	1 V (p-p) \pm 0.2 V	NTSC 75 Ohms sync negative
	[VIDEO IN] BNC connector and phone jack		
	[RGB IN] 4 BNC connectors	Composite RGB: 1V (p-p) \pm 0.2V or non-composite RGB: 0.7V (p-p) \pm 0.15 Sync: 0.5V (p-p) to 6V (p-p), 75 Ohms, sync negative	Sync is selected automatically between composite RGB signal and external sync
Video Output	[VTR] 8 pin (pins 3 & 4)	1V (p-p) \pm 0.2V	NTSC, 75 Ohms sync negative
	[VIDEO OUT] BNC connector		
Audio Input	[VTR] 8 pin (pins 1 & 5)	- 5 dB (436 mV rms)	47k Ohms
	[AUDIO IN] 2 phono jacks		
	[LINE IN] 2 phono jacks		
Audio Output	[VTR] 8 pin (pins 7 & 8)		10k Ohms 1 kHz 100% modulation
	[AUDIO OUT] 2 phono jacks		

RVP-460 46" color rear video projector.
Displays 80 characters x 25 lines with RGB
input. Cable-adaptable tuner. **\$4,440.00**

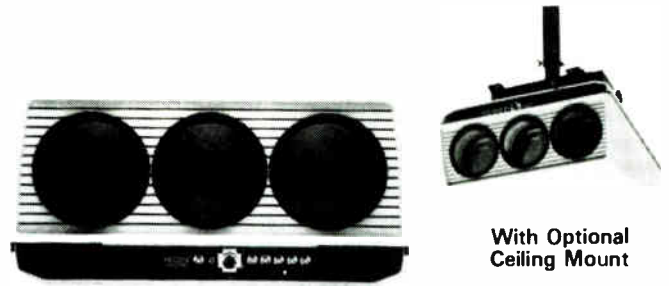
SU-460 Modular Base **\$430.00**

VPH-722Q1/1020Q1 HIGH RESOLUTION COLOR VIDEO PROJECTION SYSTEMS

The Sony VPH-722Q1 and 1020Q1 Universal Video Projectors create large, clear video images on flat screens, on high gain curved screens, and even on flat white walls when the use of a screen is impossible or impractical. These two new lightweight, bright, easy-to-operate color video projectors allow business, professional, government and educational spokespersons to bring the dynamic impact and the excitement of video to all their presentations.

The VPH projectors may be set up at table height, floor mounted on a low rise pedestal or mounted from the ceiling. In addition, they may be used for high resolution front or rear video projection. New picture tubes, new lenses and new circuitry create incredibly brightened, sharper pictures. Images are clear and crisp enough to reproduce computer generated graphics and characters (80 x 25 characters) by digital or analog RGB signal.

The projectors are uniquely compact and transportable, and exceptionally simple to operate. They can be set up quickly and easily by anyone, without assistance and without special technical training. They are ideally suited for video teleconferencing, institutional and industrial training as well as for video theaters, schools and other educational facilities using VTR and data curriculum materials.



With Optional
Ceiling Mount

VPH-722Q1

Color video projector, portable. Factory adjusted for 72" flat screen. Displays 80 characters X25 lines w/RGB input.
(Without screen) **\$5850.00**

VPH-1020Q1

Same as above except factory adjusted for 100" flat screen.
(Without screen) **\$5850.00**

VPH-2020Q1

200" Universal projector. Floor type, ceiling mount or rear projection. 3 picture tubes, built-in speakers, greater than 200 lumens, remote controllable. Horizontal resolution—600 lines RGB. 150-250" screens **\$6495.00**

SPECIFICATIONS

Optical

Projection System: 3 picture tubes, 3 lenses, direct projection system

Picture Tube: 5.5 inch high-brightness monochrome tubes, coolant sealed

Projection Lens: High-performance acrylic lenses F1.0/130mm

Projected Picture Size:

VPH-722Q1: 72" measured diagonally

VPH-1020Q1: 100" measured diagonally

Picture Brightness (obtained with a curved screen of gain 13):

VPH-722Q1: More than 130 fL

VPH-1020Q1: More than 65 fL

Throwing Distance:

VPH-722Q1: Approx. 97-3/4" (2,480mm)

VPH-1020Q1: Approx. 132-3/4" (3,368mm)

Viewing Distance:

VPH-722Q1: 10 to 66 ft. (3 to 20m)

VPH-1020Q1: 13 to 83 ft. (4 to 25m)

General

Color System: PAL, SECAM, NTSC, and NTSC 4.43, systems switched automatically

Resolution:

More than 600 TV lines (RGB inputs)

More than 400 TV lines (video line inputs)

RGB Inputs: Character display capacity 2000

characters (80 letters x 25 lines)

Horizontal frequency: 15.75 kHz

Vertical frequency: 60 Hz

Test Signal: Cross-hair/crosshatch test pattern, generator is incorporated

Speaker: 2" x 3 5/8" (5cm x 9cm) 2 units

Power Requirements:

VPH-722Q1/VPH-1020Q1:

120V AC 50/60 Hz—Preset

100-240V AC

50/60 Hz

Power Consumption:

VPH-722Q1/VPH-1020Q1: 165W (max.)

Dimensions: 10-1/4" x 20" x 23-5/8" (HWD)

with the brackets pushed down, including projecting parts and controls

Weight: 57 lb. 5 oz. (26kg)

SUPPLIED ACCESSORY

AC power cord

OPTIONAL ACCESSORIES

VLC-722 Carrying Case **\$450.00**

VPR-722 Remote Control Unit **\$400.00**

SU-722 Pedestal Floor Stand **\$450.00**

PSS-722 Projector Ceiling Mount **\$230.00**

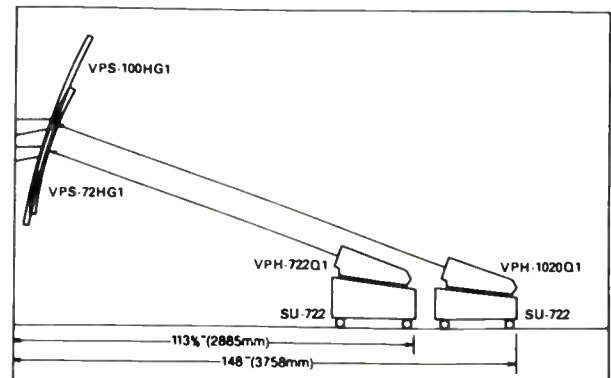
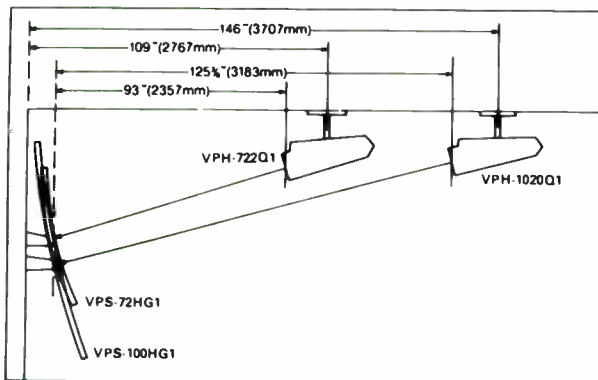
VPS-72HG1 72" Curved Screen **\$720.00**

VPS-100F1 100" Flat Screen (Elec.) **\$500.00**

VPS-100HG1 100" Curved Screen **\$2800.00**

Recommended Projector/Screen combinations

Projector \ Screen	Flat screen	Curved screen	
	VPS-100F1	VPS-72HG1	VPS-100HG1
VPH-722Q1	Desktop or Ceiling mount	Floor or Ceiling mount	—
VPH-1020Q1	Desktop or Ceiling mount	—	Floor or Ceiling mount



**SMI-7075 VIDEOTIZER
 FOR SONY MICROCOMPUTER SMC-70/70G**

The Sony's VIDEOTIZER takes you to a new world of graphics and images with much easier and faster input capability than a keyboard and a tablet.

It allows you to make a picture file for computer with the images from any NTSC composite video source, such as Video Camera, VTR, Video Disk and so on.

And more, enhances the usages of SMC-70/70G as an eminent presentation tool, and a special effect equipment for video post-production, with the mosaic effect capability.

The picture file made by VIDEOTIZER has compatibility with "Graphics Editor" and "Video Titrer" in the PIC. file format.

FEATURES

- Field Still — Can freeze the video picture with resolution of 448 x 262 pixels*
- Color Mode — 2 planes of 256 colors, 448 x 262 pixels*
- B&W Mode — 2 planes of 256 gray scales or 16 planes of user sliceable binary mode, 448 x 262 pixels*
- * SMC-70/70G 320 x 200 pixels
- Write-in Speed — 1/60 sec (1 field real timing)
- Built-in Genlock capability for any NTSC video input
- Mosaic Effect
- 1 pixel can be enlarged up to 32 times for a special mosaic effect

SMI-7075 \$2900.00

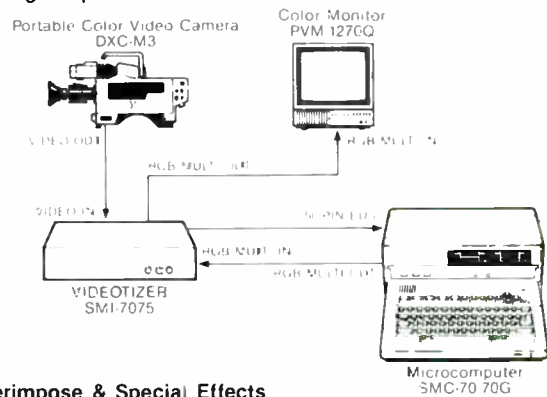
SPECIFICATIONS (Inputs/Outputs)

- Video Input:** BNC Type, 1.0Vp-p 75 ohms, sync negative
- B&W Video Output:** BNC Type, 1.0Vp-p 75 ohms, sync negative
- RGB Video Output:** BNC Type, 0.7Vp-p 75 ohms
- Composite Sync Output:** BNC Type, 4.0Vp-p 75 ohms
- Keying Signal Output:** BNC Type, 0.7Vp-p 75 ohms, without sync signal
- RGB Multi-Input:** 25-pin Connector
- RGB Multi-Output:** 25-pin Connector

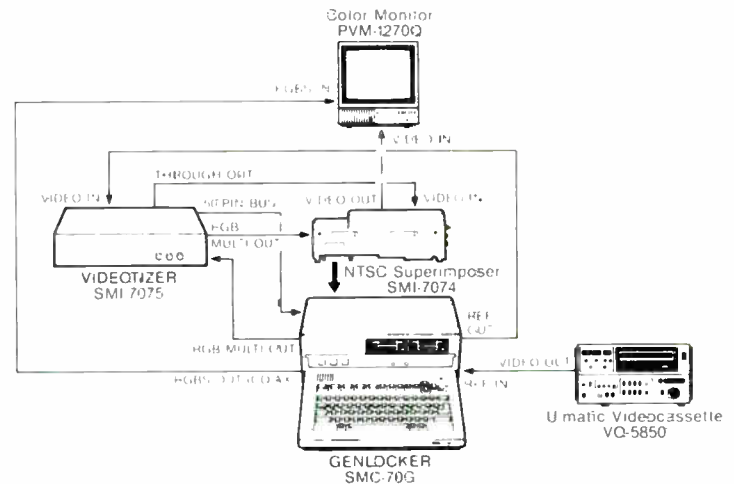


Connections

Creating Graphics



Superimpose & Special Effects





1/2" VIDEOCASSETTE RECORDER

A DIVISION OF THE AUDISCAN CORP.
1410 130th St. NE
Bellevue, WA 98009
(206) 454-0694 (800) 426-0852



VIDEOMASTER

FEATURES

- 5-1/4" color monitor
- Full size 1/2" VHS format
- Four head deck
- Only 22 lbs.
- Fits under an airplane seat
- Complete accessory line

Videomaster is geared for the sales, marketing or training professional. It can be operated with both AC and DC (using an accessory battery pack), has a built-in battery charger, retains a ten-pin connector for easy camera hook-up and boasts rotary 4-head helical scan, azimuth recording for superior playback, pause and slow motion (with the use of remote control).

The unit utilizes full size 1/2" VHS cassettes, has top-mounted loading and function controls, has a fold down arm which acts as both a carrying handle and an elevation device and comes equipped to accept a full range of accessories. Videomaster is constructed to withstand rugged use, and comes in a matte industrial black finish to complement its business-like design.

ACCESSORIES

- A nickel-cadmium battery pack
- R/F modulator
- VHF color tuner
- Wireless remote control
- Dust cover
- Soft carrying cover
- Attache-style carrying case
- A heavy duty shipping case

SPECIFICATIONS

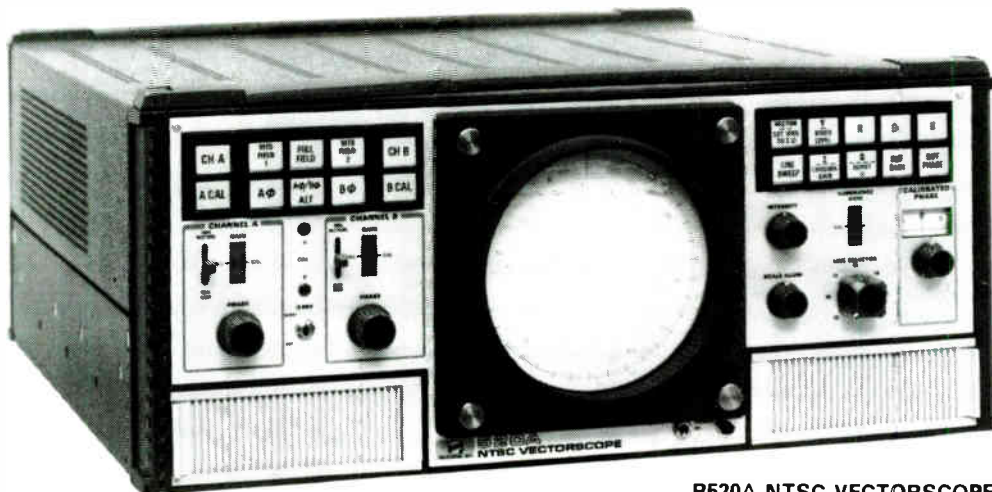
- Format:** 1/2" VHS Portable Recorder/Player with monitor built-in. Rotary 4 head Helical Scan, Azimuth Recording.
- Speed:** SP, LP & EP (Records and Plays up to 8 hours).
- Monitor:** 5" Diagonal. Tint, Color, Contrast and Brightness Control Knobs.
- Speaker:** 0.5W, 8 ohm.
- Loading:** Top Loading (Cassette).
- Features:** (Front Panel or Top) Play, Stop, Record, Cassette Ejection, Pause, Counter, Rewind/Fast Forward (high speed and viewable), Counter Reset, Audio Volume, Power Switch, After Recording, Insert, Tracking, Sensor for Wireless Remote Control and Auto-Rewind. (Slow motion available with use of Remote Control only).
- Indicator Lamp:** Play, Stop, Pause, Record, After Recording, Battery Warning, Dew Light.
- Earphone Jack:** Included (Disengages internal speaker when in use).
- Video In/Out:** Included.
- Video Input:** 0.5-2.0Vp-p (75 ohm RCA Connector).
- Video Output:** 1.0Vp-p (75 ohm RCA Connector).
- Video S/N:** 45dB Over.
- Ten Pin Connector:** Included.
- Audio Input:** Microphone -67dB (mini jack).
Line -20dB (RCA Connector).
- Audio Output:** Line -6dB (RCA Connector).
- Audio Hertz:** 70Hz - 8kHz Audio Output: Line (Standard)
- Resolution:** Over 240 Lines (Standard)
- Measurements:** 15"W x 5.5"H x 16"D.
- Weight:** 22 lbs.
- Power:** AC 117V, DC 12V (Battery Pack Extra Option).

VIDEOMASTER \$995.00

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

VIDEO MEASUREMENT VECTORSCOPIES



R520A NTSC VECTORSCOPE

R520A/R521A/R522A

Luminance Amplitude

Chrominance Amplitude and Phase

Precision Differential Phase

Precision Differential Gain

The Tektronix R520A Series vectorscopes include three basic instruments. These are the R520A for NTSC, the R521A for PAL, and the R522A for PAL-M.

DISPLAYS

The vector display shows the relative phase and amplitude of the chrominance signal on polar coordinates. To help identify these coordinates, the graticule has points corresponding to the proper phase and amplitude of the primary and complementary colors: R (Red), B (Blue), G (Green), Cy (Cyan), Y_L (Yellow), and M_G (Magenta).

Any errors in the color encoding, video tape recording, or transmission processes that change these phase and or amplitude relationships cause color errors in the television picture. Polar coordinate displays, such as those obtained on the R520A, R521A, and R522A CRT, have proven to be the best method for displaying these errors.

The polar display permits measurement of hue in terms of relative phase of the chrominance signal with respect to the color burst. Amplitude is expressed in terms of the displacement from center (radial length) toward the color point which corresponds to 75% (or 100%) amplitude of the particular color being measured.

The outer boxes around the color points correspond to phase and amplitude error limits ($\pm 10^\circ$, $\pm 20\%$). For the R520A (NTSC) the inner boxes indicate $\pm 2.5^\circ$ and 2.5 IRE units, and correspond to phase and amplitude error limits per EIA specification RS-189, amended for 7.5% setup. For the R521A (PAL) and R522A (PAL-M), the inner boxes indicate $\pm 3^\circ$ phase angle and $\pm 5\%$ amplitude

An internally generated test circle used with the vector graticule verifies quadrature accuracy, horizontal to vertical gain balance, and gain calibration for chrominance signal amplitude measurements. Two methods of measuring phase shifts are provided. You can accurately read large phase shifts from the parallax-free vector graticule. A precision calibrated phase shifter with a range of 30° , spread over 30 inches of dial length, is provided for measuring small phase shifts.

CHARACTERISTICS

Graticule — Two separate graticules provide reference for vector and line sweep displays. The parallax-free vector graticule, or the luminance graticule, is automatically selected and edge-lighted concurrent with operating mode selection.

Z-Axis Input — The Z-Axis Input connector accepts external trace-brightening pulses for intensifying a portion of the display during the time of interest.

Video Inputs — Dual BNC input connectors for each channel permit 75 Ω loop-through operation with a return loss < 46 dB to 5 MHz (exceeds CCIR recommendation 567, Part D and D2). Amplitude range is 0.7 V to 1.4 V video (sync tip to peak white).

AC POWER

Mains Voltage Range — 90 V ac to 136 V ac or 180 V ac to 272 V ac

Mains Frequency — 47 Hz to 63 Hz

Power Consumption — 95 W maximum at 115 V ac/60 Hz (Rear panel selector provides rapid accommodation to six line-voltage ranges. Factory set at 115 V ac for the R520A and R522A and 230 V ac for the R521A.)

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature Range — 0°C to $+50^\circ\text{C}$ ambient

PHYSICAL CHARACTERISTICS

Dimensions	mm		in	
	mm	in	mm	in
Width	483	19.0		
Height	178	7.0		
Depth	483	19.8		
Weights	kg		lb	
	kg	lb	kg	lb
Net	15.0	33.0		
Shipping	27.7	61.0		

INCLUDED ACCESSORIES

Smoke-gray filter, installed (378-0581-00), rackmounting hardware, and slide-out assembly (351-0195-01), manual

ORDERING INFORMATION

R520A NTSC Vectorscope	\$8,525
R521A PAL Vectorscope	\$8,050
R522A PAL-M Vectorscope	\$9,540

OPTIONAL ACCESSORIES

75 Ω Voltage Step-Up Termination — When used with a Tektronix vectorscope, the 75 Ω Voltage Step-up Termination provides an X5 increase in chrominance amplitude and lets you make more accurate Differential Gain and Differential Phase measurements. Input impedance to the termination is a constant 75 Ω . Use of the termination requires a source of external sync to the vectorscope.

Voltage Step-up Termination — For use with R520A (NTSC), R522A (PAL-M) Vectorscopes. Order 011-0100-01 \$85

Voltage Step-up Termination — For use with the R521A Vectorscope. Order 011-0109-00 \$120

Single Sideband Chroma Amplitude Corrector — Designed for use with a Tektronix vectorscope in transmitter applications where a vestigial sideband signal is being demodulated with a detecting diode. The corrector provides an X2 increase in chrominance amplitude and passes luminance components with little or no attenuation. Input impedance is 75 Ω .

Chroma Amplitude Corrector — For use with R520A (NTSC), R522A (PAL-M) Vectorscopes. Order 011-0107-01 \$110

Chroma Amplitude Corrector — For use with R521A Vectorscope. Order 011 0108-01 \$120

Recommended Camera — For Display Photographs. C-59AP with mounting adaptor 016-0295-01. See camera section of this catalog for information.

R520A Cradle Assembly — For mounting the R520A in a WECO backless rack. Order 426-0667-00 \$40

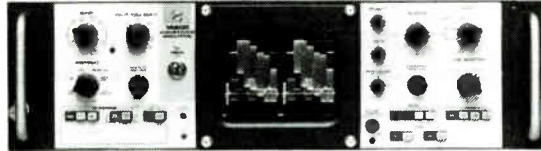
Rackmount to Cabinet Conversion Kit — Order 040-1153-00 \$50

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

WAVEFORM MONITORS

1485R Option 01 PAL/NTSC Dual Standard Waveform Monitor (Rackmount)



1480 SERIES

1480 Series

**Bright CRT Especially Suitable
for Vertical Interval Testing**

Advanced Measurement Modes

**Amplitude Measurement Accuracy
Approaching 0.2%**

Digital Selection of Line and Field

Probe Input Option

15-Line Display for VTR Applications

The 1480 Series waveform monitors have excellent amplitude measuring accuracy and many unique operating modes that enable you to work more precisely and accurately. The monitoring needs of CCU, VTR, control room, transmission facilities, transmitter, and special systems are met by the use of 1480 Series waveform monitors. The 1485C and 1485R PAL/NTSC dual standard monitors (see photos) represent the essentials of all seven monitors in the 1480 Series. The differences between the monitors in the series are essentially confined to what lines in the vertical interval are selectable, what filters are selectable in the response mode, and in the field selection modes. Dual-Standard Monitors recognize the signal standard in use automatically and indicate that standard with front panel indicators.

CHARACTERISTICS VERTICAL DEFLECTION

Inputs — Input A and B are 75 Ω high impedance loop-through. Return loss is ≥ 40 dB from dc to 5 MHz in a 75 Ω system. Aux Video Input is internally terminated in 75 Ω . Return loss is ≥ 34 dB from dc to 5 MHz.

Scale Factor — A and B input calibrated 1.0 V ± 7 mV, 0.5 V ± 15 mV, 0.2 V ± 7 mV, (0.05 V ± 2.5 mV Option 06) volts full scale. Variable: Range for each scale factor at least $\pm 40\%$ to -50% . Aux Video Input 1.5 dB gain.

Maximum Input Voltage — 2 V p-p (ac coupled), ± 1.5 V dc \pm peak ac (dc coupled).

Frequency Response

FLAT: 50 kHz to 5 MHz $\pm 1\%$ (1.0 V F.S., VAR in detent), 5 MHz to 8 MHz ± 2 , -3% , 8 MHz to 10 MHz ± 2 , -6% . Typically within ± 2 , -15% to 18 MHz and typically -3 dB at 20 MHz.

Low Pass: Attenuation ≥ 14 dB, 500 kHz and above. 3.58 MHz Bandpass: Amplitude within $\pm 1\%$ of amplitude in Flat response position. Bandpass ≈ 600 kHz. 4.43 MHz Bandpass: Amplitude within $\pm 1\%$ of amplitude in flat response position. Bandpass ≈ 800 kHz. IRE: Conforms to IEEE Standard 205, 1972.

Linear Waveform Distortion

Pulse/Bar Ratio: $\pm 1\%$. For NTSC or PAL 2T Pulse or NTSC T Pulse.

Short Time: Preshoot, overshoot, ringing $< 1\%$ of NTSC or PAL T Pulse and Bar.

Line Time: Tilt or rounding $\leq 1.0\%$. Field Time: (Ac coupled) $< 1\%$.

Nonlinear Distortion — Differential Gain: $< 0.5\%$.

Dc Restorer — Keyed type, may be turned off. Clamping

point: Back Porch/Sync Tip. Time Constant: FAST reduces mains hum ≥ 26 dB, SLOW reduces mains hum < 0.9 dB.

Calibrator — Amplitude selected by dc Restorer switch. Sync Tip: 1 V $\pm 0.2\%$. Back Porch: 714 mV or 700 mV $\pm 0.5\%$.

HORIZONTAL DEFLECTION

Time Base — 5 μ s and 10 μ s timing accuracy $\pm 2\%$ (center 10 divisions); 5 μ s and 10 μ s linearity $\pm 1\%$ (center 10 division).

External Sync Input — Two loop-through high impedance, with ≥ 46 dB return loss in a 75 Ω system. Inputs are slaved to A and B input or to A external sync input only.

External Sync Input Requirements — 400 mV to 2 V composite video or 200 mV to 8 V composite sync.

Field Selector — Positive selection of Field 1 or Field 2 in the NTSC system. Positive selection of 1, 2, 3, 4, or 1 & 3, 2 & 4 in the PAL systems.

Line Selector — Dig: Selects lines 9 to 22 NTSC, line 9/322 to line 22/335 PAL, line 9/272 to line 22/285 PAL-M. Var: Approx line 20 of the selected field to line 4 of the next related field. 15 lines: Identical to Var, except 15 successive lines are displayed.

Sync — AFC horizontal frequency range is 15.75 kHz ± 200 Hz. Maximum Jitter with Respect to Input Sync: 10 ns with 4 V RMS hum (30 ns with the addition of -36 dB white noise). Direct horizontal frequency up to < 20 kHz. Maximum Jitter with Respect to Input Sync: 12 ns with 4 V RMS hum (90 ns with the addition of -36 dB white noise).

OUTPUTS

Line Strobe — TTL amplitude pulse. Pulse coincident with line or lines selected by VAR, 15 LINE or DIG modes of DISPLAY switch.

Picture Monitor — Output of incoming video with Line Strobe added. Output impedance is 75 Ω . Output gain adjusted to unity with respect to A and B video input.

Aux Video — Output of incoming video. 75 Ω output impedance. Gain adjustable to unity with respect to A and B video input.

OTHER CHARACTERISTICS

RGB/YRGB Staircase Input — ≈ 12 V for 12.7 divisions deflection. RGB sweep length internally selected for $1/3$ normal sweep. YRGB sweep length internally selected for $1/4$ normal sweep length.

Mains Voltage — Ranges 100 V ac, 110 V ac, 120 V ac, 200 V ac, 220 V ac, 240 V ac $\pm 10\%$. Frequency 48 Hz to 62 Hz, maximum power consumption 75 W. At factory, 1480, 1482 preset for 110 V ac. 1481, 1485 preset for 220 V ac.

CHARACTERISTICS (OPTION 01)

10X Probe Channel — Scale Factor: 1 V, 0.5 V, 0.2 V full screen with 10X attenuator probe. Gain Range: $\pm 10\%$. Tilt: $< 5\%$ on 50 Hz. Squarewave High Frequency Response: $< 3\%$, 25 Hz to 5 MHz. Referenced to 50 kHz. Input Resistance 1 M Ω , $\pm 2\%$, not including probe. Input RC Product: 20 μ s, $\pm 1\%$, not including probe. BNC connector accepts most Tektronix probes.

10X Probe Calibrator — Output voltage 1,000 V ± 0.005 V or 0.995 V to 1.005 V.

SLOW SWEEP CHARACTERISTICS (OPTION 07)

Duration — 4 to 12 s, variable with front panel control.

Linearity — $\pm 5\%$ of full-screen over the length of the sweep.

Indicator — Front panel indicator on when slow sweep is operating but sweep is not running.

Triggering Signal — APL change $\approx 10\%$ to 90% (Bump or Bounce), front panel selectable for either + or - level change.

Sensitivity — 400 mV to 2 V p-p composite video with APL change.

Rate — ≈ 0.2 Hz, free-runs at rates < 0.2 Hz or with no triggering signal.

Input — Internal or External.

50Hz/60 Hz Squarewave Triggering — Sensitivity: 400 mV p-p minimum to 3 V p-p maximum. Input Impedance: ≈ 10 k Ω ac coupled (Rear Panel loop-through connectors not return loss compensated.)

INCLUDED ACCESSORIES

Two BNC right angle adaptors (103-0031-00); One pair rack-mount ext DWR Slides (351-0195-01); various external grati-cules (see matrix below); manual.

External Graticules w/Tek P/N	1480R/C	1481R/C	1482R	1485R/C
Blank 331-0393-00	x	x	x	x
NTSC Composite 331-0393-01				x
CCIR 331-0393-02				
CCIR K Visual 331-0393-05		x		x
CCIR K Photo 331-0393-07		x		x
GRAT A Visual 331-0393-08				x
GRAT B Visual 331-0393-18	x			x
GRAT A Photo 331-0393-10				x
GRAT B Photo 331-0393-17	x			x

ORDERING INFORMATION

1480C NTSC Waveform Monitor \$6,300
1480R NTSC Waveform Monitor \$6,300
1481C PAL Waveform Monitor*1 \$5,865
1481R PAL Waveform Monitor*1 \$5,865
1482R PAL-M Waveform Monitor \$6,790
1485C PAL/NTSC Dual Standard Waveform Monitor*1 \$6,300
1485R PAL/NTSC Dual Standard Waveform Monitor*1 \$6,300
Option 01 — 1 M Ω , 20 pF Probe Input (not available with Option 06, probe not included) +\$300
Suggested Probe: P6108 10X Probe 2 m (010-6108-03), or 3 m (010-6108-05) \$100
Option 06 — 124 Ω WECO Style Inputs (1480R only) +\$2,075

Option 07 — Slow Sweep*2 (Option 07 performance included with Option 06. Do not order with Option 06) +\$510

Option 08 — SECAM Field Identification (1481C, 1481R, 1485C and 1485R only) +\$315

*1 1481C/R, 1485C/R meets European Broadcast Union Tech. 3221-E, Guiding Principles for design of Television Waveform Monitors.

*2 Option 07 satisfies EBA Tech 3321-E \S 3.2.2.

OPTIONAL ACCESSORIES

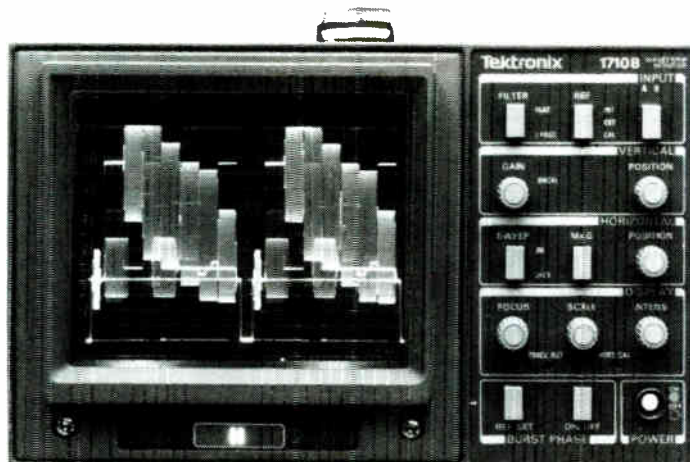
1480R Cradle Assembly — For mounting the 1480R in a WECO backless rack. Order 426-0309-00 \$40

Field Case — (For cabinet versions only). Order 016-0084-00 \$120

Trace Recording Cameras — Both the Tektronix C-53P and the C-59AP can be used. The C-53P gives the largest image possible on Polaroid pack film. The C-53P requires a battery pack (016-0270-02) and camera mounting adaptor (016-0342-00). The C-59AP is less expensive but produces a smaller image on the film. The C-59AP requires a camera adaptor (016-0224-01).

VM-108

Prices and Specifications Subject to Change Without Notice.



1710B WAVEFORM MONITOR

1710B SERIES WAVEFORM MONITORS

- Burst Phase Indicator
- Dual Filter Display
- Half Rack Width
- Bright CRT Display
- Internal Graticule
- DC Operation
- Available in NTSC and PAL Standards

The 1710B Series Waveform Monitors provide all of the commonly used display modes. In addition, the 1710B Series adds relative burst phase indication and dual filter display. All of this in a cost effective package for the user who wants high quality at a low price. These new monitors are mechanically compatible and retrofit into an existing system that uses half rack width, 5 1/4" waveform monitors.

Because of its extreme light weight, low power consumption, and DC operation (field installable kit) the 1710B Series is ideal for field production, mobile operations, and any other application where space, power consumption and/or portability are prime considerations.

Easy Operation. This monitor was also designed with the user in mind. Controls have clear nomenclature and are laid out in a logical order. This makes the operation of this powerful tool easier than one might expect.

Burst Phase Indication. The relative burst phase between inputs is displayed on the LED bar graph. The center green LEDs indicate the two signals are phase matched. The yellow ones warn the phase is slipping out of an acceptable range. Finally, the red LEDs flag an unacceptable amount of phasing error. This feature allows one instrument to do the complete job of timing and phasing in a basic television system.

Dual Filter Display. The dual filter display allows the user to view both the complete video signal and the luminance information at the same time using just one instrument. This eliminates the need for switching back and

forth between filters and makes the instrument easier to operate. Ideal for camera setup.

Bright CRT Display. The bright CRT display permits use of the 1710B Series in high ambient light conditions. Brightness remains high in the magnified sweep modes enhancing the 1710B's use in system timing applications. The internal graticule is parallax-free to reduce errors and improve its monitoring and measuring capabilities.

ELECTRICAL SPECIFICATIONS

VERTICAL DEFLECTION SYSTEM

Frequency Response:

FLAT Within 5% of the response at 50kHz from 50kHz to 6MHz. The response at Fsc is within 2% of the response at 50kHz.
L PASS At least 40dB attenuation at Fsc

Transient Response:

Pulse to Bar Ratio: 0.99:1.00 to 1.01:1.00

Ringing: 2% or Less

Overshoot: 2% or Less

Tilt (Field Rate Square Wave, Vertical Window, or 25 μs Bar): 1% or Less

Gain Range:

Input signals between 0.25V and 2.0V can be adjusted to 140 IRE (NTSC) or 1V (PAL) display

Maximum Absolute Input Level:

±2V (dc + peak ac)

Deflection Accuracy:

1710B 1V input for 140 IRE display within 2%

1711B 1V input displays 1V within 2%

DC Restoration:

DC Restorer Clamp: Time Back Porch

Low Frequency Response at: 50Hz Attenuation of 50Hz on Input Signal 20% or less

Blanking Level Shift with 10% to 90% APL Change

1710B APL changes from 50% to either 10% or 90% will cause blanking level shift of 1 IRE unit (7 mV) or less.

1711B APL changes from 50% to either 10% or 90% will cause blanking level shift of 7.2 mV or less

Blanking Level Shift Due to Presence or Absence of Burst: 1% or less of 100% video

HORIZONTAL DEFLECTION SYSTEM

Sweep:

Sweep will occur in all Horizontal mode settings with or without synchronization

Synchronization

Sweep will synchronize to composite video C 5V p-p to 2.0V p-p or to composite sync 143mV p-p to 8V p-p

2FLD Sweep Repetition Rate

Equal to frame rate of applied video or external sync

2H Sweep Repetition Rate:

Equal to half line rate of applied video or external sync

Timing Accuracy:

1 μs/div Sweep within 2%

Linearity (1 μs/div):

Within 2%

Differential Linearity (1 μs/div):

Within 3% 0.1 div (0.5 minor div) or less compression or expansion of a center screen 4 div signal, when positioned anywhere horizontally

POWER SOURCE

Mains Voltage Ranges:

115V (90-132V)

230V (200-250V)

Mains Frequency Range:

48Hz to 66Hz

Power Consumption:

25 Watts (85.25 BTU/hour) maximum

CALIBRATION SIGNAL

Frequency:

100kHz ± 1kHz

Amplitude:

1V within 1%

PHYSICAL CHARACTERISTICS

Dimensions:

5.25"H x 8.42"W x 16.875"L

(13.3 x 21.4 x 42.9cm)

Weight: Approx. 8 lbs (3.6kg)

INCLUDED ACCESSORIES

Instruction Manual 1710B Series 070-5522-00

Power Cable Assembly 161-0066-00

OPTIONAL ACCESSORIES

Cameras:

Regular: C5C OPT.2

Automatic: C7 OPT.3

Cabinets:

Plain: 390-0018-05

Portable: 437-0100-03

MPS Case: 020-1241-01

Flip Stand (Order 2): 348-0618-01

Rack Adaptor: 016-0115-04

Blank Panel: 016-0475-00

Viewing Hood: 016-0726-01

Front Panel Cover: 200-1566-00

DC Operation Kit (12VDC): 1700 F10

1710B SERIES

ORDERING INFORMATION

1710B Waveform Monitor

(NTSC system applications)

\$1,890.00

1711B Waveform Monitor

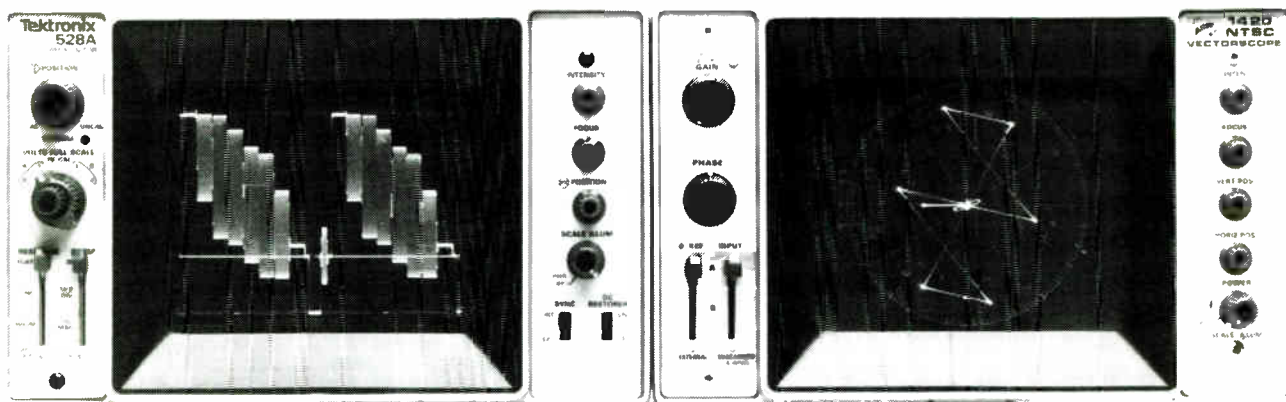
(PAL system applications)

\$2,174.00

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

WAVEFORM AND VECTOR MONITORS



528A/1420 SERIES

528A/1420 Series

Parallax-Free Internal Graticule

Half Rack Width

Proven Performance

Available in NTSC, PAL, PAL-M Models

The 528A Waveform Monitor and 1420 Series vectorscopes and X-Y monitors provide complete monitoring of your video signal. One 528A and one 1420 Series monitor mounted side by side in the optional rack adaptor provide a continuous display of both the luminance and chrominance information of your video signal, whether your signal is in the NTSC, PAL, or PAL-M format.

These monitors are ideally suited for use in camera, VTR, video production and post production monitoring applications. They all have simple-to-understand and easy-to-use controls.

CHARACTERISTICS (528A)

Inputs — Two Rear Panel BNC Connectors (A and B): Provide two 75 Ω loop through connectors (normally ac coupled but may be easily modified for dc coupling).

Video Output — The displayed signal is provided at the Video Out rear panel connector.

Dc Restoration — Slow acting back porch dc restoration.

Calibrator — An internal calibration signal provides a convenient reference to verify the deflection factor. Calibrator amplitude is 1.0 V p-p ± 1%.

TIME BASE

Provides four time base operating modes, baseline visible in each mode with no external video or sync inputs.

EXTERNAL SYNC

Input Signal Levels — 1.5 V to 4.5 V p-p (composite sync will synchronize sweeps).

YRGB AND RGB

The 528A can be used with color camera processing amplifiers that provide the necessary signal switching and staircase signals.

CHARACTERISTICS (1420, 1421, 1422)

Chrominance Bandwidth — Upper 3 dB Point Fsc
· 550 kHz, 100 kHz, Lower 3 dB Point Fsc 550 kHz
· 100 kHz

Vector Phase Accuracy — Within 1°

Phase Control Range — 360° continuous rotation with goniometer

Input Amplitude Range — 1 V ± 6 dB

Front Panel Gain Control Range — Unity to ± 12 dB Unity to ± 6 dB

Input Return Loss — At least 46 dB to 5 MHz.

Differential Phase — 1° or less

Differential Gain — 1% or less

AC POWER

Line Voltage Ranges — 99 V ac to 132 V ac and 198 V ac to 250 V ac (528A) 90 V ac to 132 V ac and 180 V ac to 250 V ac (1420 Series)

Typical Power Consumption — 48 W (528A) 45 W (1420, 1421, 1422)

Mains Frequency — 48 Hz to 66 Hz

SAFETY

528A Waveform Monitors are CSA556B certified. With cover or carrying case installed they meet the requirements for listing under UL 1244. 528A's without a cover are UL recognized components.

PHYSICAL CHARACTERISTICS (528A/1420 SERIES)

Dimensions	mm	in
Width	216	8.5
Height	133	5.3
Depth	470	18.5
Weights (528A)	kg	lb
Net (with accessories)	6.8	15.0
Shipping	10.4	23.0
Weights (1420 Series)	kg	lb
Net (with cabinet)	7.0	15.5
Net (without cabinet)	5.9	13.0
Shipping	9.1	20.0

INCLUDED ACCESSORIES

9-pin plug connector for 528A (136-0099-01); manual; 75 Ω termination for 1420, 1421, 1422 (011-0102-00).

ORDERING INFORMATION

These instruments are configured for rackmounting and are shipped without cases or covers. To configure for bench or portable use, order appropriate optional accessories.

528A Option 01 Waveform Monitor (for use with 525 line systems) **\$2,300**

Option 03 — (Modified for use with 625 line systems and for 230 V ac power, unless otherwise specified) **NC**

1420 Option 01 Vectorscope (for NTSC, factory wired for 115 V ac power) **\$2,820**

1421 Option 01 Vectorscope (for PAL, factory wired for 230 V ac power) **\$2,920**

1422 Option 01 Vectorscope (for PAL-M, factory wired for 115 V ac power) **\$3,185**

OPTIONAL ACCESSORIES

Cover — Unfinished aluminum, no handle or feet. Order 437-0100-01 **\$60**

Carrying Case — Painted, with handle and feet. Order 390-0018-01 **\$85**

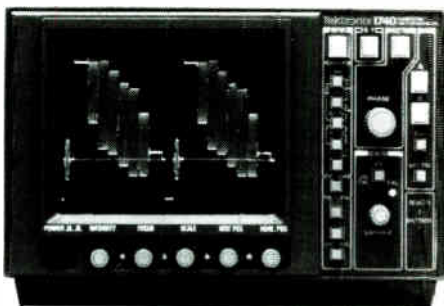
Camera — Use standard C-59AP, C-4 Option 02, or standard C-5C (See camera section of this catalog)

Side-by-Side Rack Adaptor — (For two half-rack instruments) Order 016-0115-02 **\$225**

Blank Panel — For rack adaptor. Order 016-0116-00 **\$42**

TEKTRONIX, INC.

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Beaverton, OR 97077
(503) 627-7111 Telex 151754



1740 SERIES

1740 Series

Two Instruments in One

Optional Dc Power Capability

Bright CRT Display

R-Y (V-Axis) Mode

VITS Monitoring

RGB/YRGB Display Capability

Remote Control Capability

Available in NTSC, PAL, and PAL-M

Similar to the 528A and 1420 Series products, the 1740 Series provides all the basic waveform monitoring and vectorscope functions but in a single, compact package. In addition the 1740 Series adds dc power operation (optional), single line vertical interval display which is internally preset, an R-Y sweep mode for differential phase measurements, and remote control of waveform vector mode and most of the front panel sweep and vertical amplifier response functions.

The 1740's half-rack width package allows easy installation where space and power requirements are important considerations. The 1740 is mechanically compatible with the 528A, 602, 1420 and 1750 Series instruments.

Typical applications include video signal monitoring in VTR bridges, camera control units, production switcher consoles, and in mobile vans and field productions.

EXTERNAL REFERENCES INPUT

Dc Input Impedance — 15 k Ω
Return Loss — At least 40 dB from 50 kHz to 6 MHz

RGB YRGB MODE

Will display either a 3 step or 4-step RGB YRGB display.
Staircase Amplitude — A 10 V input will result in a horizontal display of 9 divisions \cdot 4 major divisions.
Maximum Operating Staircase Signal Voltage — 12 V p-p ac component. Signal voltage not to exceed \cdot 12 V dc \cdot peak ac.

VECTOR MODE

Chrominance Bandwidth
Upper 3 dB point F_{sc} \cdot 500 kHz \cdot 100 kHz
Lower 3 dB point F_{sc} 500 kHz \cdot 100 kHz
Vector Phase Accuracy — Within 1.25 degrees
Vector Gain Accuracy — 1740 Within 1.25 IRE
1741 1742 Within 1.25%
Quadrature Phasing — Within 0.5 degrees

SUBCARRIER REGENERATOR

Pull-In Range — 1740 Within 50 Hz of F_{sc}
1741 1742 Within 10 Hz of F_{sc}
Phase Shift with Subcarrier Frequency Change — 1740 Within 0.5 degrees from F_{sc} to (F_{sc} \cdot 50 Hz) or F_{sc} to (F_{sc} \cdot 50 Hz)
1741 1742 Within 0.5 degrees from F_{sc} to (F_{sc} \cdot 10 Hz) or F_{sc} to (F_{sc} \cdot 10 Hz)
Phase Shift with Burst Amplitude Change — Within 2 degrees from nominal burst amplitude to \cdot 6 dB
Phase Shift with Reference Switched Between Internal and External References — Within 0.5 degrees
Phase Shift with Input Channel Change — Within 0.5 degrees
Phase Shift with X5 Gain — Within 2 degrees
Phase Shift with Variable Gain — Within 1 degree as gain is varied from \cdot 3 dB to 6 dB
Phase Control Range — 360 degrees continuous rotation

DISPLAY CHARACTERISTICS

Differential Phase — Within 1 degree
Differential Gain — Within 1%
Variable Gain Range — 1740 Input subcarrier signals between 28 IRE and 140 IRE can be adjusted to normal burst vector length
1741 1742 Input carrier signals between 210 mV and 1.0 V can be adjusted to normal burst vector length

CRT DISPLAY

CRT Viewing Area — 80 mm x 100 mm
Accelerating Potential — Nominally 15 kV

GRATICULE

Waveform — Internal, variable illumination
Vector — External, variable illumination. Illuminated with VECTOR or R-Y mode selected

POWER SOURCE

Mains Voltage Ranges — 100 V (90 V to 100 V), 120 V (108 V to 132 V), 220 V (200 V to 242 V), 240 V (218 V to 250 V)
Mains Frequency Range — 48 Hz to 66 Hz
Power Consumption — 50 W maximum in ac, 30 W nominal in dc

DC BATTERY OPERATION (OPTION 07)

Voltage Input Range — 11 V to 16 V
Over Voltage and Polarity Reversal Protection — Fuse blows if \cdot 20 V dc or opposite polarity is applied to the dc INPUT
Under Voltage Protection — Instrument shuts down when battery voltage (under load) is below 9 V
Battery Current — 3.5 A or less at 12 V.

WAVEFORM/VECTOR MONITORS

ENVIRONMENTAL CHARACTERISTICS

Temperature — Operating 0 C to \cdot 50 C Nonoperating 55 C to \cdot 75 C
Altitude — Operating 4500 m (15,000 ft) Nonoperating 15,000 m (50,000 ft)

CERTIFICATION

Safety/EMC — UL 1244

PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Width	216	8.5
Height	133	5.3
Depth	460	18.1
Weight	kg	lb
Net	8.2	18.8
Battery Pack	13.6	30.0

INCLUDED ACCESSORIES

0.3 A fuse (159-0029-00), 0.6 A fuse (159-0043-00), Power cord assembly (161-0066-00), clear filter (378-0219-00), female remote connector, 25 pin (131-0569-00), remote connector housing, 25 pin (200-1667-00), strain relief, 25 pin (358-0314-00), instruction manual (070-4473-00)

ORDERING INFORMATION

These instruments are configured for rackmounting and are shipped without cases or covers. Order appropriate options or optional accessories to configure for bench or portable use.

1740 Option 01 Waveform/Vector Monitor (For NTSC applications) \$3,970
1741 Option 01 Waveform/Vector Monitor (For PAL applications) \$3,970
1742 Option 01 Waveform/Vector Monitor (For PAL-M applications) \$4,370
Option 06 — (Composite internal graticule, waveform and vector) + \$30
Option 07 — (Adds dc power operation capability, must be installed during manufacture) + \$60
Option 11 — (Portable carrying case, dc power operation, and a BP1 Battery Pack) + \$650

OPTIONAL ACCESSORIES

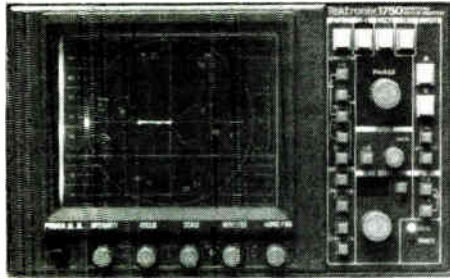
Battery Pack — Order BP1 \$550
Snap-On Front Cover — High import plastic. Order 200-1566-00 \$18
Modular Carrying Case — Portable case with handle, feet, and battery mounting lugs (lugs are required to mount the BP1). Order 020-1241-00 \$120
Carrying Case — Painted (blue), with handle and feet. Order 390-0018-01 \$85
Cover — Unfinished aluminum, no handle or feet. Order 437-0100-01 \$60
Side-by-Side Rack Mount — For mounting two half-racks (1740, 528A, etc) in a standard 19 in rack. Order 016-0115-02 \$225
Blank Panel — For one half of the side-by-side rack mount. Order 016-0116-00 \$42
Flip Stand Feet — For modular carrying case, stands extend normal feet for tilted viewing (two required). Order 348-0618-01 \$5.75
Viewing Hood — For high ambient light environments. Order 016-0475-00 \$8.25
Camera — Use C-30. Option 01 with adaptor 016-0269-03, C-5C Option 02 or 04, or standard C-4.

MAINTENANCE ACCESSORIES

Extender Board — 64 pin. Order 670-7980-00 \$47
Extender Cable — Order 067-0709-00 \$45
Deflection Leads Extender Cables — (Four each). Order 196-0939-00 \$6.00

TEKTRONIX, INC.

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1750 SERIES

1750 Series

Two Instruments in One

SCH Phase and Color Framing

R-Y (V-Axis) Mode

RGB/YR GB Mode

Remote Control Capability

The Tektronix 1750 Series offers comprehensive monitoring and measurement of television signals, including SCH phase and color framing, in one compact unit. While similar in appearance to the 1740 instruments, the 1750 has enhanced performance in each of its operating modes.

The unique new SCH phase display presents horizontal sync timing relative to reference subcarrier (burst) for verification of signal format and color framing. This mode enables easy analysis and monitoring of these important characteristics of the television signal, a task which previously required complex techniques, highly skilled operators and/or additional instrumentation. The 1750's SCH phase and color frame displays are derived from the standard composite signals. No extra pulses or added signal details are required.

The 1750's SCH capability makes it particularly valuable in production and editing environments where maintenance of SCH phase and color frame are critical considerations. Applications include VTR bridges, camera control units, switcher consoles, master control, mobile and field production units, and in maintenance operations supporting any of these areas.

The 1750's half-rack package allows easy installation in environments where space and power requirements are important considerations. The 1750 is mechanically compatible with 528A, 602, 1420, and 1740 Series Tektronix instruments.

Waveform Mode

The waveform mode vertical response is controlled by selectable flat, chroma, and luminance (IRE) filters. A backporch slow clamp is controllable from the front panel. An internal jumper reprograms the clamp timing for sync lip operation.

The 1750 has pushbutton selection of H, 2H, V, and 2 V horizontal sweeps. A magnifier provides calibrated sweep speeds of 1 μ s/div, 0.5 μ s/div, and 0.2 μ s/div at the line display rates, and about 20X magnification of the vertical rate display. The faster sweep speeds are useful for determination of horizontal blanking pulse widths, risetimes, and other timing details of the signal, while the magnified vertical sweep allows viewing of the vertical blanking interval.

The internal calibrator signal in the 1750 is useful for verification of both video amplitude and sweep timing calibration. Crystal control of the calibrator waveform provides an accurate 1V p-p squarewave and 10 μ s timing interval.

The sweeps may be locked to the selected signal (A or B input), or to a separate external reference input. The horizontal rate sweeps may be triggered by the selected source (which presents a stable display in the presence of sync jitter) or may be AFC controlled (which displays sync jitter for analysis). Use of the AFC sweep control can also reposition the H sweep for more convenient timing measurements.

The 1750 Series has front panel line and field selection, an LED readout of the selected line number, and a video output with a strobe pulse on the displayed line. The 1750 (NTSC) will display line 8 thru 23 of either monochrome field (color fields 1.3 or fields 2.4). The 1751 (PAL) will display lines 6 thru 21 or 319 thru 334. The line selection range may be extended to any line of the frame by the use of rear panel remote control input in conjunction with the front panel controls.

The line selection function is operational in waveform, R-Y, and vector modes. These features provide convenient in-service monitoring or measurement of field blanking interval test or data signals.

R-Y (V-Axis) Mode

In this mode the display is similar to a waveform display with the demodulated chrominance signal on the vertical axis and the selected sweep on the horizontal axis. Any demodulation axis may be set with the phase control; properly setting the display of burst in the vector mode will ensure R-Y axis decoding when the R-Y mode is selected.

There are differential phase markings on the graticule for use in this mode. Resolution of differential phase error is about twice that of vector measurement techniques, and the displayed errors may be correlated with time and luminance amplitude by using modulated staircase or modulated ramp test signals.

WAVEFORM/VECTOR MONITORS

SCH Phase Mode

This display is a combination of the burst vectors of the vector display and a bright dot on the outer degree circle of the vector graticule. The position of this "sync dot" around the circle represents the timing (phase) of the horizontal sync edges relative to the reference subcarrier. An individual signal may be analyzed for proper format (for proper SCH phase) without any additional reference.

Since it is possible for two signals to be properly formatted but not properly timed to each other (i.e., a color framing error exists), the 1750 has provision for using an external reference input for its subcarrier phase reference. When the external reference mode is used, the display shows the burst phase and sync timing of the selected signal relative to the burst of the reference signal, simultaneously indicating the SCH phase of the selected input signal and its color frame relative to the external reference signal.

INCLUDED ACCESSORIES

Power cord assembly (161-0066-00), clear filter (378-0219-00), contrasting filter (378-0221-01), female remote connector, 25 pin (131-0569-00), 9 pin (131-1006-00), remote connector housing, 25 pin (200-1667-00), 9 pin (200-1170-00), strain relief, 25 pin (358-0314-00), 1.0 A fuse (159-0022-00), 0.5 A fuse (159-0032-00), instruction manual (070-4472-00).

ORDERING INFORMATION

1750 Waveform/Vector Monitor (for NTSC Applications) \$5,900
1751 Waveform/Vector Monitor (for PAL Applications) \$5,900

OPTIONAL ACCESSORIES

Battery Pack — Order BP1 \$550
Snap-On Front Cover — High impact plastic
Order 200-1566-00 \$18
Modular Carrying Case — Portable case with handle, feet, and battery mounting lugs (lugs are required to mount the BP1). Order 020-1241-01 \$120
Carrying Case — Painted (blue), with handle and feet
Order 390-0018-01 \$85
Cover — Unfinished aluminum, no handle or feet
Order 437-0100-01 \$60
Side-By-Side Rack Mount — For mounting two half-racks (1750, 528A, etc.) in a standard 19 in rack
Order 016-0115-02 \$225
Blank Panel — For the side-by-side rack mount
Order 016-0116-00 \$42
Flip Stand Feet — For modular carrying case, stands extend normal feet for tilted viewing (two required).
Order 348-0618-01 \$5.75
Viewing Hood — For high ambient light environments
Order 016-0475-00 \$8.25
Camera — Use C-30 Option 01 with adaptor 016-0269-03, or C-5C Option 02 or 04, or standard C-4.

MAINTENANCE ACCESSORIES

Extender Board — 64 pin Order 670-7980-00 \$47
Extender Board — 32 pin Order 670-7981-00 \$55
Extender Cable — Order 067-0709-00 \$45
Deflection Leads Extender Cables — (Four each)
Order 196-0939-00 \$6.00

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650HR

High Resolution Display Plus Capability
for Critical Signal Analysis

0.25 mm Triad Pitch High Resolution
Trinitron CRT

Variable Aperture Correction

Precise Color Tracking Over Full Signal
Range

Two Video Inputs with Differential (A-B)
Capability

Video Inputs Isolated from Ground for
Hum Rejection

Capability for Front Panel Switching
of External Sync Inputs

NTSC, PAL and Multistandard Decoders
Available

Precise Decoders with Outputs to Provide
Vector Display on External X-Y Monitor

Unique Monochrome (White) Display
of Decoded Blue Signal for Critical
Analysis of Color Noise

The Tektronix 650HR Series color picture monitors are designed for exacting applications where picture quality and signal quality analysis are particularly important. The 650HR uses a Trinitron CRT with resolution capabilities which exceed the performance of encoded television signals. The decoders have sufficient chroma channel bandwidth to pass all of the information in standard signals.

The unique blue only mode feeds the decoded blue video signal to the red, green, and blue channels simultaneously. This produces a monochrome display with a high subjective sensitivity to chroma noise, allowing better analysis of video quality.

The chrominance channel may be manually switched to either the monochrome or color modes, or activated automatically by the presence of burst.

Circuits in the Tektronix 650HR Series are designed for color stability and consistency. Outputs are provided from the precision decoders and may be used to drive an X-Y monitor for a vector display. The regulated EHT supply is not affected by extreme changes in APL even when calibrated brightness, at peak white, is set at 30 ftL. Raster size is held within 1%, while excellent clamping maintains a stable black level with a 0% to 100% range of APL.

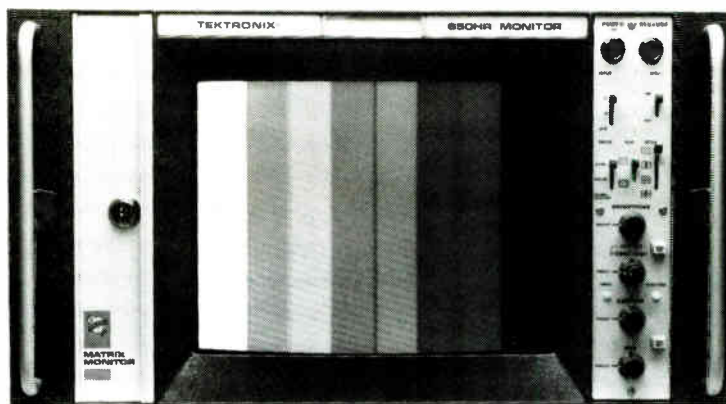
CHARACTERISTICS

Input Signal Level — 0.5 V p-p minimum composite video 2 V p-p maximum (Exceeds CCIR recommendations 567, Part D and D.2.)

Impedance — Unterminated. High Z bridging inputs loop-through compensated for 75 Ω (not internally terminated). Return Loss: -46 dB to 5 MHz, power on or off, input in use or not.

Maximum Safe Input — Exceeds CCIR Recommendation 451-2 (-5 V peak).

Hum Rejection — Hum is ≥50 dB down when 4 V maximum RMS common mode mains hum signal is applied to the monitor in floating ground mode.



650HR
MONITOR

NTSC Luminance Channel — Bandwidth (notch filter removed) 6 MHz. Subcarrier notch filter automatically removed when burst is not present and Mode switch is in Auto position. Subcarrier notch filter removed when Mode switch is in Monochrome position. Dc Restoration back porch type, not affected by burst. Mains hum reduction due to dc restorer is -6 dB. Amplitude Linearity Within 2%.

NTSC Chrominance Channel — Demodulation Axis: R-Y, B-Y Bandpass 1.3 MHz equiband Gain Range: Preset at 0 dB adjustable from -6 dB to +10 dB

PAL Luminance Channel — Bandwidth (notch filter removed) 6 MHz. Subcarrier notch filter can be removed by changing internal jumper. Subcarrier notch filter normally left in circuit.

PAL Chrominance Channel — Demodulation Axis: U, V Bandpass 1.2 MHz Gain Range: Preset at 0 dB; adjustable from -6 dB to +10 dB

Residual Subcarrier Detection (On Applied Signal) — Color of displayed picture will shift due to any residual subcarrier. This feature can be inhibited by a jumper on the decoder board.

Chrominance/Luminance — Time Error 30 ns Gain Error 3% Delay — Red to green to blue 50 ns

Subcarrier Regeneration — Phase Error: Within 1° with input burst variation of ±10 Hz from subcarrier nominal burst frequency. With Temperature Variation: Within 5° with ambient temperature variation from 0°C to -50°C, with 1° for any 10°C increment within the range 0°C to -50°C. With Input Signal Variation: Within 1° with input signal variations of 3 dB from 1.0 V, within 3° with variation of burst, sync ratio of 5 dB to 10 dB. Breezeaway Stability: 0.2 for burst timing errors including burst width variance (8 to 11 cycles), and breezeaway variance: 0.28 μs. Phase Error Due to Noise: Within 1° with RMS white noise at 24 dB (0 dB 700 mV RMS).

PICTURE

Height — 184 mm (7.2 in)

Width — 244 mm (9.6 in)

Underscan — 20% reduction in both height and width

Aspect Ratio — 4:3

Deflection Linearity — Vertical and Horizontal: 1% of picture height within a central area bounded by a circle whose diameter equals picture height ±2% of picture height outside of central area.

Convergence Error — 1 mm within the central area. Outside of the central area, color separation (misconvergence) is 2 mm.

Unblanking — All active picture elements are displayed (Horizontal retrace is accomplished within 10 μs.)

Color Temperature — 6500 K. Easily adjustable to other standards.

Calibrated Contrast — 30 ftL at peak white of standard 1 V signal.

Calibrated Brightness — Displayed black may be preset to a level appropriate for ambient conditions.

EHT (Extremely High Tension) — 19 kV nominal regulated. Load variations cause 1% picture size variation. Monitor complies, as of date of manufacture, with applicable DHHS standard, under Radiation Control for Health and Safety Act of 1968.

Kinescope Protection — Failure of horizontal or vertical scanning shuts off the EHT. Failure of HV Regulator circuit does not cause EHT to soar excessively. EHT supply is current limited.

Heater Voltage — Regulated dc

SYNC and TIMING

Signal Range — Composite sync 0.5 V p-p to 8 V p-p or composite video 0.5 V p-p to 2 V p-p.

Impedance — Unterminated. High Z bridging inputs loop-through compensated for 75 Ω (not internally terminated). Terminated: 75 Ω. Return Loss: -46 dB to 5 MHz with respect to 75 Ω.

Synchronization — Stable subcarrier regeneration, limited by line sync performance. Line sync white noise immunity is 20 dB. Field sync white noise immunity is 20 dB. Field sync stable with tilt equal to 100% of sync amplitude in vertical blanking. Stable with 20 IRE mains num.

AFC (Two Loop AFC Type) — Phase Corrector: Corrects for phase errors due to side pincushion correction and other effects within the monitor. Slow AFC: Displays timing errors of incoming sync, particularly, 60 Hz or 240 Hz timing errors. Bandwidth is ≥25 Hz. Fast AFC: Largely corrects for incoming sync errors. ≥2 kHz bandwidth.

Scan Delay — Horizontal Delay: ≤1/4 line, displays burst. Vertical Delay: Displays the vertical blanking interval of the input signal expanded ≈2.5 times unless underscan is activated. If the underscan button is depressed, vertical expand is inhibited.

AC POWER

Mains Voltage Range — 115 V: Within 10% (104 V ac to 126 V ac). 230 V: Within 10% (207 V ac to 250 V ac maximum). 650HR, 650HR-1 are factory set for 115 V. 651HR, 651HR-1, 655HR-1 and 652HR-1 are factory set for 230 V.

Crest Factor — ≥1.3.

Mains Current — 1.5 A RMS maximum at 115 V, 60 Hz. 0.75 A maximum at 230 V, 50 Hz. Current is substantially higher during degaussing.

Degaussing Surge Current — 5 A RMS.

Power Consumption — 150 W maximum, 110 W typical.

Mains Frequency — 48 Hz to 66 Hz.

PHYSICAL CHARACTERISTICS

Dimensions	Cabinet		Rackmount	
	mm	in	mm	in
Width	426	16.8	483	19.0
Height	279	11.0	266	10.5
Depth	419	16.5	464*	18.3*
Weights	kg	lb	kg	lb
Net	22.7	50.0	23.5	52.0
Domestic	28.5	65.0	30.4	67.0
Shipping				
Export Shipping	36.3	80.0	37.2	82.0

*1 With handles

ORDERING INFORMATION

All 650HR Monitors are shipped with rackmounting hardware. Cabinet version hardware is also included.

MODEL NUMBER	NTSC	PAL	RGB	PRICE
650HR	•			\$5,760
650HR-1	•		•	\$5,970
651HR		•		\$6,010
651HR-1		•	•	\$6,250
652HR-1		M	•	\$6,660
655HR-1	•	•	•	\$6,925

Prices and Specifications Subject to Change Without Notice.

VM-113

TEKTRONIX, INC.

P.O. Box 500
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(503) 627-7111 Telex 151754

COLOR PICTURE MONITORS

656HR-1

Color Sequencing from Field Identification Signals or Line Burst

Precision Decoding Allows Use of R-Y, B-Y Outputs for Vector Display Measurements

RGB Inputs with Vector Display Outputs

PAL SECAM with Front Panel Control of Decoding Standard

Variable Aperture Correction

Vertical and Horizontal Delay Display Modes

Reduced Chrominance Line Crawl

Indicates Color Sequence Error

Rapid Retrace — Entire Picture Area is Displayed in Reduced Scan

Two Switchable Inputs Isolated from Ground for Hum Rejection

The Tektronix 656HR-1 SECAM color picture monitor is identical in function to the other 650HR Series monitors but is specifically designed for use in SECAM systems. It includes both PAL and SECAM decoders.

Color sequencing is front panel controlled by a three position mode switch. In the Field mode, field identification signals are used for color sequencing and a color display is enabled by the presence of detectable field identification signals. In the Line mode, line burst determines color sequence, and a color display is enabled whenever detectable SECAM subcarrier is present. Use of the Monochrome mode blanks the chrominance channel.

In the internally selectable Forced-Color mode, the very high limiting ratio of the chrominance channel lets you use the monitor to search for very small amounts of crosstalk or other unwanted signals. By displaying the chrominance portion of such signals on a brightened display, you can easily identify the source.

Two PROMs (Programmable Read Only Memories) are used in the monitor for generating accurate timing signals. Their use eliminates the need for many internal adjustments and possible drift related to the timing of internal signals. One of these PROMs is programmed with information corresponding to the lines containing subcarrier (including field identification lines) in 625/50

SECAM systems. The monitor then serves as a check on improper additions or deletions of lines that might possibly occur in improperly adjusted VTRs, processing amplifiers, and switchers.

Chrominance line crawl is greatly reduced by using separate acoustical delay lines; one for D'R and one for D'B. With front panel controls, you can turn off luminance or chrominance, and examine each one separately. Brightness is automatically advanced for easier viewing when luminance is turned off for examination of chrominance. For purity checks, you can set up the equivalent of a flat field display by switching luminance off in a monochrome mode (chrominance off).

The monitor's chroma control has two operating modes. When the control is in, the chrominance is independent of subcarrier amplitude. When the control is out, the chrominance is proportional to subcarrier amplitude. In the first mode, the saturation will vary with incoming video level. In the latter mode, correct saturation will be maintained for varying signal levels. In either mode, both a preset (detent) position and a variable range are available. Switching between the two modes in the preset position provides an indication of abnormal chrominance or luminance amplitude.

CHARACTERISTICS

SECAM PERFORMANCE-LUMINANCE CHANNEL

Bandpass Without Chrominance Trap — (Aperture Corrector set for 0 dB). Amplitude: ± 0.5 dB to 5 MHz. Aperture Corrector Maximum Range: 8 dB; doubled peaked at 2.5 MHz and 7 MHz; ≤ 3 dB between 4.0 MHz and 5 MHz.

Chrominance Filter — Subcarrier Rejection: > 25 dB at 4.250 MHz and 4.406 MHz. < -1 dB at 5.5 MHz. NOTE: The chrominance filter is removed from the luminance channel whenever the display is monochrome.

Pulse Distortion — $< 1\%$ tilt on 50 Hz squarewave. $< 0.5\%$ tilt on 15 kHz squarewave.

Dc Restoration — Back porch type, not affected by burst. Mains hum reduction due to dc restorer is < 6 dB.

Amplitude Linearity — Within 2%.

Luminance Off Facility — Displays chrominance only and automatically advances brightness.

SECAM PERFORMANCE-CHROMINANCE CHANNEL

High Frequency De-emphasis — Matching to Encoder High Frequency Pre-emphasis: Error ≤ 0.5 dB over the range 3.9 MHz to 4.75 MHz; < 3 dB at 2.85.

Drift (Center Frequency) — Within ± 20 kHz.

Luminance Rejection — > 46 dB at 15 kHz.

Limiting Ratio — ~ 60 dB.

Ultrasonic Delay Line Error — ~ 30 ns.

Crosstalk at Input to Discriminators — Between Direct and Delayed Chrominance Signals: Alternate line crawl on display is minimized through the use of separate delay lines for the D'R and D'B chrominance signals.

Discriminator Linearity — Overall: Within $\pm 1\%$. Incremental: Within 1%.

Demodulator Center Frequency — Clamped to crystal reference stabilized within ± 0.250 kHz.

Chrominance Sequence and Color Enable — Chrominance sequence and enable are statistically averaged with hysteresis for best performance under poor signal-to-noise conditions. Field Mode: Based upon field identification signals. Chrominance Amplitude: Disable when chrominance is more than 12 dB low, may be internally selected. Line Mode: normally based upon line burst with no chrominance amplitude disable. An internal jumper provides chrominance amplitude disable if required.

Chrominance Unblanking — Programmed internally according to 625 line 50 Hz SECAM standards. Field identification signals are displayed in vertical scan delay modes.

Saturation — Selectable to treat subcarrier as FM signal or to vary the saturation with incoming chrominance level. Independent of Subcarrier Amplitude: Gain Error $< 3\%$. Dependent on Subcarrier Amplitude: Tracking error $< 5\%$ for signals within ± 3 dB to -6 dB of normal amplitude. Chroma Control Separately Adjustable: ± 6 dB.

Cross Talk — Between R-Y and B-Y ~ 40 dB attenuation.

Chrominance/Luminance Time Error — < 60 ns with properly adjusted bell filter and low frequency de-emphasis.

Sequence Error Indicator — When the front panel red light indicates that the incoming SECAM signal has a chrominance sequence opposite to that indicated by an externally applied 7.8 kHz signal. Also when the monitor is used in the Line mode the light will indicate when the field identification signals are reversed with respect to the Chrominance Sequence present during the active picture.

VECTORSCOPE OUTPUTS

Calibrated Modes (Dots in Boxes) — Selected by front-panel control for either 75% color bars or 25% color bars (SECAM and RGB only). Vector locations are within $\pm 2\%$ of vector magnitude.

Vectorscope Drive Capability — Suitable to drive 10 ft of 75 Ω coaxial cable (unterminated) to X-Y display.

Required X-Y Display Deflection Sensitivity — 0.05 V/cm on both X axis and Y axis.

Required X-Y Display Input Resistance — ≥ 100 k Ω .

RGB Vector Display — R, G, and B input signals are matrixed to form R-Y and B-Y signals which are switched to the rear-panel vector output connectors when the RGB inputs are selected.

RGB Matrix Error — R-Y and B-Y relative output signal amplitudes are within $\pm 2\%$ of desired values when equal R, G, and B signals are supplied.

RGB Centering — Black level is clamped to within ± 9 mV which corresponds to ± 1 mm in the 75% vector display.

Other Inputs and Outputs — 7.8 kHz input, 7.8 kHz output, and field 1 pulse output.

PHYSICAL CHARACTERISTICS

Same as 650HR on previous page.

ORDERING INFORMATION

656HR-1 SECAM + PAL + RGB \$7,740

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

690SR Color Monitor

High-Resolution 19-Inch Dot-Shadowmask CRT

Precise Color Convergence

Stabilized Color Balance

Rugged Modular Construction

Plug-in Interface (Decoder) Modules

Operates at Various Scan Frequencies

Adjustable Picture Size and Aspect Ratio

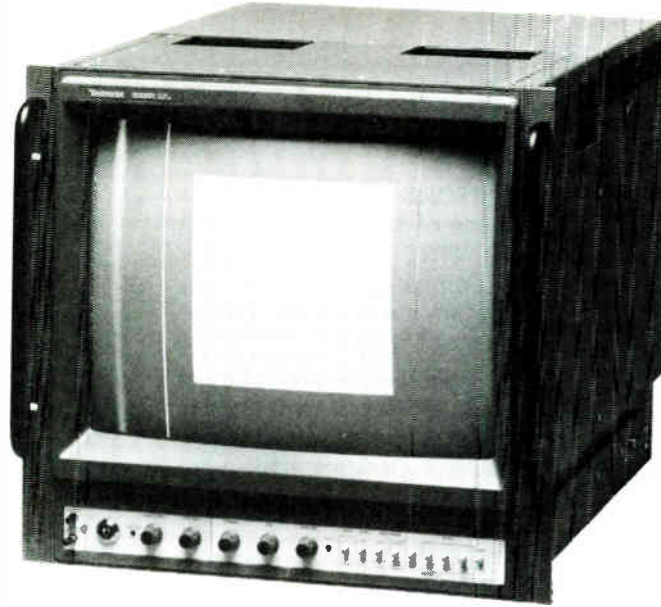
The 690SR is designed to meet critical needs for image evaluation and video signal quality control in television, high definition television, and computer imaging environments. The standard high resolution delta gun, dot-shadowmask CRT and precise, stable video processing circuits provide faithful rendition of picture details and ease of closeup viewing. An optional medium resolution CRT provides more uniform screen appearance and tightly controlled phosphor colorimetry for those applications where greater viewing distance or signal limitations ease the requirement for the highest resolution display.

With either of these CRTs, Tektronix' unique color convergence system provides accurate color registration over the entire screen (less than 0.5 mm maximum error, equivalent to less than 0.18% of picture height) so that fine details can be observed anywhere in the picture. Stabilization of the operating point of each gun in the CRT compensates for tube aging and helps to maintain accurate long term color balance without frequent maintenance.

A logical and noninteractive set of convergence controls makes reconvergence a quick and straightforward task. All controls are identified by color-coded patterns and produce a comfortable up-down or right-left motion on the screen with negligible interaction. Several function switches are also located within the front drawer. In general, these switches permit the 690SR to be used either as an accurate picture/signal monitor to display faults if they are present, or as a high quality picture display monitor that provides a clean picture even in the presence of signal defects.

Front panel controls have detent positions so that the monitor may be returned to its preset condition quickly and accurately. Adjustments for the preset positions of front panel controls are located within the lockable front drawer together with virtually all other adjustments needed for routine setup.

Picture size can be adjusted from overscan to underscan without significant loss in convergence or linearity. This feature makes it possible to conduct experiments at various image sizes and aspect ratios or to set the monitor for different system characteristics by readjusting the size and position controls.



690SR COLOR MONITOR

White balance is adjustable to standard D6500 or to other desired standards using controls located in the front drawer. A Setup switch allows the raster height to be reduced to facilitate low-level-light adjustments. Additional features in the television models include horizontal and vertical scan delays, and pulse cross. The CRT is automatically brightened in these modes to facilitate evaluation of blanking interval detail.

The 690SR mainframe is essentially an RGB monitor. The signal conditioning and/or decoding functions are performed in plug-in modular units. The 69M41 provides RGB input, with provision for external sync. The 69M01 is an NTSC decoder with a one line comb. The front control panel for each of these interface modules is also modular and is fitted into the control drawer of the mainframe. (A blank panel is provided with the 69M41 since no controls are needed for the RGB interface.)

All 690SR color monitors are fully enclosed and may be mounted in a standard relay rack. The 690SR complies with UL478 and UL1244, CSA Bulletin 556B, IEC348, and IEC435. The 690SR also complies, as of date of manufacture, with applicable DHHS standards under Radiation Control for Health and Safety Act of 1968 and with FCC/CBEMA standards for electromagnetic-interface control.

Various combinations of interface, CRT, and scan capability are orderable. The following "system" option allows convenient specification of a common configuration.

690SR OPTION 02

The 690SR Option 02 is a NTSC color monitor system that consists of a comb/notch filter/decoder module (69M01 Comb Decoder) installed in a 690SR mainframe.

PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Width	483	19.0
Height	444	17.5
Depth	579	22.8
Weights	kg	lb
Net	50	110
Domestic Shipping	73	160

Rackmounting Information — Rear surface of monitor 559 mm (22 in) behind rack-mounting surface, 690SR with interface module installed.

INCLUDED ACCESSORIES

8 ft power cord (161-0104-00); slide-out tracks w/mounting hardware (351-0395-00); two front drawer keys (214-3292-00), manual.

ORDERING INFORMATION

690SR Color Monitor, (High Resolution (0.31 mm Triad Pitch) CRT \$6,300

CRT OPTION

Option 25 — Controlled Phosphor Colorimetry.
Medium Resolution (0.43 mm Triad Pitch) CRT **-\$250**

SYSTEM OPTION

Option 02 — Standard Mainframe with 69M01 Installed
..... **+\$765**

INTERFACE MODULES

69M01 NTSC Comb Decoder **\$850**
69M41 RGB interface **\$510**

OPTIONAL ACCESSORIES

Rigid Module Extender — For circuit modules.
Order 067-0999-00 **\$50**
Minimum Load Unit — For power supply.
Order 067-0958-00 **\$175**
Flexible Extender — For interface modules/decoders.
Order 067-1000-00 **\$125**
Linearity Graticule — 11 x 15 lines.
Order 067-1034-00 **\$150**
Linearity Graticule (NTSC) 14 x 17 lines.
Order 067-1054-00 **\$150**

12 AND 14 INCH COLOR MONITORS

CPD™ now offers a complete line of 12 and 14 inch high resolution and switchable RGB/NTSC color monitors for home, business and industry. Compatible with Apple II, Ile, III; IBM PC, PC Jr. (virtually any personal computer); video tape recorders; TV game and TV tuner.

CPD color monitors incorporate switching regulator power supplies and in-line high contrast CRT's in two sizes to meet all your video requirements. When dependable picture quality and versatility make the difference, make your choice a CPD color monitor.

Features

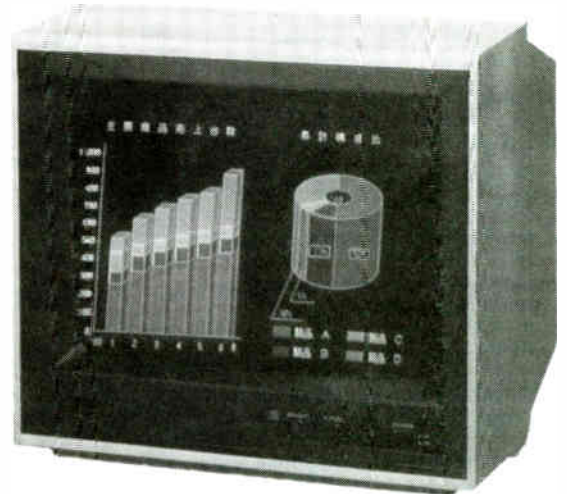
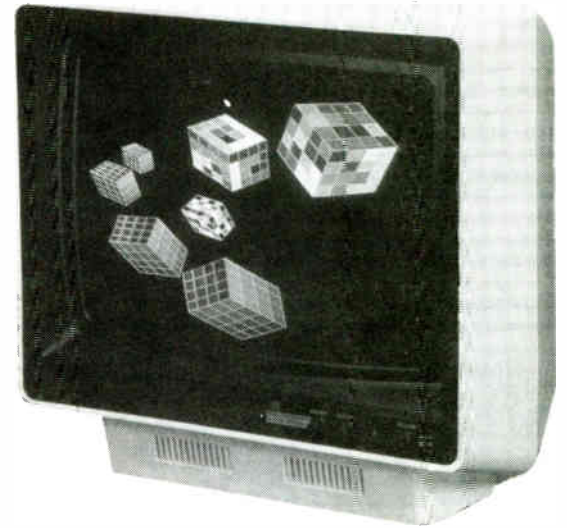
- Switchable RGB/NTSC
- Compatible with Apple II, Ile, III, IBM PC, PC Jr. Video Tape Recorder, TV Game, TV Tuner
- High Resolution Model 785H x 400V
- Switching Regulator Power Supply
- In-line High Contrast CRT's

SPECIFICATIONS

Model	CRT/Pitch mm	Bandwidth	Resolution
1201 NR	12" 0.47	10 MHz RGB 3 MHz NTSC	640 H x 262 V 260 H x 300 V
1203 R	12" 0.38	20 MHz	640 H x 262 V
1208 R	12" 0.28	25 MHz	785 H x 400 V
1410 NR	14" 0.52	12 MHz RGB 3 MHz NTSC	490 H x 250 V 260 H x 300 V
1428 R	14" 0.39	18 MHz	650 Hz x 250 V
Also available...			
1201 N	12" 0.47	5 MHz	260 H x 300 V
1201 R	12" 0.47	18 MHz	640 H x 200 V
1205 R	12" 0.31	25 MHz	640 H x 200 V
1416 N	14" 0.64	3 MHz	260 H x 300 V
1410 R	14" 0.52	12 MHz	490 H x 250 V
1423 R	14" 0.42	18 MHz	600 H x 250 V
1423 NR	14" 0.42	12 MHz RGB 3 MHz NTSC	600 H x 250 V 260 H x 300 V

Note:

1. Suffix "R" denotes RGB; "N" is NTSC; "NR" is switchable NTSC RGB
2. All RGB models have switchable Pos or Neg sync
3. 12" Models 11.6" (295mm) H x 12.75" (324mm) W x 14.4" (367mm) D 22 lb (10 kg)
4. 14" Models 14.7" (374mm) H x 14.3 (364mm) W x 14.6" (370mm) D 24.2 lb (11 kg)



12 and 14 Inch Color Monitors

Model	Price
1200	\$532.00
1201N	587.00
1201NR	656.00
1203R	718.00
1208R	887.00
1201R	604.00
1410NR	660.00
Tilt & Swivel	26.00

ULTRAVISION

DISTRIBUTED EXCLUSIVELY BY
ELECTOR USA, INC.

P.O. Box 699
30 Chapin Road
Pine Brook, NJ 07058
(201) 882-0584

COLOR VIDEO PROJECTOR

ULTRA-VISION 2000 PROFESSIONAL COLOR VIDEO PROJECTOR

Model 2000 is a high performance large screen color video projector capable of delivering bright outstanding picture definition on any flat or curved screen.

Designed for consistent performance and high reliability, this projector is especially well suited for large screen video applications providing high quality projection imaging.

FEATURES

- Screen sizes from 7 to 10 ft. diagonal
- Projects onto flat or curved screens
- Front or rear projection
- Floor or ceiling mounting
- Electronic range finder facilities set-up
- Electronic border generator surrounds the picture with a black frame
- Comb filter NTSC decoder with enhancement circuitry provides crisp imaging
- Internal 5-inch loudspeaker with 1.5 watt amplifier
- Liquid-cooled tubes
- Video output drives auxiliary equipment

SPECIFICATIONS

OPTICS

- Lenses:** Three Delta IID-OC Optical-coupled, flat field, f/1.0 high resolution, 3-element acrylic
- Focus:** Adjustable lens barrel rotation with mechanical lock
- Resolution:** Min. of 3 line pairs/mm across 5 inch image diagonal

PICTURE

- Display:** 8 ft. diagonal (6.5 ft. wide x 4.8 ft. high); projector throw distance 10 feet front projection; table mounting

Note: Dealer can reconfigure projector for screen sizes from 7 ft. up to 10 ft. diagonal; and can change to rear projection and/or ceiling mount.

- Throw Distance:** Approx. 1.5 times image width
- Brightness:** 320 lumens peak output
- Resolution:** 330 lines

GENERAL

- Width:** 24 inches
- Length:** 23 inches cabinet, with lens mounted in full focus extension, 30.5 inches
- Height:** 12.5 inches
- Weight:** 80 lbs. net; 90 lbs. shipping
- Color:** Pecan finish with black and metallic accents

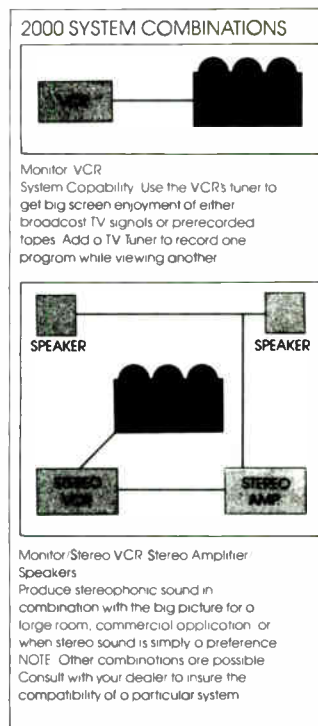
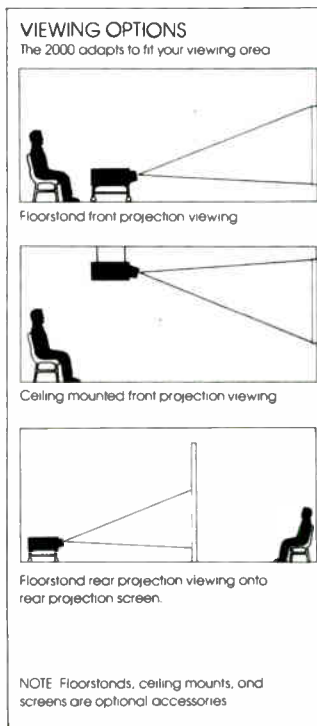
ACCESSORIES SUPPLIED

- Phono to Phono 75 ohm video cable, 48", (1), yellow connector
- Phono to Phono shielded audio cable, 48", (1), red connector

Ultra-Vision 2000 \$2095.00

OPTIONAL ACCESSORIES

MODEL	DESCRIPTION	PRICE
2000 RC	Remote on/off cable, 15 ft. long	\$ 20.00
2000FS	Floor stand kit	90.00
1453	Mounting kit for suspended ceilings	150.00
1463	Mounting kit for concrete or steel beam ceilings	55.00
1465	Mounting kit for rafter or plaster ceilings	65.00
1445	Extension column; specify length (2 ft. min.) includes 1418 finishing ring	ft./9.00
2000 AC	Heavy-duty Anvil ATA reusable padded transit case with accessory compartment	485.00



CV 512	Electronic TV Tuner; 157 channels; cable ready; IR remote control	395.00
VR 4000	VHS Hi-Fi Stereo Video Cassette Recorder; cable-ready tuner; 14-day programmable; IR remote controlled	1350.00
VR 2000	VHS Video Cassette Recorder; cable-ready tuner; IR remote controlled	700.00
2000 SM	Technical Service Manual for 2000	50.00

Prices and Specifications Subject to Change Without Notice.

VM-117

VIDEOMATE[®]

USATCO[®]

UNIVERSAL SATELLITE CORPORATION

Videomate, the family of American Made High Quality, High Resolution Video Projection Devices that are capable of displaying full color images up to 25' diagonal. Dual Focal Element Lenses, in conjunction with a highly optimized 9 Zone Convergence system provide full screen convergence with corner to corner brightness, clarity and resolution.

Videomate Projection Devices have been designed for a wide variety of applications to include Entertainment, Alpha-Numeric Data Display, High Resolution Computer Graphics, Teleconferencing, Educational Training, Sporting Events, and CAD/CAM applications. With Monochrome displays as well as Variable Line Rates, coupled with the ability to interface with NTSC, PAL and SECAM, it's no surprise that Videomate has a projector for your application.

	Alpha	VMIIa	VMIV	VMIII
Tubes	3-5''	3-5''	3-5''	1-5''
Lens	IIM	6'' U.S. Precision Delta IIM IID3		IID3
Cooling	Forced Air & Liquid Cells			
Country/Origin	USA			
Screen Size* (Variable To)	25'	25'	10'	10'
Lumens	250	450	450	300
Bandwidth	11MHz	11MHz**	40MHz	11MHz
Convergence	9 Zone			N/A
Resolution:				
NTSC	400	400	N/A	N/A
PAL***	400	400	N/A	N/A
SECAM***	400	400	N/A	N/A
RGB	800	800	1080X800 Pixels	800
Scan Freq:				
Horiz.	14kHz-17.5k	11kHz-18.5kHz 17kHz-27kHz	to 37kHz	to 37kHz***
Vert.	50-100Hz	50-100Hz	50-100Hz	50-100Hz
Mounting	Floor or Ceiling			
Test Pat.	Yes	Yes	Yes	N/A
Mfg. Sug. Retail	\$5995.00	\$6900.00	\$12,900.00	\$5500.00

All specifications reflect standard product for the indicated price.

*Lens dependent (optional lenses are available)

**Optional plug-in cards will provide a 40 MHz Bandwidth

***Optional

Videomate; manufactured by UNIVERSAL SATELLITE CORPORATION IN LIC, NY, USA

Plant: 5-30 54 Ave.
Long Island City, NY 11101
(718) 786-1510

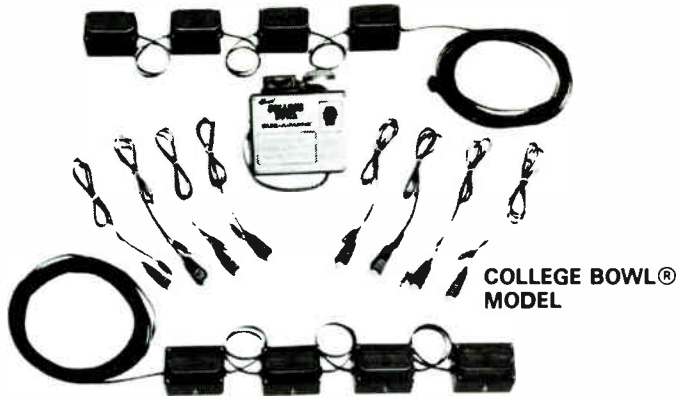
Exec. Offices: 300 East 59 St., Suite 606
New York, NY 10022
(212) 752-7750

Telex 226000 ETLXUR/USATCO

University Research Company

526 South 780 West
Cedar City, UT 84720
(801) 586-5261

VISUAL/VOICE RESPONSE LEARNING SYSTEM



COLLEGE BOWL® QUIZ-A-MATIC®

Modularized construction permits quick set-up and take down. Extra long cords accommodate any set layout. Number of players can be modified to suit your needs. Patented circuit uses voltage lock-out and solid state construction, instead of digital.

All cords come with strain relieved molded plugs, and gold plated switch contacts. A bright 4" wide red light at each station clearly identifies each contestant and is easily distinguished under studio lighting.

COLLEGE BOWL® QUIZ-A-MATIC® \$603.00

OPTIONS

Remote Chime — provides additional jack on control console to bypass built-in bell and connect to a remote chime. Plug with 12 feet of cord included **add to price \$25.00**

Remote Reset — provides additional jack on control console for connecting to a remote reset switch. Includes wired switch, 25 feet of cord and plug **add to price \$35.00**

Player modification (for modifying the number of players); write for pricing, as this is customized to your needs.

SPECIFICATIONS

Power Requirements: 120 VAC, 60 Hz, 6 watts

Electrical Safety: Grounded, low voltage class 2 transformer circuit. Approved by the City of Los Angeles Electrical Testing Laboratory

Cord Lengths: Power cord, 8 feet; contestant switch cords, 5 feet; teamset cords (from plug to first station), 25 feet. Contestants' stations are on 2 foot centers

Format: Official College Bowl® format consisting of 2 teams of 4. Picks first place and locks out remaining contestants until reset. Bell tone accompanies first response

Note: Use of this system alone will not earn credit towards an official College Bowl® match. Current enrollment and participation in the official College Bowl® program through College Bowl Co., Inc., from their New York headquarters is required.

Guarantee:

One year, parts and labor
(excluding light bulbs).

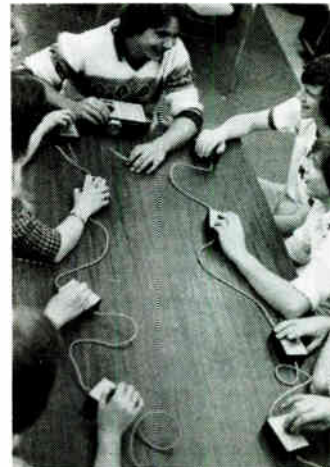


10 PLAYER MODEL

10 PLAYER QUIZ-A-MATIC®

Contains main control unit with an 8 foot ground, 3 wire power cord; 2 teamsets each with 5 player stations on 2 foot centers and 6 foot cord from first player station to control unit. Tamper-proof construction and heavy duty switches with gold contact for long life.

10 PLAYER QUIZ-A-MATIC® \$329.00



OPTIONS

Remote Chime **add to price \$ 25.00**

Remote Reset **add to price 35.00**

Expansion Jack **add to price 25.00**

Coupling Unit **add to price 50.00**

25 Foot Extension Cord **add to price 40.00**

Deluxe Carrying Case **add to price 100.00**

SPECIFICATIONS

Power Requirements: 120 VAC, 60 Hz, 2 watts

Electrical Safety: Grounded, low voltage transformer circuit. Approved by the City of Los Angeles Electrical Testing Laboratory

System Package: Stores compactly in its 2 foot by 1 foot by 6 inch deep container. Easily set up within one minute. Weighs 9 pounds

Guarantee:

One year, parts and labor.



PROFESSIONAL RACKMOUNT COLOR MONITORS

243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125



SYSTEM 8

Eight Inch Broadcast Rackmount AC/DC Color Monitor With Comb Filter and Glare Shield.

Includes TSM-5A Waveform Monitor and PVS-6 Switcher

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, RGB gun switches, RGB background and drive controls, tally light, medium resolution 350 lines, comb filter, internal/external sync, anti-glare shield, rackmount accessories and Service manual

Options: Pulse Cross, Underscan,
Dimensions: 8 $\frac{3}{4}$ "H x 19"W x 18 $\frac{1}{2}$ "D
Weight: 40 lbs.

Power Consumption/ 40W AC, 33W DC

Power Consumption/

Entire System: 95W



VM-8PRD

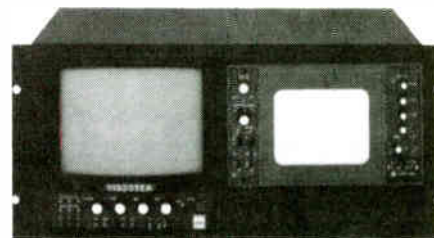
Dual Eight Inch Professional Rackmount AC/DC Color Monitor

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync, rackmount accessories and service manual.

Options: Pulse Cross, Underscan,
Dimensions: 8 $\frac{3}{4}$ "H x 19"W x 15 $\frac{1}{4}$ "D
Weight: 57 lbs

Power Requirements: 120VAC 60Hz,
12 or 24VDC

Power Consumption: 40W AC,
33W DC (ea. unit)



VM-8PRW

Eight Inch Professional Rackmount AC/DC Color Monitor with Space Provided for Videotek TSM-5A with Standard Case or VSM-5A with Standard Case.

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync, rackmount accessories and service manual.

Options: Pulse Cross, Underscan,
Dimensions: 8 $\frac{3}{4}$ "H x 19"W x 15 $\frac{1}{4}$ "D
Weight: 32 lbs.

Power Requirements: 120VAC 60Hz,
12 or 24VDC

Power Consumption: 40W AC, 33W DC



VM-8PT

Eight Inch Professional Portable AC/DC Color Monitor

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync and service manual.

Options: Pulse Cross, Underscan,
Dimensions: 9 $\frac{1}{4}$ "H x 8 $\frac{1}{2}$ "W x 16 $\frac{1}{4}$ "D
Weight: 25 lbs.

Power Requirements: 120VAC 60Hz,
12 or 24VDC

Power Consumption: 40W AC, 33W DC



VM-8PR

Eight Inch Professional Rackmount AC/DC Color Monitor

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync, rackmount accessories and service manual.

Options: Pulse Cross, Underscan,
Dimensions: 8 $\frac{3}{4}$ "H x 19"W x 15 $\frac{1}{4}$ "D
Weight: 30 lbs.

Power Requirements: 120VAC 60Hz,
12 or 24VDC

Power Consumption: 40W AC, 33W DC



VM-8PRA

Eight Inch Professional Rackmount AC/DC Color Monitor w/ Speaker Cabinet

Features Include: Raster size regulation, degauss, keyed back porch clamping, A-B inputs, Dual audio inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync, rackmount accessories and service manual.

Options: Pulse Cross, Underscan,
Dimensions: 8 $\frac{3}{4}$ "H x 19"W x 15 $\frac{3}{4}$ "D
Weight: 32 lbs.

Power Requirements: 120VAC 60Hz,
12 or 24VDC

Power Consumption: 40W AC, 33W DC

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243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125

PROFESSIONAL RACKMOUNT COLOR MONITORS



Studio-13 Professional Rackmount Color Monitor

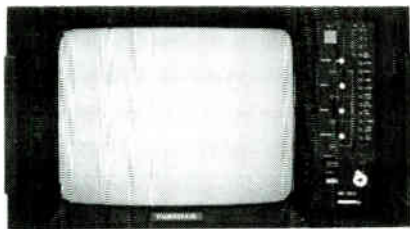
Features Include: 13" Trinitron® Plus color picture tube, 380 lines of resolution, Selectable comb and notch filters, nign voltage regulation, separate H & V delay front panel adjustable, split mode A-B display (front panel adjustable), automatic sync switchover to internal if external sync is lost, external sync indicator, automatic degauss, keyed back porch clamping, A-B-C looping video inputs, RGB video inputs, RGB Gun switches, RGB background and drive controls, Tally light, Underscan, Presets - Chroma/Phase/Brightness/Contrast, ACC defeat (switchable), Selectable time constant (H. AFC), Monochrome select, Set-up select, Aperture control, Rackmount slides, and Service manual

Dimensions: 10½"H x 19"W x 19"D

Weight: 52 lbs.

Power Requirements: 120VAC 60Hz ± 10%

Power Consumption: 85 Watts (avg.), 120 Watts (max.)



HR-130 Broadcast Master Color Monitor RGB/NTSC

Features

- Hi Resolution (600 lines)
- Video Inputs A, B, C/A-B split field adjustable video display
- Linear phase aperture correction
- 1H comb filter, notch filter-selectable
- Pulse cross mode
- Separate H & V adjustable pulse cross delays
- Expanded vertical mode
- Underscan mode H.AFC time constants selectable
- Internal-External sync selectable
- RGB gun kill control
- Color-monochrome mode
- Manual or preset chroma, phase, brightness and contrast front panel controls
- Analog RGB inputs, NTSC-RGB selectable
- Lockable engineering adjustment drawer
- Tally indicator



VM-17PRO 17" Professional Rackmount Color Monitor

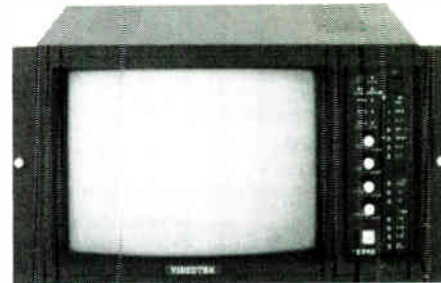
Features Include: Raster size regulation automatic degauss, keyed back porch clamping, A-B-C inputs, RGB gun switches, RGB background and drive controls, tally light, internal/external sync, pulse cross, underscan, rackmount slides, presets, aperture control, focus control and service manual.

Dimensions: 17½"H x 19"W x 21½"D

Weight: 70 lbs.

Power Requirements: 120VAC 60Hz

Power Consumption: 73 Watts (avg.), 110 Watts (max.)



VM-13PRO 13" Professional Rackmount Color Monitor

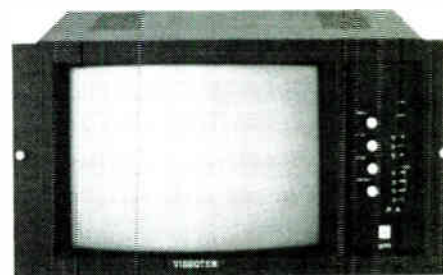
Features Include: Raster size regulation, automatic degauss, keyed back porch clamping, A-B-C inputs, RGB gun switches, RGB background and drive controls, tally light, internal-external sync, pulse cross, underscan, presets, selectable automatic chroma control (ACC) defeat for detection of chroma loss, monochrome-color select, set-up switch, selectable horizontal time constant (H. AFC), aperture control, rackmount slides.

Dimensions: 10½"H x 19"W x 19"D

Weight: 48 lbs.

Power Requirements: 120VAC 60Hz ± 10%

Power Consumption: 55 Watts (avg.), 80 Watts (max.)



VM-13PR 13" Professional Rackmount Color Monitor

Features Include: Raster size regulation, automatic degauss, keyed back porch clamping, A-B-C inputs, Blue Gun, tally light, internal/external sync, rackmount slides, selectable ACC defeat, and service manual.

Dimensions: 10½"H x 19"W x 19"D

Weight: 48 lbs.

Power Requirements: 120VAC 60Hz ± 10%

Power Consumption: 55 Watts (avg.), 80 Watts (max.)

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Prices and Specifications Subject to Change Without Notice.

VM-121



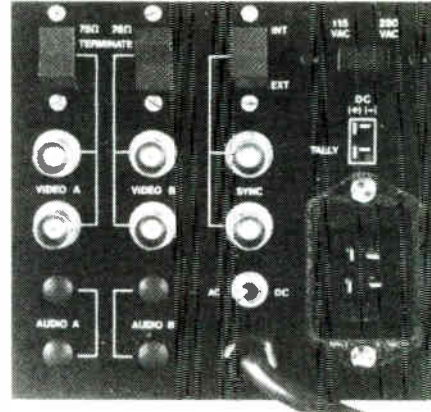
243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125

PROFESSIONAL RACKMOUNT COLOR MONITORS

SPECIFICATIONS

Professional Color Monitors (Except HR-130)

CRT: Trinitron Plus®
Color Standard: NTSC
Video Signal Level: .5V to 1.5V P-P composite video loop thru or switchable to 75 ohm termination, negative sync
Video Inputs A-B-C: Switchable, better than 50 dB at 4 MHz isolation (Except 8")
Connectors: BNC
Raster Regulation: 1%, 0-100% APL, 20 fl.
Luminance Bandwidth: 2 dB/to 3.2 MHz
DC Restoration: Keyed back porch clamping maintains 98% black reference
Pulse Cross: Switchable to display horizontal and vertical blanking intervals
Underscan: Switchable to display 90% of full screen
External Sync: 1V P-P minimum—8V P-P maximum
Comb Filter: Permits extended luminance to be displayed (except VM-13PR, VM-13PRO, VM-17PRO)



Above: Rear Connector Panel for VM-8PT, VM-8PR, VM-8PRW, VM-8PRA, VM-8PRD, System 8.



Right: Rear Connector Panel for VM-13PR, VM-13PRO, Studio-13, VM-17PRO.

Professional Color Monitors

Model No.	Description	List Price
VM-8PT	8" Professional Portable AC/DC Color Monitor	\$1230.00
VM-8PR	8" Professional Rackmount AC/DC Color Monitor	1155.00
VM-8PRW	8" Professional Rackmount AC/DC Color Monitor with space provided for Videotek TSM-5A with Standard Case or VSM-5A with Standard Case	1198.00
VM-8PRW-1	Same as VM-8PRW and with space provided for PVS-6 Switcher	1220.00
VM-8PRA	8" Professional Rackmount AC/DC Color Monitor with Speaker Cabinet	1335.00
VM-8PRD	Dual 8" Professional Rackmount AC/DC Color Monitor	2265.00
System 8	8" Broadcast Rackmount AC/DC Color Monitor with Comb Filter and Glare Shield. Includes TSM-5A Waveform Monitor and PVS-6 Switcher	3495.00
	Includes VSM-5A Vectorscope and PVS-6 Switcher	3795.00
VM-13PR	13" Professional Rackmount Color Monitor	1250.00
VM-13PRO	13" Professional Rackmount Color Monitor	1465.00
Studio-13	13" Broadcast Rackmount Color Monitor	2360.00
VM-17PRO	17" Professional Rackmount Color Monitor	2065.00
	Options VM-8PT, VM-8PR, VM-8PRW, VM-8PRA, VM-8PRD, System 8	
PC-1	Pulse Cross	\$ 155.00
US-1	Underscan	70.00
	Service Manual (Additional)	11.00
CF-1	Comb Filter and Glare Shield	200.00
	VM-13PRO, Studio-13	
	Service Manual (Additional)	11.00

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243 Shoemaker Road
Pottstown, PA 19464
(215) 327-2292
TWX 710-653-0125

COLOR MONITORS & RECEIVER MONITORS

RM-5T Five Inch AC/DC Portable Color Receiver/Monitor

Dimensions: 8 $\frac{5}{8}$ "H x 7 $\frac{7}{8}$ "W x 12 $\frac{1}{4}$ "D
Weight: 15 lbs.
Power Requirements: 120 VAC 60 Hz, 12 or 24 VDC
Power Consumption: 27 Watts AC (max.), 17 Watt DC (max.) **\$999.00**

VM-5T Five Inch AC/DC Portable Color Monitor

Dimensions: 8 $\frac{5}{8}$ "H x 7 $\frac{7}{8}$ "W x 12 $\frac{1}{4}$ "D
Weight: 15 lbs.
Power Requirements: 120 VAC 60 Hz, 12 or 24 VDC
Power Consumption: 27 Watts AC (max.), 17 Watt DC (max.) **\$970.00**

RM-8A Eight Inch AC/DC Portable Color Receiver/Monitor

Dimensions: 9 $\frac{3}{8}$ "H x 10 $\frac{1}{4}$ "W x 13 $\frac{3}{4}$ "D
Weight: 20 lbs.
Power Requirements: 120 VAC 60 Hz, 12 or 24 VDC
Power Consumption: 49 AC Watts (max.), 40 Watts (12 VDC), 33 Watts (24 VDC) **\$957.00**

VM-8A Eight Inch AC/DC Portable Color Monitor

Dimensions: 9"H x 10 $\frac{1}{4}$ "W x 13 $\frac{3}{4}$ "D
Weight: 18 lbs.
Power Requirements: 120 VAC 60 Hz, 12 or 24 VDC
Power Consumption: 49 AC Watts (max.), 40 Watts (12 VDC), 33 Watts (24 VDC) **\$855.00**

RM-9A Nine Inch Portable Color Receiver/Monitor

Dimensions: 11 $\frac{1}{4}$ "H x 10 $\frac{1}{2}$ "W x 14 $\frac{1}{2}$ "D
Weight: 19 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 57 Watts AC (avg.), 77 Watts AC (max.) **\$1050.00**

VM-9A Nine Inch Portable Color Monitor

Dimensions: 11"H x 10 $\frac{1}{2}$ "W x 13 $\frac{3}{4}$ "D
Weight: 16 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 57 Watts AC (avg.), 77 Watts AC (max.) **\$998.00**

RM-13T Thirteen Inch Cable Ready Portable Color Receiver/Monitor

Dimensions: 14"H x 15 $\frac{1}{2}$ "W x 16 $\frac{1}{2}$ "D
Weight: 33 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 55 Watts (avg.), 80 Watts (max.) **\$755.00**

VM-13T Thirteen Inch Portable Color Monitor

Dimensions: 14"H x 15 $\frac{1}{2}$ "W x 16 $\frac{1}{2}$ "D
Weight: 33 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 55 Watts (avg.), 80 Watts (max.) **\$725.00**

RM-13TR Thirteen Inch Cable Ready Rackmount Color Receiver/Monitor

Dimensions: 15 $\frac{3}{4}$ "H x 19"W x 16 $\frac{1}{2}$ "D
Weight: 38 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 55 Watts (avg.), 80 Watts (max.) **\$875.00**

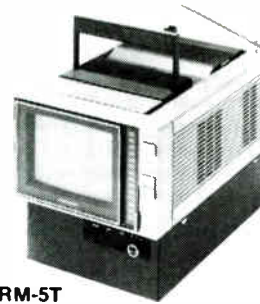
VM-13TR Thirteen Inch Rackmount Color Monitor

Dimensions: 15 $\frac{3}{4}$ "H x 19"W x 16 $\frac{1}{2}$ "D
Weight: 38 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 55 Watts (avg.), 80 Watts (max.) **\$820.00**

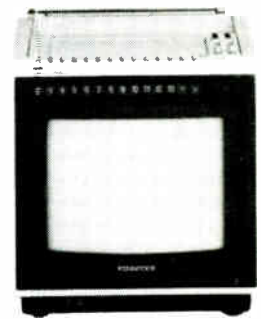
RM-15 Fifteen Inch Color Receiver/Monitor

Dimensions: 15"H x 16 $\frac{3}{8}$ "W x 16 $\frac{3}{8}$ "D
Weight: 36 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 73 Watts (avg.), 105 Watts (max.) **\$1057.00**

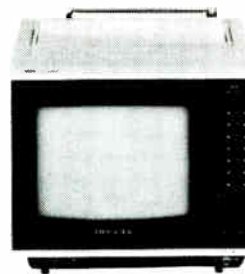
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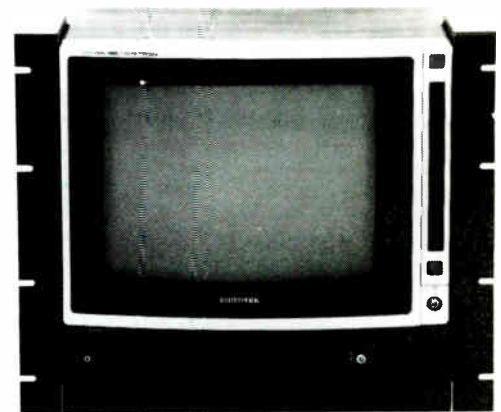
RM-5T



RM-9A



VM-8A



RM-13TR

VM-15 Fifteen Inch Color Monitor

Dimensions: 14 $\frac{3}{4}$ "H x 16 $\frac{3}{8}$ "W x 16 $\frac{3}{8}$ "D
Weight: 36 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 73 Watts (avg.), 105 Watts (max.) **\$1039.00**

NON-TRINITRON MONITORS

RM-13 Thirteen Inch Color Receiver/Monitor

Dimensions: 13 $\frac{3}{4}$ "H x 18"W x 15"D
Weight: 33 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 84 Watts **\$8699.99**

VM-13 Thirteen Inch Color Monitor

Dimensions: 13 $\frac{3}{4}$ "H x 18"W x 15"D
Weight: 33 lbs.
Power Requirements: 120 VAC 60 Hz
Power Consumption: 84 Watts **\$642.00**

RM-19B Nineteen Inch Color Receiver/Monitor

Dimensions: 17 $\frac{3}{8}$ "H x 23 $\frac{1}{4}$ "W x 18 $\frac{1}{2}$ "D
Weight: 60 lbs.
Power Requirements: 120 VAC 60Hz
Power Consumption: 83 Watts **\$740.00**

RM-25 Twenty-Five Inch Color Receiver/Monitor

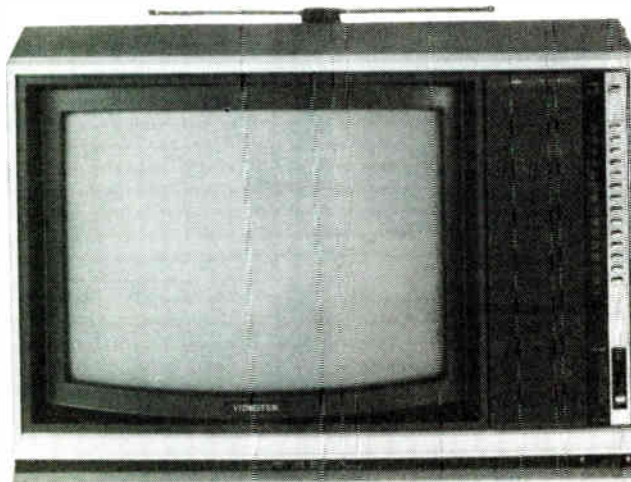
Dimensions: 21 $\frac{1}{4}$ "H x 30 $\frac{1}{4}$ "W x 22 $\frac{1}{4}$ "D
Weight: 92 lbs.
Power Requirements: 120 VAC 60Hz
Power Consumption: 93 Watts **\$1070.00**

Prices and Specifications Subject to Change Without Notice.

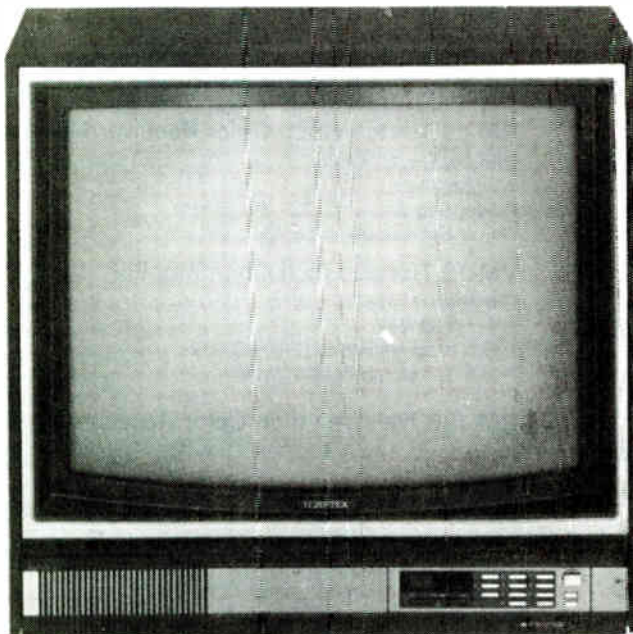
VM-123



RM-17RC



RM-19



RM-26A

COLOR MONITORS & RECEIVER/MONITORS

RM-17RC
SEVENTEEN INCH, CABLE-READY
COLOR RECEIVER/MONITOR,
REMOTE CONTROL

Dimensions: 17-1/2"H x 17-3/4"W x 18-1/2"D

Weight: 55 lbs.

Power Requirements: 120V AC 60 Hz

Power Consumption: 56 Watts (Avg)

90 Watts (Max).

RM-17RC \$1170.00

VM-17
SEVENTEEN INCH COLOR
MONITOR

Dimensions: 17-1/2"H x 17-3/4"W x 18-1/2"D

Weight: 55 lbs.

Power Requirements: 120V AC 60 Hz

Power Consumption: 56 Watts (Avg)

90 Watts (Max).

VM-17 \$999.00

RM-19
NINETEEN INCH, CABLE-READY
COLOR RECEIVER/MONITOR

Dimensions: 19"H x 26-1/2"W x 18-5/8"D

Weight: 63 lbs.

Power Requirements: 120V AC 60 Hz

Power Consumption: 73 Watts (Avg)

115 Watts (Max).

RM-19 \$985.00

VM-19
NINETEEN INCH COLOR
MONITOR

Dimensions: 19"H x 26-1/2"W x 18-5/8"D

Weight: 61 lbs.

Power Requirements: 120V AC 60 Hz

Power Consumption: 73 Watts (Avg)

115 Watts (Max).

VM-19 \$899.00

RM-26A
TWENTY-SIX INCH, CABLE-READY
COLOR RECEIVER/MONITOR

Dimensions: 25-1/8"H x 26-1/2"W x 23-7/16"D

Weight: 118 lbs.

Power Requirements: 120V AC 60 Hz

Power Consumption: 88 Watts (Avg)

160 Watts (Max).

RM-26A \$1525.00

VM-26A
TWENTY-SIX INCH
COLOR MONITOR

Dimensions: 25-1/8"H x 26-1/2"W x 23-7/16"D

Power Requirements: 120V AC 60 Hz

Power Consumption: 88 Watts (Avg)

160 Watts (Max).

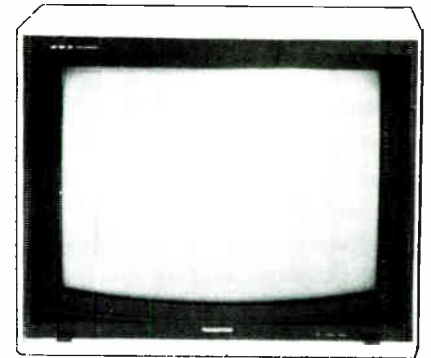
VM-26A \$1498.00

RGB/VM-25A

25" Analog and Digital RGB/NTSC Monitor

Features

- 25" Trinitron® CRT • Comb filter, 350 lines of resolution • Looping video and audio inputs • 8 pin VTR connectors • A-B input switching • DC restoration • 100% solid-state • Complete chassis AC isolation • Low power consumption • Dual audio amplifiers • Underscan standard • Blue gun standard • 1V or TTL digital RGB inputs, looping BNC or multi pin input • Digital composite or separate horizontal and vertical sync, normal or inverted polarity • Internal-external sync select and looping BNC input • 8 pin DIN connector to work with Videotek DM-40R for full remote control and TV tuner capabilities • Two optional speaker systems \$2425.00



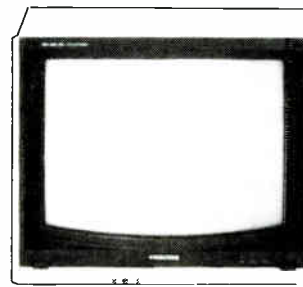
RGB/VM-25A

RGB/VM-19A

19" Analog and Digital RGB/NTSC Monitor

Features

- 19" Trinitron® CRT • Comb filter, 340 lines of resolution • Looping video and audio inputs • 8 pin VTR connectors • A-B input switching • DC restoration • 100% solid-state • Complete chassis AC isolation • Low power consumption • Dual audio amplifiers • Underscan standard • Blue gun standard • 1V or TTL digital RGB inputs, looping BNC or multi pin input • Digital composite or separate horizontal and vertical sync, normal or inverted polarity • Internal-external sync select and looping BNC input • 8 pin DIN connector to work with Videotek DM-40R for full remote control and TV tuner capabilities • Two optional speaker systems \$1745.00



RGB/VM-19A

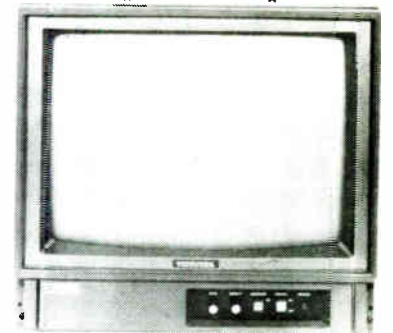
CD-19HR

19" Analog RGB Monitor

Features

- High resolution CRT capable of a clear display of 4,000 characters (approx. 1,000 pixels in screen center) • Black-matrix CRT Pil-Delta construction for stable, simple convergence of beam registration • Full range analog input • Video channel bandwidth, 50Hz to 25MHz (±3dB) • 3 looping RGB inputs with selectable 75 ohm termination • Internal/external sync auto select • Multiple scan rates • Separate H and V drives • 19" rack mountable • Dynamic focusing • Multi mains input select • Selectable 3:4 or 1:1 aspect ratio

With Cabinet (Underscan Standard) \$3250.00



CD-19HR

CD-13HR

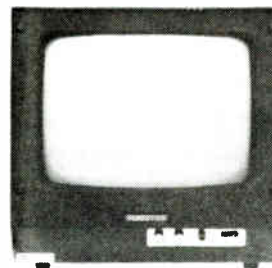
13" Analog RGB Monitor

Features

- High resolution CRT capable of a clear display of 2,000 characters (approx. 700 pixels in screen center) • Black-matrix CRT Pil-Delta construction for stable, simple convergence of beam registration • Full range analog signal input • Video channel bandwidth, 50Hz to 20MHz (±3dB) • 3 looping RGB inputs with selectable 75 ohm termination • Internal/External sync select set internally • Multiple scan rates • Multi mains input select

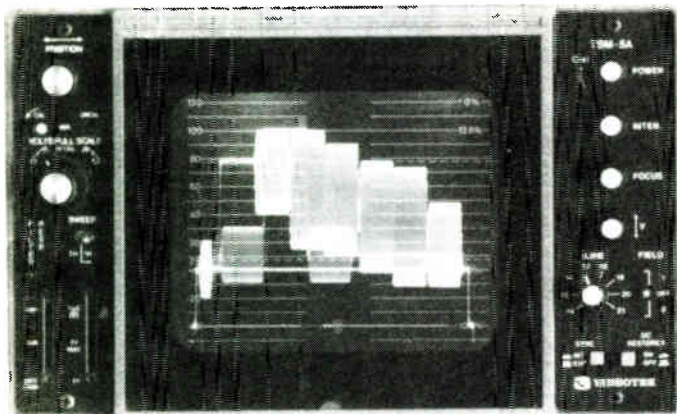
With Cabinet (Underscan Standard) \$1855.00

Without Cabinet (Underscan Standard) 1635.00

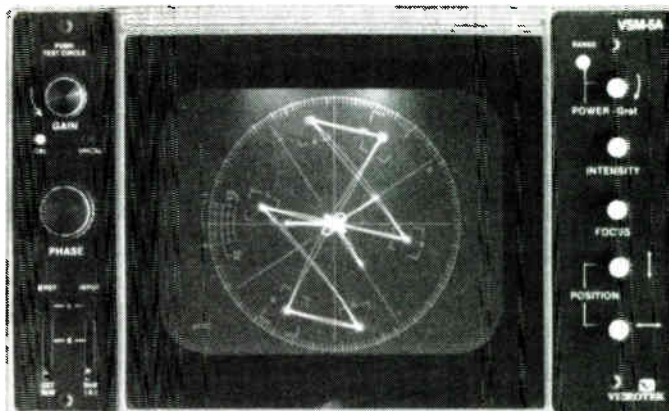


CD-13HR

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TSM-5A



VSM-5A

TSM-5A WAVEFORM MONITOR
NTSC/PAL/PAL-M STANDARD
FEATURES

- Compact:** Mounts in 5-1/4" of vertical rack space and one-half standard rack width space
- NTSC:** Standard NTSC, 525 lines, 30 frame (60Hz field rate) scan
- CCIR:** Standard PAL, 625 lines, 25 frame (50Hz field rate) scan
- CCIR:** Standard PAL-M, 525 lines, 30 frame (60Hz field rate) scan

Vertical Frequency

- Response:** 8MHz response
- Graticule:** Internal illuminated graticule; eliminate parallax errors
- Visibility:** High brightness CRT, non-glare contrast filter
- Inputs:** Selectable A/B video looping BNC inputs. AC or DC coupled
- Output:** Separately buffered video out 1 V P-P into 75 ohm termination
- Sync:** Selectable internal/external input
- Filters:** Flat, IRE, Chroma or Differential Gain
- Time Base:** 2 line, 1 line, expanded 2 line, expanded 1 line, 2 field or expanded 2 field
- Line Select:** Selects lines 14 thru 21 of field selected
- Field Select:** Field 1 or 2 selectable
- YRGB/RGB:** 9 pin access connector for monitoring color processing amplifier waveforms
- DC Restoration:** Selectable
- Options:** Standard case, portable case, double rackmount case, blank panel

TSM-5A \$2065.00

VSM-5A VECTORSCOPE
NTSC/PAL/PAL-M STANDARD
FEATURES

- Compact:** Mounts in 5-1/4" of vertical rack space and one-half standard rack width space
- NTSC:** Standard NTSC, 525 lines, 30 frame (60Hz field)
- CCIR:** Standard PAL, 625 lines, 25 frame (50Hz field)
- CCIR:** Standard PAL-M, 525 lines, 30 frame (60Hz field)

Graticule: Internal illuminated graticule; eliminates parallax errors

Visibility: Non-glare contrast filter

Inputs: Selectable A/B Video looping BNC inputs, subcarrier A select, external subcarrier looping BNC inputs, external PAL pulse looping BNC inputs (PAL only)

REF NTSC: Selectable A/B and external subcarrier looping inputs

REF PAL: Selectable A or B and external sub-carrier looping inputs

Test NTSC: Normal/Alternate Line/Test Circle Push Button Selectable

Test PAL/PAL-M: Normal/NTSC Display/Test Circle Push Button Selectable

Options: Standard case, portable case, double rackmount case, blank panel

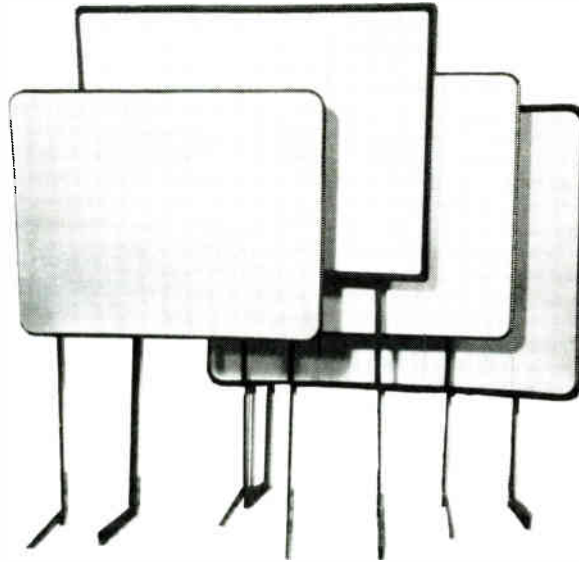
VSM-5A \$2365.00

OPTIONS (TSM-5A, VSM-5A)

- SCC-1** Single Standard Case \$ 39.00
- PTC-1** Portable Case w/Handle & Sunshield 135.00
- DRC-1** Double Rackmount Case 200.00
- BLK-1** Blank Panel 20.00

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Ultralite Projection Screens...The Ultimate in Picture Quality



ULTRALITE PROJECTION SCREENS

Get maximum visual impact with sharp brilliant images. Ultralite's high quality optical coating gives you top fidelity magnification with no distortion or loss of detail.

- Light is evenly distributed across the screen. Color fidelity is uniform and consistent.
- Exceptional image definition is achieved with Ultralite's "controlled" gain across the screen.
- Contrast is improved. Ultralite's special optical coating absorbs extraneous ambient light without loss of image brightness.

Customized Ultralite

- Ultralite 1 for three-gun projection systems. Designed for wide angle viewing.
- Ultralite 2 for single-gun systems, with wider angle viewing and minimum drop-off.
- Custom match the right Ultralite screen to your projection system. A variety of sizes to 7-feet diagonal measurement. Wall-mounted, free-standing or custom packaged to your cabinetry.

Durable And Easy To Maintain

Ultralite's tough, mar-resistant surface tolerates handling and is easily cleaned with conventional detergents.

- The Ultralite Screen Care Kit is a lifesaver, includes a soft, protective dust cover and our specially formulated spray cleaner and screen brightener.
- In the lightweight, portable version, the durable Ultralite screen now allows you to make your TV system fit your decor.

Screen Resurfacing Service

Viscotec can resurface screens for most major projection TV systems — Advent, Kloss, MGA, Sony and others.

- Saves dollars because resurfacing is often half the cost, or less, of buying a new replacement.
- Improves quality, with superior optical characteristics for improved brightness, truer colors and crisper images.

Let Viscotec help you get more out of your projection TV system. Our versatile range of Ultralite screens let you see a superior picture. Our screen resurfacing service assures you of continued good viewing. You can also use Ultralite screens for front projection viewing of slides and films. Our expertise in optical coatings and manufacturing guarantees timely delivery and consistent quality at attractive prices. When you want to experience the ultimate in viewing... team up your projection system with Ultralite.

MODEL	SIZE	PRICE*
Ultralite I or II	4' dia. (32" x 40")	\$165.00
Ultralite I or II	5' dia. (52" x 40")	285.00
Ultralite I or II	6' dia. (62" x 45")	442.50

HARDWARE		
Floorstand	(All sizes)	\$ 67.50
Wall/Ceiling Mounts	(All sizes)	18.00

SCREEN CARE ACCESSORIES		
Protective Dust Cover	4' dia.	\$ 37.50
Protective Dust Cover	5' dia.	45.00
Protective Dust Cover	6' dia.	52.50
Spray Cleaner	16 oz.	6.75
Screen Brightener	16 oz.	11.25
Screen Care Kit	4' dia.	52.50
(Includes cover, cleaner and brightener)	5' dia.	60.00
	6' dia.	67.50

*Substantial quantity price breaks are available. Please call for specific price quotations.

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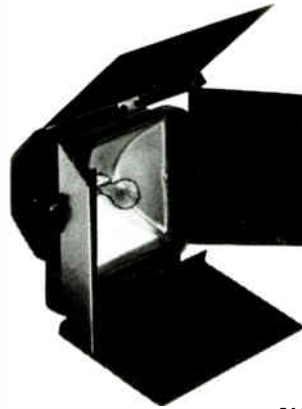
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3401 W. Madison Street
Skokie, IL 60076
(312) 588-2776



NO. 660

Basic unit conical in shape with 4" diameter reflector, 3" depth which produces medium beam spread, fixed focus. Ideal illumination for most lighting applications such as key or fill as main or side light. Housing sunshine gold. 600W quartz lamp included. **\$89.95**

NO. 680

Unique focusing arrangement enables beam adjustment from medium to broad and 3:1 ratio of beam center intensity. Such versatility makes this model adaptable to all lighting situations. Housing surf sand. 600W quartz lamp included. **\$123.95**

Q-BRITE PROFESSIONAL VIDEO AND PHOTO LIGHTS

Q-Brite represents a trio of heavy-duty, compact quartz reflectors for professional use. Constructed of heavy steel housings and scientifically contoured aluminum reflectors using strong swivel yokes with adaptors for either 3/8 or 5/8 stands. Electrical construction includes 3-cond. power cords, heavy rated switches, and ceramic sockets. All models include lamp, safety chain, accessory clips, finger grips.

NO. 960

Specifically designed to give broad, uniform beam ideal for back and background lighting. Measures 4 x 4" with shallow 2" depth. Includes built-in 4-leaf barndoors. Housing black. 600W quartz lamp included. **\$99.95**

NO. 990

A higher intensity broad beam reflector with long life frosted lamp for greater diffusion. Includes 1000W lamp, rated 400 hours in 5-1/2" reflector with heavy-duty switch. Barndoors included. **\$149.95**

4VB BARNDOORS: 4-leaf rotating Barndoors to fit Models 660 and 680 only **\$32.50**

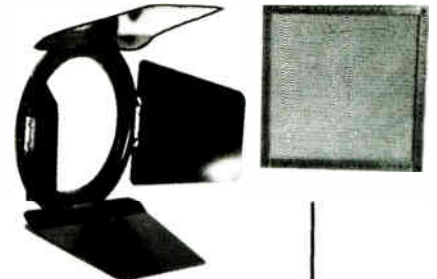
VSD SCRIM: Fine mesh screen framed in aluminum for diffusion. Use singly or in pairs. For all Q-Brite models only. each **\$11.95**

SPECIFICATIONS FOR Q-BRITE MODELS

Model	Lamp	Watts	Amps	Kelvin	Hours	Beam	FCBC
660	DYS	600	5.2	3200	75	45°	100
680	DYS	600	5.2	3200	75	40°-75°*	65-190*
960	DYS	600	5.2	3200	75	60°	60
990	FHM	1000	8.7	3200	400	75°	140

FCBC: Footcandles at Beam Center measured at 10 feet. All models priced to include Lamps as indicated.

*For focusing model indicates extreme from spot to flood position.



SUGGESTED Q-BRITE COMBINATIONS

The versatility of Q-Brite line allows for various combinations to suit your lighting needs. Below are listed several combinations which are more economical than purchased as components.

No. LP268 Litepak
2 No. 680 Q-Brite
2 Casestands
2 Stand Extensions
2 DYS Lamps
1 Deluxe Case
\$450.00

No. LP366 Litepak
3 No. 660 Q-Brite
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$500.00

No. LP396 Litepak
1 No. 660 Q-Brite
2 No. 960 Q-Brite (incl. Barndoors)
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$530.00

No. LP306 Litepak
2 No. 960 Q-Brite
1 No. 990 Q-Brite
3 Barndoors
3 Casestands
3 Stand Extensions
3 DYS/FHM Lamps
1 Deluxe Case
\$600.00

No. LP266 Litepak
2 No. 660 Q-Brite
2 Casestands
2 Stand Extensions
2 DYS Lamps
1 Deluxe Case
\$390.00

No. LP368 Litepak
2 No. 680 Q-Brite
1 No. 660 Q-Brite
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$565.00

No. LP398 Litepak
1 No. 680 Q-Brite
2 No. 960 Q-Brite (incl. Barndoors)
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$550.00

No. LP309 Litepak
2 No. 990 Q-Brite
1 No. 960 Q-Brite
3 Barndoors
3 Casestands
3 Stand Extensions
3 DYS/FHM Lamps
1 Deluxe Case
\$650.00

No. LP296 Litepak
2 No. 960 Q-Brite (incl. Barndoors)
2 Casestands
2 Stand Extensions
2 DYS Lamps
1 Deluxe Case
\$400.00

No. LP375 Litepak
2 No. 660 Q-Brite
1 No. 680 Q-Brite
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$535.00

No. LP290 Litepak
2 No. 990 Q-Brite (incl. Barndoors)
2 Casestands
2 Stand Extensions
2 FHM Lamps
1 Deluxe Case
\$530.00

No. LP332 Litepak
2 No. 990 Q-Brite
1 No. 710SL
3 Barndoors
3 Casestands
3 Stand Extensions
3 ELJ/FHM Lamps
1 Deluxe Case
\$680.00

No. LP360 Litepak
2 No. 660 Q-Brite
1 No. 960 Q-Brite (incl. Barndoor)
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$490.00

No. LP386 Litepak
1 No. 660 Q-Brite
1 No. 680 Q-Brite
1 No. 960 Q-Brite (incl. Barndoor)
3 Casestands
3 Stand Extensions
3 DYS Lamps
1 Deluxe Case
\$545.00

No. LP300 Litepak
1 No. 660 Q-Brite
1 No. 680 Q-Brite
1 No. 960 Q-Brite
3 Casestands
3 Stand Extension
3 DYS/FHM Lamps
1 Deluxe Case
\$625.00

No. LP369 Litepak
2 No. 990 Q-Brite
2 Barndoors
1 No. 660 Q-Brite
3 Casestands
3 Stand Extensions
3 FHM/DYS Lamps
1 Deluxe Case
\$650.00

No. LP390 Litepak
2 No. 660 Q-Brite
1 No. 990 Q-Brite
1 Barndoor
3 Casestands
3 Stand Extensions
3 DYS/FHM Lamps
1 Deluxe Case
\$575.00

No. LP399 Litepak
1 No. 660 Q-Brite
1 No. 960 Q-Brite
1 No. 990 Q-Brite
2 Barndoors
3 Casestands
3 Stand Extensions
3 FHM/DYS Lamps
1 Deluxe Case
\$585.00

THE CASE

The case designed for the Q-Brite line is the most versatile and deluxe ever designed. Constructed of solid plywood and covered with tough PVC laminate. All edges and corners reinforced with extruded aluminum. Interior fully foam padded. Vertical partitions adjustable to any size. Includes strong hasp locks and full length piano hinge. Measures 26 x 12 x 9. Holds up to 3 lights, 3 stands, plus accessories. **Case Only \$179.95**

THE STAND

The special Case stand designed to fit in the case provides maximum sturdiness for Q-Brites. 3-sec. stands made of 5/8, 1/2, and 3/8 telescoping tubing, black seamless tubing with star locking knobs. Sections locked in, legs channeled and braced. Elevates to 7 ft. folds to 26"; leg spread 30". **Stand Only \$29.95**



ACME-LITE MFG. CO.

3401 W. Madison Street
Skokie, IL 60076
(312) 588-2776

KOOLVENT REFLECTORS

A line of 6 lights of professional quality made in larger sizes for both efficient quartz lamps and lower priced photoflood lamps.



NO. 010-Q
NO. 010-LL



NO. 010-P
NO. 012-P



NO. 640HD

Each reflector has a specially designed Koolvent housing on the back which keeps the unit cooler and easier to use. Heavy swivelling yoke, 3-conductor grounded power cord, and large control knobs make this suitable for heavy-duty use.

NO. 010-P

10" diameter using #1 (BBA) lamp 250W (not included) in screw-in ceramic socket providing 45° beam spread with 125 fc at beam center at 10 ft.

.....\$51.95

NO. 010-Q

10" diameter using 600W quartz lamp (included) providing 40° beam spread with 150 fc at center at 10 ft. Expected lamp life 75 hours.\$69.95

NO. 010-LL: Same but 500W quartz lamp (included) with 100 fc and 2000 hour life.\$109.95

NO. 012-P

12" diameter for #2 (EBV) lamp 500W (not included) providing 40° beam with 170 fc at center.\$59.95

NO. 025-P

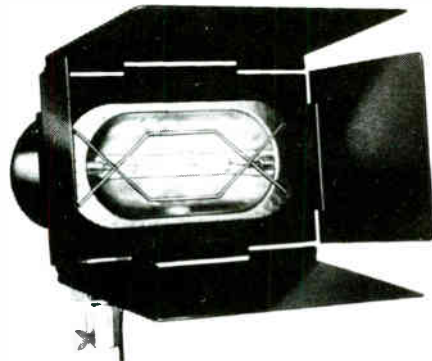
Cone shaped 7" diameter for #1 or #2 photoflood lamp (not included) for narrow beam, 80 to 120 fc.

.....\$59.95

NO. 640-HD

6" diameter using 600W quartz lamp (included) with 60° beam and 90 fc at center at 10 ft. Equipped with 4-leaf rotating barndoors.\$94.95

COMPACT ECONOMY QUARTZ LIGHTING



NO. 710-SL

Compact, low-cost light with big 1000W lighting punch. Includes quartz lamp with 75 hour life in lightweight phenolic housing small enough for gadget bag. Elliptical aluminum reflector for broad beam complete with folding 4-leaf barndoors to control beam. Includes locking swivel, panel switch, heavy power cord, stand adaptor for 3/8 stand.\$119.95

NO. 710-LL

Same as above but with 1000W quartz lamp with 400 hour life rating ideal for longer video taping.

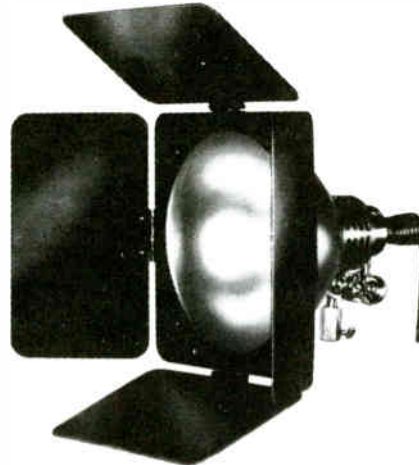
.....\$129.95

LP232 LITEPAK: Deluxe combination of two Model 710SL for total 2000W. Includes two 7 ft. Midelwater Stands, 4 stand extensions, extension cord, lamps. All fitted into deluxe wood case, partitioned and lined.\$439.00

NO. 600

Small, lightweight 6" diameter aluminum reflector which throws broad beam of light. Complete with 600W quartz lamp, double ball swivel, and stand adaptor for 3/8 stand. Electrically fitted with ceramic socket, 10 ft. power cord, 10 amp line switch, cool finger knob. Use for main, side, or back lighting.

.....\$69.95



4BD BARNDOORS: 4-leaf rotating barndoors to fit Model 600 reflector.\$19.95

640BD REFLECTOR: Combination of No. 600 reflector with lamp and 4BD Barndoors.\$84.95

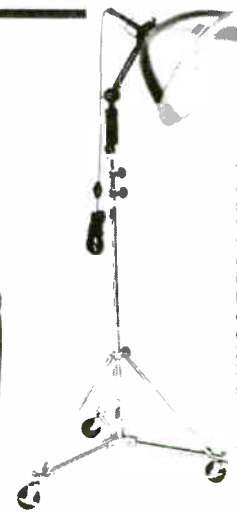
LITECLAMPS



47 MINI SPRING

Medium tension spring clamp for attaching small lights to flat surface or tubing. Has 3/8 stud for light.

.....\$7.95



STUDIO JUMBOLITE

Giant 18" diameter reflector to illuminate entire scene and overall lighting in studio. Comes equipped with amazing 2-in-1 Lamp with large frosted outer envelope for diffusion plus inner quartz lamp for long life and consistency. Produces intense light highly diffused. Lamp 1000W, 27,000 lumens, 500 hours, 3200K. Reflector disassembles into 3 sections for portability. Complete with 10 ft. cable cord and 10 amp line switch.

NO. 923

Complete 3-piece reflector assembly and 1000W QST Lamp\$99.95

NO. 920-RS

Model 923 Reflector assembly and lamp plus heavy-duty Champion stand on roller base.\$283.00

49 PIPE CLAMP

Heavy-duty clamp for heavy lights with adjustable screw lock. Fits flat or tubular surfaces from 5/8" to 2"

No. 49 with 3/8 Light Stud\$23.95

No. 49/5 with 5/8 Light Stud\$23.95

48 GAFFER

Heavy tension spring clamp with large grips for clamping to flat or tubular surface. Has 3/8 stud for light. Fits 5/8 to 2".\$23.95

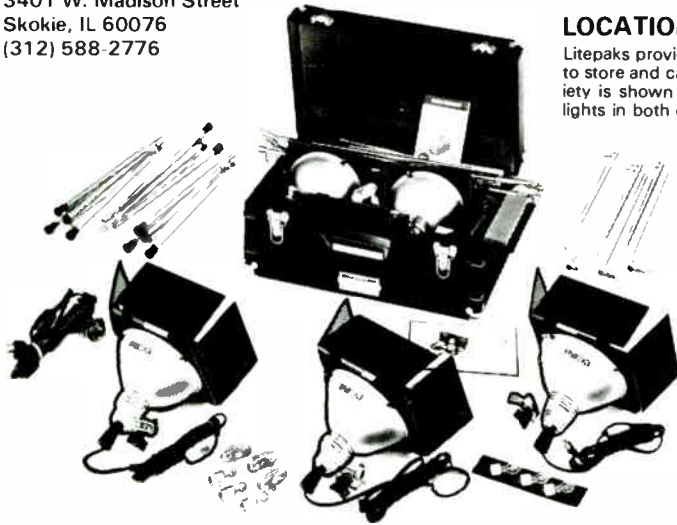
ACME-LITE MFG. CO.

3401 W. Madison Street
Skokie, IL 60076
(312) 588-2776

LOCATION LITEPAKS/ LITE STANDS

LOCATION LITEPAKS

Litepaks provide an economical and convenient way to store and carry all your lighting equipment. A variety is shown below including deluxe and economy lights in both deluxe cases and economy carriers.



LP340BD LOCATION LITEPAKS

Deluxe combination of three Model 600 reflectors including barndoors for use as front, side, and back lighting. Totals 1800 watts of illumination. Complete with lamps, fittings, 3 Flywate stands, stand extensions, extension cord, and 4-leaf barndoors. All contents contained in partitioned plywood case measuring 19" x 12" x 8". **\$445.00**

LP340BD CONTENTS

- 3 No. 600 Reflectors
- 3 No. 4BD Barndoors
- 3 DYH 600W Quartz Lamps
- 1 Deluxe Carry Case
- 3 Flywate Stands
- 3 Stand Extensions
- 1 Extension Cord
- Lighting Plans

NO. LP333:

Same as LP340BD but without Barndoors. **\$389.00**

LP3 LOCATION LITEPAK

An economy 3-way lighting kit that provides a total of 1800 watts of lighting for front, side, and back. Includes 3 No. 600 reflectors with 600 watt Quartz lamps, 3 Flywate Lite Stands with 3 Stand Extensions for total height of 7.5 ft., 12 ft. extension cord, fittings, and lighting diagrams. All contents in partitioned heavy weight paperboard carrier with metal snaplocks and styrene handle. **\$299.95**

LP2 LOCATION LITEPAK

Same as LP3 but a 2-way lighting kit providing 1200 watts of illumination. Contains 2 each of No. 600 reflector, lamps, stands, extensions, etc. in same carrier. **\$209.95**

LP27 LOCATION LITEPAK

Same as LP2 but adds Model 708G Videolite for total 1800 watts. Provides camera mounted light plus side and background light for 3-way triangular lighting for professional effect. Complete with lamps, 2 Flywate Stands and extensions, fittings, and light plans fitted into same carrier as above. **\$279.95**

LP36 DELUXE LITEPAK

Contains deluxe heavy-duty Model 660 Q-Brite Reflectors and heavier duty Casestands in sturdy paperboard carrier with metal snap-latches and styrene handle. Includes 3 No. 660 with 600W DYS quartz lamps, 3 Casestands with stand extensions, 2 rotating 4-leaf barndoors, fittings. **\$355.00**

LP26:

Same as above but 2-way kit including 2 No. 660 with lamps, 2 Casestands, and one Barndoor. **\$239.00**

LITE STANDS FOR EVERY VIDEO AND PHOTO NEED

Lite Stands are an indispensable part of every lighting set-up. They support the light and place it exactly where it is needed. Acme-Lite offers a variety of sizes and prices to suit every need.

FLYWATE

Ultra compact 4-sec closing to a mere 18" and opening to 6 ft. Recommended for lightweight units and where compact portability is needed. **\$29.95**

MIDELWATE

Same design but slightly larger closing to 24"; opens to 7 ft. **\$34.95**

LITEWATE

Basic steel stand with 5/8 tubing offers greatest value. 2-sec closes to 42"; opens to 6.5 ft. **\$19.95**

BANTAMWATE

Same stand but 3-sec closes to 36"; opens to 8 ft. **\$29.95**

WELTERWATE

Deluxe stand for heavier lights offers finest construction and features. 3-sec closes to 31"; opens to 8 ft. Heavier 1" tubing and 31" leg spread. **\$59.50**

HEVIWATE

Same construction but 4-sec with heavier 1-3/8 diameter tubing. Closes to 37"; opens to 12 ft.; leg spread 35" **\$89.50**

7A

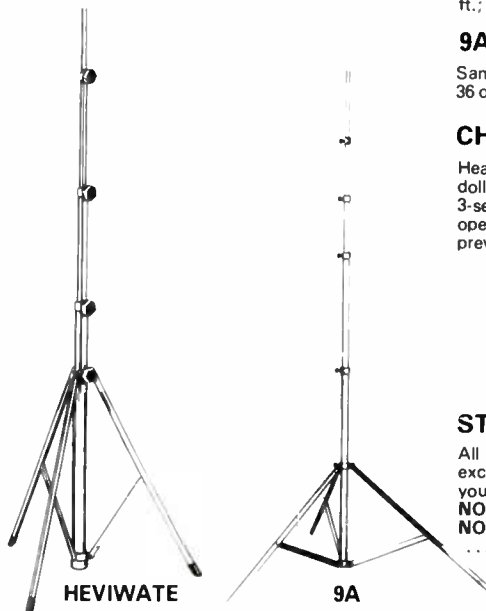
Aluminum 5-sec stand offering lighter weight and greater versatility. Sections locked in; legs braced; lock knobs won't fall out. Closes to 19"; opens to 7 ft.; leg spread 32"; weighs 30 oz. **\$36.95**

9A

Same as 7A but closes to 23"; opens to 9 ft.; weighs 36 oz. **\$41.95**

CHAMPION

Heavy duty stand to hold largest lights. Built-in dolly 3" wheels sturdily braced. Folds up compactly. 3-sec with one inch base tubing closes to 39" and opens to 10 ft. Sections locked in; locking clamps prevent denting. **\$119.95**



STAND CONVERTERS

All Acme-Lite stands accept lights with 3/8 fitting except Champion for 5/8. Change size of stand to fit your own light fitting with:

- NO. 35 CONVERTER: Changes 3/8 to 5/8
 - NO. 53 CONVERTER: Changes 5/8 to 3/8
- each **\$5.95**

Prices and Specifications Subject to Change Without Notice.

ACME-LITE MFG. CO.

3401 W. Madison Street
Skokie, IL 60076
(312) 588-2776

These compact lights have been designed to attach directly to the video or movie camera to provide key lighting that automatically follows the lens and action.

VIDEO CAMERALITES



twinlites

MODEL 22-AC and AC
Two individually switched lamps in tandem each 250W operating from 115V wall outlet. One lamp provides 250W for normal room sizes and average beam angle for smaller subjects. Both lamps provide 500W for large areas and wider beam angle for larger subjects. All Twinlite lamps are miniature size with built-in reflectors having faceted surfaces for optimum illumination. Dichroic coating on lamps and phenolic housings provide cool operation. Swivel yoke can mount on stand or video camera. \$129.95

ONE LAMP
Optimum illumination for normal room. Medium beam angle for average subjects.

TWO LAMPS
Increased illumination for large room. Wider beam angle for larger subjects.

Lamp Life	1	175hrs
	2	350hrs
Color Temp		3250K
Beam Angle	1	25°
	2	45°
Watts	1	250
	2	500
Footcandles	2	150fc
	1	300fc

MODEL 32-DC and DC
Two individually switched lamps in tandem for DC operation includes 50W (high intensity) and 100W. Low wattage lamp provides intense light but doubles battery running time while second lamp provides same illumination with wider beam. Use both lamps simultaneously for high light output with wider beam angle. Total unit provides variable light output and beam angle plus double battery running time. . . . \$129.95

FIRST LAMP
Doubles battery running time.

SECOND LAMP
Wider beam angle.

BOTH LAMPS
Increases both illumination and beam angle.

Lamp Life	1	3000hrs
	2	50hrs
Color Temp	1	3075K
	2	3350K
Beam Angle	1	27°
	2	38°
	both	60°
Watts/Amps	1	50/4.2
	2	100/8.6
	both	150/12.7
Footcandles	1	80fc
	2	90fc
	both	170fc

MODEL 42-AC and DC
Same construction as described above but operates on both DC (battery) and AC power.

Two individually switched lamps in tandem: one 100W operates on 12V battery; other 250W operates on 115V wall outlet. Unit can be used on either type power source with security of having unlimited reserve power when battery runs down. Or both lamps can be used simultaneously on both power sources when additional light and wider beam angle is needed. One power cord to fit battery and one to fit wall outlet each keyed to be used on correct power source. \$139.95

DC LAMP
Use on 12V battery for portability

AC LAMP
Use on 115V circuit for reserve power.

BOTH LAMPS
Increased illumination for large room. Wider beam angle for larger subjects.

Lamp Life	AC	175hrs
	DC	50hrs
	2	225hrs
Color Temp	AC	3250K
	DC	3350K
	2	3300K
Beam Angle	AC	25°
	DC	38°
	2	60°
Watts	AC	250
	DC	100
	2	350
Footcandles	AC	150fc
	DC	40fc
	2	180fc

MODEL 32P-DC and DC

Same as Model 32 but made to professional standards with high intensity lamps. Includes two 200W lamps to operate on 30V battery to provide maximum illumination up to 400W. \$159.95

Lamp Life	1	50 hrs
	2	100hrs
Color Temp	1	3300K
	2	3300K
Beam Angle	1	38°
	2	70°
Watts	1	200
	2	400
Footcandles	1	95fc
	2	180fc

ACCESSORIES

4VT BARNDOORS: 4-leaf barndoors attach to front of any Twinlite model to provide accurate control of light pattern. \$24.95

VST SCRIM: Fine mesh screen attaches to front of any Twinlite model to provide soft lighting and diffusion. \$12.95

95 HANDLE: Handle attaches to any Twinlite model for holding light in hand. \$7.95

LIGHTS FOR 115V AC



No. 625 DELUXE FOCUSING VIDEOLITE

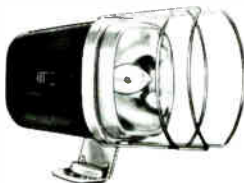
Deluxe focusing light which adjusts beam spread to cover entire subject and changes light intensity for size of room. Aluminum reflector in steel housing with yoke. Fits on stand or 94B and includes shoe adaptor. Includes 250W, 3200K quartz lamp with 200 hour rated life. \$79.95

No. 725

Economy videolite with built-in elevated shoe mount (use 94B for cameras without shoe) and includes 250W quartz lamp rated 3200K. 200 hours good for up to 40 video cassettes. \$59.95

725G

Same as above but with wire safety guard and cooler operation. UL approved. \$69.95



No. 708G:

600W quartz lamp, 75 hour for more intense light in larger rooms and groups. Complete with safety guard, bounce bracket, stand adaptor. Includes lamp. For camera mounting see note at bottom. \$59.95

No. 800VL:

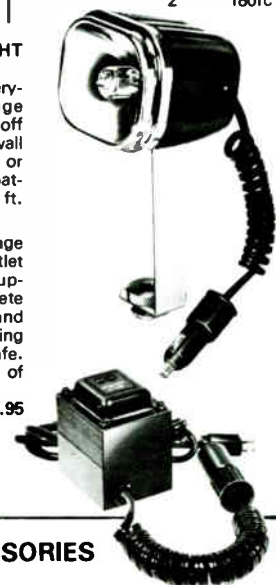
100W low-level light for closeups and small areas. Same construction as 708G. Includes lamp. UL approved. \$39.95

NOTE: To mount 708G, 800VL, 710 to top of camera use No. 25 shoe adaptor for cameras having accessory clip; or 94B telescoping handle bracket for other cameras or added height.

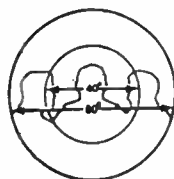
AC-DC VIDEO SAFETY LIGHT MODEL 7PBX

No. 7PBX: Model 7PB battery-operated light with Voltage adjuster included to power off either 12V battery or 115V wall outlet without changing lamps or cords. Plug directly into 12V battery (e.g. 12BB or 12BL) with 6 ft. coil cord and cigar plug.

Or insert light cord into Voltage Adjuster plugged into wall outlet and continue without interruption. Total 18 ft. cord. Complete with 100W quartz lamp and elevated bracket with locking camera shoe. Completely safe. Never a dangerous mistake of plugging into wrong voltage. \$119.95



BEAM FOCUSES TO DIFFERENT ANGLES ACCORDING TO SIZE OF SCENE



Distance	Spot	Flood
5ft	500	160
10ft	120	42
15ft	70	25
20ft	35	15

Measured in footcandles

ACCESSORIES

25
Shoe adaptor to mount light to top of cameras having shoe fitting. \$7.95

94B
Folding handle to mount light to cameras having no fitting. Camera mounts on platform, light on telescoping tube. \$19.95



Prices and Specifications Subject to Change Without Notice.

VL-5

AMBICO, INC.

50 Maple Street
Norwood, NJ 07648-0427
(201) 767-4100

Model V-0199

Video Lighting System

A total of 600 watts in an integrated video lighting kit. Adds complete lighting control with stands for back lighting and side lighting. In this kit:

- Two V-0100 Flood/Spot Videolights, each with a 300-watt quartz-halogen lamp, 120 volts
- Two V-0509 Video Lightstands telescope to nine feet. Easy-adjust Positive-action locks and non-skid feet
- Two handgrips and two bases
- Deluxe Fitted Carrying Case to store and carry complete set of lights and stands conveniently and safely

\$349.00

For detailed description of parts see light V-0100 and stand V-0509.



V-0199



V-0170

Model V-0170

AC/DC Flood/Spot Videolight

A versatile quartz-halogen light with brushed reflector to spread soft light. Plugs into a normal 120-volt AC receptacle and comes with 12-volt cigarette lighter plug adapter for car lighter receptacle or battery pack for DC use. Focus adjustment changes light from flood to spot. Includes one 150-watt AC lamp and one 100-watt DC lamp. Heat-absorbing glass Safety-Shield. Tilt Control for 120° bounce lighting.

\$112.95

Model V-0200

Compact 12V Videolight

Portable, 100-watt, quartz-halogen light with cigarette lighter-type plug. Fits directly into car lighter receptacle, 12-volt battery pack, or similar power source. Compact light attaches firmly to camera accessory shoe, extender bracket, lightstand, or tripod. Comes with voltage monitor, cord, and mounting shoe.

- Includes 100-watt quartz-halogen lamp (approximately 50-hour bulb life)
- 3200° Kelvin color temperature gives accurate color reproduction
- Heat-absorbing glass Safety-Shield
- Facet-Focus Reflector provides maximum light dispersion
- Tilt control for 120° vertical adjustment bounce lighting

\$79.95

Model V-0100

Flood/Spot Videolight

Versatility makes this one of the most popular videolights. Bathes subject in warm light for accurate, realistic colors. Comes complete with lamp, handgrip, base for wall or table-top mounting, and instructions.

- Lightweight and compact
- Attaches to camera accessory shoe, handgrip, lightstand, or tripod
- 300-watt quartz-halogen lamp (approx. 70-hour bulb life) Output: 700 foot-candles
- 3200° Kelvin color temperature for accurate color reproduction
- Light beam variable controlled for 30° spot (single subjects) to 50° flood (group shots)
- Facet-Focus Reflector gives maximum light dispersion in both flood and spot positions
- Light intensity at center of beam adjustable from 60 foot-candles in flood to 150 foot-candles in spot configuration at 10 feet
- Heat-absorbing glass Safety-Shield for cooler, safer shooting (Protects video-camera, too)
- Lamp Ejector removes hot lamp without burning fingers
- Tilt Control for vertical 120° adjustment of bounce lighting
- Mounting bracket is offset from video-camera for cooler shooting

\$89.95

Model V-0806

10-Amp-Hour, 12-Volt Belt Powerpack/Videolight Kit

Powers V-0200 videolight for nearly one hour.

- Weighs less than 8 pounds
- Compact 12-volt Videolight, V-0200, included
- 100-watt quartz-halogen lamp included
- Rechargeable lead-acid battery cells are rugged, have high cycle-life and recovery ability
- Batteries in polypropylene cases for protection from shock, temperature, and climate changes
- Fused for greater protection
- Outer packs of water-resistant nylon fabric with foam padding for extra comfort
- Sturdy web belting adjustable and has easy-latch buckle

\$169.95

VIDEO LIGHTING AND ACCESSORIES



Quartz-Halogen Replacement Lamps

Model V-0101 a 300-watt, 120-volt lamp, for V-0100 Videolight. Approximately 70-hour bulb life. **\$25.95**

Model V-0151 a 150-watt, 120-volt lamp for AC operation of Model V-0150 or V-0170. Approximately 70-hour bulb life. **\$25.95**

Model V-0201 a 100-watt, 12-volt lamp for V-0200 Videolight; or for DC operation of V-0150 or V-0170. Approximately 50-hour bulb life. **\$19.95**

Model V-0105

Barndoors

Professional-style Barndoors control light spill; direct maximum light on subject. Screw directly onto V-0100 Flood/Spot Videolight. Hinged doors adjust individually to any angle; fold flat when not needed. **\$19.95**



V-0507

V-0505

Model V-0507

Multiple Accessory Shoe

Allows mounting two lights and a microphone on videocamera to follow the action everywhere. Sturdy, lightweight metal. **\$9.95**

Model V-0505

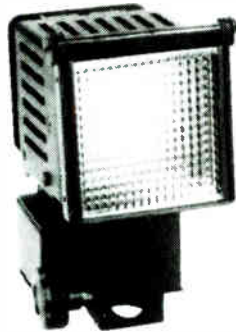
Extender Bracket

Moves light to side of videocamera for cooler shooting and reduced "head-on" lighting look. Attaches to camera tripod socket and holds V-0100 or V-0200 Videolight. Also keeps power cord conveniently away from camera. **\$9.95**



One Controls Drive
Shelton, CT 06484
(203) 929-1100

PORTABLE LIGHTING & KITS



ULTRALIGHT SINGLE



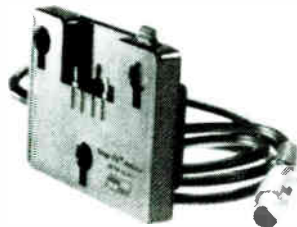
ULTRALIGHT DUAL



CLPA MOUNTED ONTO
CAMERA SNAP-ON BRACKET



LGK-30 LIGHTING KIT



UP SNAP-ON UNIPAC



CAMERA WITH LG-UD LIGHT,
BR HL79 BRACKET, AND
CLPA ADAPTOR

ULTRALIGHT™ SYSTEM

UltraLight System provides extremely compact, lightweight, and versatile portable lighting. UltraLights become fill, spot, or flood lights according to the selection of quick-change bulbs, filters, and focus adapters. The removable light head module allows bulb changes in the field without direct handling. A working system requires one or more of the power cables/adapters listed as well as a bulb of corresponding voltage.

ULS. UltraLight Single. Single base and head module with single power input and switch. **\$195.00**

ULD. UltraLight Dual. Dual base with two head modules, two switches, and single power input. Bulb voltages must be matched. **ULD** **\$350.00**

UL-HM. UltraLight Head Module. Extra quick-change rugged aluminum module to house alternate or spare bulbs.

UL-HM Package of three **\$195.00**

UL-HM Single **75.00**

ULAC. UltraLight AC Power Supply. Compact AC power supply allows use of low voltage bulbs (12-14v) where AC power is available. Maximum 100 watts of light output (one or two bulbs). 115/230v, 50/60 Hz. 12-14 VAC for lighting applications only. **\$165.00**

Black Beauty Light Head

LG-UD Universal Black Beauty Light Head. With swing-away dichroic filter. Select bulb and cable from lists below. **\$295.00**

Dichro. Dichroic Filter Assembly. For all LG Series Black Beauty Light Heads. **\$85.00**

Bulbs for Black Beauty Light Heads

ANSI Code	Volts	Watts	Life, Hrs.	Run Time with 4 AH battery	
FBV	30v	250	6	25 min.	\$32.
FBT	30v	150	6	45 min.	\$27.
FLP	14.4v	70	50+	45 min.	\$46.
FAV	12v	100	6	25 min.	\$23.

LGK-30 30 VOLT LIGHTING KIT

Complete Kit Includes:

- LG-UD Black Beauty Light Head with Dichroic Filter Assembly
- LC-30, 5 foot 30 volt power cable
- FBV 30V 250 watt tungsten bulb (one).
- Model 30/13 30V 4 AH battery belt with built-in 110/220 overnight charger
- Heavy duty shipping case with custom fit foam interior
- Typical Run Time: 25 minutes at 250 watts
- Size: 17-1/2" x 7-1/2" x 14"

LGK-30 **\$1195.00**

LIGHTING ACCESSORIES

LC-L 5 Foot Low Voltage (12-15V) Power Cable

For LG-U Light Head. Makes with Anton/Bauer Super D System UniPac Holders and other batteries with 5 pin XLR connectors. ... **\$48.00**

LC-30 5 Foot 30 Volt Power Cable

For LG-U Light Head. Amphenol connector mates with Anton/Bauer 30/13 Battery Belt and other 30 volt batteries **\$55.00**

CLPA Camera Light Power Adaptor

Powers LG-U Light from camera battery. Snaps on between battery and bracket at the rear of any camera. Integral cable plugs directly into LG-U Light Head. Requires 14.4 volt 70 watt bulb. **\$95.00**

UP Snap-On UniPac

Compact Anton/Bauer Snap-On bracket with integral belt loops and 5 foot cable. Allows any Anton/Bauer Snap-On 4 AH NiCad battery to be worn on a pants belt. Cable plugs directly into LG-U (or other 12-15 volt device). Requires 14.4 volt 70 watt bulb. **\$130.00**

Light Head Brackets

These brackets are used for quick custom mounting the Black Beauty and UltraLights on all popular ENG cameras.

Cameras not listed above may use one of the following brackets:

BR STUD: For all cameras with a 1/4-20 threaded accessory hole.

BR UNIV: Universal mount that clamps onto the handle of virtually any camera.

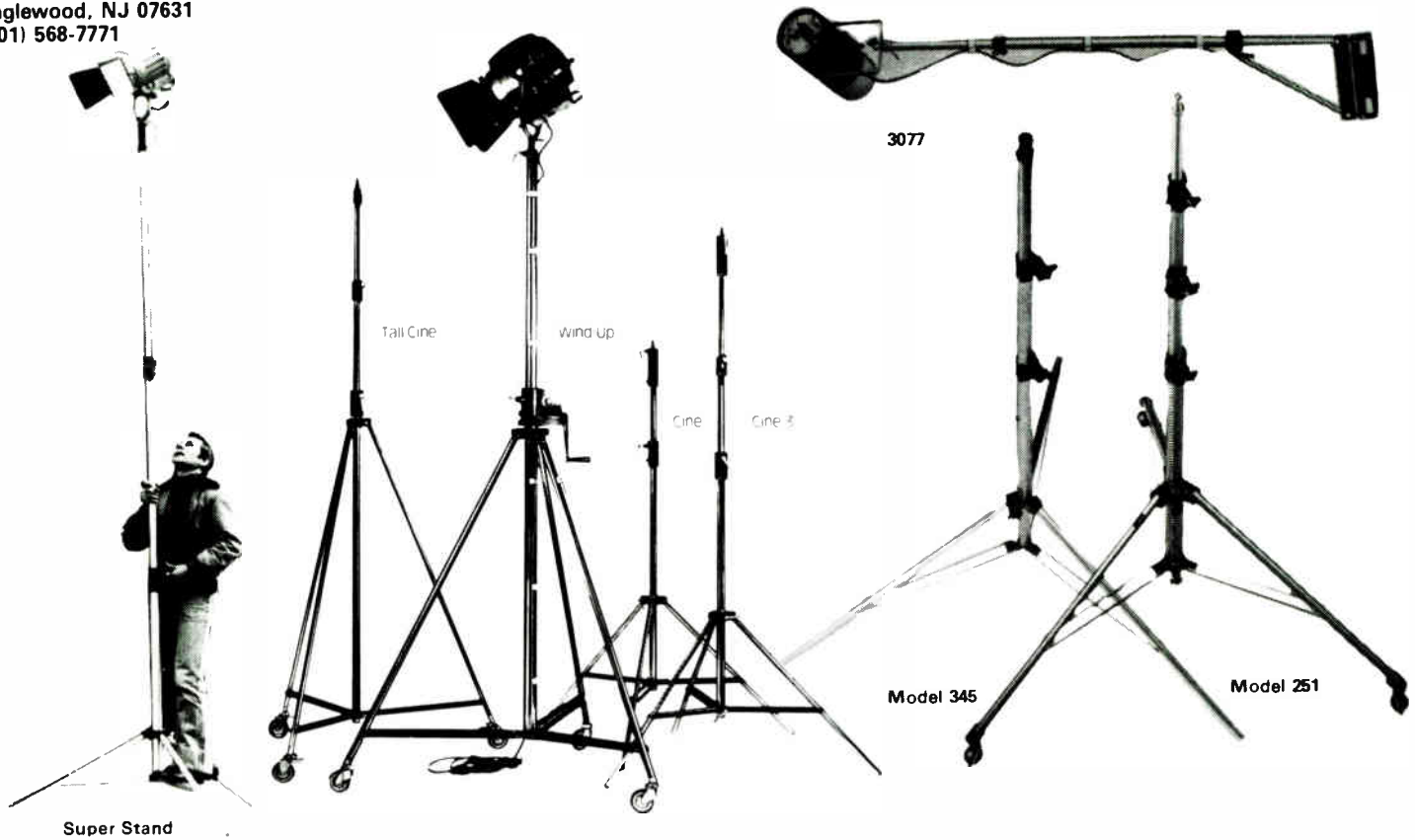
BR SHOE: For all cameras with microphone/accessory shoe.

Price of all Brackets listed. **\$45.00**

BOGEN PHOTO CORP.

100 South Van Brunt St.
PO Box 448
Englewood, NJ 07631
(201) 568-7771

STANDS



Super Stand

The bigger your light, the more you need this strong, tall, stable stand. Made of aluminum, it's comparatively lightweight (slightly over 15½ lbs.), yet will support large lighting units such as movie and TV floodlights, including 228mm sockets. Full extension is just under 12 feet. Standard 5/8" stud and 1/4-20 adapter to take strobes, smaller professional Q.H. lights, and other lights. Clamp-on leveller can be ordered which keeps the Super Stand on an even footing, when the terrain isn't. For indoor use, there's an accessory set of 100mm casters.

SPECIFICATIONS

Closed Length: 55.9". Minimum Elevation: 56.3". Maximum Elevation: 143.3". Diameter of base: 64.5". Legs are 30mm diameter aluminum. Sections are respectively, 50, 40, 30mm

3079 \$240.00

ACCESSORIES

Extension Leveller. A 22mm diameter tube which clamps on to one of the legs of the Super Stand and provides a 40cm (15") range of adjustment so that the center column of the stand can be kept level on uneven ground.

3080 \$30.00

Caster Set. 100mm (3.9") diameter casters to provide easier movement when the stand is used indoors.

3081 \$40.00

Cine Stands

Designed to hold heavy lights, reflectors and scrims. The Wind-up 2 and Wind-up 3, Cine and Cine 3 Stands, as well as the Super Stand all accept 1-1/8" (28mm) bushings and supplied with adapters for 5/8" (16mm) and half inch female yoke sockets. The Tall Cine accepts 5/8" bushings and female yoke sockets.

Model 345 Stand

Three section light stand which extends to 11', closes down to 41 ½". It weighs 6 lbs. 4 oz. and will support any of our Monolite units or other lights of comparable weight. The 345 comes with Shepherd casters for easy movement in the studio. Mounting stud is 5/8" for standard studio strobes with 1/4-20 thread adapter.

3082 \$99.95

Model 251 Stand

The workhorse for portable strobe and Q.H. lighting use, the 251 is stable 8' stand. It weighs under 2-1/4 lbs. and closed length is 34-1/4". Mounting stud is 5/8" for standard studio lights with 1/4-20 thread adapter, 42" diameter legs spread.

3086 \$47.95

For use indoors, you can add a set of Shepherd Casters.

3088 \$22.00

Bantam Weight Stand

A six foot light stand, very lightweight for its size and relative sturdiness. For use with small strobes and quartz lighting units. The mounting stud is 5/8" diameter. Closed length is 24-3/4", minimum extension is 32", weight 2 lbs.

3089 \$34.95

Order

Price

3077	Wall Boom	\$79.95
3083	Clip on metal cable hooks for 3082	2.10
3084	Adaptor to convert stand tips to accommodate 3/8" sockets	1.70
3085	Boom Assembly with adjustable arm counterbalance	84.95
3086	Model 251, Compact Stand, extends to 8'	47.95
3092	Plastic clip on cable clamps, set of 6	2.00
3093	Plastic clip on cable clamps, set of 4 (Large)	2.00
3095	Back light stand	24.00
3098	Water bag counterbalance	19.50
3100	Broncolor Adaptor	4.95
3101	5/8" Socket Converter	4.95
3102	Rapid Adaptor for 3/8" socket	5.95
3103	1/4-20 to Euro Thread	1.95
3104	Adjustable section for Back Light Stand	15.00
3105	Rapid Adaptor for 1/4-20 socket	5.95

CINE STANDS	Wind-Up 3	Wind-Up 2	Cine	Tall Cine	Cine-3
Order Code	3075	3070	3071	3072	3073
Nr of Sections	3	2	2	3	3
Folded Length*	68 7/8" (176cm)	59" (149cm)	47 1/2" (120cm)	61" (155cm)	51" (130cm)
Diameter of Base	50 3/4" (128cm)	50 4" (128cm)	46 1/2" (119cm)	39 4" (119cm)	46 1/2" (119cm)
Minimum Height*	63 1/2" (162cm)	53 5" (136cm)	47 1/2" (120cm)	57 1/2" (146cm)	56" (153cm)
Maximum Height*	147 3/4" (375cm)	98 4" (250cm)	90 1/2" (230cm)	149 1/2" (380cm)	128" (325cm)
Approx. Load Capacity	66 lbs (30kg)	88 lbs (40kg)	66 lbs (30kg)	55 lbs (25kg)	48 lbs (22kg)
Weight	43 lbs (19.5kg)	37 lbs (15.3kg)	14 1/2 lbs (6.7kg)	19.6 lbs (8.9kg)	15 1/2 lbs (6.9kg)
Casters Available	(included)	(included)	(included)	Use Nr 3081	Use Nr 3074
	\$420.00	\$360.00	\$135.00	\$140.00	\$130.00

*Without Casters

BOGEN PHOTO CORP.

100 South Van Brunt St.
PO Box 448
Englewood, NJ 07631
(201) 568-7771

QUARTZ STUDIO LIGHT OUTFITS



7220



7200



7240

Bogen 120 Quartz Studio Light Outfit

Order Code 7200

2-Bogen 7000 Studio Quartz Lights w/ Safety glass, 2-Barndoors for Bogen 7000, 2-600W DYS QH Bulbs, 2-6' Light Stands, 1-Compact Carrying Case. **\$409.95**

Bogen 185 Quartz Studio Light Outfit

Order Code 7210

2-Bogen 7000 Studio Quartz Lights w/ Safety glass, 1-Bogen 7050 Studio Quartz Light w/ Safety glass, 1-Barndoor for Bogen 7000, 2-600W DYS QH Bulbs, 1-Barndoor for Bogen 7050, 1-650W FAD QH Bulb, 2-6' Light Stands, 1-Carrying Case, 1-8' Light Stand. **\$699.95**

Bogen 190 Quartz Studio Light Outfit

Order Code 7220

1-Bogen 7000 Studio Quartz Light w/ Safety glass, 2-Bogen 7050 Studio Quartz Lights w/ Safety glass, 1-Barndoor for Bogen 7000, 1-600W DYS QH Bulb, 2-Barndoors for Bogen 7050, 2-650W FAD QH Bulbs, 1-6' Light Stand, 1-Carrying Case, 2-8' Light Stands. **\$789.95**

Bogen 180 Quartz Studio Light Outfit

Order Code 7230

3-Bogen 7000 Studio Quartz Lights w/ Safety glass, 3-Barndoors for 7000, 3-600W DYS QH Bulbs, 3-6' Light Stands, 1-Carrying Case. **\$609.95**

Bogen 195 Quartz Studio Light Outfit

Order Code 7240

3-Bogen 7050 Studio Quartz Lights w/ Safety glass, 3-Barndoors for Bogen 7050, 3-650W FAD QH Bulbs, 3-8' Light Stands, 1-Carrying Case. **\$884.95**

7000	Bogen 7000 Quartz Studio Light. Accepts 600W DYS QH Bulbs. Supplied with hand-grip and safety glass	\$79.95
7010	Barndoors for 7000	34.95
7015	Dichroic Filter for 7000	55.00
7016	Diffuser Filter for 7000	16.95
7025	600W DYS QH Bulb for 7000	18.60
7030	Compact Carrying Case for 7000	89.95
7050	Bogen 7050 Quartz Studio Light. Accepts 650W FAD, FBX (Frosted) or DWY (3400°) QH Bulbs. Supplied with quick release safety glass	\$149.95
7060	Barndoors for 7050	49.95
7065	Dichroic Filter for 7050	84.95
7066	Diffuser Filter for 7050	32.95
7075	650W FAD QH Bulb for 7050	17.80
7080	650W FBX QH Bulb for 7050	22.05
7085	Carrying Case for 7000 and /or 7050	129.95
7200	Bogen 120 Quartz Studio Light Outfit	\$409.95
7210	Bogen 185 Quartz Studio Light Outfit	699.95
7220	Bogen 190 Quartz Studio Light Outfit	789.95
7230	Bogen 180 Quartz Studio Light Outfit	609.95
7240	Bogen 195 Quartz Studio Light Outfit	884.95
0310	32" Reflective White Umbrella	26.00
0311	40" Reflective White Umbrella	36.00
0312	32" Reflective Silver Umbrella	40.00
0313	40" Reflective Silver Umbrella	55.00
0316	40" Reflective White Umbrella w/ Silver backing	69.00
0317	Feather-Lite Umbrella	52.00
0322	42" White Bowflecta	50.00
0323	42" Silver/ Matte Silver Bowflecta	50.00
0324	42" Silver/ Silver-Gold Bowflecta	50.00
3086	8 ft. Light Stand	47.95
3089	6 ft. Light Stand	34.95

4717 "F" South Mingo Road
Tulsa, OK 74146
(918) 665-6820

A—ALTMAN STAGE LIGHTING COMPANY, INC

BM—BARDWELL & MCALISTER INC.

EC—ELECTRO CONTROLS INC.

F—FREZZOLINI ELECTRONICS INC

GE—GENERAL ELECTRIC COMPANY

LL—LOWEL-LIGHT MANUFACTURING, INC

L—LEVITON INC

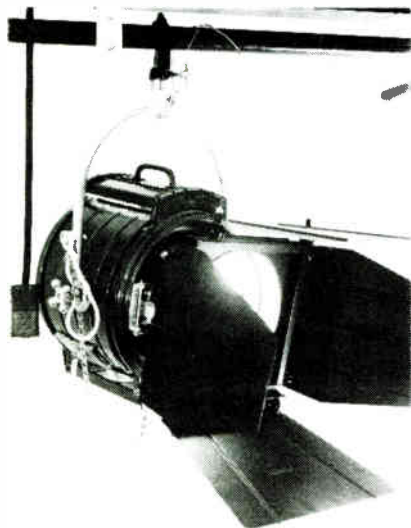
R—ROSCO LABORATORIES INC

SY—SYLVANIA (GTE PRODUCTS CORPORATION)

TH—THORN EMI LIGHTING

WB—WALTER S. BREWER COMPANY, INC.

KEY & BACK LIGHT



FRESNEL

This family of fresnels are the workhorses of the industry, providing the art in lighting for the realization of depth, modeling and to set the mood, which is so important for that interesting picture. All are focusing.

06000-BM	1000W, 6" BABY KEG FOCUSING FRESNEL with "C" Clamp and GPP Plug	277.09
06001-BM	MOTION PICTURE MODEL as above except with Stand Mount, 25' cable and inline 20A crush proof on/off switch and plug	264.99
58005-BM	4-leaf Barndoor	39.60
49143-BM	Gel/Diffusion Frame	19.00
49141-BM	Safety Cable	8.80
49144-BM	Scrim, single	6.60
49145-BM	Scrim, half single	6.60
49146-BM	Scrim, double	7.70
49147-BM	Scrim, half double	7.70
10004-BM	Snoot 2" dia. opening	16.50
10005-BM	Snoot 3" dia. opening	16.50
10006-BM	Snoot 4" dia. opening	16.50
06308-GE	Replacement-Socket, medium bi-post	48.00

RECOMMENDED LAMPS 120V
MEDIUM BIPOST BASE
2 1/2" L.C.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
EGN-TH	120	500	3200K	Clear	50.00
EGR-TH	120	750	3200K	Clear	70.00
EGT-TH	120	1000	3200K	Clear	75.00

14006-BM	2000W, 10" JUNIOR FOCUSING FRESNEL with "C" Clamp and GPP Plug	429.55
14005-BM	MOTION PICUTRE MODEL as above, except with stand mount, 25' cable and fixture mounted 20A switch and plug	441.65
58014-BM	4-leaf (8 way barndoors)	79.20
49369-BM	Gel/Diffusion Frame	20.00
49141-BM	Safety Cable	8.80
10012-BM	Snoot 6" dia. front opening	68.20
10013-BM	Snoot 8" dia. front opening	68.20
10014-BM	Snoot 10" dia. front opening	68.20
49148-BM	Scrim, single	8.00
49149-BM	Scrim, half single	8.00
49150-BM	Scrim, double	10.00
49151-BM	Scrim, half double	10.00
09343-BM	Replacement Socket Brass, terminal side	12.00
09344-BM	Replacement Socket Brass, clamp side	9.50

RECOMMENDED LAMPS 120V
MOGUL BIPOST BASE
5" L.C.L. TUNGSTEN-HALOGEN QUARTZ

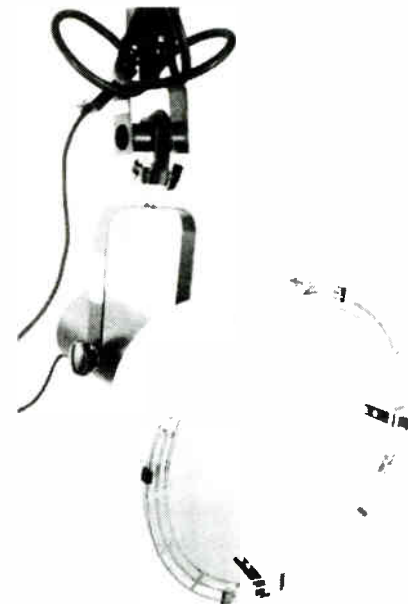
Ansi Code	Volts	Watts	Temp.	Type	Price
CVV-TH	120	1000	3200K	Clear	92.00
CXZ-TH	120	1500	3200K	Clear	115.00
CYX-TH	120	2000	3200K	Clear	125.00

19005-BM	5000W, 13" SENIOR FOCUSING FRESNEL with "C" Clamp and 60A GPP plug	771.65
19004-BM	MOTION PICTURE MODEL as above except stand mount 25' cable and fixture mounted 20A switch and plug	819.50
58022-BM	4-leaf (8 way barndoors)	132.00
49391-BM	Gel/Diffusion Frame	23.00
49141-BM	Safety Cable	8.80
10022-BM	Snoot 8" dia. front opening	85.80
10023-BM	Snoot 10" dia. front opening	85.80
10024-BM	Snoot 12" dia. front opening	85.80
49152-BM	Scrim, single	12.10
49153-BM	Scrim, half single	12.10
49154-BM	Scrim, double	13.20
49155-BM	Scrim, half double	13.20

RECOMMENDED LAMP 120V MOGUL BIPOST
BASE 6 1/2" L.C.L.
TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
DPY-TH	120	5000	3200K	Clear	535.00

BASE & FILL LIGHT



SCOOP

These fixtures give the proper light source and intensity to allow the lens aperture to operate at a desired setting to create that brilliant picture with creative depth and sharpness. All are focusing for absolute control.

02120-WB	14", 1000W FOCUSING SCOOP with "C" Clamp and GPP plug	235.00
01120-WB	MOTION PICTURE MODEL as above except with stand mount, 25' cable and inline 20A crush proof on/off switch and plug	245.00
01129-WB	Gel/Diffusion Frame	35.00
02710-WB	Safety Cable	6.50
08806-L	Replacement Socket, medium pre-focus base	15.00

RECOMMENDED LAMP 120V
MEDIUM PREFOCUS BASE
3 1/2" L.C.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
EGC/EGD-GE	120	500	3200K	Clear	64.80
EGF-GE	120	750	3200K	Clear	72.70
EGK-TH	120	1000	3200K	Frosted	70.00

02124-WB	14", 2000W FOCUSING SCOOP with "C" Clamp and GPP Plug	230.00
01124-WB	MOTION PICTURE MODEL as above except with stand mount, 25' cable and inline 20A crush proof on/off switch and plug	245.00
01129-WB	Gel/Diffusion Frame	35.00
02710-WB	Safety Cable	6.50
08808-L	Replacement Socket, mogul screw base	17.50

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WALTER S. BREWER CO., INC.

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RECOMMENDED LAMP 120V

MOGUL SCREW BASE

5/4 L.C.L. TUNGSTEN-HALOGEN QUARTZ

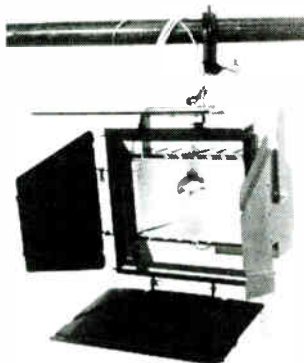
Ansi Code	Volts	Watts	Temp.	Type	Price
1500Q/					
CL/48-SY	120	1500	3200K	Frosted	175.38
BWG-TH	120	2000	3200K	Frosted	140.00

02135-WB	18"	2000W	FOCUSING SCOOP	with "C" Clamp and GP Plug	255.00
01135-WB			MOTION PICTURE MODEL	as above except with stand mount, 25' cable and inline 20A crush proof on off switch and plug	265.00
01139-WB			Gel/Diffusion Frame		40.00
02710-WB			Safety Cable		6.50
08808-L			Replacement Socket, mogul screw base		17.50

RECOMMENDED LAMP 120V MOGUL SCREW BASE

9/2" L.C.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
DSE-GE	120	1000	3200K	Frosted	50.00
DSF-GE	120	1500	3200K	Frosted	60.00
BWG-TH	120	2000	3200K	Frosted	140.00



BROAD

48007-BM	1000W FOCUSING SINGLE BROAD	with "C" Clamp and GPP Plug	236.50
48006-BM	MOTION PICTURE MODEL	as above except with stand mount, 25' cable and fixture mounted 20A switch and plug	236.50
48015-BM	4-Way Barndoor		63.80
48013-BM	Gel/Diffusion Frame		14.30
49141-BM	Safety Cable		8.80
08815-L	Replacement Socket (pair), recessed single contact		11.00/each

RECOMMENDED LAMPS 120V

DOUBLE ENDED

4-1/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
FDN-TH	120	500	3200K	Frosted	31.00
EMD-TH	120	750	3200K	Frosted	40.00
FHM-TH	120	1000	3200K	Frosted	35.00

48007/15-BM	1500W FOCUSING SINGLE BROAD	with "C" Clamp and GPP Plug	236.50
48006/15-BM	MOTION PICTURE MODEL	as above except with stand mount, 25' cable and fixture mounted 20A switch and plug	236.50
48015-BM	4-way Barndoor		63.80
48013-BM	Gel/Diffusion Frame		14.30
49141-BM	Safety Cable		8.80
08815-L	Replacement Socket (pair), recessed single contact		11.00/each

RECOMMENDED LAMPS 120V

DOUBLE ENDED

6-9/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
FGV-GE	120	1000	3200K	Frosted (Disc)	
FGT-GE	120	1500	3200K	Frosted	72.44

STUDIO LIGHTS



LIGHT HANGER

WBC manufactures the only light hanger made in the USA that is adjustable from the studio floor. Extends 5', 8', 10', & 15'. Supports 0-100 lbs.

02740-WB	*Floor adjustable telescoping hanger, extends 5', supports 0-100 lbs.	525.00
02742-WB	*Floor adjustable telescoping hanger, extends 8', supports 0-100 lbs.	535.00
02744-WB	*Floor adjustable telescoping hanger, extends 10', supports 0-100 lbs.	545.00
02746-WB	*Floor adjustable telescoping hanger, extends 15', supports 0-100 lbs.	555.00
02750-WB	Battery operated motor assembly with activator pole and battery charger	295.00
02752-WB	5 ft. extension cable	**41.65
02755-WB	8 ft. extension cable	**44.35
02757-WB	10 ft. extension cable	**46.15
02760-WB	15 ft. extension cable	**50.65

Note: *Includes stirrup, safety cable and other needed accessories.

**Add \$20.00 per cable for NEMA L520 Twist lock



SOFT LIGHT

Used for virtually shadowless fill light and base light for smaller subjects. Fabricated from aluminum for easy movement.

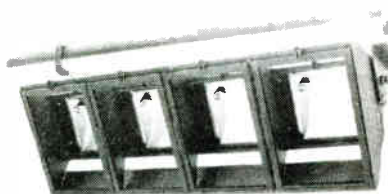
01185-WB	1000/4000W FEATHERLITE SUPER SOFT-LIGHT with 4, 20A fixture mounted switches, 1/2" stud-stand mount, and two 20A pigtails with Locking Pin Plugs.	750.00
04074-WB	20A, 25' cables with female 120V pin plug (2 required)	53.25
01186-WB	Gel/Diffusion Frame	60.00
49100-BM	"C" Clamp	26.40
08815-L	Replacement Socket (pair), recessed single contact	11.00/each
08902-L	Replacement Switch	8.00

RECOMMENDED LAMP 120V DOUBLE ENDED

BASE 4-1/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
FCM-TH	120	1000	3200K	Clear	32.00

CYCLORAMA AND BACKGROUND LIGHTS



CYC LIGHTS

These units are available in a variety of configurations for up to 4 color cyclorama, background, set illumination and color blending. Grid or floor mounting are available with a full range of mounting hardware for any type of studio installation requirements. (Fixtures for single and four light systems listed. Other configurations available upon request.)

25013-BM	ONE LIGHT CYC LIGHT	1000W with GPP Plug	141.90
25013/15-BM	ONE LIGHT CYC LIGHT	1500W with GPP Plug	141.90
25050-BM	Extended Holder, One Light		50.00
25063-BM	"C" Clamp and Yoke Hanger Assembly for One Light Cyc		40.70
02208-WB	"C" Clamp and Yoke Hanger Assembly for Two One Light Cycs (Used in 4-circuit system)		45.00

25051-BM	Gel Frame		18.70
49141-BM	Safety Cable (1 required)		8.80
25018-BM	FOUR LIGHT, FOUR CIRCUIT CYC LIGHT	1000/4000W with GPP Plug	284.90
25018/15-BM	FOUR LIGHT, FOUR CIRCUIT CYC LIGHT	1500/600W with GPP Plug	284.90
25050-BM	Extended Holder, One Light		50.00
25060-BM	Extended Holder, Three Light		77.00
25053-BM	"C" Clamp and Hanger Assembly (Pair)		42.90
25051-BM	Gel Frame (4 required)		18.70
49141-BM	Safety Cable (1 required)		8.80
08815-L	Replacement Socket (pair), recessed single contact.		11.00

RECOMMENDED LAMPS 120V

DOUBLE ENDED

4-1/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ (Use with 1000W Version Only)

Ansi Code	Volts	Watts	Temp.	Type	Price
FDN-TH	120	500	3200K	Frosted	31.00
EMD-TH	120	750	3200K	Frosted	40.00
FHM-TH	120	1000	3200K	Frosted	35.00

RECOMMENDED LAMPS 120V

DOUBLE ENDED

6-9/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ (Use with 1500W Version Only)

Ansi Code	Volts	Watts	Temp.	Type	Price
FGV-GE	120	1000	3200K	Frosted (Disc.)	
FGT-GE	120	1500	3200K	Frosted	72.44

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WALTER S. BREWER CO., INC.

4717 "F" South Mingo Road
Tulsa, OK 74146
(918) 665-6820

STUDIO LIGHTS/KITS

EFFECTS PROJECTORS



FOLLOW SPOT

Has six color changers and dowsler, framing shutters, iris, variable focus, stand with casters, 25' cable, fixture mounted 20 amp switch and blower for gels and lamp.

02642-A FOLLOW SPOT **900.00**
08800-L Replacement Socket, medium two pin base **15.00**



ELLIPSOIDAL

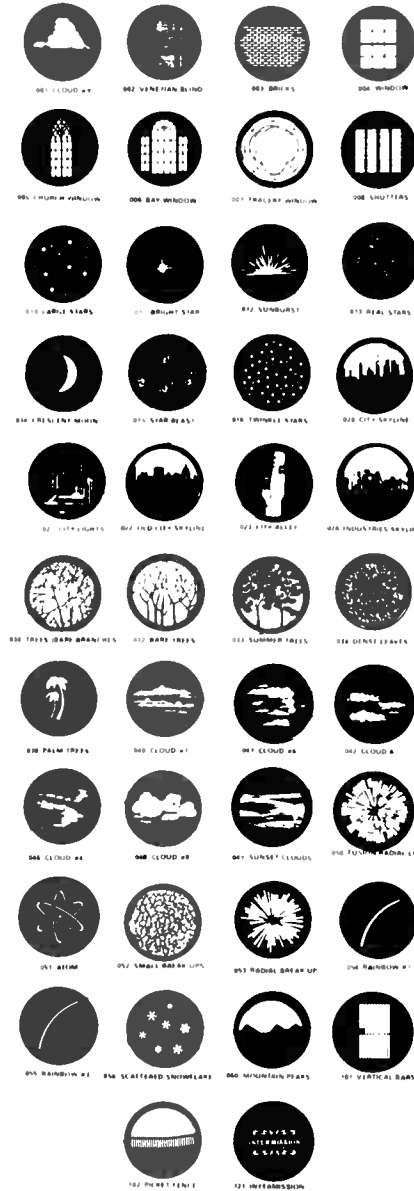
Used for background special effect. Will project rectangles, triangles, almost any combination of straight edges. Also, will project patterns. The ellipsoidal can be purchased with a iris to control the diameter of the beam.

02612-A 6" x 9" Ellipsoidal **240.00**
02616-WB 6" x 12" Ellipsoidal **240.00**
02621-A 6" x 16" Ellipsoidal **240.00**
02624-A ZOOM Ellipsoidal, 1000W, 20° to 40° beam angle **380.00**
* A modified by WB

01411-WB MOTION PICTURE ADDER for stand mounting, 25' cable with inline 20A crush proof on/off switch and Parallel Blade Plug **25.00**
02632-A Gel Frame **2.50**
02635-A Pattern Holder **8.00**
02636-A Iris **50.00**
09608-A Set of 8 Patterns **18.00**
09609-WB Set of 10 Designer Patterns **90.00**
02710-WB Safety Cable **6.50**
08800-L Replacement Socket, medium two pin base **15.00**

RECOMMENDED LAMP 120V
MEDIUM TWO-PIN
BASE 2 3/8" L.C.L.
TUNGSTEN-HALOGEN QUARTZ

Ansi Code Volts Watts Temp. Type Price
FEL-TH 120 1000 3200K Clear 52.00
(For both Follow Spot and Ellipsoidal)



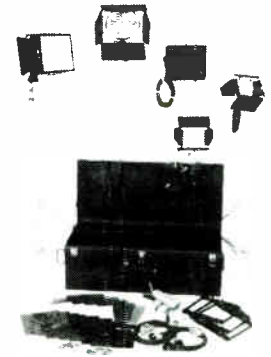
ELLIPSOIDAL DESIGNER PATTERNS

9.00

With over 100 precision patterns to choose from you can accent your picture theme or mood not possible any other way so inexpensively. These patterns will fit any standard brand of ellipsoidal fixture. When necessary, the special heat resistant metal can be cut to size with scissors to fit most pattern holders.

CUSTOM PATTERNS from camera ready art (first pattern) **90.00**

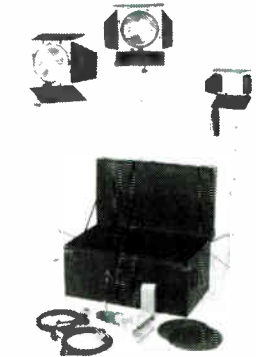
LIGHTING KITS



01720-WB PORTA-KIT 6000

Portable "open face" fixtures designed for larger set areas giving maximum footcandles and the ability to diffuse, color the light with field and beam control.

- 2—SLIMLINE II 1000/2000W "Punch Light" with integral (4) way barndoor and 10' power cable with crush proof inline switch and plug
- 2—Accessory Holders (Attaches to Barndoor)
- 2—Gel Diffusion Frame.
- 2—FEY 2000W, 3200K Quartz Lamp
- 3—MINI MAC 1000W "Base Light with integral (4) way barndoor and 25' power cable with inline switch and plug.
- 3—Accessory Holders (attaches to barndoor).
- 3—Gel Diffusion Frame.
- 3—FHM 1000W, 3200K Quartz Lamp
- 4—Medium Weight, Hi-riser Stand Folded 35 3/4", extended 127"
- 2—Gaffers Grip
- 1—Rosco Assortment-Roscolux: 3200K to daylight conversion blue, red, green and blue primary colors, amber and Tough Spun Diffusion Material.
- 1—Rugged Case-partitioned, roomy and light-weight **2350.00**



01730-WB PORTA-KIT 4000

Use as kit 6000 when not as many fixtures are needed and without maximum beam diffusion or colored light is needed.

- 2—SLIMLINE II 1000/2000W "Punch Light" with integral (4) way barndoor and 10' power cable with crush proof inline switch and plug.
- 2—Double Scrim.
- 2—FER 1000W Quartz Lamp.
- 1—MINI MAC 1000 with integral (4) way barndoor and 25 ft. power cable with inline switch and plug.
- 1—Double Scrim.
- 1—FHM Frosted Quartz Lamp.
- 1—Gaffers Grip
- 3—Featherweight Hi-riser Stand, folded 30", extended 103"
- 1—Rugged Case-Partitioned, roomy and light-weight. **1350.00**

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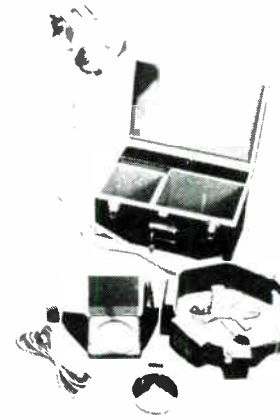
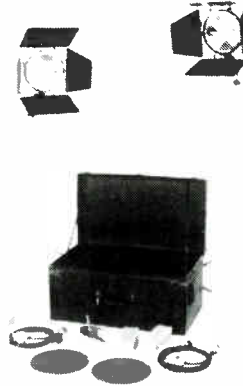
4717 "F" South Mingo Road
Tulsa, OK 74146
(918) 665-6820

LIGHTING KITS

01740-WB SLIMLINE II 2000 KIT

Can be used for over all base light. We recommend using with Mini Mac 1000 kit for more versatility. The double kit system is easier to move from location to location.

- 2—SLIMLINE II 1000 2000 with integral (4) way barndoor and 10 ft. power cable with crush-proof inline switch and plug.
- 2—Double Scrim.
- 2—FER 1000W Quartz Lamp.
- 2—FEY 2000W Quartz Lamp.
- 1—Gaffers Grip
- 2—Featherweight High Riser Stand, Folded 30" extended 103"
- 1—Rugged Case-Partitioned, roomy and light-weight. **1250.00**



01610-WB SUPER 600 "ENG" KIT I

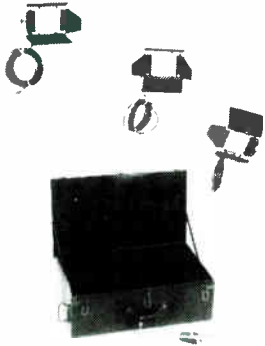
Designed for use when 120V AC is not available. The power is a 30 volt DC battery belt which generates a 250W lamp. Both power cords and lamps are included in the kit. Gives more light output per watt than any competitive fixture.

- 1—Frezzi 600, 30 volt DC 125 Volt AC fixture
- 1—120 Volt Cable, 8 ft. with on off switch and plug
- 1—30 volt cable, 8 ft. with on off switch and plug
- 1—Accessory Holder
- 1—Rotating Barndoor
- 1—Daylight Glass Conversion Filter, 3200K to 5400K.
- 1—Hand Grip
- 1—Micro-Featherweight Stand, Folded 18 1/2", extended 78"
- 1—30 Volt "4ah Battery Belt (250W-30 min.) w/charger cable.
- 1—DYS, 600 Watt "3200K Quartz Lamp.
- 1—DYG, 250 Watt "3400K Quartz Lamp.
- 1—ENG Kit I Carrying Case **965.00**

01750-WB MINI MAC 1000 KIT

As described above but generally are used more as a base light and the Slimline II as the key light. They also make excellent copy board lights.

- 3—MINI MAC 1000 with integral (4) way barndoor and 25 ft. power cable with inline switch and plug.
- 3—Double Scrim.
- 3—FHM 1000W Frosted Quartz Lamp.
- 1—Gaffers Grip
- 3—Featherweight High Riser Stand, Folded 30", extended 103"
- 1—Rugged Case-Partitioned, roomy and Light-weight **1055.00**



01760-WB MINI MAC 650 KIT

Same rugged fixtures as above but smaller in size.

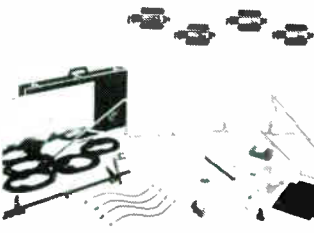
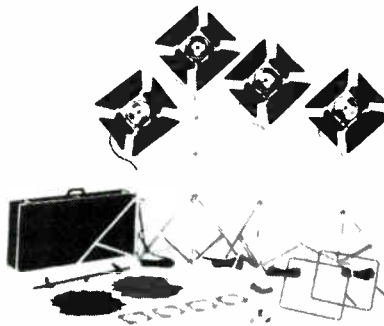
- 3—MINI MAC 650 with integral (4) way barndoor and 25 ft. power cable with inline switch and plug.

- 3—Double Scrim.
- 3—FBX 650W Frosted Quartz Lamp
- 1—Gaffers Grip
- 3—Featherweight High Riser Stand, Folded 30", extended 103"
- 1—Rugged Case-Partitioned, roomy and Light-weight **1000.00**

D2-94-LL DP 4 KIT

Light weight kit that is very versatile and unique. Four reflectors can be interchanged to vary the beam pattern from a soft wide angle to a narrow beam long throw fixture.

- 4—dp 1000 fixtures with #1 reflector and 16 ft power cable and inline switch.
- 4—dp barndoors
- 4—ks stands
- 1—dp lampak
- 1—carrying case, partitioned and light weight. **1375.00**



TI-94M-LL T 4 KIT

Versatile, light weight that gives a very wide spread of light or (by moving the reflector doors into the light beam) gives a concentration of light which can be used for bounce light. The kit has

a large selection of accessories.

- 4—tota 1000W fixtures with 16 ft power cable and integral two-leaf reflecting doors.
- 1—tota-brella
- 4—tota-frames
- 2—assorted gels
- 1—lightflector
- 4—tota-flags
- 1—tota-flector
- 4—flexi-shafts
- 1—tota-tatch
- 4—omni-stands
- 1—tota-mount
- 1—tota-clamp
- 1—large space clamp
- 1—gaffer tape
- 1—tota-lampak
- 1—case **1290.00**

01640-WB SUPER 600 "ENG" KIT III

Everyone in TV or photo lighting production must have at least one ENG KIT III. Very efficient light output and light weight.

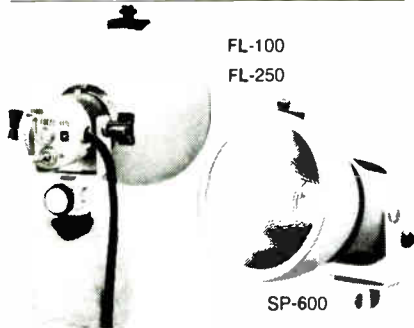
- 3—Frezzi 600, 30 Volt DC, 125 Volt AC Fixture.
- 3—120 Volt Cable, 8 ft. with on off switch and plug.
- 3—DYS 600W Quartz Lamp
- 3—Accessory Holder
- 3—Four Leaf Barndoor.
- 2—Scissor Mounts.
- 3—Ultra Featherweight Stands, Folded 25 1/4", extended 83 1/2"
- 1—25' Extension Cable, 3-Way
- 1—Rugged Case, Partitioned, Roomy, Light weight **975.00**

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(918) 665-6820

PORTABLE LIGHTING



KEY AND BACKLIGHTING

AC/DC Power—You need "FREZZI" high output lights, plus portable power for most all ENG production.

- FL-100-F FREZZI LIGHTHEAD WITH 11.5 Volt 1000W FAV Quartz Lamp, Handle Power Cable with Plug **195.00**
- FL-250-F FREZZI LIGHTHEAD WITH 30 Volt DC 250W FBV Quartz Lamp, Handle, Power Cable with Plug. (Light-head accepts 150 or 350W Quartz Lamps) **195.00**
- SP-600-F FREZZI SUPER 600 Fixture Only (No Lamp or Cable) **165.00**
- CABLES**
- C12-F 12 Volt Cable, 8 ft. with On/Off Switch **32.00**
- C30-F 30 Volt Cable, 8 ft. with On/Off Switch **32.00**
- C120-F 120 Volt Cable, 8 ft. with On/Off Switch **17.00**
- C120EX-WB 120 Volt Extension Cable, 25 ft. 3 Way **18.50**
- FIXTURE ACCESSORIES**
- FLAH-101-F Accessory Holder for Barndoors Plus Scrim & Dichroic Filter **29.00**
- FLBD-102-F Rotating Barndoors, Mounts in Accessory Holder **36.00**
- 01005-WB Single Scrim, Mounts in Accessory Holder **8.50**
- 01006-WB Double Scrim, Mounts in Accessory Holder **8.50**
- 01007-WB Dichroic Filter, Mounts in Accessory Holder **85.00**
- FLDF-101-F Dichroic Filter Swing Away **88.00**
- FLS-101-F Scrim Swing Away **40.00**
- FLH-101-F Hand Grip **12.00**



2339-BM Scissor Clip with 1/2" Stud, Used to Suspend Light from Drop Ceiling. Allows dressing of power cable along drop ceiling. **6.00**

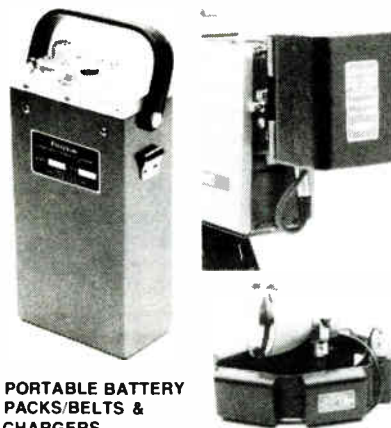


2339-1-BM Scissor Hook, Used to Dress Light Cable Across Drop Ceiling **6.00**

- 01510-WB Micro-Featherweight High Riser Light Stand, Folded 18 1/2", Extended 78" **53.00**
- 01512-WB Ultra-Featherweight High Riser Light Stand, Folded 25 1/4", extended 83 1/2" **67.00**
- 01980-WB Eng Kit 1 Carrying Case **90.00**
- 01982-WB Eng Kit 3 Carrying Case **100.00**
- LAMPS**
- EYL-GE 1000 Watt (w/ 3300K 12 Volt (50 hrs.) **13.68**
- DYG-GE 250 Watt (w/ 3400K 30 Volt (15 hrs.) **27.80**
- EKB-GE 420 Watt (w/ 3200K 120 Volt (75 hrs.) **36.86**
- DYS-TH 600 Watt (w/ 3200K 120 Volt (75 hrs.) **28.00**
- EKD-GE 650 Watt (w/ 3400K 120 Volt (25 hrs.) **36.34**
- DYR-220-GE 650 Watt (w/ 3200K 220 Volt (50 hrs.) **33.50**

MOUNTS

- FLCM-101-F Camera Mount, 1/4-20 Screw In **12.00**
 - FLCM-101A-F** Camera Mount, 10-32 Screw In **12.00**
 - FLCM-101B-F** Camera Mount, 4MM Screw-In **12.00**
 - FLCM-102-F Dove Tail Mount **45.00**
 - LS-1-F Lite-Stud, 3" x 1/2", 1/4-20 **10.00**
 - LS-2-F Lite-Stud, 3" x 1/2", 10-32 **10.00**
 - LS-3-F Lite-Stud, 3" x 1/2", 5MM **11.00**
 - LS-4-F Lite-Stud, 3" x 1/2", 6MM **11.00**
 - LS-5-F Dove-Tail Assembly and Lite-Stud **49.00**
 - LS-21-F Lite Stud for FP-21/22 **28.00**
 - LS-79-F Lite Stud for HL-9 **17.00**
 - LS-83-F Lite-Stud for HL-83 **28.00**
 - LS-700-F Lite-Stud for XC-700 **17.00**
 - LSM-21-F Lite Mic Holder for FP-21/22 **49.00**
 - LSM-79-F Lite Mic Holder for HL-79 **49.00**
 - LSM-83-F Lite Mic Holder for HL-83 **49.00**
- Special Mounts Available for Most Video Cameras



PORTABLE BATTERY PACKS/BELTS & CHARGERS

- Frezzolini fixture and camera batteries.
- FBP-12-4L-F 12 Volt @ 4AH Battery Pack (100W-20 Min.) **395.00**
 - F-30-EC-F 30 Volt @ 4AH Battery Belt (250W-30 Min.) **545.00**
 - F-30-EXFA-F 30 Volt @ 4AH Battery Belt (250W-30 Min.) **595.00**
 - EC-30-F 30 Volt @ 4AH Battery Pack (250W-30 Min.) **595.00**
 - FTC-12-F 12 Volt Trickle Charge (14 hrs.) **80.00**
 - BC-77-U-F 12 Volt Fast Charger (1 hr.) **395.00**
 - C/D-F 30 Volt Fast Charger (1 hr.) **395.00**
 - FLCC-101-F Super 650 AC Kit Carrying Case **125.00**
 - FLCC-102-F Super 650 AC Kit Shipping Case **295.00**
 - FLCC-103-F 30 Volt Kit Carrying Case **140.00**
 - FLCC-104-F 12 Volt Kit Carrying Case **140.00**

PORTABLE LIGHTING

BATTERY PACKS

- BP-12-F 12V (w/ 4ah) **455.00**
- BP-13-F 13.2V (w/ 4ah) **475.00**
- BP-14-F 14.4V (w/ 4ah) **495.00**
- BP-77-F 7.2V (w/ 4ah) **495.00**
- BP-122-F 12V (w/ 2ah) **275.00**
- BP-142-F 14.4V (w/ 2ah) **295.00**
- FBP-20-F 12V (w/ 2ah) **210.00**
- FBP-44-F 12V (w/ 2ah) **210.00**
- FBP-60-F 12V (w/ 2ah) **210.00**
- FBP-90-F 12V (w/ 4ah) **275.00**
- FBP-90-FC-F 12V (w/ 4ah) **330.00**
- FBP-12-4B-F 12V (w/ 4ah) **395.00**
- FBP-12-4L-F 12V (w/ 4ah) **395.00**
- FBP-14-43-F 14.4V (w/ 4ah) **425.00**
- EC-30-F 30V (w/ 4ah) **595.00**
- AC ADAPTERS**
- RPS1-F On-Board, 40 Watts **515.00**
- RPS2-F Dual Channel Adapter Charger **895.00**
- RPS3-F On-Board 50 Watts **595.00**

BATTERY BELTS

- F-12-EXFA-F 12V (w/ 6ah) **475.00**
- F-12-77-F 6.0V (w/ 6ah) **475.00**
- F-14-EXFA-F 14.4V (w/ 6ah) **495.00**
- F-30-EC-F 30V (w/ 4ah) **545.00**
- F-30-EXFA-F 30V (w/ 4ah) **595.00**

FREZZI BATTERY MOUNTING BRACKETS & ACCESSORIES

- BHM-F Belt Bracket **95.00**
- FCB-103-F For FBP-12-4B/4L, FBP-14-4E **90.00**
- HM76A-F TK-76A **155.00**
- HM76B/C TK-76B/C **155.00**
- HM77-F HL-77 **148.00**
- HM300-F BVP-300/330 **105.00**
- HM2000-F Ky-2000/2700 **105.00**
- HM6000-F On-Board to DXC 1800/6000 **198.00**
- HM90-F BP-90 to OnBrd **198.00**
- ISM90-F Side Mt. HI-79 **110.00**
- RM6000-F BP-90 to DXC-1800/6000 **198.00**
- HMBVV1-F BETACAM **105.00**
- HMM3-F DXC-M3 **145.00**
- LP90-F Leather Pouch **38.00**

LEATHER BELT

FLBB-101-F For FBP-124B/4L & FBP-14-4E **28.00**

BATTERY CHARGERS

- BC-77U-F 12-14V W/Cable **395.00**
- BC-77UB-F 12-14V W/Side BKT **395.00**
- BC-30C/D-F 30V W/Cable **395.00**

FAST CHARGER ADAPTER CABLES

- HL-F To BP-122/142 **30.00**
- HS-F To FBP-20-44/60 & FBP-12-4B/4L **30.00**
- HV-F To FBP-90-FC **30.00**
- HX-F To FBP-14-4E **30.00**

OVERNIGHT TRICKLE CHARGERS

- BC-1225-F For FBP-20/44/60 **80.00**
- BC-1245-F For BP-90 **80.00**
- CR-1-F Current Regulated **105.00**
- FTC-12-F For BP-12 **80.00**
- FTC-14-F For BP-14 **80.00**
- FTC-14X-F For FBP-14-4E **80.00**
- FTC-122-F For BP-122 **90.00**
- FTC-142-F For BP-142 **90.00**

MULTIPLE BATTERY CHARGING STATIONS

- MBC-2-F Fast Charges (5) Batteries* Plus (8) Inter-Mixed VTR Batteries Overnight **2,400.00**
- MBC-4-F Fast Charges (5) Batteries* Plus (8) BP-90 Type or other Single Type VTR Battery Packs Overnight **2,090.00**
- MBC-4A-F Fast Charges (5) Batteries Only **1,595.00**
- MBC-2/4C-F Deluxe Shipping Case **375.00**
- *Fast Charge Adapter Cables Optional
- MBC-5-F Charges (8) Sony BP-90 Type Battery Packs Overnight **395.00**

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DP LIGHT & REFLECTORS

DP light and reflectors make this 1000W very versatile. There are many accessories that compliment this fixture. Ask for a complete brochure.



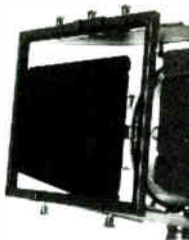
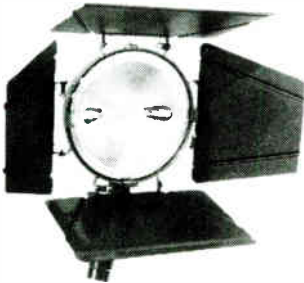
D2-10-LL dp light	145.00
D2-15-LL #1 reflector	13.00
D2-17-LL #3 reflector	13.00
D2-18-LL #4 reflector	13.00

DP LIGHT CONTROLS

D2-20-LL complete barndoor	60.00
D2-21-LL barndoor frame	25.00
D2-22-LL rectangular leaf	13.00
D2-23-LL triangular leaf	13.00
D2-50-LL diffused glass	32.50
D2-51-LL dichroic filter	107.50
D2-52-LL clear glass	28.50
D2-53-LL snoot	36.50
D2-54-LL full scrim	14.50
D2-55-LL half scrim	14.50
D2-56-LL graduated scrim	17.00
D2-57-LL cookaloris	14.50
D2-24-LL dp frame	38.50

RECOMMENDED LAMP 120V MEDIUM TWO-PIN BASE

2 3/8" L.C.L. TUNGSTEN-HALOGEN QUARTZ					
Ansi Code	Volts	Watts	Temp.	Type	Price
EHC-TH	120	500	3150	Clear	52.00
EHF-TH	120	750	3200	Clear	58.00
FEL-TH	120	1000	3200	Clear	52.00
FCV-TH	120	1000	3200	Frosted	64.00



Heavy duty key light type fixture with excellent open face barndoor capacity. The fixture is very compact and the 4 leaf barndoor is integral.

29001-BM	SLIMLINE II 1000/2000W with integral (4) Leaf Barndoors, "C" Clamp and Plug	210.10
29000-BM	MOTION PICTURE MODEL as above except with stand mount, 25' cable and inline 20A Crush proof on/off switch with 20A Twist Lock Plug	214.50
04113-BM	U Ground Pigtail (PBG)	18.00
48015-BM	Four-Leaf Barndoor	63.00
01018-WB	Gel Frame	13.00
01017-WB	Gel Frame Holder (For Use on Barndoor to extend Gel Frame)	52.00
49304-BM	Scrim (10" Stainless Steel) Single	8.00
49305-BM	Scrim (10" Stainless Steel) Double	10.00

RECOMMENDED LAMPS 120V DOUBLE ENDED 5/8"

M.O.L. TUNGSTEN-HALOGEN QUARTZ					
Ansi Code	Volts	Watts	Temp.	Type	Price
FER-GE	120	1000	3200K	Clear	68.46
DVV-SY	120	1500	3200K	Clear	(Disc.)
FEY-TH	120	2000	3200K	Clear	110.00

PAR LAMP HOLDERS

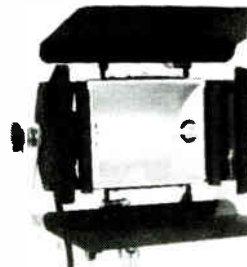
Used for lighting of arenas, sports events, churches, etc. More light per 1000W than any other quartz fixture.

02031-WB	1000 PAR 64 WHITE, includes "C" Clamp and Color Frame	135.00
02032-WB	1000 PAR 64 BLACK, includes "C" Clamp and Color Frame	135.00
02033-WB	1000 PAR 64 WHITE, with Canopy, Gel Frame, and No Plug	120.00
02034-WB	1000 PAR 64 BLACK, with Canopy, Gel Frame, and No Plug	120.00
01034-WB	MOTION PICTURE ADDER For Stand Mounting, 25' Cable with Inline 20A Crush Proof On/Off Switch and Plug	25.00
01035-WB	4-Way Barndoor	52.00
01036-WB	Color Frame	10.00
02710-WB	Safety Cable	6.50
02705-WB	"C" Clamp	19.80
08820-L	Replacement Socket, extended Mogul end prong	8.00

RECOMMENDED LAMPS 120V SINGLE ENDED, EXTENDED MOGUL END PRONG BASE TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
FFN-GE(VNS)	120	1000	3200K	Clear	96.94
FFP-GE(NS)	120	1000	3200K	Clear	96.94
FFR-GE(MF)	120	1000	3200K	Clear	96.94
FFS-GE(WF)	120	1000	3200K	Clear	96.94
FGM-GE(NS)	120	1000	5200K	Clear	224.50
FGN-GE(MS)	120	1000	5200K	Clear	224.50

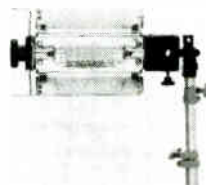
BASE AND FILL LIGHT



Excellent heavy duty base type light. Great for copy board lighting.

18003-BM	MINI MAC 1000 with integral 4-leaf Barndoor, "C" Clamp and Plug	141.90
18001-BM	MOTION PICTURE MODEL as shown above except with stand mount, 25' cable and inline 15A on/off switch and Plug	141.90
01112-WB	Extended Holder	52.00
01113-WB	Gel Frame	13.00
49141-BM	Safety Cable	8.80

(See Lamp Listing below Set Lights)



Lots of light and an even wide angle beam. Has a semi-hard light pattern that can be concentrated by the reflector doors for bounce light.

STUDIO LIGHTS

T1-10-LL	Tota-Light 1000 with Reflecting Doors	107.00
T1-20-LL	Gel/Difusion Frame	24.50
T1-80-LL	16', 120V Power Cable with Inline On/Off Switch and Plug	22.50

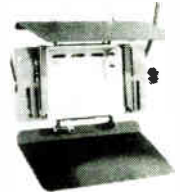
(See Lamp Listing below Set Lights)



For Soft almost shadowless light. Folds to take on location.

S2-10-LL	Soft Light 2-2000 with 14' Cable with Inline On/Off Switch	275.00
S2-20-LL	Two Leaf Barndoor	72.50
S2-30-LL	Replacement Reflector Shell	68.00

(See Lamp Listing below Set Lights)



SET AND BACKGROUND LIGHT

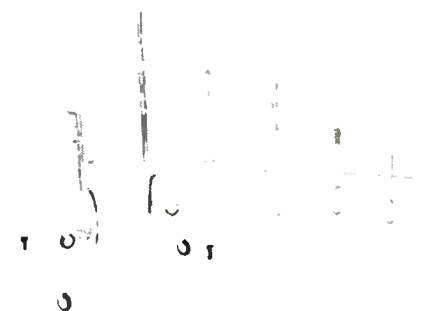
Heavy duty wash light for backgrounds, sets or curtains up to 9' in height. They work 4 1/2' from background service eliminating spill light on subject.

27001-BM	MINI SET 1000 with Integral 2-Leaf Barndoors, "C" Clamp and Receptacle	141.90
49141-BM	Safety Cable	8.80
27000-BM	MOTION PICTURE MODEL as above except with Stand Mounts, 25' Cable and Inline 15A On/Off Switch and Plug	141.90

RECOMMENDED LAMPS 120V DOUBLE ENDED 4 1/16" M.O.L. TUNGSTEN-HALOGEN QUARTZ

Ansi Code	Volts	Watts	Temp.	Type	Price
FDN-TH	120	500	3200K	Frosted	31.00
EMD-TH	120	750	3200K	Frosted	40.00
FHM-TH	120	1000	3200K	Frosted	35.00
FCM-TH	120	1000	3200K	Clear	32.00

(Clear Lamp Used with Soft Light)



STAND FAMILY

This family of stands will handle most fixture mounting. There are many more stands available.

01510-WB	MICRO-FEATHERWEIGHT 18 1/2" extended 78"	53.00
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01512-WB	ULTRA-FEATHERWEIGHT	folded 25' 1/2", extended 83' 1/2"	70.00
01514-WB	FEATHERWEIGHT	folded 30", extended 103"	82.50
01516-WB	MEDIUM WEIGHT	folded 35' 1/2", extended 127"	115.00



01517-WB Caster Adapters with Brakes for 01516-WB (Set of 3) **40.00**

63006-BM	STUDIO STAND	folded 47", extended 142' 1/2"	218.35
63003L-BM	STUDIO STAND LOW	folded 28", extended 64"	176.00



A must for placing the light beam exactly where you want it, placing the boom stand out of the picture. A light can easily be counter balanced equal to the weight of a 6" fresnel with accessories

63020-BM Boom Arm & Heavy Duty Stand **610.50**

GAFFER EQUIPMENT

18321/3-BM Two Position 5/8" Stand to Fixture Mount with 1/2" Yoke Bolt **12.75**



49104-WB Safety Throat "C" Clamp with Hand Position Knob **19.80**



63070-WB Gaffers Grip with 1/2" Safety Stud, Non-Marring **20.90**



02731-WB Pantograph Stirrup **16.00**

02734-WB Stirrup Pipe, two light position **10.00**



SAND BAG

Used to weight stands for fixtures, boom, gobos and flags to assure stability and safety both on location and in the studio. These high quality lined sandbags can also be emptied and reloaded with ease.

07028-WB	Single Bag—25 lbs	55.00
07029-WB	Saddle Bag—50 lbs	75.00

PORTABLE DISTRIBUTION



CONNECTORS

All connectors are PHENELIC molded plastic, grounded and shipped with wire ends for the pin connectors. (All are grounded.)

04210-H	15A Parallel Blade (Fits Standard recept) Female	17.00
04211-H	15A Parallel Blade (Fits Standard recept) Male	11.00
04212-H	20A Parallel Blade, Female (Will accept 15A Male above)	18.00
04213-H	20A Parallel Blade, Male (cannot be used with 15A Female above)	11.50
04214-UC	20A Pin Connector, Female	6.25
04215-UC	20A Pin Connector, Male	6.25
04216-H	20A Twistlock, Female	20.00
04217-H	20A Twistlock, Male	13.00
04218-H	50A Twistlock, Female	53.00
04219-H	50A Twistlock, Male	41.50
04220-UC	60A Pin Connector, Female	21.50
04221-UC	60A Pin Connector, Male	21.50
04222-UC	100A Pin Connector, Female	44.00
04223-UC	100A Pin Connector, Male	44.00



EXTENSION CABLE

25 FT. NUMBER 14/3 S.O. 1000 WATT		
04030-WB	Parallel Blade "U" Ground, 15A 120V	60.00
04031-WB	Grounded Pin Plug, 20A 120V	43.90
04032-WB	Grounded Twist Lock, 20A 120V	63.15
25 FT. NUMBER 12/3 S.O. 2000 WATT		
04073-WB	Parallel Blade "U" Ground, 20A 120V	69.35
04074-WB	Grounded Pin Plug, 20A 120V	53.25
04075-WB	Grounded Twist Lock, 20A 120V	72.35

PORTABLE LIGHTING/ ACCESSORIES

50 FT. NUMBER 14/3 S.O. 1000 WATT		
04033-WB	Parallel Blade "U" Ground, 25A 120V	81.25
04034-WB	Grounded Pin Plug, 20A 120V	65.10
04035-WB	Grounded Twist Lock, 20A 120V	84.25
50 FT. NUMBER 12/3 S.O. 2000 WATT		
04083-WB	Parallel Blade "U" Ground, 20A 120V	99.75
04084-WB	Grounded Pin Plug, 20A 120V	83.60
04085-WB	Grounded Twist Lock, 20A 120V	102.75



PIGTAILS

MALE TO FEMALE PIGTAIL 12/3 2000 WATT		
04112-WB	Male 15A 120V Parallel Blade "U" Ground to Female 20A/120V Grounded Pin Plug	29.20
04113-WB	Male 15A 120V Parallel Blade "U" Ground to Female 20A 120V Grounded Twist Lock	46.75



PIGTAIL—TWO-FER

MALE TO FEMALE 12/3 2000 WATT		
04123-WB	Male to Two Female 20A/120V Grounded Pin Plug	52.50
04124-WB	Male to Two Female 20A 120V Grounded Twist Lock	92.35



PIGTAIL POWER BOXES

MALE TO FEMALE 1000 WATT 15A/120V WATER RESISTANT APPROVED BOX.		
04411-WB	Parallel Blade "U" to Duplex	82.50
04412-WB	Parallel Blade "U" to Quad	100.00
04413-WB	Parallel Blade "U" to Duplex, Individually Switched-Quad Box	120.00

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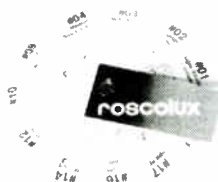
FGT	12	1500	3200K	85.61
FGV	12	1000	3200K	(Disc.) 892.86
FGW	24	150	3200K	24.67
*FHM	10	1000	3200K	35.00
1500-Q/CL/48	6	1500	3200K	142.72

HMI LAMPS

BA575-SY	10	575	5600K	854.60
BA1200-SY	10	1200	5600K	892.86
HMI1200-OK	10	1200	5600K	561.25
HMI1200-OS	10	1200	5600K	542.00
BA1200/32-SY	2	1200	3200K	956.63
BA2500-SY	1	2500	5600K	1530.62
BA4000-SY	1	4000	5600K	1938.78
BB1200-PAR/64-SY	1200	5600K		982.14

—THORN LAMPS

UNMARKED LAMPS ARE GENERAL ELECTRIC OR SYLVANIA



ROSCOLUX

The most durable color filter. Available in 103 colors and diffusers. Sold under the trade name "Supergel" overseas.

*Sheets: 20" x 24"

1027-R	Primary Red	4.25
1080-R	Primary Blue	4.25
1091-R	Primary Green	4.25

*Rolls: 24" x 50'

1027R-R	Primary Red	109.50
1080R-R	Primary Blue	109.50
1091R-R	Primary Green	109.50
8807-R	Swatch Book	2.50

1001	Lt. Bastard Amber	1051	Surprise Pink
1002	Bastard Amber	1052	Light Lavender
1003	Dark Bast. Amber	1053	Pale Lavender
1004	Med. Bast. Amber	1054	Special Lav.
1006	No Color Straw	1055	Lilac
1007	Pale Yellow	1057A	Lavender
1008	Pale Gold	1058A	Deep Lav.
1009	Pale Amber Gold	1059	Indigo
1010	Medium Yellow	1060	No Color Blue
1011	Light Straw	1061	Mist Blue
1012	Straw	1062	Booster Blue
1014	Medium Straw	1063	Pale Blue
1015	Deep Straw	1064	Light Steel Blue
1016	Light Amber	1065	Daylight Blue
1017	Light Flame	1067	Light Sky Blue
1018	Flame	1068	Sky Blue
1019	Fire	1069	Brilliant Blue
1020	Medium Amber	1070	Nile Blue
1021	Golden Amber	1071	Sea Blue
1022	Deep Amber	1072	Azure Blue
1023	Orange	1073	Peacock Blue
1024	Scarlet	1076	Lt. Green Blue
1025	Orange Red	1077	Green Blue
1026	Light Red	1078	Trudy Blue
1027	Medium Red	1079	Bright Blue
1030	Lt. Salmon Pink	1080	Primary Blue
1032	Salmon Pink	1081	Urban Blue
1033	No Color Pink	1082	Surprise Blue
1034	Flesh Pink	1083	Medium Blue
1035A	Light Pink	1085	Deep Blue
1036	Medium Pink	1086A	Pea Green
1037	Pale Rose Pink	1087	Pale Yel. Green
1038	Light Rose	1088	Light Green
1040	Light Salmon	1089	Moss Green
1041	Salmon	1090	Dark Yel. Green
1042	Deep Salmon	1091	Primary Green
1044	Middle Rose	1092	Turquoise
1045	Rose	1093	Blue Green
1046	Magenta	1094	Kelly Green
1047	Lt. Rose Purple	1095	Med. Blue Grn.
1048	Rose Purple	1097	Light Grey
1049	Medium Purple	1099	Chocolate
1050A	Mauve		

DIFFUSION MATERIAL

3006-R	Tough Spun, 4 1/2' x 22' Roll	80.00
03110-WB	Tough Spun, 4 1/2' x 5 1/2' Roll	25.00

PAINT

5710-R	Chroma Key Blue (gal)	30.50
5711-R	Chroma Key Green (gal)	30.50

TAPE

(2' x 60 YDS—24 Rolls Per Case)

398BL-WB	Black (case)	141.84
398GR-WB	Grey (case)	115.00
398GRY-WB	Grey (roll)	6.20
398CL-WB	Colors, Red, Green, Blue, Gold Yellow, White, and Black, (roll)	8.00



LIGHT METERS

09010-WB	G.E. Incident Footcandle Meter	75.00
09011-WB	Sekonic Incident Light Meter (reads in footcandle) Complete Kit	145.00
09012-WB	Gossen Sixicolor Color Meter (reads 2600 to 20,000K) indicating proper color	296.00

CURTAINS, TRACK & ACCESSORIES



CURTAINS—CYC

Cyclorama curtains are seamless up to 125 feet in length and 28 feet in height, the cloth is

inspected before fabrication to assure against weaving flaws and sewn to our rigid specifications. These cycloramas are available in three colors—white, gray, and powder blue green.

Seamless Lino-Weave

This curtain has a 4" heavy duty binding at the top with spring harness snaps on one foot centers. The 2 1/4" bottom hem has a #90 lead tape weight sewn 1" above the bottom of the hem in a separate muslin pocket. The side hems have a 2" heavy duty binding with eyelets of 2" centers for tauting the curtain. Tow cord with handle is provided for easy transporting of curtain. The curtain is flame-proofed and flawless (as per the standards of the mills and converters) and is fabricated to the highest quality workmanship.

	Sq. Ft. (14'9" & under)	Sq. Ft. (14'10" & over)
07005-WB White	3.25	4.25
07006-WB CBS Grey	3.40	4.50
07007-WB Powder Blue Green	3.35	4.35
07008-WB Limbo Black	3.60	4.70

Seamless Scrim

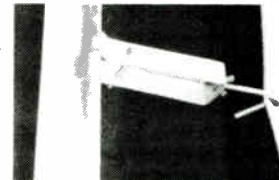
07038-WB White	2.20	2.95
07039-WB Black	2.30	3.20

TAUTING POLE

Tauting poles are used generally with the cyc curtain to assure proper horizontal tension on the cyclorama. They stand vertical at both ends of the cyc with adjustable claws attached through the vertical eyelet on the curtain. The base is weighted with a sandbag. The curtain is then adjusted to a proper tautness by the pair of poles.

07013-WB	Tauting Pole Base (one Left and one Right Hand)	45.00
07014-WB	(8') Tauting Pole with Guy Wire and Turnbuckle	52.00
07015-WB	(9') Tauting Pole with Guy Wire and Turnbuckle	58.50
07016-WB	(10') Tauting Pole with Guy Wire and Turnbuckle	65.00
07017-WB	(11') Tauting Pole with Guy Wire and Turnbuckle	71.50
07018-WB	(12') Tauting Pole with Guy Wire and Turnbuckle	78.00
07019-WB	(13') Tauting Pole with Guy Wire and Turnbuckle	84.50
07020-WB	(14') Tauting Pole with Guy Wire and Turnbuckle	91.00
07021-WB	(15') Tauting Pole with Guy Wire and Turnbuckle	97.50
07022-WB	(16') Tauting Pole with Guy Wire and Turnbuckle	104.00
07023-WB	(17') Tauting Pole with Guy Wire and Turnbuckle	110.50
07024-WB	(18') Tauting Pole with Guy Wire and Turnbuckle	117.00
07025-WB	(19') Tauting Pole with Guy Wire and Turnbuckle	123.50
07026-WB	(20') Tauting Pole with Guy Wire and Turnbuckle	130.00
07027-WB	(21') Tauting Pole with Guy Wire and Turnbuckle	136.50

EYELET CLAWS



07031-WB	Eyelet Claws to Attach Tauting Pole to Cyc Curtain (2 ft. centers required)	12.50
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SAND BAG

07029-WB Sand Bag, 50 lb size, non-spill saddle bag type made of heavy-duty duck with inner liner and Velcro fasteners to hold base and pole in position **75.00**

CURTAINS—BACKGROUND

SPECTROCOLOR II (TM)

The background curtains are also fabricated to rigid specifications and come in almost any color. Usually it is recommended that the first background curtain be chroma-key blue. This, then permits chroma-keying and when not illuminated may be used to produce a limbo effect.

	(Primary)	Sq. Ft.
07058-WB	Red	2.20
07059-WB	Green	2.20
07060-WB	Chroma-Key Blue	2.20
	(Other)	
07061-WB	Antique Gold	2.20
07062-WB	Silver Haze	2.20
07063-WB	Limbo Black	2.20

VELCRO FASTENER

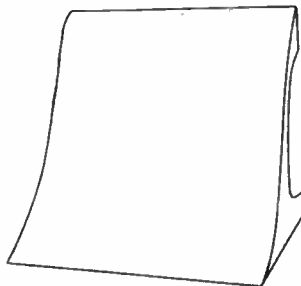
07068-WB	8' Velcro Fastener	20.00
07069-WB	9' Velcro Fastener	22.50
07070-WB	10' Velcro Fastener	25.00
07071-WB	11' Velcro Fastener	27.50
07072-WB	12' Velcro Fastener	30.00
07073-WB	13' Velcro Fastener	32.50
07074-WB	14' Velcro Fastener	35.00
07075-WB	15' Velcro Fastener	37.50
07076-WB	16' Velcro Fastener	40.00
07077-WB	17' Velcro Fastener	42.50
07078-WB	18' Velcro Fastener	45.00
07079-WB	19' Velcro Fastener	47.50
07080-WB	20' Velcro Fastener	50.00
07081-WB	21' Velcro Fastener	52.50

07083-WB SWATCH BOOK
2.50



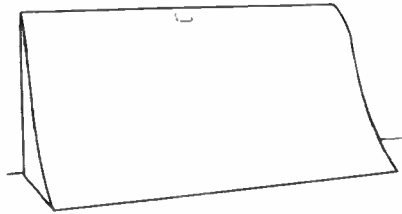
CYC GROUND ROW

Made of fiberglass for durability and to allow compound curvatures. Color of the ground row matches the white cyclorama curtain. The ground row may be painted to match any color background curtain by using tempa paint and washing with water when production is complete. Hides all cyclorama fixtures. When using top cyc lighting, the ground row is tinted with gels. Works 5 ft. from cyc curtain.



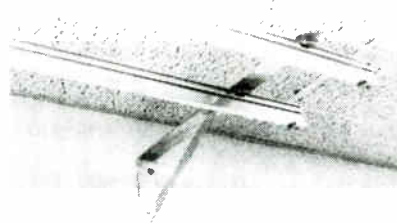
CYC LIGHT GROUND ROW

07085-WB	4 1/2 ft. radius corner section	450.00
07086-WB	8 ft. straight section	475.00



CYC CURTAIN GROUND ROW

07088-WB	9 ft. radius corner section	425.00
07089-WB	8 ft. straight section	375.00



TRACK AND HANGERS

Track and accessories have been selected to assure a perfect installation. Curtain carriers are supplied with the proper trim chain ready to attach the cyc or background curtains. The dual track method is recommended. Track switching can be purchased upon installation or can be installed at a later date. A complete package, ready to install, includes preformed corners, assuring proper diameter for accurate corner illumination and ease of curtain travel.

SUSPENSION

It is most important that the curtains be suspended properly to assure even travel at the studio floor and stability of the track system. Wall brackets are available in 6" increments from the studio wall. Suspension brackets are used where wall mounting is not possible. All brackets assure proper spacing between the tracks. Grid mounted track hangers are available for studios where the grid pipe extends to the studio wall. Hardware is available for the mounting to any type of wall, including hollow.

07110-WB	5 ft. section of straight cyc/background	12.00
07111-WB	10 ft. section of straight cyc/background	24.00
07112-WB	15 ft. section of straight cyc/background	36.00
07113-WB	20 ft. section of straight cyc/background	48.00
07114-WB	9 ft. radius, 1/4 circle cyc/background corner track	40.00
07115-WB	9 ft. radius, crating charge	30.00
07118-WB	4 1/2" radius, 1/4 circle cyc/background corner track	22.50
07119-WB	4 1/2" radius, crating charge	16.00
07122-WB	Track Switch, Right Hand	400.00
07123-WB	Track Switch, Left Hand	400.00
07124-WB	Inter Track Switch Assembly	800.00
07125-WB	Switching Pole	85.00
07128-WB	Nylon Wheel Carrier with Bumper Assembly	6.00
07129-WB	Hanging Clamp	1.73
07130-WB	Ceiling Clamp	6.90
07131-WB	Splicing Clamp	5.50
07132-WB	Carrier Stop	3.75
07138-WB	4" Single Track Wall Bracket Assembly	16.50
07141-WB	8" Double Track Suspension Bracket Assembly	15.00
07142-WB	12" Double Track Wall Bracket Assembly	23.50
07143-WB	18" Double Track Wall Bracket Assembly	34.00
07144-WB	24" Double Track Wall Bracket Assembly	36.50

STUDIO EQUIPMENT

07145-WB	30" Double Track Wall Bracket Assembly	38.50
07146-WB	36" Double Track Wall Bracket Assembly	40.50
07147-WB	42" Double Track Wall Bracket Assembly	42.50
07153-WB	24" Double Track Corner Wall Bracket Assembly	37.00
07154-WB	30" Double Track Corner Wall Bracket Assembly	40.00
07155-WB	36" Double Track Corner Wall Bracket Assembly	43.00

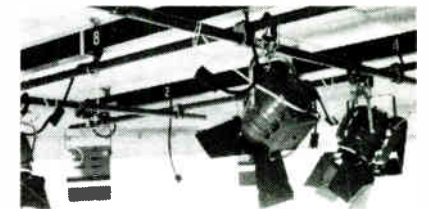
TRUSS OR CEILING SUSPENSION

7161-WB	Beam Attachment Assembly for 8" Suspension Bracket	18.50
07162-WB	Hanging Clamp Assembly for Single Track Suspension (each includes 18" x 3/8" all-thread rod)	14.00

GRID PIPE SUSPENSION

07163-WB	Track Suspension Bracket Top (1 1/2" I.D. to Track)	8.00
07164-WB	Track Suspension Bracket Top Corner Right Hand (1 1/2" I.D. Pipe)	8.00
07165-WB	Track Suspension Bracket Top Corner Left Hand (1 1/2" I.D. Pipe)	8.00
07167-WB	Track Suspension Bracket Bottom (1 1/2" I.D. to Track)	7.50
07168-WB	Track Suspension Bracket Bottom Corner Right Hand (1 1/2" I.D. Pipe to Track)	7.50
07169-WB	Track Suspension Bracket Bottom Corner Left Hand (1 1/2" I.D. Pipe to Track)	7.50
07172-WB	Accessory Suspension Bracket (with 3/8" Attachment Hole)	5.50
07171-WB	Accessory Suspension Bracket (with 3/8" Threaded Stud)	5.00
07170-WB	Accessory Suspension Bracket (with 3/8" Threaded Socket)	5.25

STUDIO DISTRIBUTION



Rigid, 16 gauge, one-piece 3 1/2" x 4 1/2" steel construction of desired length, with internal wiring to meet all electrical codes. Available with mounting hardware for any possible situation, standard 18" or 24" pigtail with connector of your choice. A unique four circuit cyc box for powering your cyc lights. Unit available completely assembled including 1 1/2" I.D. pipe (not included in price below) ready to hang... saving time and cost at installation. Comes primed and painted with 3" permanent decal assuring circuit identification from the control console.

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GRID CONNECTOR STRIPS

05015-WB	10 ft. Strip, 4 20A* Pigtails	395.00
05018-WB	13 ft. Strip, 5 20A* Pigtails	487.50
05021-WB	16 ft. Strip, 6 20A* Pigtails	602.00

Other Configurations Available
Price on Application

*Add \$13.75 per Circuit for 20 Amp NEMA Twist Lock.

Note: Price for Connector Strip Bracket Assemblies. Single Pipe are included in price of Connector Strip and are completely assembled ready to install. They are shipped in a wooden crate, price included.

Fabricated to the high standards of the above mentioned connector strip with desired number of circuits and ampacity. Ready for wall or pipe mounting.



WALL BOXES

05310-WB	Two Pigtails, 2-20A	102.00
05315-WB	Three Pigtails, 2-20A, 1-50A	142.00
05311-WB	Three Pigtails, 3-20A	138.00

Other Configurations Available
Price on Application

GRID HARDWARE

All hardware may be purchased to suspend the complete lighting grid system. Included would be load channel, for ceiling mounting positions, all thread, required nuts and bolts, beam clamps, concrete anchors, grid hardware and pipe cut to length.

05107-WB LIGHT PIPE 2.25/ft.

The heart of good lighting is the grid system. It is very important to use 1 1/2" I.D. light pipe.

05194-WB LIGHT PIPE Handling Charge .10/ft.



05109-WB GRID LOCK 10.00

Used to fasten perpendicular 1 1/2" I.D. light pipe together when constructing a grid. Also used for moveable light pipe to place a light at any position in the grid. The grid lock will not let the pipe torque.

05113-WB Beam clamp 3/8", attaches "Load Channel" to most types of angle iron, such as truss deck beams 5.00

05114-WB	Bolt Assembly 3/8", attaches "Load Channel" (as above) when slots are provided by truss deck beams (money savings)	.70
05115-WB	Sleeve Anchor 3/8" (for low PSI density concrete ceiling and floors)	.55
05116-WB	Wedge Anchor 3/8" (for high PSI density concrete ceiling and floors)	1.25
05117-WB	Toggle bolt 3/8" assembly for hollow wall	1.00
05118-WB	Load Channel, slotted sections, 20' x 3/8" x 1 5/8", 12 gauge	76.00
05119-WB	All Thread Suspension Rod 3/8" x 12'	7.00
05120-WB	Locking Spring Nut	1.25
05121-WB	Square Locking Washer	1.20
05122-WB	Hex Head Nut, 3/8"	.10
05123-WB	Flat Washer, 3/8"	.05
05124-WB	Lock Washer, 3/8"	.05
05125-WB	Connector Strip Bracket Assembly Single Pipe	22.50
05126-WB	Connector Strip Bracket Assembly Double Pipe	28.00
05191-WB	Corner 90 degree Cyc Light Pipe 4 1/2" radius, 1 1/2" I.D. Slip Couplings—both ends	90.00
05192-WB	Pipe Cuts, 1 1/2" I.D.	1.75
05193-WB	Pipe Threads, 1 1/2" I.D.	5.00
05195-WB	Light Pipe Coupling	3.00
05197-WB	Moveable Light Pipe, 6' x 1 1/2" I.D.	15.00
05109-WB	Grid Locks, 1 1/2" x 1 1/2" for Moveable Light Pipe	10.00

STUDIO LADDERS



Designed to meet or exceed all safety standards. These ladders are manufactured to work to grid height providing a 6 ft. reach from ladder platform to grid with a 30" safety rail. The ladder is fabricated from 1" square tubing with all joints welded. Gaffers storage chest and basket for extension cables and other frequently used studio equipment are recommended. The large casters are rubber with toe touch locking. A second ladder is recommended for larger studios. Finished with a prime coat and two coats of durable enamel.

09210-WB	Studio Ladder for 8' Grid	495.00
09211-WB	Studio Ladder for 9' Grid	550.00
09212-WB	Studio Ladder for 10' Grid	640.00
09213-WB	Studio Ladder for 11' Grid	725.00

STUDIO EQUIPMENT/CONTROL SYSTEMS

09214-WB	Studio Ladder for 12' Grid	825.00
09215-WB	Studio Ladder for 13' Grid	880.00
09216-WB	Studio Ladder for 14' Grid	940.00
09217-WB	Studio Ladder for 15' Grid	995.00
09218-WB	Studio Ladder for 16' Grid	1,025.00
09219-WB	Studio Ladder for 17' Grid	1,100.00
09220-WB	Studio Ladder for 18' Grid	1,200.00
09221-WB	Studio Ladder for 19' Grid	1,250.00
09222-WB	Studio Ladder for 20' Grid	1,300.00
09228-WB	Gaffers Basket	65.00
09229-WB	Gaffers Tool Box, Locking	275.00

LIGHTING CONTROL SYSTEM

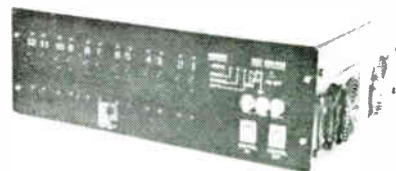
DIMMER BANKS—PORTABLE



ALPHA DIM TO INCLUDE: (For Portable/Location Use)

Alpha Dim 24 kW portable dimmer with integral potentiometer is used to dim 2-1000W or 1-2000W fixtures. It is used in small studios or on location. A 10' low voltage cable with remote control can be purchased.

0600502-EC	Parallel Blade U	285.00
0600506-EC	Pin Plug	285.00
0600503-EC	Twist Lock	285.00
06006-EC	Remote Control Unit	71.00



PLAYMATE II PORTABLE DIMMER PACK TO INCLUDE: (For Portable/Location or Small Studio Use)

Compact and flexible, Playmate can be purchased with (12) 20 amp, (6) 50 amp, and (3) 100 amp dimmers per each portable pack. Recepticals on dimmer outputs are (2) per 20 amp dimmer and (1) per 30 amp and 100 amp dimmer. Each dimmer has a single properly sized protective breaker. The celebrity controller is used with the Playmate dimmer packs.

41412-EC	(12) 20 Amp Dimmers	3200.00
41406-EC	(6) 50 Amp Dimmers	3600.00
41403-EC	(3) 100 Amp Dimmers	2267.00
04-1400-00-EC	Daisy Chain 18"	66.65

Recepticle Code (Place after Cat. No.)
01-EC—Terminal Output

02-EC-PBG—(NEMA 520) 2 KW Dimmers
Only Two Recepticals Per Dimmer
03-EC-UTLG—Twist Lock (Not in 12 KW)
06-EC—PPG Grounded Pin Plug

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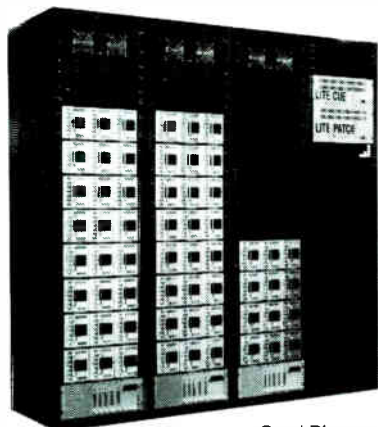
Prices and Specifications Subject to Change Without Notice.

WALTER S. BREWER CO., INC.

4717 "F" South Mingo Road
Tulsa, OK 74146
(918) 665-6820

CONTROL SYSTEMS

DIMMER BANKS Studio



Quad Dimmer
Modular Bank

MODULAR FLOOR MOUNT CABINET

Available in four heights (42", 59", 77", 85") DCF Cabinets provide independent ventilation for each dimmer, thus preventing cross-temperature effect

and increasing dimmer life. Standard 19" EIA Cabinets utilize tri-chassis dimmer racks and other components for complete system. Dimmers are available in 10, 20, 35, 60 and 100 amp ratings. Contractor access is assured by removable panels on all faces.

Studio dimmer racks are modular to simplify installation and provide customized economy. This system is complete with needed dimmer plug-in modules, wiring, breakers and all other components ready to be set in its permanent location and "hard-wired."

NOTE: SUPPRESSION OF RADIO FREQUENCY INTERFERENCE IN DIMMERS

SCR dimmers utilize rapid switching of electrical current for effective dimming. This rapid switching creates radio frequency interference (RFI) that causes "noise" problems in audio systems. All well-designed dimmers contain choke coils to filter most of the RFI. There is confusion, however, about the best method to describe such filtering. A common approach is to quote total rise time, which does not consider spikes. A more accurate approach is that proposed by Motorola Semiconductor Products in their article AN-295 on RFI suppression, wherein the rate of current rise is recommended to be less than 0.35 amps (350 milliamps) per microsecond. All Electro Controls' dimmers meet or exceed these recommendations.

Custom Built—Price on Application

CONTROL CONSOLES Manual



PLEXUS 200 PT PRESET CONSOLE TO INCLUDE:

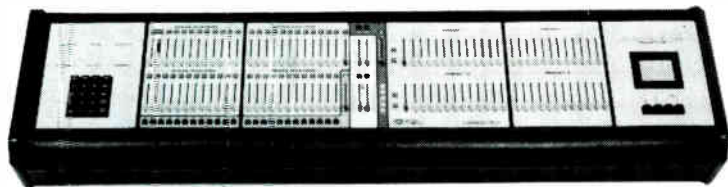
(For use with Custom Studio Dimmer Banks when used with (48) Dimmers or Less and an Electronic Patch is Not Desired.)

Compact and lightweight, PT Panels are ideal where space and weight are at a premium but where control capability cannot be compromised. Available

in single scene (PT 100) or two-scene (PT 200) preset, the Master Modules feature Grand and Independent Masters, A and B Scene Masters and on two-scene versions, manual or timed Split Fader. With sixteen 60mm (2 3/8") controllers on each Preset Module, the single scene version contains sixteen channels per module and the two-scene version contains eight channels per module. Non-dim modules are available. Control Power Supply is located in a dimmer cabinet. Control Panel can be ordered for hard wiring or with 52-conductor receptacle(s).

6200-18-EC (18) Channel, 2 Scene Preset	2580.00
6200-24-EC (24) Channel, 2 Scene Preset	3062.00
6200-32-EC (32) Channel, 2 Scene Preset	3625.00
6200-40-EC (40) Channel, 2 Scene Preset	3997.00
6200-48-EC (48) Channel, 2 Scene Preset	4468.00
6201-99-EC Timed Split Fader	304.00
6156-01-EC Wall Plug-In Box	117.00

CONTROL CONSOLES Manual/Memory/Patch



CELEBRITY

(For use with Custom Studio Dimmer Banks and the Playmate II Portable Dimmer Pack)

Modular **celebrity** comes in over 100 different models; in single or two-tiered designs. (There's one perfect for you.) Either 24 or 48 **celebrity** Scene

CELEBRITY PLUS

celebrity plus provides greatly enhanced memory capacity in an easy to use format. It can also be used with the **celebrity**, or as a stand-alone memory control. **celebrity plus** offers access to 200 additional memory cues and 125 channels through auto-sequencing, by means of a split wheeled A/B

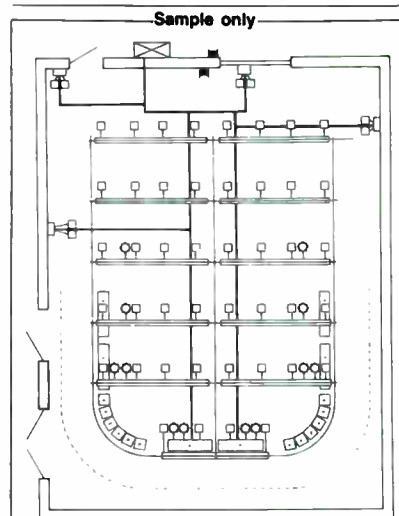
Masters can be configured with 12, 24, 36 or 48 control channels, and with patch. **celebrity** controls up to 512 dimmers. Controller comes with vinyl cover and 25 ft. control cable.

7700-10-EC Basic Celebrity Control Console, 24 Scene 12 Channel with operator's light	2,300.00
---------------------------------------------------------------------------------------	----------

crossfader and a single wheeled C/D crossfader. It may be installed initially, or added to your **celebrity** console. **celebrity plus** is CRT compatible, displaying data updates in both "on-stage" and "preview" modes.

6780-25-EC Basic Celebrity Plus Control Console, 125 Channels and 200 Cues	4,000.00
----------------------------------------------------------------------------	----------

STUDIO PACKAGES



Legend:
 - Lamp: 1. Lamp
 - Dimmer: 2. Dimmer
 - Control Console: 3. Control Console
 - Patch Panel: 4. Patch Panel
 - Power Box: 5. Power Box
 - Gaffer Tape: 6. Gaffer Tape
 - Diffusion Material: 7. Diffusion Material
 - Gel: 8. Gel
 - Gel Press: 9. Gel Press
 - Connector Strip: 10. Connector Strip
 - Studio Ladder: 11. Studio Ladder
 - Locking Tool Box: 12. Locking Tool Box
 - Footcandle Meter: 13. Footcandle Meter

30' x 40' TELEVISION STUDIO LAYOUT 14' GRID HEIGHT

BILL OF MATERIALS	
KEY AND BACK LIGHTS	LIGHTING GRID
30 1000 Watt 6" Sweep Focus Fresnel	203 feet 1 1/2" I.D. steel light pipe with beam clamp, load clamp, load channel, grid locks, bracket assemblies and other hardware as required for complete grid installation
18 2000 Watt 10" Focusing Fresnel	
BASE AND FILL LIGHTS	WIRING EQUIPMENT
10 1000/2000 Watt 14" Screw Focus Scoop	96 20 Amp 00 Dimmers with SCR's (toroidal RFI filters and System Analysis Indicators)
6 1500 Watt Focusing Broad	
2 1000/4000 Watt Featherlite Super Spotlight	LIGHTING CONTROL
16 Floor Adjustable Telescoping Hanger	1 24 Channel Two Scene Preset PM Board with 96 x 24 volt voltage patch
CYCLORAMA, SET AND BACKGROUND LIGHTS	2 Wall Mount Control Receptacles
12 1000 Watt Two Light Two Circuit Cyc Light	
6 1000 Watt Four Light Four Circuit Cyc Light	LIGHTING CURTAINS
SPECIAL LIGHTS	1 80" White Lino-weave 13' curtain
1 Porta Kit 4000	2 20' Chroma Key Blue Background 13' curtain
3 Medium Duty High Riser Stand	140 feet Curtain Track with 8 corners
3 Heavy Duty Low Riser Stand	
6 Extension Cable (225')	Other
3 Male-Female Pigtail Adapter	Cycorama, Curtains and Double Track come complete with taping points and beam clamp/level clips, wire fasteners, carriers, brackets and clamps as required for complete track installation and operation.
3 Power Box	
3 Inline 1000 Watt Dimmer Gaffers Tape, Diffusion Material, Gel Presses	
ELECTRICAL DISTRIBUTION	GAFFER'S EQUIPMENT
11 Connector Strip (100') with 44-20 Amp and 12 - Four Light Cyc Pigtail Receptacles	1 Studio Ladder with Basket and
4 Wall Boxes with 8 - 20 Amp Pigtail Receptacles	1 Locking Tool Box
	2 Footcandle Meter

Studio lighting packages are designed to supply an excellent system for a particular size studio. The "Complete Package" has all the equipment lighting and control equipment needed to light sets and the production area of the studio. *The equipment is not over specified.*

The "Start Package" is assembled with the idea of getting enough equipment from the "Complete Package" (master list), to begin production and then, add from the "Complete Package" as your production needs increase.

81015-WB	10'0" x 15'0" START	P.O.A.
81115-WB	10'0" x 15'0" COMPLETE	P.O.A.
81620-WB	15'0" x 20'0" START	P.O.A.
81820-WB	15'0" x 20'0" COMPLETE	P.O.A.
82030-WB	20'0" x 30'0" START	P.O.A.
82130-WB	20'0" x 30'0" COMPLETE	P.O.A.
83040-WB	30'0" x 40'0" START	P.O.A.
83140-WB	30'0" x 40'0" COMPLETE	P.O.A.
84060-WB	40'0" x 50'0" START	P.O.A.
84160-WB	40'0" x 50'0" COMPLETE	P.O.A.
85080-WB	50'0" x 60'0" START	P.O.A.
85180-WB	50'0" x 60'0" COMPLETE	P.O.A.
86070-WB	60'0" x 70'0" START	P.O.A.
86170-WB	60'0" x 70'0" COMPLETE	P.O.A.
87500-WB	70'0" x 100'0" START	P.O.A.
87800-WB	70'0" x 100'0" COMPLETE	P.O.A.

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BW LIGHTING SYSTEMS

P.O. Box 470162
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(918) 664-111

Special Effect Lights

Cyclorama Lights

Catalog Number:

20-201 One Light, One Circuit	\$195.00
20-202 Two Light, One or Two Circuit (specify)	390.00
20-203 Three Light, Three Circuit	585.00
20-204 Four Light, Four Circuit	780.00

Accessories:

20-211 One Light Yoke and C-Clamp	\$39.00
20-212 Two Light Yoke and C-Clamp	44.00
20-213 Three Light Hanging Assembly	44.00
20-219 Floor Mount Assembly	20.00
20-220 Gel Frame	24.00
20-705 Safety Cable	8.00

Lamps:

80-FDN 500W, 3200°K	\$27.00
80-FHM 1000W, 3200°K	30.50

Features:

- Cyc Strip housings are compact and extremely durable in design and construction
- Cyc Strips can be mounted overhead or on the floor depending upon requirements and applications.
- Single and multi-circuit cyc strips allows change in color of illumination by switching or dimming from one circuit to the other with colored filters.
- Flo-Thru ventilation cooling design
- Soft, even intense illumination
- Net weight One Light 3 lbs.
Four Light 11 lbs.

NOTE: Add /B to above Catalog number for FHM lamp series.

Ellipsoidal — 3 1/2 Inch

Catalog Number:

20-33006 3-1/2" x 6"	\$175.00
20-33008 3-1/2" x 8"	175.00
20-33010 3-1/2" x 10"	175.00
All with C-Clamp & 36" Power Lead	

Accessories:

20-331 Gel Frame	\$ 3.00
20-332 Pattern Holder	8.00
20-333 Pattern Set	16.00
20-705 Safety Cable	8.00

Lamps:

80-EHD 500W, 3200°K	\$45.00
---------------------	---------

Features:

- Compact, lightweight, with double plano-convex lenses.
- Accurately controlled accent lighting.
- Axially mounted socket (TP/4).
- Alzak reflector.
- Easy relamping.
- New weight 7 1/2 lbs.

Ellipsoidal — 6 Inch

Catalog Number:

20-335 6" x 9"	\$237.00
20-336 6" x 12"	237.00
20-337 6" x 16"	237.00
All with C-Clamp & 36" Power Lead	

Accessories:

20-327 Gel Frame	\$ 5.00
20-339 Pattern Holder	8.00
20-340 Pattern Set	16.00
20-705 Safety Cable	8.00

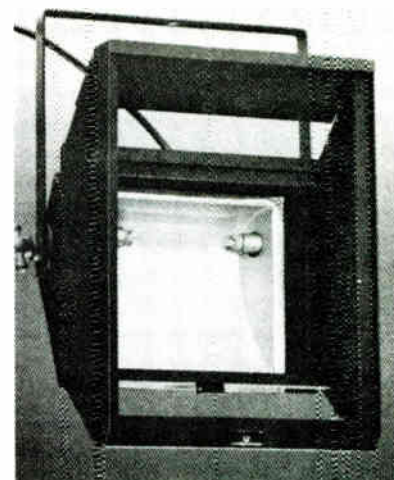
Lamps:

80-EHG 750W, 3000°K	\$49.50
80-EHF 750W, 3200°K	49.50
80-EHD 500W, 3000°K	45.00

Features:

- Features interchangeable and replaceable die cast, fully guaranteed parts
- Compact, lightweight with double plano convex lenses
- Accurately controlled accent lighting
- All aluminum die cast unit
- Axially mounted socket (TP/4)
- Alzak reflector (Double flatted)
- Net weight 18 lbs.

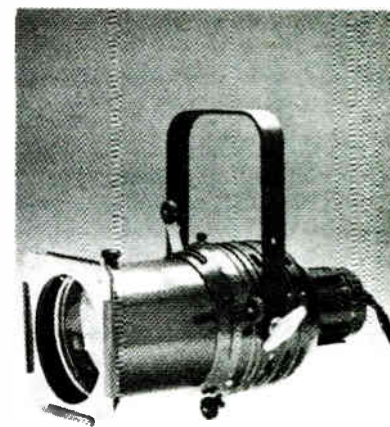
STUDIO LIGHTING



Cyclorama Lights



Ellipsoidal — 3 1/2 Inch



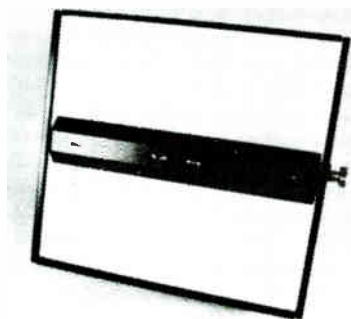
Ellipsoidal — 6 Inch

BW LIGHTING SYSTEMS

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(918) 664-1111



Baby Broads — 650/1000



**Mini Softlight
500 / 2000**



Softlight 2000/4000

Base and Fill Lights

Baby Broads

Catalog Number:

* 10-101 650 Watts	\$180.00
* 10-110 1000 Watts	190.00
Both with 25' power lead, in-line switch and parallel blade u-ground connectors	

Accessories:

10-111 Extended Holder	\$42.00
20-220 Gel Frame	24.00
20-705 Safety Cable	8.00

Lamps:

80-FHM 1000W, 3200°K	\$30.50
80-FDN 500W, 3200°K	27.00
80-FBX 650W, 3200°K	30.00

Features:

- Flat, even pattern of light over a wide area
- Ultra lightweight for portability
- Unique ventilation cooling design
- New one piece reflector for smooth, even light pattern
- Compact . . . ideal for field use
- Heat resistant adjustment knobs
- Net weight 4 lbs.
- *TV Model available with yoke and C-Clamp: Specify 10-101(A) or 10-110(A)

Mini Softlight 500 / 2000 Watts

Catalog Number:

20-140 TV Model with: 36" Power Lead	\$350.00
-----------------------------------------	-----------------

Accessories:

20-141 Gel Frame	\$38.00
20-142 Scrim	36.00
10-517 Stand Mount	10.00
20-705 Safety Cable	8.00

Lamps:

80-FHM 1000W, 3200°K	\$30.50
80-FDN 500W, 3200°K	27.00

Features:

- Designed for rugged location or studio use, utilizing 5050 H32 high strength aluminum.
- Integral gel frame holder.
- Individually switchable lampholders.
- 18" x 18" aperture.
- Switch Guard protects damage to switches during shipping and rough handling.
- Net weight of base unit with yoke: 15 lbs.

STUDIO LIGHTING

Softlight 2000/4000 Watts

Catalog Number:

20-130 TV Model with 36" power lead, C-Clamp	\$595.00
10-130 Motion Picture Model with 10 ft. power lead	595.00

Accessories:

10-131 Gel/Diffusion Frame	\$69.00
10-132 Scrim	65.00
10-517 Stand Mount	10.00
20-705 Safety Cable	8.00

Lamps:

80-FFW 2000W, 3200°K	\$81.00
80-FDB 1500W, 3200°K	52.00
80-FFT 1000W, 3200°K	48.00

Features:

- Designed for rugged location or studio use, utilizing 5050 H32 high strength aluminum.
- Integral gel frame holder.
- Individually switchable lamp holders.
- 24" x 24" aperture.
- One (1) 50A power cable on request.
- Two (2) 20A power cables standard.
- Switch Guard protects damage to switches during shipping and rough handling.
- Net weight of base unit with yoke: 19 lbs.

BW LIGHTING SYSTEMS

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Base and Fill Lights

Focusing Broad

Catalog Number:

*20-108 1500 Watt	\$290.00
*20-110 1000 Watt	290.00

Accessories:

20-111 Four Leaf Barndoor	\$85.00
20-112 Gel Frame	21.00
20-705 Safety Cable	8.00

Lamps:

80-FDB 1500W, 3200°K (For Model 20-108)	\$52.00
80-FFT 1000W, 3200°K (For Model 20-108)	48.00
80-FHM 1000W, 3200°K (For Model 20-110)	30.50

Features:

- Smooth, uniform field . . . no hot spots
 - Designed for short throw studio applications
 - Continuous variable focus for beam intensity control
 - Heavy duty sockets and unique ventilation for improved cooling and lamp life
 - On/Off switch built into housing on request
 - Switch guard assures protection of switches for stacking and storing units
 - High performance reflectors for smoothness and intensity
 - Compact and lightweight without sacrifice of durability
 - Net weight 10 lbs.
- *Motion picture models available with 10 ft. power lead.

14" Focusing Scoop — 1000 Watts

Catalog Number:

20-120 TV Model with: Yoke and C-Clamp	\$195.00
-------------------------------------------	-----------------

Accessories:

20-121 Gel Frame	\$15.00
20-705 Safety Cable	8.00

Lamps:

80-EGK 1000W, 3200°K	\$60.50
80-EGF 750W, 3200°K	56.00

Features:

- New rapid focus and cool operating control handle.
- New high efficiency reflector permits long throw applications.
- Continuous variable focus from medium beam to wide flood.
- Net weight 9 lbs.

16" Non-Focusing Scoop — 1000 Watts

Catalog Number:

20-125 TV Model	\$165.00
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Accessories:

20-126 Gel Frame	\$35.00
20-705 Safety Cable	8.00

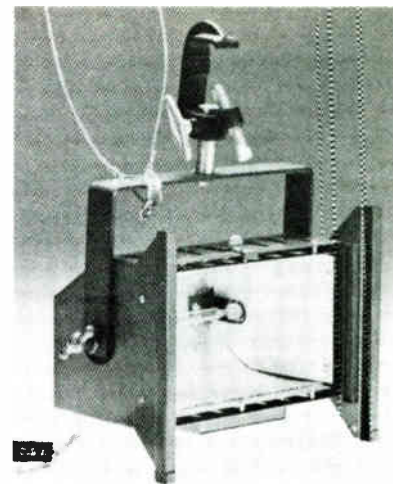
Lamps:

80-FHM 1000W, 3200°K	\$30.50
80-FDN 500W, 3200°K	27.00

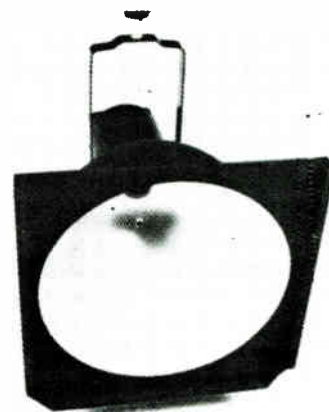
Features:

- 16" diameter aperture
- 75° beam spread
- High efficiency reflector
- Net weight 9 lbs.

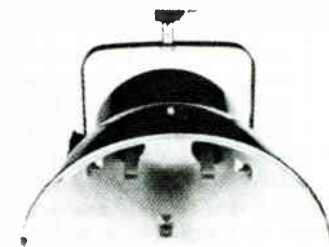
STUDIO LIGHTING



Focusing Broad



Focusing Scoop — 1000



Non-Focusing Scoop — 1000

BW LIGHTING SYSTEMS

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(918) 664-1111

STUDIO LIGHTING

A. Key and Back Lights

Fresnel 3-Inch — 200 Watts

Catalog Number:

20-314/A Table base model with: **\$50.00**
4' cable and parallel blade
u-ground connector

Accessories:

20-316/A Four-Leaf Barndoor	\$19.00
20-317/A Gel Frame	2.00
20-318/A Pin Spot Adapter	43.00
20-319/A Gel Frame for Pin Spot	3.00
20-320/A Snoot	7.00
20-701/A C-Clamp	6.00

Lamps:

80-FEV 200 W Lamp, 3200°K **\$28.00**

Features:

- Convection cooled spotlight which focuses accurately from spot to flood.
- Fits on stand or hanger and can be hidden for light effects.
- 3" Fresnel lens for clear, ring-free light.
- For both B & W and Color photography.
- Durable and well ventilated
- Easy top opening access for quick lamp change.
- Net weight 3 1/4 lbs.

Fresnel 6 Inch — 1000 Watts

Catalog Number:

20-020/B TV Model with: **\$335.00**
C-Clamp
36" Power Lead

Accessories:

10-041 Four Leaf Barndoor	\$54.00
10-042 Gel/Diffusion Frame	25.00
10-047 Single Scrim	12.00
10-048 Double Scrim	14.00
20-705 Safety Cable	8.00

Lamps:

80-EGT 1000W, 3200°K	\$66.00
80-EGR 750W, 3200°K	60.50

Features:

- Delivers intense, filament-free light — sharp and hard for heavy contrast, soft and smooth for flood effect.
- Versatile, lightweight, all-purpose spot modeling, background, and fill light for motion picture, photographic, and television studios.
- 6" Fresnel lens for clear, ring-free light.
- Instant spot to flood with quick acting lever.
- Durable and well ventilated with easy rear door access for quick lamp change.
- Front and rear "fingertip" focus control.
- Net weight 12 1/2 lbs.

Fresnel 10 Inch — 2000 Watts

Catalog Number:

20-050/B TV Model with: **\$520.00**
C-Clamp
36" Power Lead

Accessories:

10-051 Four Leaf Barndoor	\$99.00
10-052 Gel/Diffusion Frame	30.00
10-057 Single Scrim	12.00
10-058 Double Scrim	15.00
20-705 Safety Cable	8.00

Lamps:

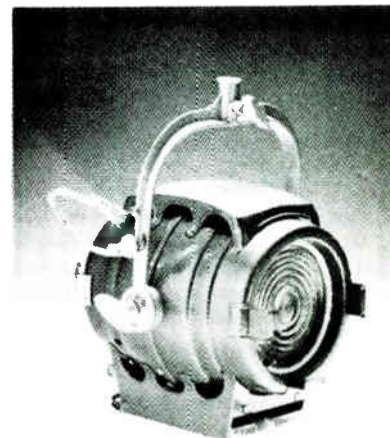
80-CYX 2000 W, 3200°K	\$105.00
80-CXZ 1500W, 3200°K	97.00
80-CYV 1000W, 3200°K	76.00

Features:

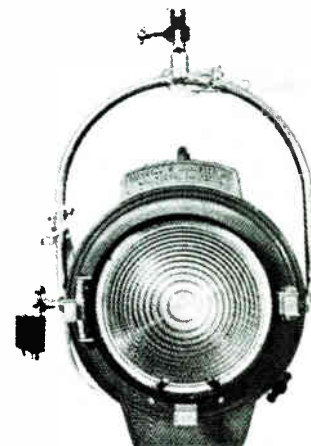
- Highly efficient 10" fresnel lens.
- Heavy-duty mogul bipost socket utilizing the popular and long-lived CYX series lamp.
- Easily removable reflector retainer for ease of cleaning the reflector.
- Net weight 28 lbs.



Fresnel 3 Inch — 200



Fresnel 6 inch — 1000



Fresnel 10 inch — 2000

Prices and Specifications Subject to Change Without Notice.

VL-25

BW LIGHTING SYSTEMS

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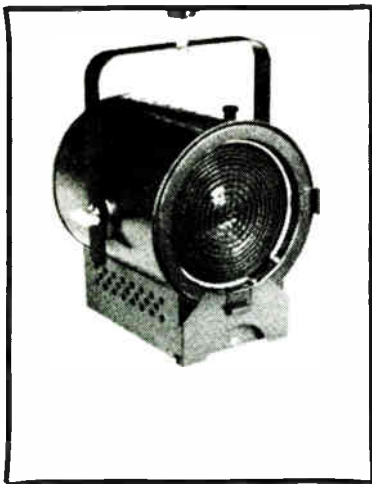
Much more Studio Lighting available...
ask for complete BW Lighting Catalog

STUDIO LIGHTING SYSTEMS

BW Lighting offers a wide selection of complete Television Studio Lighting Packages. Each system is designed to offer the greatest flexibility possible, utilizing the world's finest lighting fixtures made in conjunction with BW Lighting control system. Each system is complete, including lamps, color frames, accessories and distribution equipment. In addition we also offer complete custom design and engineering for larger specialized systems, including a complete range of the most advanced memory systems. For any of these special services please consult us directly.



Fresnel 6 inch — 750



**Fresnel 8 inch —
1000/2000**

Key and Back Lights

Fresnel 6 Inch — 750 Watts

Catalog Number:

20-324A	TV Model with:	\$110.00
	C-Clamp	
	36" Power Lead	
	Medium Prefocus Socket	

Accessories:

20-326	Four Leaf Barndoor	\$39.00
20-327	Gel/Diffusion Frame	5.00
10-047	Single Scrim	12.00
10-048	Double Scrim	14.00
20-705	Safety Cable	8.00

Lamps:

For Model 20-324A.		
80-BTP	750W, 3200°K	\$39.00
80-BTM	500W, 3200°K	39.00

Features:

- Adjustable spot to flood focus
- Heat resisting 6" fresnel lens
- Alzak reflector
- Hinged front for easy relamping
- 36" leads
- Lightweight — 8 lbs.
- Shipping weight 12 lbs.

Fresnel 8 Inch - 1000/2000 Watts

Catalog Number:

20-354A	TV Model with:	\$195.00
	C-Clamp	
	36" Power Lead	
	Mogul Prefocus Socket	

Accessories:

20-356	Four Leaf Barndoor	\$55.00
20-357	Gel/Diffusion Frame	6.00
10-057	Single Scrim	12.00
10-058	Double Scrim	15.00
20-705	Safety Cable	8.00

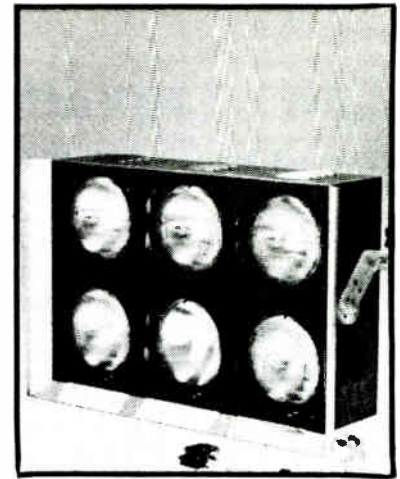
Lamps:

For Model 20-354A		
80-BVV	1000W, 3200°K	\$60.00
80-CWZ	1500W, 3200°K	72.00
80-BVW	2000W, 3200°K	91.00

Features:

- Adjustable spot to flood focus
- Heat resisting 8" fresnel lens
- Alzak reflector
- Hinged front for easy relamping
- 36" leads
- Lightweight — 12 lbs.
- Shipping weight — 22 lbs.

STUDIO LIGHTING



Cine Par

Cine Par

Catalog Number:

10-393	Par 64 Holder	\$ 90.00
10-310	Cine Par Four	593.00
10-320	Cine Par Six	706.00
10-340	Cine Par Nine	898.00

Accessories:

10-395	Par 64 Gel Frame	\$ 6.00
10-396	Par 64 Stainless Steel Scrim	18.00
10-311	Cine Par Four Extended Holder	46.00
10-312	Cine Par Four Gel Frame	29.00
10-313	Cine Par Four Stainless Steel Scrim	72.00
10-321	Cine Par Six Extended Holder	57.00
10-322	Cine Par Six Gel Frame	34.00
10-323	Cine Par Six Stainless Steel Scrim	107.00
10-341	Cine Par Nine Extended Holder	85.00
10-342	Cine Par Nine Gel Frame	40.00
10-343	Cine Par Nine Stainless Steel Scrim	159.00
20-705	Safety Cable	8.00

Lamps:

80-FFN	1000W, 3200°K Narrow Spot	\$67.00
80-FFP	1000W, 3200°K Spot	67.00
80-FFR	1000W, 3200°K Medium Flood	67.00
80-FFS	1000W, 3200°K Wide Flood	67.00

Features:

- Lightweight
- Operates at 120V AC/DC
- Provides high intensity fill for daylight shooting
- Each lamp adjustable to provide control of beam spread
- Easy access for lamp replacement
- Separate switch for each lamp . . . permits lamps to be preset.
- Net weight Par 64 7 lbs.
Cine Par Four 20 lbs.
Cine Par Six 28 1/2 lbs.
Cine Par Nine 40 1/4 lbs.

BW LIGHTING SYSTEMS

P.O. Box 470162
Tulsa, OK 74147-0162
(918) 664-1111

Dimmer Racks

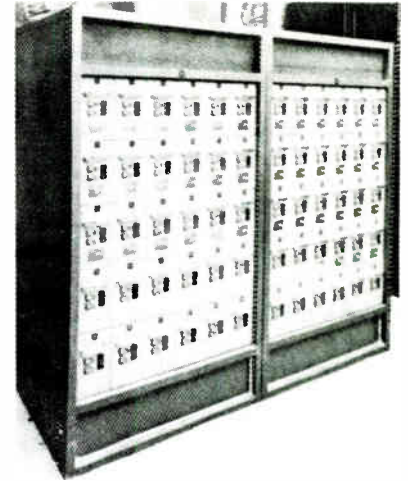
Catalog Number: 60-300

Description

BW Lighting manufactures a complete line of custom built dimmer racks. Each dimmer rack is tailored to fit the particular dimmer style. All dimmer racks include the specified number of spaces for dimmers and non-dims. All input and output power terminals are housed behind the terminal access door.

Construction

The rack consists of welded tubular steel frame in 16 Ga. cold rolled steel closure panels. Entire rack is primed, then painted with two coats of black catalyzed polyurethane paint. Detailed specifications available upon application.



Dimmer Racks

Patch Panel

Description

BW Lighting manufactures a complete line of custom built patch panels. Each patch panel is tailored to fit the end user's specific requirements. All panels are of the cold-patch family and represent complete safety from shock hazard for the operator. Styles available range from wall mount-hanging cord thru free standing retractable (in both under and overhung).

All patch panels include a specified number of receptacles grouped according to individual dimmers and non-dims. There is one drop cord and load circuit breaker for each pigtail and/or receptable in the studio. An ammeter is also included for proper loading of dimmers.

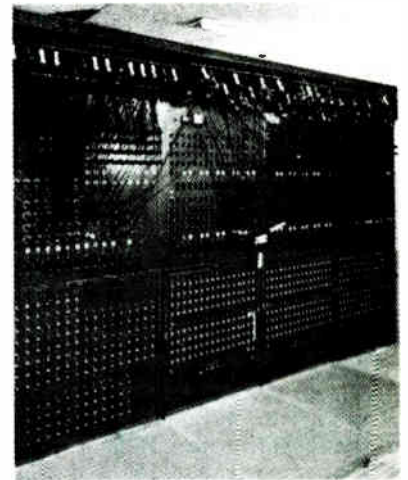
Construction

Panel consists of welded, tubular steel frame and 16 gauge cold rolled steel closure panels. Receptacle panels are made from 16 gauge cold rolled steel. Entire panel is primed, then painted with two coats black catalyzed polyurethane paint.

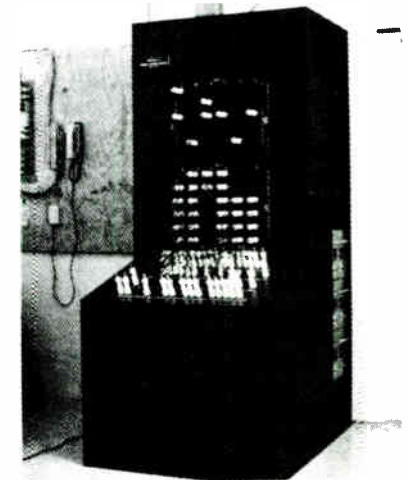
Detailed specifications available upon application.

Catalog Number:

- 60-401 Hanging Cord
- 60-402 Overhead Retractable Cord
- 60-403 Desk Retractable Cord



Overhead Retractable Cord



Patch Panel Desk

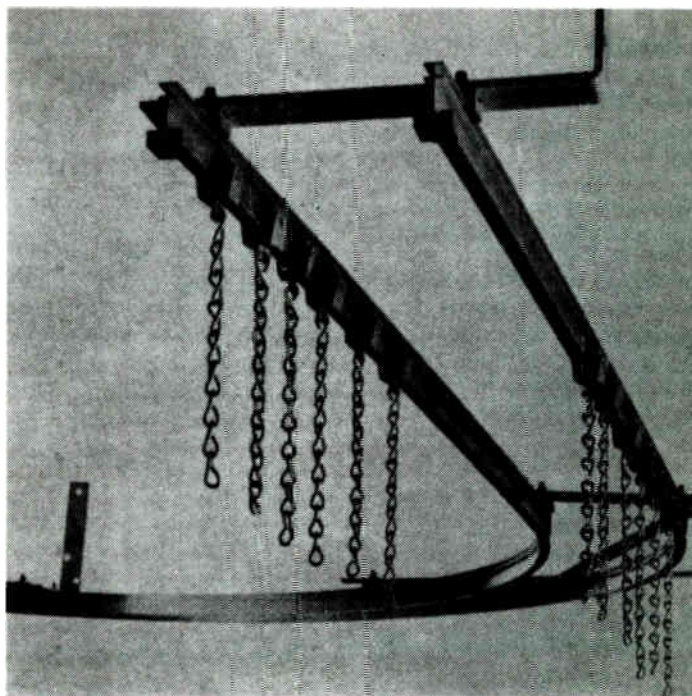
Cyclorama Curtain Track

Catalog Number:

* 70-100 Double track system	\$13.95 ft.
* 70-110 Single track system	7.25 ft.
* 70-120 Single track system w/double track brackets	9.90 ft.

Accessories:

70-101 Track 10 ft.	\$21.00
70-102 Track 15 ft.	31.50
70-103 Track 20 ft.	42.00
70-108 Splicing clamp	7.75
70-109 Bracket clamp	3.50
70-111 Curtain stop	2.50
70-122 Corner track 90° for 10 ft. corner	45.50
70-123 Corner track 90° for 5 ft. corner	33.50
70-133 Bumpered ball-bearing Carrier Assembly	6.25
70-135 Single track wall bracket 4 in.	10.75
70-137 Double track wall bracket 12 in.	14.50
70-138 Double track wall bracket 18 in.	15.50
70-139 Double track wall bracket 24 in.	30.50
70-140 Double track wall bracket 30 in.	39.75
70-141 Double track wall bracket 36 in.	45.50
70-142 Double track wall bracket 42 in.	48.00



Features:

- Ease of installation
- Rigid alignment of splices
- Effortless, walk-along carriers may be pushed or pulled
- Pre-formed corner radii
- All components aluminum or plated or painted steel
- One free set custom track layouts (Additional sets available for fee)

Double Track System 70-100

The double track system is recommended for the seamless Linoweave, and background curtains. The track, corner track sections, track brackets, splicing clamps and all other necessary accessories required to install the double track system are included.

Track Features

Extruded aluminum I-beam. Minimum 14 gauge aluminum with interior horizontal web for additional stiffness and to prevent carriers riding up on the track. Bottom flange has 10° topside slope — inside to outside automatically centering carriers on track.

Carrier Features

1" wheeled, nylon ball-bearing carrier with bumper, 20° included angle between wheels for self centering on track. (One carrier per foot of curtain width, plus one).

Splicing Clamp Features

Extruded aluminum clamp slides over track and may be coincident with hanger bracket to facilitate system layout and installation. Clamp rigidly aligns both spliced track ends resulting in smooth joint. Splicing clamp may also be used as bracket clamp to minimize components.

Important Note

It is recommended that exact inside studio dimensions be sent — carefully noting all obstacles. By so doing, we can often eliminate problems — and save money.

Bracket Clamp Features

Extruded aluminum clamp slides over track firmly attaching track to hanging brackets. Single screw attaches clamp to track — and clamp to bracket, providing quick, easy, one-handed, low maintenance installation.

Wall Bracket Features

Brackets made of 1/4" X 2" heavy duty steel slotted 8" apart, center to center in horizontal leg for mounting ceiling clamps. Three 7/16" holes on vertical leg for attaching to wall.

*CWANA — Complete with all necessary accessories for normal wall installation.

†Normal Installation: Two (2) inexperienced men can install double track system in a 30' X 40' studio in two (2) days.

P.O. Box 470162
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(918) 664-1111

Connector Strips

Specifications

This unit shall consist of a 4" X 4" (102 mm X 102 mm) code gauge steel wire-way with removable cover sections for access, labelled with circuit numbers.

Each strip shall have a terminal compartment which shall be factory installed on the right or left end as required which shall contain terminals for feed connection.

The strip shall be provided with heavy steel mounting straps on approximately 5' (1.5m) centers with U-bolts and pipe saddles to grip up to 2" (51 mm) pipe.

Type SEO. 18" (457 mm) cable pigtailed shall be secured by strain reliefs and shall be furnished with three pole grounded type female receptacles. Flush receptacles are available in lieu of pigtailed.

Internal wiring shall be rated at 125°C. Overall length of unit shall be as shown on the drawings, and each pigtail shall be spaced and wired in accordance with the circuit schedule.

Exterior finish shall be catalyzed polyurethane paint and the entire unit shall be listed with Underwriters Laboratories.

Catalog Number:

50-000 Connector Strip (specify length, number and ampacity of pigtailed/receptacles, type of connector and terminal location. **P.O.A.**

Accessories:

50-092 Connector Strip Bracket Assembly, double pipe.
50-093 Connector strip Bracket assembly, horizontal mount
50-094 Other bracket assemblies

Features:

- 4" X 4" cross section made of code gauge steel with screw on cover. Separate cover over terminals.
- Complies with National Electric Code.
- UL listed
- 18" pigtailed attached by strain relief type cable clamps.
- Separate, color coded, HOT, NEUTRAL, GROUND wire to terminal strip for each circuit.
- Primer and two paint coats for superior durability and corrosion resistance.

Note: P.O.A. (Price on Application)

- Each circuit identified by I.D. number on outside of strip and on terminal strip.
- Each strip a solid welded unit.
- Connector Strip Assemblies are fully assembled units ready to hang with connector strip bracket assembly attached. Grid pipe attached if purchased with the connector strip.
- Connector strip system engineered to integrate with the grid system.
- Weight — 6 lbs. per foot (approx.)
- Shipping Weight — 9 lbs. per foot (approx.)

Wall and Grid Box

Specifications

This unit shall consist of a 4" X 4" (102 mm X 102 mm) code gauge steel wire-way with removable cover section for access, labelled with circuit numbers.

The box shall be supplied with wall fasteners for wall boxes and pipe saddles for grid boxes.

Grounded female flush receptacles are standard on all wall and grid boxes. Type SEO. 18" (457 mm) cable pigtailed, secured by strain reliefs, and furnished with grounded female connectors are available in lieu of receptacles.

Exterior finish shall be catalyzed polyurethane paint and the entire unit shall be listed with Underwriters Laboratories.

Catalog Number:

50-WBX Surface Mount Wall Box (specify number and ampacity of receptacles/pigtailed, and type of connector. **P.O.A.**

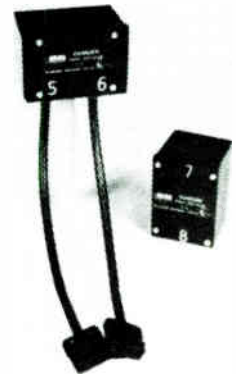
50-GBX Pipe Mount Grid Box (specify number and ampacity of receptacles/pigtailed, and type of connector. **P.O.A.**

Features

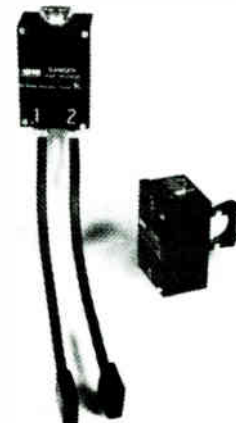
- 4" X 4" cross section made of code gauge steel with screw on cover.
- Complies with National Electric Code.
- UL listed.
- Primer and two paint coats for superior durability and corrosion resistance.
- Each circuit identified by I.D. number on outside of box.
- Each box a solid welded unit.
- Weight — Wall Box with 2 20A receptacles — 2 lbs.
Wall Box with 2 20A pigtailed — 3 lbs.
Grid Box with 2 20A receptacles — 3 lbs.
Grid Box with 2 20A pigtailed — 4 lbs.



Connector Strips

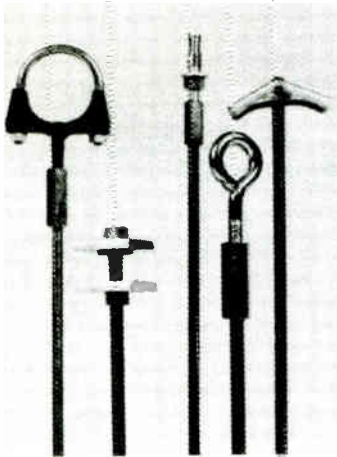


Wall Box

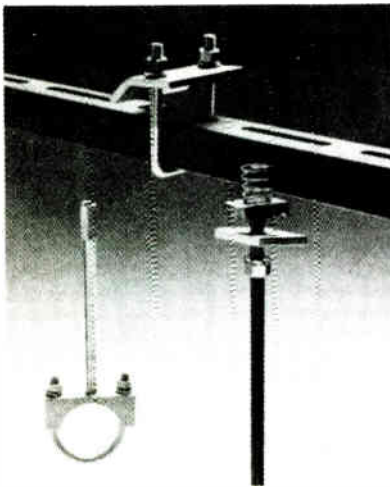


Grid Box

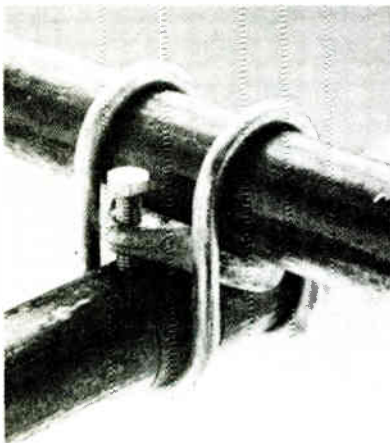
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 Tulsa, OK 74147-0162
 (918) 664-1111



Grid Hardware I



Grid Hardware II



Grid Lock

C. Grid Hardware

Specifications

Grid Hardware shall consist of upper suspension mechanism(s), proper length threaded rod, and lower suspension mechanism(s).

All components of a grid hardware system shall be painted or plated for corrosion protection.

Detailed assembly drawings, installation instructions, and layout prints shall be included with grid hardware when system is engineered by BW Lighting. If grid hardware is purchased as components, only assembly drawings shall be included.

Catalog Number:

- 50-100 Grid Hardware as engineered by BW Lighting. **P.O.A.**
- 50-105B Bracket Suspension Assembly.
- 50-105C Concrete Suspension Assembly.
- 50-105I I-Beam Suspension Assembly.
- 50-105L Load Channel Suspension Assembly.
- 50-105P Pipe Suspension Assembly.
- 50-105T Truss (Bar Joist) Suspension Assembly.
- 50-105W Wood Beam Suspension Assembly.

Accessories:

- 50-ALL 3/8 3/8" Threaded Rod.
- 50-ALL 5/16 5/16" Threaded Rod.
- 50-140 Load Channel

Features:

Includes sufficient load channel, all-thread, nuts, bolts, beam clamps, etc. to complete installation of connector strips or pipe grid to I-beams or truss deck based on no greater than 5' centers. Detailed assembly instructions sent with equipment.

D. Grid Pipe

Specifications

All pipe shall be pre-cut to length, have ends deburred, and be painted with a catalyzed wash primer.

Pipe sections which are co-incident with connector strips shall be factory mounted to strips when purchased and delivered at the same time.

Pipe sections shall be spliced together with a sleeve-over type splice. Threaded couplings available at extra cost.

Catalog Number:

50-110 1 1/2" I.D. Steel Pipe	\$3.30
50-111 1 1/4" I.D. Steel Pipe	3.05

Accessories:

50-110SP Splice for 1 1/2" I.D. Pipe	\$ 8.75
50-111SP Splice for 1 1/4" I.D. Pipe	8.50
50-130 Grid Lock	12.75

Features:

- BW Lighting provides engineering services for grid and distribution systems.
- Pipe grid available in any configuration.
- Grid Lock provides positive, secure interconnection of cross gridpipes. Lock has only two component parts and generates a 4,000 lb. grip with a safety factor of 2:1 (8,000 lb. actual grip.)

Note: P.O.A. (Price on Application)

BW LIGHTING SYSTEMS

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(918) 664-1111

Studio Ladder Catalog Numbers:

90-208 Ladder for 8 ft. grid	\$495.00
90-209 Ladder for 9 ft. grid	564.00
90-210 Ladder for 10 ft. grid	683.00
90-211 Ladder for 11 ft. grid	719.00
90-212 Ladder for 12 ft. grid	753.00
90-213 Ladder for 13 ft. grid	785.00
90-214 Ladder for 14 ft. grid	845.00
90-215 Ladder for 15 ft. grid	920.00
90-216 Ladder for 16 ft. grid	995.00
90-217 Ladder for 17 ft. grid	1110.00
90-218 Ladder for 18 ft. grid	1250.00
90-219 Ladder for 19 ft. grid	1390.00
90-220 Ladder for 20 ft. grid	1530.00
90-221 Ladder for 21 ft. grid	1670.00

Features:

- Meets or exceeds new government safety codes
- Made of 1" square steel tubing, all welded construction.
- Steps have non-slip surfaced steel for strength and safety.
- Platform at top with safety rail, toe plate and connecting hand rails.
- Four large casters with foot locks for non-movement working position.
- Base is covered with 3/4" plywood, finished in walnut stain, bolted to steel frame to provide usable shelf.
- Primer and two paint coats for superior durability and corrosion resistance.

Gaffer's Tool and Accessory Box

- Use for expensive or delicate accessories, i.e., spare lamps, footcandle meters, etc. Access is from the top by two lids designed so a lot of space would not be needed for opening. Desk type lock also provided. Tray covers half the box with two subdivisions which may be slid from side to side, or lifted out completely. Box painted to match studio ladder.

90-230 \$295.00

Spectra Candela Footcandle Meter

The footcandle meter is a convenient lightweight instrument for making studio measurements of illumination. It features correction for the color quality of the light and cosine-correction for incident angle of light. The meter has three (3) ranges of sensitivity, 0 to 300 footcandles, 0 to 3,000 footcandles and 0 to 30,000 footcandles. A protective carrying case is also included.

30-005

Pole Hangers Grid Adjustable Pole Hanger

Catalog Number:

20-714 4 ft. pole	\$55.00
20-715 6 ft. pole	65.00
20-716 10 ft. pole	78.00

Accessories:

20-707 Stirrup	\$34.00
20-717 Stirrup Light Pipe	10.00
40-074 4 ft. Extension Cable	39.00
40-076 6 ft. Extension Cable	41.00
40-0710 10 ft. Extension Cable	45.00

Features:

- Adjustable up or down with easy T-handle
- Dependable - will hold up to 75 lbs.
- Net weight: 4 ft. Hanger 11 lbs.
6 ft. Hanger 12 lbs.
10 ft. Hanger 14 lbs.

NOTE: Allow as much room above grid as needed for hanger to be positioned up out of the way.

Stands

Catalog Number:

30-542 Tubular Leg Stand, (40" folded, max. 122" extended)	\$120.00
30-543 Lightweight Stand, (41" folded, max. 96" extended)	110.00
30-544 Heavy Duty Stand, (51" folded, max. 132" extended)	206.00
30-545 High Riser Heavy Duty Stand with Casters, (66" folded, max. 170" extended)	530.00

Accessories:

30-546 Caster Set for Tubular Leg Stand #10-542	\$ 45.00
30-547 Caster Set for Heavy Duty Stand #10-544	55.00
30-517 Stand Mount	10.00

Features:

- Each stand designed for minimum weight, high strength and rigidity.
- Constructed to properly mate with lighting equipment.
- Easy to set up, knock down.

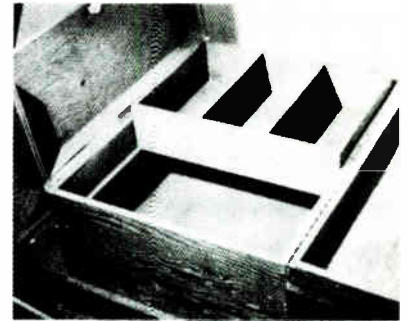
Color Media and Diffusion Material Catalog Number:

30-010 20" x 24" sheets	\$ 4.25
30-020 24" x 50' roll	110.00
30-050 20" x 24" sheet diffusion	4.25
30-060 24" x 50" roll diffusion	110.00

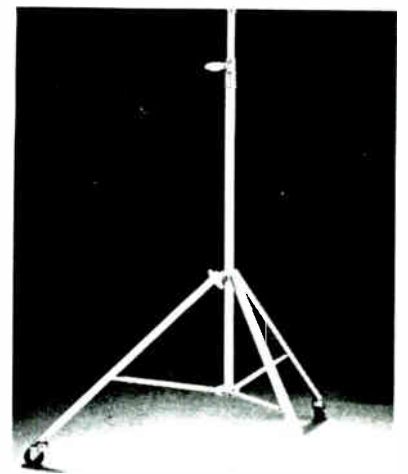
GAFFER AND MISC. EQUIPMENT



Studio Ladder



Gaffer's Tool and Accessory Box



Stands

Double-Duty Battery Power and Light Kits

A complete kit combining a miniature 12 Volt Battery Light with integral 8 ft. battery cable, removable handle, ultra-violet filter safety glass, 12 Volt 100 Watt Lamp. Battery Belt or Pack equipped with two 5-pin XLR power outputs, one to power the Light, the other, for a Camera/VTR; 14 hour Overnight Charger, spare 12 Volt Lamp, all contained in a foam-cushioned customized carrying case. Eight models provide a selection of 29 minutes to 1.7 hour run time per charge.

Carrying Case Dimensions for all Models are 7 1/4" x 13" x 1 1/4"

KIT MODEL NO.		WT.	KIT MODEL NO.		WT.		
LKB-124S	Battery Belt Type	29 min. Light	13 lbs.	LKP-124S	Battery Pack Type	29 min. Light	11 lbs
LKB-127S	" "	50 " " 14 lbs		LKP-127S	" "	50 " "	13 lbs
LKB-128S	" "	58 " "	17 lbs.	LKP-128S	" "	58 " "	16 lbs
LKB-1214S	" "	1.7 hour Light	20 lbs.	LKP-1214S	" "	1.7 hour Light	19 lbs



#LKB-124S KIT

#B-124S BATTERY BELT

#PL-12 POWER LIGHT



#L12V LAMP

#2LBD BARNDOOR (optional)

#DF12 DICHOIC FILTER (optional)

#SR12 SPOT REFLECTOR (optional)

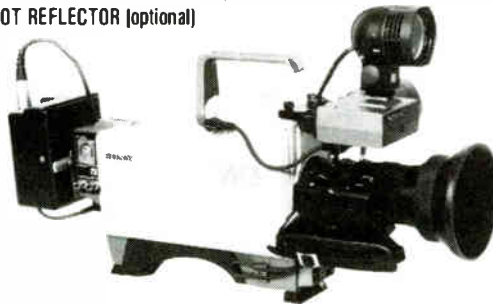
#4.0-10 BATTERY CHARGER



#B-127S BATTERY BELT



#P-124S BATTERY PACK



#PL-12 POWER LIGHT ON SONY DXC-M3 CAMERA

PL-12 Power Light Data

The 12 Volt Power Light is a soft, wide angle focusing light. Its miniature size makes it ideal as a camera-mounted light. Used as a "fill" light outdoors, a "key or fill" indoors.

Features

- Portrait quality
- Variable focusing to change intensity and light coverage
- Less heat and no ultraviolet rays with heat-absorbing Safety Glass Filter

Powerlight: Cat. No. PL-12 with handle and L12V Lamp. Handle is removable. **Switch:** On Powerlight. **Cable:** 8 ft. integral cable with XLR5-12C connector. **Mounting:** Male 1/4-20 stud on swivel "bounce" fixture, 90° vertical, 360° horizontal. **Beam Angle:** Continuously variable from 20° to 80° with heat-insulated knob. **Weight/Size:** 6 ozs., w/o Cable, 2 1/2" diameter, 3 1/8"; front to back. **Lamp:** 12 Volts 100 Watts, 3400°K 50 hour Tungsten-Halogen Lamp, Cat. No. L12V. **Reflector/Safety Glass Assembly:** Bayonet type, removable.

Optional Accessories For PL-12 Powerlight:

Dichroic Filter: Converts 3400°K indoor color temperature to 5500°K outdoor color temperature. **Connector Adaptor:** Converts 5-pin XLR connector on Powerlight's cable to cigarette lighter plug. Cat. No. 5-CLP. **Car Extension Cord:** 6 ft. cable. Permits powering Powerlight from car's cigarette lighter. Cat. No. 6401EX. **Barndoors:** 2-Leaf Barndoors and Holder for lighting effects filters. Cat. No. 2LBD. **Spot Reflector:** Provides spot light for long throw applications and effects. Cat. No. SR12. **PL-12 Camera Mounting Brackets.**



CINE 60

630 Ninth Avenue
New York, NY 10036
(212) 586-8782 Telex 645647

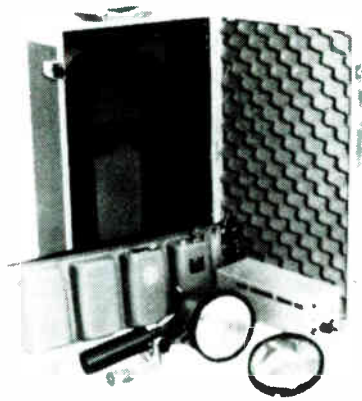
Sun-Gun #6201-A, 12 14.4 & 30 Volts

A unique battery-powered light used by TV News Camera Men and documentary video & film makers all over the world as a 'fill' light outdoors, a 'key' or 'fill' light indoors. For 70, 100, 150, 250 and 350 watt quartz lamps.

Features:

- Soft, wide angle focusing light. Ideal camera-mounted for head-on situations. At 10 ft. flood position throws a 14 ft. wide beam flat from edge to edge, free of hot spots, filament patterns, or halos. Camera man achieves better picture quality balancing 'fill' light to ambient light, and eliminating facial shadows. A heat insulated knob provides for focusing.
- Built-in Swing-Away Dichroic Filter provides 5500°K color temperature with the turn of a knob. Correct color temperature whether indoors or outdoors is always assured without the need for adjusting the camera's filter.
- Accepts 12V 100W, 14.4V 70W, 30V 150W, 250W & 350W Lamps.
- Single finger control of focus and on-off switch.

Cine 60 Sun-Gun Kits



The Sun-Gun Kit consists of: The Cine 60 Sun-Gun Head (with integral Swing-Away Filter Holder, removable handle, integral battery cable), Cat. No. 6201A; Tungsten-Halogen Lamp; Swing-Away Dichroic Filter, Cat. No. 6202; Powerbelt or Powerpak, Std. or Fast Charge; Overnight Charger; Carrying Case, Cat. No. 6207. Pictured: 12V .8AH FC Powerbelt Sun-Gun Kit with 1-Hour Fast Charger, Cat. No. SGK-8327PS.

SGK-6327PS	Standard Powerbelt Sun-Gun Kit. 12 Volt — 8AH (50 min. life. Wt. 20 lbs.)	\$ 972.00
SGK-8327PS	Fast Charge Powerbelt Sun-Gun Kit. 12 Volt — 8AH (50 min. life. With 9400 Fast Charger. Wt. 23 lbs.)	\$1304.00
SGK-7027PS	Standard Powerbelt Sun-Gun Kit. 12 Volt — 14AH (80 min. life)	\$1276.00
SGK-7027FC	Same As SGK-7027PS except with Fast Charge Powerbelt and Fast Charger.	\$1596.00
SGK-6304PS	Standard Powerbelt Sun-Gun Kit. 30 Volt — 4AH (25 min. life. Wt. 21 lbs.)	\$ 941.00
SGK-8304PS	Fast Charge Powerbelt Sun-Gun Kit. 30 Volt — 4AH (25 min. life. With 9400 Fast Charger. Wt. 24 lbs.)	\$1270.00
SGK-7004PS	Standard Powerbelt Sun-Gun Kit. 30 Volt — 7AH (40 min. life)	\$1270.00
SGK-7004FC	Same As SGK-7004PS except with Fast Charge Powerbelt and Fast Charger.	\$1607.00
SGK-9704PS	Standard Powerpak Sun-Gun Kit. 30V — 7AH (40 min. life. Wt. 23 lbs.)	\$1299.00
SGK-9704FC	2 Hr. Fast Charge Powerpak Sun-Gun Kit. 30 Volt — 7AH (40 min. life. With 9400 Fast Charger. Wt. 26 lbs.)	\$1616.00

LIGHTS



Switchable Sun-Gun Kits

Combines 30V 250W and 14.4V 70W Sun-Gun lighting in one kit.

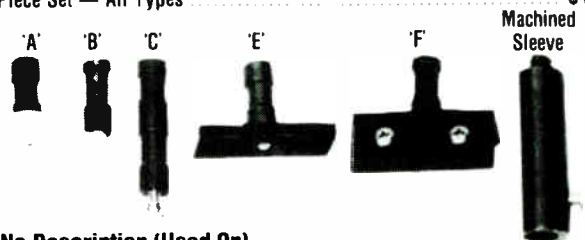
These Models are supplied with the Combination 30 Volt and 14.4 Volt Switchable type Battery Belt or Battery Pack, Standard or Fast Charge, plus the 30 Volt 250 Watt Lamp and 14.4 Volt 70 Watt Lamp.

SGK-3014PS	Standard Battery Belt Sun-Gun Kit. 30 Volt — 4AH / 14.4 Volt — 8AH 30 Volt — 250 Watt (27 min. life) 14.4 Volt — 70 Watt (90 min. life)	\$1080.00
SGK-3014FC	Fast Charge Battery Belt Sun-Gun Kit. 30 Volt — 4AH / 14.4 Volt — 8AH. Same life as standard kit. With 9400 Fast Charger.	\$1416.00
SGK-3017PS	Standard Battery Belt Sun-Gun Kit. 30 Volt — 7AH / 14.4 Volt — 14AH 30 Volt — 250 Watt (42 min. life) 14.4 Volt — 70 Watt (147 min. life)	\$1408.00
SGK-3017FC	Fast Charge Battery Belt Sun-Gun Kit. 30 Volt — 7 AH / 14.4 Volt — 14AH. Same life as standard kit. With 9400 Fast Charger.	\$1746.00

Sun-Gun Mounting Brackets

For easy, fast mounting and removing Sun-Gun on camera. Two piece set. Consists of precision machined aluminum sleeve with side locking knob for Sun-Gun and stud for camera. Supplied complete with hardware. Available in two diameters 5/8" and 1/2". Types for most cameras are listed below.

Two Piece Set — All Types \$45.00



Cat No. Description (Used On)

- A-1/2 Has male accessory shoe. Mounts on all cameras equipped w/female accessory shoe.
- B-1/2 Has 1/4-20 screw. Mounts on all cameras equipped w/1/4-20 hole. Sony BVP types, etc.
- B1/8 Has 6mm screw. Mounts on Ikegami ITC-730.
- B-1/5 Has 5mm screw. Mounts on JVC KY-1900.
- B1/2-16 Has 3/8-16 screw. Mounts on all Panasonic and Ampex Recams.
- C-1/2 Mounts on RCA TK-76.
- D-1/2 Clamp type. Attaches to camera's handle.
- E-1/2 Mounts on Ikegami HL-79 cameras.
- F-1/2 Mounts on RCA TK-76B, C, and TK-86.

Note: For 5/8" size Sleeve & Stud Set, instead of 1/2. specify 5/8.



Colortran, Inc.

1015 Chestnut Street
Burbank, CA 91506-9983
(818) 843-1200
Telex 67-7252WU, 188167TRT

LIGHTING CONTROLS

Colortran offers a comprehensive line of both manual and computerized lighting control consoles to fit any application. Portable manual control units are available to control 6-999 dimmers in either fully manual units or in units with eight presettable recorded scenes. Three different computerized consoles are available for television lighting control: The portable Patchman for the small to medium sized studio; the System Two for larger installations; and the ultimate in lighting control systems, Dimension Five. State of the art dimming is available in the Dimension 192 Rack, available in rating capacities ranging from 1.2kw to 12.0kw all in plug-in configurations.



System Two 168-300 Series
A completely self-contained computerized control console.



Patchman 168-700 Series, the leader in portable lighting control systems, big system features, in a small package.



Dimension 192-192-000 Series
Maximum density dimming...up to 192 2.4kw dimmers or combinations with other ratings all in one rack.

(Optional) as an accessory to Dimension Five. Designer Remote 168-603 with a single display, channel controller, cue controller, two individual faders, and one crossfader which duplicate all main system functions, except for the more limited playback functions.

Dimension Five™ 168-400 Series, the most versatile and logical control system in the world. This is the lighting control system for the future, designed for versatility, ease of operation and for your needs —by Colortran.



(Optional) as an accessory to Dimension Five. A hand held (Focusing Remote) 168-602 is provided to access all dimmers, channels and cues.



Dimension Five—Two color video monitors, comprehensive group mastering, and multiple fader systems make this the ultimate in television lighting control.



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Colortran, Inc.

LIGHTING



1kw Pole Op Fresnels

FEATURES

- Rugged sheet metal construction with die cast reinforced accessory clips built to withstand trouping and rough handling
- New optical system designed for maximum photometric output
- Double wall construction for optimum cooling
- UL recognized floating diamond four point contact mogul bipost socket (patented)
- All operator controls are thermally insulated
- Rapid turn, rack and pinion focus mechanism for manual and pole operated versions for international applications
- Applications: Key lighting • Wattage: 1000W

100-205 Manual operated \$328.00
100-215 Pole operated 477.00

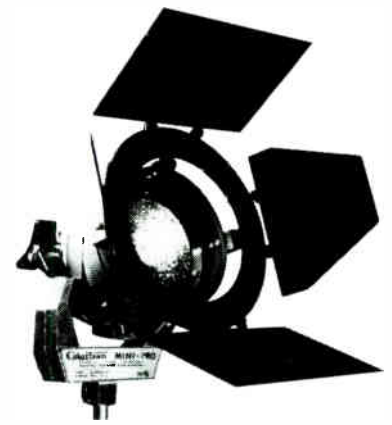


6" Theatre Fresnel

FEATURES

- Rugged lens door equipped with cool handling positive lock for fast and easy relamping
- High performance low expansion Borosilicate lens delivers maximum intensity in a smooth field
- Thermally insulated, fast track focus mechanism provides 6 to 1 spot/flood focus ratios
- Positive clutch system insures fast, positive, slip free operation
- Applications: Area, side, and back lighting
- Maximum Wattage: 750W

213-2026" Theatre Fresnel \$160.00



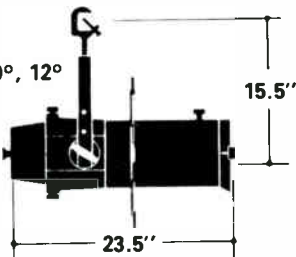
Mini-Pro®

FEATURES

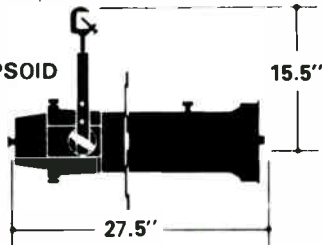
- Utility yoke contains finger operated on/off switch
- Recessed power receptacle permits use of detachable 120 or 30 volt power cord
- Completely portable. Designed for stand mounting or hand held operation
- Operates at 30 volts, 120 volts or 240 volts AC/DC
- Safety lock prevents accidental loss of accessories from mounting clips
- Smooth field. No hot spots
- Variable focus produces 3:1 range
- Dichroic Filter available for daylight shooting
- "Quartz" Lamps for high efficiency
- Applications: Key, back, kicker, side lighting
- Maximum Wattage: 650W

100-091 Mini-Pro \$122.00

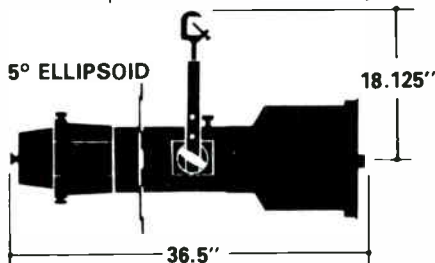
40°, 30°, 20°, 12° ELLIPSOID



10° ELLIPSOID



5° ELLIPSOID



Ellipsoids

Colortran Ellipsoids are designed to frame areas, project patterns and help you create special effects. They are designed for throws of 14 feet to 140 feet. The Ellipsoid system incorporates: a rugged die cast housing assembly for long reliable service and ease of maintenance. A new high performance optical train with plano-convex lenses permits greater light transmission, fewer aberrations, improved field control and higher efficiency. Lenses are fabricated of low expansion borosilicate glass and may be easily field modified to create 40°, 30°, or 20° field angle in one unit. Lenses are shock mounted in silicone to eliminate possible damage. A new joy stick design assures fast precise filament alignment without tools. A new lens barrel design permits you to easily focus to a hard or soft field edge. A new framing shutter concept enables you to create nearly any three or four sided shape...this unique capability solves virtually every keystone problem. Each shutter travels in its own plane eliminating interference problems. Every unit is equipped with a built-in pattern slot and is available with an optional iris without the loss of other beam shaping capabilities.

40° & 30° Ellipsoid

Incorporates a single 4.5" and 6" diameter plano-convex lens. These units outperform 750 watt and 1kw 6" x 9" and 6" x 12" existing spotlights. They are designed for throws from 14' (4.3m) to 55' (16.7m). \$310.00

20° Ellipsoid

Incorporates a single 6" x 9" plano-convex lens. This unit outperforms 750 watt and 1kw 6" x 16" existing spotlights. Designed for throws from 30' (9.1m) to 67' (20.4m).

\$305.00

12° Ellipsoid

Incorporates a single 6" x 12" plano-convex lens. This unit is equivalent in performance to higher priced generic eight-inch spotlights. Designed for throws from 45' (13.7m) to 80' (24.4m).

\$310.00

10° Ellipsoid

Incorporates a single 8" diameter plano-convex lens. This eight-inch unit is equivalent in performance to existing ten and twelve-inch spotlights. Designed for throws from 55' (16.7m) to 108' (32.9m).

\$446.00

5° Ellipsoid

Incorporates a high transmission 10" diameter plano-convex lens. With its efficient reflector design, single lens optical system and with optional iris assembly it actually outperforms many followspots. It is ideally suited to long-throw applications and is effective from 110' (33.4m) to 140' (42.7m).

\$625.00

Mini-Ellipse

The new Mini-Ellipse establishes a new performance standard. It is designed for throws from 6 feet to 40 feet. It accepts a range of high output Tungsten-Halogen Lamps from 250 watts to 500 watts at 120 volts and 500 watts at 240 volts.

\$165.00

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Prices and Specifications Subject to Change Without Notice.

VL-35

ENG/LOCATION LIGHTING KITS

14—Highly flexible kits that set-up fast for the most complex shooting situations.

Colortran's lighting kits are designed for film/ENG lighting anywhere in the world.

14 different kits in 120, 220 and 240 volt versions. Kits are sized to deliver maximum lighting with minimum power consumption.

Fill lights and variable focus spots are available in wattage from 250 to 1000 watts. Lightweight construction and compact design delivers maximum illumination while maintaining complete portability.



PRODUCTION KIT

FEATURES

Designed to illuminate a 15' wide x 10' deep by 10' high area.

Includes lights, stands, accessories, cable, and switch boxes.

Applications include news, sports, weather, commercials, instruction, etc.

Total connected load 45.8 amps at 120 volts.

Contents

qty.	catalog number	description
3	100-201	1000 Watt Fresnel
3	118-013	4-Leaf Barndoor
3	142-101	25' Extension Cable
3	152-053	Compact Stand w/Casters
1	142-215	Outlet Box w/2 Outlets 25' Cable
3	176-097	1000 Watt Lamp
2	104-031	Broad
2	152-053	Compact Stand w/Casters
2	176-022	1000 Watt Lamp
1	104-041	Multi-Broad
2	120-007	Diffusion Frame
1	142-101	25' Extension Cable
1	152-053	Compact Stand w/Casters
1	176-024	500 Watt Lamp
2	148-001	Case

150-062 \$4130.00

LOCATION LIGHTING KIT

FEATURES

Accessory holder on Multi-10 simplifies operation.

Designed for more complex lighting setups. One case carries all equipment.

Channel leg stands for reliable support.

Draws 41.6 amps at 120 volts and 14.5 amps at 220 volts.

Contents

qty.	catalog number	description
2	100-301	Multi-10
2	118-013	4-Leaf Barndoor
1	122-147	Scrim Set—Single, Half Single
2	176-012	1000 Watt 120V Lamp (150-056 Kit)
2	176-015	800 Watt 220V Lamp (150-057 Kit)
2	104-051	Mini-King
2	118-003	4-Leaf Barndoor
1	148-001	Case
2	152-052	Compact Stand
2	176-002	1000 Watt 120V Lamp (150-056 Kit)
2	176-027	800 Watt 220V Lamp (150-057 Kit)

150-056 (120V)
150-057 (220V) \$1485.00

FLIGHT KIT

FEATURES

Lightweight, compact, designed for fast setups.

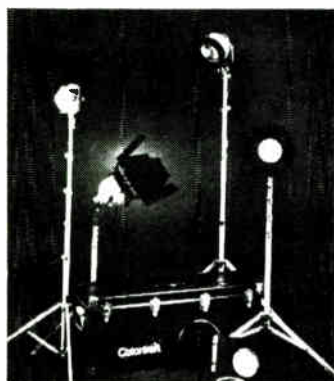
Accessory holders on Multi-6 for simple setup.

Draws 27.5 amps at 120 volts and 15 amps at 220 volts.

Contents

qty.	catalog number	description
2	100-151	Multi-6
2	118-013	4-Leaf Barndoor
1	122-147	Scrim Set—Single, Half Single
2	176-002	650 Watta 120V Lamp (150-058 Kit)
2	176-007	800 Watt 220V Lamp (150-059 Kit)
2	104-051	Mini-King
2	118-003	4-Leaf Barndoor
1	148-007	Case
3	152-051	Mini-Stand with 5/8" Stud
1	156-001	Gaffer Grip
2	176-022	100 Watt 120V Lamp (150-058 Kit)
2	176-027	800 Watt 220V Lamp (150-059 Kit)

150-058 (120V)
150-059 (220V) \$1655.00



CAMERAMAN'S LIGHTING KIT

FEATURES

A highly flexible kit for complex shooting situations.

All equipment fits in one case.

High output lighting equipment for optimum production lighting.

Draws 27 amps at 120 volts and 14.5 amps at 220 volts.

Contents

qty.	catalog number	description
2	400-201	Color Beam 800
2	126-027	Accessory Holder
2	118-013	4-Leaf Barndoor

2	104-341	Mini-Board
2	118-016	4-Leaf Barndoor
1	122-137	Scrim Set—Single, Half Single
1	148-007	Case
2	152-050	Mini-Stand with 1/2" Stud
2	152-051	Mini-Stand with 5/8" Stud
4	176-002	650 Watt 120V Lamp (150-054 Kit)
4	176-007	800 Watt 220V Lamp (150-005 Kit)

150-054 (120V)
150-055 (220V) \$1325.00



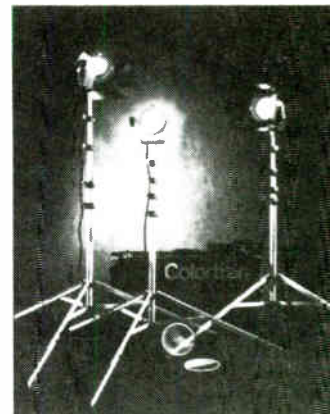
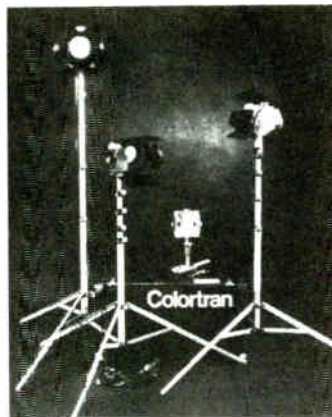
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Colortran, Inc.

ENG/LOCATION LIGHTING KITS

14 — Highly flexible kits that set-up fast for the most complex shooting situations

LIGHTING KITS



COLOR BEAM 800 KIT

Features
Uses three cool touch Color Beam 800 units. Accessories include accessory holder, barndoors and scrim set. Total connected load 16.3 amps at 120 volts and 11 amps at 220 volts.

Contents

qty.	catalog number	description
1	122-147	Scrim Set - Single, Half Single
1	148-007	Case
3	152-051	Mini-Stand with 5/8" Stud
3	176-002	650 Watt 120V Lamp (150-060 Kit)
3	400-201	Color Beam 800
3	118-013	4-Leaf Barndoor
3	126-097	Accessory Holder
3	176-007	800 Watt 220V Lamp (156-061 Kit)
150-060 (120V)		
150-061 (220V) \$1300.00		

PRO-KIT IV

FEATURES
Four lights. Two Minibroads, and two Mini-Pros. Key and fill lighting in one package. Interchangeable accessories. Designed for use with 120 volt or 240 volt lamps for foreign location work. Draws: 20 amps at 120 volts and 11 amps at 220 volts.

Contents

qty.	catalog number	description
2	100-091	Mini-Pro
2	104-341	Mini-Broad
3	118-016	4-Leaf Barndoor
1	142-001	25' Extension Cord
1	148-030	Metal Case
3	152-050	Mini-Stand 1/2" Stud
1	156-012	Gaffer Grip
2	176-002	650 Watt 120V Lamp (150-052 Kit)
2	176-092	600 Watt 120V Lamp (150-052 Kit)
2	176-007	800 Watt 220V Lamp (150-053 Kit)
2	176-094	650 Watt 220V Lamp (150-053 Kit)
150-052 (120V) w/metal case		
150-053 (220V) w/metal case \$1125.00		

MINI-PRO KIT

FEATURES
Lightweight
Designed for use with 30 volt battery power, 120 volts, or 220 volts
Kits in current use by network news crews and photographers
Draws 15 amps at 120 volts and 8 amps at 220 volts

Contents

qty.	catalog number	description
3	100-091	Mini-Pro
2	118-016	4-Leaf Barndoor
1	122-137	Scrim Set-Single, Half Single
1	142-001	25' Extension Cable
1	148-030	Metal Case
3	152-050	Mini-Stand with 1/2" Stud
3	176-092	600 Watts 120V Lamp (150-050 Kit)
3	176-094	650 Watt 220V Lamp (150-050 Kit)
150-050 (120V) w/metal case		
150-051 (220V) w/metal case \$930.00		



BATTERY BELT KIT

BATTERY BELT KIT

FEATURES
Kit comes complete with Battery Belt, Mini-Pro, 30 Volt DC cord, Mini Pro Handle, 9 foot cord for 120 Volt AC power operator (note — requires 120V lamp). Carry Case and 250 Watt 3400 K 30V lamp.

Batteries are rechargeable Nickel-Cadmium Cells and will provide many years of reliable service.

Note — Belt comes complete with 14-hour overnight charger and an integrated cable. Charger designed for 120 and 240 volt input power.

Contents

qty.	catalog number	description
1	100-091	Mini-Pro
1	140-003	30 Volt DC cord
1	140-001	Battery Belt with charger unit (120/240 volt)
1	142-012	9' cord for 120V AC power (requires 120V lamp)
1	148-030	Carry Case (metal)
1	156-005	Mini-Pro Handle
1	176-090	250 Watt, 3400°K 30V lamp, 25 hours
150-063 (30V) Battery Belt Kit \$1475.00		

MODULAR MOUNTS & LIGHT CONTROLS

COMPREHENSIVE LIGHT MOUNTING AND CONTROL ACCESSORIES

Selecting and deploying lighting fixtures and control devices to one's exact specifications can be difficult on location or in small, "adapted" studios, where confined quarters, low ceilings, and a shortage of power is the rule rather than the exception.

Recognizing this, Comprehensive has created a new line of light mounting and control devices designed to work with portable lighting fixtures. They offer you much the same freedom and flexibility on location as you would expect in a studio environment. While they each perform a unique function, they share features important to you and your budget.

- **Lightweight and portable** These rugged little devices can fill the nooks and crannies of your present lighting system case, without adding appreciably to your bulk and weight logistics.
- **Generic compatibility** Our light control and mounting devices are designed to work with YOUR lightweight location lights.
- **Designed for economy, not duplication** The modular aspect of our mounting devices eliminates the need to purchase costly parts over and over again, adding to your flexibility, not your overhead.

THE MODULAR STUD MS

Commonly known as the "baby pin", the 5/8" (16mm) diameter stud has become the most prevalent mount for lightweight professional lighting fixtures in use in motion picture and television. Nearly all manufacturers of this type of equipment design their lights to fit, or be adapted to, this mount. We have made this common denominator a modular piece in our system. It can be moved from device to device, thereby saving the cost of having to make repeat purchases of this item. The 3/4" deep 1/4-20 lapped hole in the base of the stud, enables it to be attached to all Comprehensive mounts, as well as many other types of mounts, stands, and rigs with 1/4-20 threaded screws. It's also an ideal building block when nothing will do but an invention of your own.

It conforms, in key mounting dimensions, to the new SMPTE proposed standard for the baby pin, but is an inch and a half longer (4 inches overall) to facilitate interchangeable mounting and add to the versatility of the piece. It features a safety hole through the top for safety wiring of lighting fixtures and a safety mounting groove, which should be standard on all light mounting devices.

CEILING SCISSOR CLIP CSC

For hanging lightweight lighting fixtures from the rails of dropped ceilings so commonly found in modern offices. Used in conjunction with the modular stud and our tilting umbrella/gel frame bracket, it also makes an excellent support for overhead microphones. (Mic must be equipped with 1/4-20 threaded receptacle or 3/8 to 1/4 adapter thread on mic mount.)

COMPREHENSIVE C-CLAMP CC

Our version of the industry's standard hangar for mounting lightweight lights and control devices to pipe, shelves, doors and "two-by-fours" - the Comprehensive C-Clamp accepts pipe and flat surfaces up to 2 inches thick. The pin mount's variable adjustment control makes this C-clamp the most versatile of its type available. Its 1/4-20 threaded

screw, our link to the modular stud, can also be used for microphone mounts and, in an emergency, to mount lightweight still cameras. Here, however, extreme caution should be exercised so as not to perforate the camera's bottom. Use the threaded back-up plate for this and similar applications.

COMPREHENSIVE DOUBLE CLAMP DC

This product eliminates forever the need to transport cumbersome and expensive pole systems to distant locations for the purpose of building temporary overhead rigging for your lights and controls. Two of these clamps, attached to the tops of two stands, will support a length of inexpensive, readily available, electrical or plumbing conduit, on which you can clamp your fixtures. Pipe of this type can be purchased locally from hardware stores, electrical outlets, or plumbing supply shops, used for the shoot and disposed of, all at a fraction of the cost of shipping such items to and from a location. A ten foot length of conduit is an inexpensive and ideal way to hang seamless background paper as well. A pair of these handy clamps is an ideal adjunct to any portable lighting system.

COMPREHENSIVE CAMERA MOUNT CM

Fast, simple, and safe, this is an effective way to attach lightweight fixtures to the camera shoes featured on many of today's video cameras. The mount, tooled from a single piece of sturdy bar aluminum, is fitted with a locking plate to prevent the fixture from sliding off the camera if it's tilted forward. The top of the mount is our standard 1/4-20 threaded screw to accept the modular light mounting stud.

5/8" to 3/8" ADAPTER A5/3

Adapts lights with 1/2" or 3/8" mounting receptacles to stands and clamps with 5/8" pin diameters. Like the 5/8" modular stud, the adapter features a safety undercut to prevent a light from sliding off a suspended mount.

COMPREHENSIVE/GEL UMBRELLA HOLDER GUH

This device enables you to equip 1,000 watt or under focussing spot or flood lights with either an umbrella for soft lighting applications, or a gel frame for color conversion, correction, diffusion, or special effects with gel. The holder has a tilting mechanism which enables the light and the gel frame or umbrella, to be re-oriented as an assembly rather than having to re-position these accessories independently when the light is moved. The top of the unit has a 1/4-20 lock screw that mates to the modular stud. In an emergency, the gel/umbrella holder can be used to support a lightweight still camera or mic mount on top of a light stand, however, the same caution mentioned in the C-Clamp description applies.

BACK-UP PLATE BUP

The 1/4-20 screws, common to most Comprehensive modular mounting devices, can provide temporary support for small cameras, mic mounts, and similar devices with 1/4-20 mounting receptacles. For most of these applications, however, the 3/4" screw length is too long. The back-up plate provides a secure, adjustable mounting surface for devices with shallower maximum mounting depths.

COMPREHENSIVE GAFFER GRIP GG-2

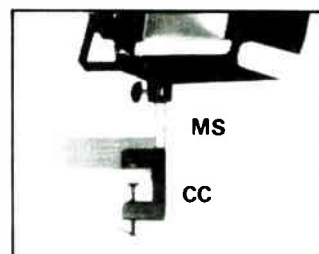
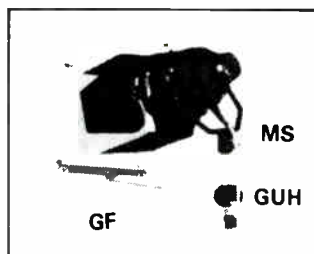
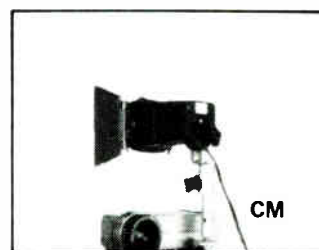
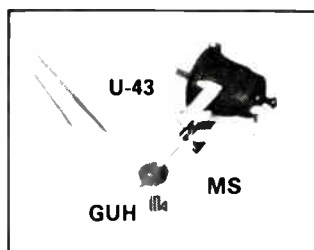
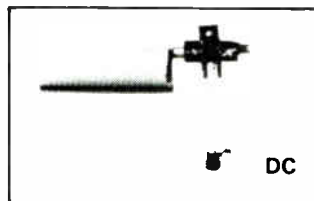
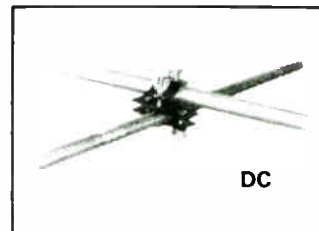
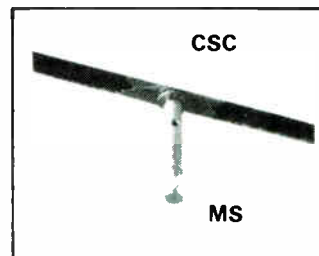
Made of heavy-duty fiberglass and featuring a permanently mounted 5/8" safety undercut stud, the Comprehensive gator-style gaffer grip is an efficient, reliable way to attach lightweight fixtures to shelves, doors, and similar flat surfaces. Use with 5/8" to 3/8" adapter for lights with smaller mounting receptacles. (see fig. 1 inside front cover)

COMPREHENSIVE GEL FRAME GF

The Comprehensive gel frame is designed to work in conjunction with our gel/umbrella holder, but will work equally well with standard "gobo" type devices from a variety of manufacturers in the industry. It's open-sided design facilitates "blending" the effect of the gel on the subject or set. The unique double ball & socket locking mechanism permits the plane of the gel supports to be set at any angle relative to the mounting shaft of the unit. It is sized to accommodate 10" x 12" gels, available in the Comprehensive/Rosco Gel Kits and from other manufacturers in this size. Four gels can be cut from industry standard 20" or 21" x 24" sheet sizes.

COMPREHENSIVE UMBRELLAS

Comprehensive reflective umbrellas convert small, focussing spot lights and flood lights into efficient soft sources, particularly useful in fill light applications. The U-43 and U-30 feature an aluminized surface, the UMMV is white. All provide high reflectivity and true color renditions, based on the color temperature of the lamp in use. Caution: When used in conjunction with focussing spots, light must be adjusted to flood position. Full spot intensity aimed at the center of the umbrella may cause scorching of the umbrella surface.



Modular Light Controls & Mounting:

MODEL NO.	DESCRIPTION	WT.	PRICE
MS	Modular stud	2 oz	\$ 3.50
CC	C-clamp	1 1/2 oz	12.95
CSC	Ceiling scissor clip	2 oz	2.50
GUH	Gel/umbrella holder	2 oz	19.95
GF	Gel frame	10 oz	19.95
CM	Camera mount	1 oz	5.50
A5/3	5/8" to 3/8" adapter	2 oz	4.95
DC	Double clamp	2 lb	10.50
U-30	Umbrella 30" diameter/storage length	20-3 4	26.50
U-43	Umbrella 43" diameter/storage length	29-1 4	37.50
BUP	Back-up plate	1 oz	.95
GG-2	Gaffer grip	10 oz	26.95



6144



Medium-Duty Tripod and Fluid-Effect Head

A medium-duty but lightweight assembly featuring a 30 lb. capacity fluid-effect head with adjustable quick-release platform, dual-handle operation, tilt safety stop, fluid-action pan and tilt, and reversible 1/4" or 3/8" camera mounting screw.

Collapsed Length: 30" Weight 14-3/4 lbs.
Extended Length: 70" 3142 Tripod Capacity 65 lbs.
1473 Fluid-Effect Head Capacity 30 lbs.

3148 \$449.95



3148

Compact Tripod with Fluid-Effect Head

Compact and lightweight, this tripod is specially designed for today's lightweight industrial and consumer color cameras.

Collapsed Length: 20"
Extended Length: 54"
Weight: Less than 6 lbs.
Tripod/head Capacity 18 lbs.

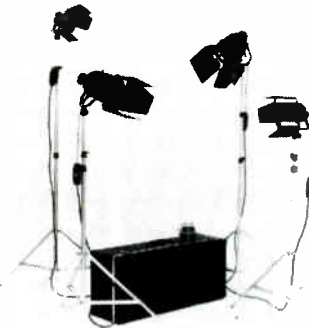
6144 \$139.00

LIGHTING KITS Comprehensive Lighting Kits

Virtually all lighting kit suppliers face a similar challenge—selecting component pieces that best handle the requirements of the largest number of users. Comprehensive kits are therefore divided into two general categories: kits featuring a full assortment of accessories for a wide variety of locations, and kits that offer the bare necessities, but provide extra room for accessories of your choice. Either way, Comprehensive lighting kits offer you a substantial savings over purchasing individual component pieces.

Ultra-Min Kit

MODEL NO.	DESCRIPTION	PRICE
UM-1	(3) M-250 lights (1) UAMV umbrella/stand adapter (1) UMMV Mini umbrella (2) SAMV stand adapters (1) TCMV table clamp (1) HGMV handgrip (2) TRS mini stands (2) ENH lamps (1) MC mini case Size: 20-1/2 L x 4 W x 15-1/4 H Weight: 14 lb. 6 oz. (Lamps included)	\$595.00



T-4 Kit

Basic 2 Kit

MODEL NO.	DESCRIPTION	PRICE
B-2	(1) VL-601 light (1) VL-601 VF focussing light (1) VL-BD-2 Barndoors for VL-601 VF (1) GUH Gel/Umbrella holder (1) MS Modular stud (1) U-30 Umbrella (30") (2) LS-2 light stands (2) DYH lamps (1) C-2 kit case Size: 25 L x 10 W x 8-1/4 H Weight: 18 lb. 5 oz. (Lamps included)	\$399.00

Take 2 Kit

MODEL NO.	DESCRIPTION	PRICE
T-2	(2) K-600 focussing lights (2) KBD Barndoors for K-600 (1) GUH Gel/Umbrella holder (1) MS Modular stud (1) UMMV mini umbrella (2) TRS mini stands (2) DYS lamps (1) KC kit case Size: 22 L x 6-3/4 W x 16 H Weight: 19 lb. 14 oz. (Lamps included)	\$549.00

Take 4 Kit

MODEL NO.	DESCRIPTION	PRICE
T-4	(2) V-10/6 focussing light (2) VBD barndoors for V-10/6 (2) VAH accessory holders for V-10/6 (2) MF-10 flood lights (4) LSP light stands (2) DXW lamps (2) FHM lamps (1) PRC Kit case Size: 35 L x 11-1/2 W x 15-3/4 H Weight: 45 lb. (Lamps included)	\$995.00

Take 3 Kit

MODEL NO.	DESCRIPTION	PRICE
T-3	(2) V-10/6 focussing light (2) VBD Barndoors for V-10/6 (2) VAH Accessory holder for V-10/6 (1) MF-10 flood light (3) LSP light stands (2) DXW lamps (1) FHM lamp (1) PRC Kit case Size: 35 L x 11-1/2 W x 15-3/4 H Weight: 36 lb. 14 oz. (Lamps included)	\$795.00

Basic 3 Kit

MODEL NO.	DESCRIPTION	PRICE
B-3	(1) VL-601 light (2) VL-601 VF focussing light (1) VL-BD-1 Barndoors for VL-601 (2) VL-BD-2 Barndoors for VL-601 VF (1) GUH Gel/Umbrella holder (1) MS Modular stud (1) U-30 Umbrella (30") (1) VLS-1 Single scrim for VL-601 (1) VLS-V Single scrim for VL-601 VF (3) LS-2 light stands (3) DYH lamps (1) C-2 kit case Size: 25 L x 10 W x 8-1/4 H Weight: 25 lbs. (Lamps included)	\$599.00

ENG-3 Kit

MODEL NO.	DESCRIPTION	PRICE
ENG-3	(2) K-600 focussing light (1) VM-300 focus no. lamp (2) KBD Barndoors for K-600 (1) DFK diffusion filter for K-600 (1) DIV dioptic filter for VM-300 (1) CSMV camera mount for VM-300 (1) VC-30 30V battery cable for VM-300 (1) HGMV handgrip for VM-300 (1) SAMV stand adapter for VM-300 (3) TRS mini stands (2) DYS lamps (1) AVI lamp (1) EPL lamp Size: 22 L x 6-3/4 W x 16 H Weight: 23 lb. 5 oz. (Lamps included)	\$775.00

Production 4 Kit

MODEL NO.	DESCRIPTION	PRICE
P-4	(2) V-10/6 focussing light (2) VBD barndoors for V-10/6 (2) VAH accessory holders for V-10/6 (2) VSS single scrim for V-10/6 (1) VDS double scrim for V-10/6 (2) MF-10 flood lights (2) FLS-1 single scrim for MF-10 (4) GUH gel/umbrella holders (4) MS modular studs (1) U-43 umbrella (43") (4) GF gel frames (1) LGP location gel pack (2) CSC ceiling scissor clip (2) CC c-clamp (4) LSP light stands (2) DXW lamps (2) FHM lamps (1) PRC Kit case Size: 35 L x 11-1/2 W x 15-3/4 H Weight: 53 lb. 13 oz. (Lamps included)	\$1,225.00

EFP-3 Kit

MODEL NO.	DESCRIPTION	PRICE
EFP-3	(2) V-10/6 focussing light (2) VBD barndoors for V-10/6 (2) VAH accessory holder for V-10/6 (2) VSS single scrim for V-10/6 (1) MF-10 flood light (1) FLS-1 single scrim for MF-10 (3) GUH Gel/Umbrella holders (3) MS modular studs (1) U-43 umbrella (43") (3) GF gel frames (1) LGP location gel pack (1) CSC ceiling scissor clip (1) CC c-clamp (3) LSP light stands (2) DXW lamps (1) FHM lamp (1) PRC Kit case Size: 35 L x 11-1/2 W x 15-3/4 H Weight: 43 lb. 4 oz. (Lamps included)	\$975.00



MINI-COOL PORTABLE, PHOTOGRAPHIC LIGHT

The Mini-Cool is designed especially for photography. All its interchangeable lamps provide light which is essentially free of heat, Infra-red and Ultraviolet radiation. Ultraviolet light has the unwelcome effect on film or videotape of decreasing image contrast (and is harmful to people as well). And many subjects, such as delicate life forms, can be damaged or destroyed by heat.

The Mini-Cool's unique operating features simplify conventional applications and invite new creative uses. It is small and light enough to attach to any video, motion picture or still camera, using the Camera Adaptor supplied. Or it may be handheld, using the handle included with each unit. (The handle has a hollow underside which can be fitted over a 5/8" diameter light stand column or post, but this is recommended only as an occasional practice. A far more secure mounting is provided by the Cool-Lux Stand Adaptor.)

The Mini-Cool is operable from a variety of AC and DC power sources, simply by installing a lamp of corresponding voltage and an appropriate adaptor cord. The lamp socket, switch and wiring are all heavy-duty construction, easily capable of handling DC currents (which are heavier than AC) as well as AC.

A 120-Volt, 250-Watt lamp is included with every Mini-Cool.

C4440 Mini-Cool Standard Pack (AC). Includes one each Mini-Cool Light, FOS-1 Lamp, Camera Adaptor (C4447), and handle (C4441). Supplied in foam carton **\$129.50**

C4460 MINI-COOL AC/DC PACK. Includes all items listed in Standard Pack plus FOS-9 Lamp and 12V DC Adaptor Cord (C4453). Supplied in foam carton **\$159.50**

INTERCHANGEABLE LAMPS. Eleven different lamps are available for your Mini-Cool to enable you to use a wide variety of illumination intensities.

LAMP TYPE	FOS-1	FOS-2	FOS-3	FOS-4	FOS-5	FOS-6	FOS-7	FOS-8	FOS-9	FOS-10	FOS-11
WATTS	250	200	100	50	25	50	25	75	75	95	150
VOLTS	120	30	12	12	12	12	12	12	12	14.4	120
AMPERES	2.08	6.67	8.33	4.17	2.08	4.17	2.08	6.25	6.25	6.94	1.25
AVERAGE LIFE (hrs)	50	50	50	4000	4000	4000	4000	4000	4000	500	250
COLOR TEMPERATURE (Degrees Kelvin)	3300	3300	3350	3100	3100	3100	3100	3000	3150	3200	3300
BEAM TYPE	FLOOD	FLOOD	FLOOD	FLOOD	FLOOD	SPOT	SPOT	SPOT	FLOOD	FLOOD	FLOOD
DEGREES COVERAGE (Horiz. x Vert.)	46x47	40x40	43x42	30x30	30x30	19x13	14x11	14x11	36x38	36x38	42x44
Distance											
1' Foot Candles	8250	4660	3950	1800	600	7200	6670	19142	3003	3600	6200
2' FC	2062	2915	988	450	150	1800	1669	4201	801	960	1550
3' FC	917	1296	439	200	67	800	741	1980	375	450	710
5' FC	330	446	158	72	24	298	267	1050	125	150	180
7' FC	168	238	81	37	12	147	136	465	67	80	63
10' FC	83	117	40	18	6	72	67	171	32	38	42
15' FC	37	52	18	8	2.7	32	30	85	14	17	14

*Illumination figures above are read as LUX. if distance figures are read as meters.

COOL-LUX™ LAMPS FOR MINI-COOL

FOS-1	Lamp, 120V, 250W, Wide Beam	\$24.95
FOS-2	Lamp, 30V, 200W, Wide Beam	29.95
FOS-3	Lamp, 12V, 100W, Wide Beam	29.95
FOS-4	Lamp, 12V, 50W, Wide Beam	24.95
FOS-5	Lamp, 12V, 25W, Wide Beam	24.95
FOS-6	Lamp, 12V, 50W, Narrow Beam	24.95
FOS-7	Lamp, 12V, 25W, Narrow Beam	24.95
FOS-8	Lamp, 12V, 75W, Narrow Beam	24.95
FOS-9	Lamp, 12V, 75W, Wide Beam	24.95
FOS-10	Lamp, 14.4V, 95W, Wide Beam	28.95
FOS-11	Lamp, 120V, 150W, Wide Beam	24.95



C4463 COOL KIT III

C4462 COOL KIT II. 18"L x 16"W x 5-1/2"D. 10-1/2 lb. Includes two Mini-Cool Lights, two Light Stands (C4451), three FOS-1 Lamps, one FOS-4 Lamp, two Stand Adaptors (C4446), two Camera Adaptors (C4447), two Spring-Clamp Mounts (C4452), two Scissor-Clip Mounts (C4469), one Putty-Knife Mount (C4464), one 12V DC Adaptor Cord (C4453), three Extension Cords (C4442), one Daylight Filter (C4448) and one Diffusion Lens (C4449). Supplied in foam-fitted carrying case **\$675.00**

C4463 COOL KIT III. 18"L x 16"W x 5-1/2"D. 10 lb. Includes three Mini-Cool Lights, five FOS-1 Lamps, one FOS-3 Lamp, three Stand Adaptors (C4446), one Camera Adaptor (C4447), three Spring-Clamp Mounts (C4452), two Scissor-Clip Mounts (C4469), one Putty-Knife Mount (C4464), one 12V DC Adaptor Cord (C4453), three Extension Cords (C4442), one Cube Tap (C4471), one Daylight Filter (C4448) and one Diffusion Lens (C4449). Supplied in foam-fitting carrying case **\$675.00**

Starpak

FOR STUDIO
WORK
OR LOCATION

Jacques Cousteau's Amazon series took one year to prepare and two years to shoot. Cinematographer Louis Prezelin who has been with the Cousteau team and The Calypso for many years says,



LOUIS PREZELIN

"The STARPAK is the most compact and best equipped lighting package in the market."



4 MINI-COOL™ LIGHTS

- 1 CASE WITH FOAM & KEYS
- 4 STAND ADAPTER
- 2 COLLAPSIBLE LIGHT STAND
- 2 LIGHT FRAMERS (Barn Doors)
- 6 FOS-1 LAMP (120-Volt, 250-Watt, Flood)
- 1 FOS-3 LAMP (12-Volt, 100-Watt, Flood)
- 1 FOS-9 LAMP (12-Volt, 75-Watt, Flood)

- 2 DIFFUSION LENS
- 2 DAYLIGHT FILTER
- 1 HANDLE
- 1 CAMERA ADAPTER
- 2 THREE WAY CUBE TAP
- 2 SCISSOR-CLIP MOUNT
- 1 PUTTY-KNIFE MOUNT

- 2 LARGE SLIDING CLAMP MOUNT
- 2 SPRING-CLAMP MOUNT
- 3 EXTENSION CORD
- 1 CIGARETTE-LIGHTER ADAPTER CORD
- 1 PHOTO DIMMER™
- 2 SPARE NYLON STRAIN RELIEFS
- 1 AUTO BATTERY ADAPTER CORD

Custom-fitted foam provides cavities for all above-listed items. Cavities are also provided for NEW MINI-COOL BARN DOORS and for small tools or accessories.

Starpak is ideal for studio or location shooting. MINI-COOLS operate from AC or DC power sources. AC power consumption (total for four lights) is less than nine amps.

Many times during the filming of the series, "AMAZON" only STARPAKS would permit the shooting of exceptional documents under the most precarious conditions.

Mini-Cools are used by NASA aboard space shuttle flights.



CINEQUIP INC.
275 MacPHERSON
TORONTO, CANADA M4V 1A4
(416) 920-5424

The Camera Mart, Inc.
456 W. 55th ST.
NEW YORK, NY 10019
(212) 757 6977/TELEX: 1-2078



coollight inc.

5723 AUCKLAND AVENUE
N. HOLLYWOOD, CA 91601 • (818) 761-6116



Made in America

COSTUME ARMOUR, INC.

Shore Road
P. O. Box 325
Cornwall-On-Hudson, NY 12520
(914) 534-9120

SCENIC BACKGROUNDS

COMMERCIAL, INDUSTRIAL & PORTRAIT PHOTOGRAPHY

EXHIBITS & DISPLAYS

MOTION PICTURE, T.V. & THEATRICAL SCENERY

Materials Used In Construction Of Scenic Backgrounds: All backgrounds illustrated are fabricated of heavy gauge vinyl (30 mil.), a self-extinguishing material that has been approved for use in areas of public assembly. The units which are available "ready-to-use" are those which have been permanently mounted onto sturdy wood frames. As noted below, all units are also available unframed for direct installation onto existing walls.

Paint Finish Selection: As explained in the catalog, most of the units shown are available in several alternative finishes. To obtain any style in a finish other than the one illustrated, merely indicate the particular unit desired (by name and number) then specify that it be painted in whichever alternative finish is desired. All units ordered by name and number alone will be painted as illustrated. As further noted below, all units are also available unpainted. On re-orders of the same style, because they are hand painted to order, all units are sometimes subject to slight variations in color and tone.



Custom Work: In addition to our stock items, we also fabricate customized backgrounds to meet any design specified, i.e. company names and logos, TV station call letters, etc. The size of the customized panels may range anywhere from 2' x 2' up to 4' x 12'. Estimates for custom work not mentioned below are available on request.

Shipping Time: These scenic panels are all made up to order; they are not kept in stock. Normally approximately four weeks is required between placing an order and the shipment of painted panels, whether framed or unframed. Unpainted, unframed-units can sometimes be shipped faster if required. All prices are F.O.B. Studio, Cornwall-on-Hudson, New York. Shipments are sent Freight Collect, via trucking companies or freight forwarders.

PRICES

Style No.	Style Name	Painted, Framed Ready-To-Use	Unpainted Unframed
101	Bamboo	\$155.00	\$ 75.00
110	Old English Wall	175.00	75.00
112	Old English Wall	175.00	75.00
201	French Provincial	175.00	75.00
	(Pilasters ea.)	120.00	50.00
202	English Oak Paneling	175.00	75.00
	(Pilasters ea.)	120.00	50.00
203	Spanish Paneling	175.00	75.00
204	Italian Provincial	175.00	75.00
205	Library Panel	245.00	75.00
207	Castilian	175.00	75.00
	(Pilasters ea.)	120.00	50.00
208	Baroque	175.00	75.00
	(Pilasters ea.)	120.00	50.00
209	Rococo	175.00	75.00
	(Pilasters ea.)	120.00	50.00
210	Fireplace	185.00	75.00
212	Florentine Bronze Doors	175.00	75.00
	(Pilasters)	120.00	50.00
215	Empire (not illus.)	175.00	75.00
220	Gothic Paneling	295.00	150.00
225	Roman Arch	250.00	150.00
	Roman Arch (Matching Panel — not illus.)	155.00	75.00
230	Colonial Brick Arch	375.00	150.00
235	Moorish Arch	325.00	150.00
306	Slate Roof Tiles	175.00	75.00
310	Western Quarry Stone (not illus.)	175.00	75.00
312	Barnwood Siding	155.00	75.00
314	Logs	155.00	75.00
315	Colonial Brick	215.00	75.00
316	Cedar Shingles	155.00	75.00
317	Split Shaker Shingles	155.00	75.00
318	Spanish Roof Tiles	175.00	75.00
319	Wood Clapboard Siding	155.00	75.00
320	New England Fieldstone	175.00	75.00
330	Stucco Wall	150.00	75.00
340	Bronze Gates (ea.) (not illus.)	120.00	50.00
345	Corinthian Column	170.00	80.00
346	Mosaic Tiles	150.00	75.00
315A	Colonial Brick 9'	225.00	75.00

Handling Fee Per Box \$12.00/2 Panels Per Box.



MINI-FILL KIT
MODEL MFK4

COMPARE THESE UNIQUE MINI-FILL FEATURES:

- Extremely lightweight—only 12 ozs
- Compact size—2' x 4-1/4'
- Operates from any 12-14.4 or 30 volt battery
- Utilizes the latest high efficiency multi-mirror lamps (20-100 watts)
- Completely serviceable
- Field tested
- Field proven
- Mounts on camera, pistol grip or lightstand
- Dual-lighthead configuration from one power source
- Rugged construction—Built by Frezzolini® —The world leader in portable lighting and power

MINI-FILL KITS

- MFK1** (1) MF12P Mini-fill w/cigarette lighter plug
(1) VB12 Battery pack-12V at 4AH (slow charge only)
(1) VBC Overnight charger (115VAC 60 Hz only) (less carrying case) **\$295.00**
- MFK2** Same as MFK1 plus
(1) MFDF dichroic filter
(1) MFCC carrying case **455.00**
- MFK3** (1) MF12V Mini-fill w/frezzi amp connector
(1) VB12V High performance battery pack w/amp connector
(1) VBCV Overnight charger (115VAC 60 Hz only) (less carrying case) **354.95**
- MFK4** Same as MFK3 plus
(1) MFDF dichroic filter
(1) MFCC carrying case **514.95**

- MFK5** (1) MF4X Mini-fill w/XLR-4 connector
(1) VB4X High performance battery w/XLR-4 connector
(1) VBCV Overnight charger (115VAC 60 Hz only) (less carrying case) **364.95**
- MFK6** Same as MFK5 plus
(1) MFDF dichroic filter
(1) MFCC carrying case **524.95**
- MFK7** (1) MFSV Mini-fill w/short 18'' cable & amp connector
(1) VBSO High performance camera mount battery pack—3 keyhole type
(1) VBCV Overnight charger (115VAC 60 Hz only) (less carrying case) **374.95**
- MFK8** Same as MFK7 plus
(1) MFDF dichroic filter
(1) MFCC carrying case **534.95**

Bulb/Handle/Light Stud Optional

Prices and Specifications Subject to Change Without Notice.



Frezzolini Electronics Inc.

7 Valley Street
Hawthorne, NJ 07506 USA
(201) 427-1160 TWX 710-988-4142

LIGHTING/LAMP GUIDE

FREZZI MINI-FILL LIGHTHEAD

Single Light Configuration (Including 100W or 75W Bulb)

MF12P	Mini-Fill w/Cigarette Lighter Plug	\$149.95
MF12C	Mini-Fill w/BP-90 Type Co-Ax Plug	149.95
MF12V	Mini-Fill w/Frezza Amp Connector	149.95
MFSV	Mini-Fill w/Short (18") Cable & Amp Connector	149.95
MF4X	Mini-Fill w/XLR-4 Connector	149.95
MF5X	Mini-Fill w/XLR-5 Connector	149.95
MF30	Mini-Fill w/2-Pin Amphenol Connector for 30V Operation	154.95
	(Includes 80W Bulb)	



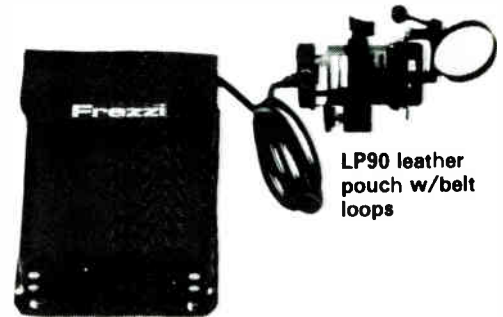
Shown with convenient Flip-up Dichroic Filter Model MFDF and diffused front surface

Dual Light Configuration

DMF12	Twin mini-fill interconnected for power from one (1) source. Choice of power connectors; Sony BP-90 In-Line, Frezzi-Amp, XLR-4 or Cigarette Lighter type	\$295.00
DMF30	Same as DMF12 except wired for 30V operation including 2-pin Amphenol Connector	298.00

Mini-Fill Accessories

MFDF	Mini-Fill "Flip-Up" Dichroic Filter	\$ 88.00
MFCC	Mini-Fill Carrying Case	80.00
LP90	Leather Pouch W/Belt Loops for BP-90	38.00



LP90 leather pouch w/belt loops

NOTE

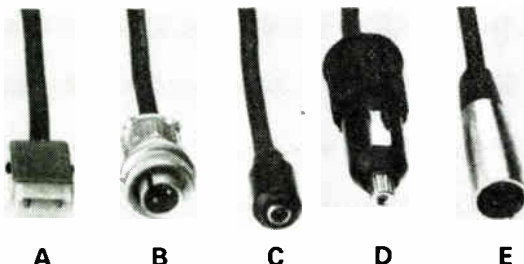
- 1) Lightstud/Mount/Handle additional
- 2) Normal cable length 4'
Custom specified cable length up to 8'. Additional cost

MINI-FILL LAMP GUIDE

LAMP CODE	VOLTS	WATTS	LIFE (HRS)	COLOR TEMP.	TYPICAL CENTER CANDLEPOWER	BEAM SPREAD
BAB	12	20	2000	2925°K	460	FLOOD
EKP	30	80	25	3350°K	1750	FLOOD
ESX	12	20	2000	2925°K	3300	NARROW SPOT
EXN	12	50	3000	3050°K	1500	FLOOD
EXT	12	50	3000	3050°K	9150	NARROW SPOT
EXV	12	100	50	3350°K	3300	FLOOD
EXZ	12	50	3000	3075°K	3000	NARROW FLOOD
*EYC	12	75	3500	3050°K	2000	FLOOD
EYF	12	75	3500	3050°K	11500	NARROW SPOT

* Also recommended for 13.2 & 14.4 VDC operation

YOUR CHOICE OF POWER CONNECTOR



- A Frezzi Amp Connector
- B 2-pin Amphenol (30V)
- C BP-90 In-Line
- D Cigarette Lighter Type
- E XLR (4 or 5 Pin)



Frezzolini Electronics Inc.

7 Valley Street
Hawthorne, NJ 07506 USA
(201) 427-1160 TWX 710-988-4142

CHARGERS/ADAPTORS/ BATTERY PACKS

VB SERIES 12 VOLT CHARGERS, ADAPTORS

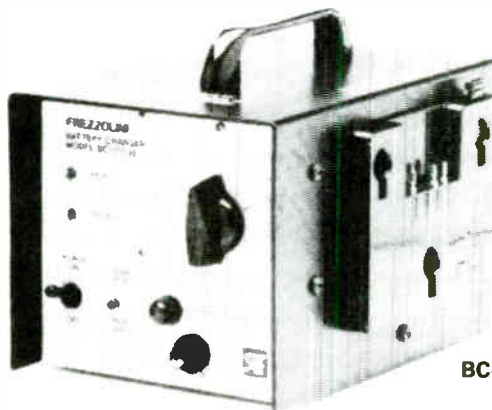
- VBC** Overnight charger w/cigarette lighter type plug (115V AC 60 Hz only) \$ **35.00**
- VBCV** Overnight charger w/frezzi male amp connector (115V AC 60 Hz only) **38.50**
- FTC12P** Deluxe overnight charger w/cigarette lighter type plug, L.E.D. charge sensing indicator and switchable 115/230V AC 50/60 Hz input . . **78.00**
- FTC12V** Deluxe overnight charger w/frezzi male amp connector L.E.D. charge sensing indicator and switchable 115/230V AC 50/60 Hz input . . **80.00**
- MBC5V** Eight (8) channel overnight charger w/universal A.C. inputs **395.00**
- BC77UB** Single battery fast charger (1 Hr) w/universal A.C. inputs (requires HV adaptor cable) . . **395.00**
- MBC4V** Fast charges five (5) battery packs simultaneously in one (1) Hr, plus eight (8) additional battery packs overnight, universal AC inputs (requires HV adaptor cables) **2090.00**
- RPS2** Dual channel (2) combination battery fast charger and A.C. adaptor **895.00**
- HV** Fast charge adaptor cable **30.00**
- V4X** Adaptor cable, 6" male amp connector to XLR-4 female connector **24.00**
- V5X** Adaptor cable, 6" male amp connector to XLR-5 female connector **24.00**
- V210** Adaptor cable from VB series battery amp connector to Sony BC210 charger or Frezzolini chargers models: BC124S, CR1, MBC2, MBC4, MBC5 **22.00**
- P210** Same as V210 except for model VB12 battery w/cigarette lighter type plug **22.00**
- XLM3** VB12V battery holder for Sony DXC-M3 (includes low battery warning circuit) **175.00**
- LP90** Leather pouch with belt loops for BP-90 . . **38.00**

VB SERIES 12V at 4AH BATTERY PACKS

- VB12** Battery pack w/cigarette lighter type plug, slow charge only w/(1) VBC charger \$ **165.00**
- VB12V** High-performance battery pack w/frezzi amp connector and (1) VBCV charger **225.00**
- VB4X** High-performance battery pack w/XLR4 connector on short coil cable and (1) VBCV charger **235.00**
- VBSO** High-performance battery pack w/amp connector, (3) circular studs for camera mount (3-keyhole) and (1) VBCV charger **245.00**



RPS-2



BC-77UB



Model VBSO
"camera-mounted"
battery pack
with additional
XLR4 connector



Model VB4X
"fast-charge"
battery pack
with XLR4 connector



Model VB12
"slow-charge"
battery pack



Model VB12V
"fast-charge"
battery pack

Prices and Specifications Subject to Change Without Notice.

VL-45

GITZO KARL HEITZ, INC.

34-11 62 St. P.O. Box 427
Woodside, NY 11377
(718) 565-0004

MONOPODS/CASES/LIGHTSTANDS MICROPHONE BOOMS/ATTACHMENTS

MONOPODS, With WRIST STRAPS, SOFT GRIPS, CHARCOAL FINISH

0056	Mono Loisir w/3 sections, leg diam. 5/8"	\$ 49.95
560	Mono Weekend w/2 sections, leg diam. 3/4"	44.95
560 H	Same, w/handle, also usable as walking stick, no grip. leg diam. 3/4"	44.95
560 B	Mono Weekend B w/3 sections, leg diam. 3/4"	49.95
560 BH	Same, w/handle, also usable as walking stick, no grip. leg diam. 3/4"	49.95
560 L	Mono Weekend Luxe w/4 sections, leg diam. 3/4"	59.95
560 LH	Same, w/handle, also usable as walking stick, no grip. leg diam. 3/4"	59.95
561	Mono Sport w/3 sections, leg diam. 7/8"	49.95
561 H	Same, w/handle, also usable as walking stick, no grip. leg diam. 7/8"	49.95
562	Mono Sport Luxe w/4 sections, leg diam. 7/8"	59.95
562 H	Same, w/handle, also usable as walking stick, no grip. leg diam. 7/8"	59.95
563	Mono Reporter w/4 sections, leg diam. 1"	69.95
563 L	Mono Reporter Luxe: 563 w/5 sections for tall people. leg diam. 1"	89.95
564	Mono Studex w/4 sections, leg diam. 1-1/4"	79.95
564 L	Mono Studex Luxe: 564 w/5 sections for tall people. leg diam. 1-1/4"	99.95
565	Mono Studex Super: 564 w/swivel head, chest & shoulder support. leg diam. 1-1/4"	119.95
565 L	Mono Studex Super Luxe: 565 w/5 sections for tall people. leg diam. 1-1/4"	139.95
566	Mini Mono Studex w/6 sections, leg diam. 1-1/4"	89.95
567	Mini Mono Studex Super: 566 w/swivel head, chest & shoulder support, leg diam. 1-1/4"	129.95
S564	Safari Mono Studex, w/reversed leg, olive green, no grip. leg diam. 1-1/4"	89.95
585	Side tilt attachment for more than 90°	49.95
175	Ball 1 for more than 90° tilts, 360° pans for 560, 561, 562	59.95
275	Ball 2 for more than 90° tilts, 360° pans for 563, 564, 565, 566, 567	79.95

MULTIPOD

558	Gitzopod foldable chest-shoulder-knee-table-bi-mono-pod w/swivel head, chest and shoulder support, neck and carrying straps	\$149.95
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ATTACHMENTS For CAMERAS

568	Car and all-purpose attachment	\$ 99.95
520	Wall support 15", turnable	79.95
521	Same, extensible 24" - 40", not turnable	99.95
522	Same as 520, but stronger 19", not turnable	59.95
522B	Same as 522, adjustable	79.95
523 PM	Simple tilt head, 2 small platforms	29.95
523 MM	Simple tilt head, 1 small - 1 large platform	29.95
523 GM	Simple tilt head, 2 large platforms	29.95
F88	Accessory Triangle Bag, attaches to all tripods	39.95
582	Accessory Tray, for Super Pro Tele Studex, Monocolumn	39.95

SOFT HEAVY DUTY CASES For TRIPODS And HEADS, With SHOULDER STRAP, BLACK

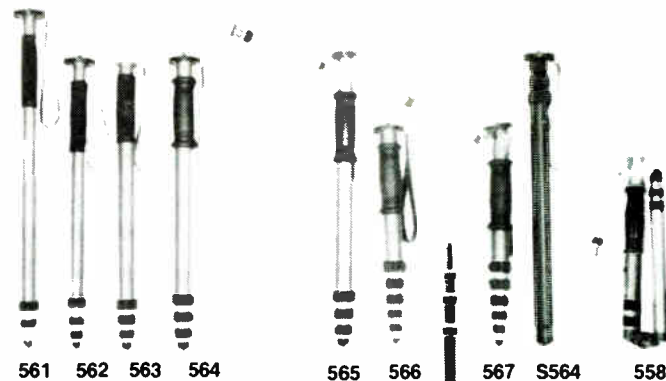
E 01	For Weekend/Luxe, Cremaillere 0/Luxe	\$29.95
E 106	For Total Luxe, Weekend Compact	29.95
E 101	For Sport/Luxe, Cremaillere 1/Luxe	29.95
E 206	For Reporter Mode, Cremaillere 2 Compact	39.95
E 201	For Reporter/Luxe, Cremaillere 2/Luxe	39.95
E 210	For Reporter Industry, Cremaillere 2 Industry/Luxe	39.95
E 304	For Studex Compact/Luxe, Cremaillere 3 Compact/Luxe	49.95
E 301	For Studex, Cremaillere 3	49.95
E 405	For Super Pro Studex Compact/Luxe	59.95
E 505	For Tele Studex Compact/Luxe	59.95
E 500	For Super Pro Tele Studex Giant/Luxe	59.95

HARD FIBER CASES For TRIPODS And HEADS, With HANDGRIP, BLACK

EH 304	For Studex/Cremaillere 3 Compact Luxe, Lightstands, 25-30" x 8-1/2"	\$84.00
EH 405	For Super Pro Studex Compact/Luxe, Studex/Cremaillere 3, 30-40" x 8-1/2"	86.75
EH 405	For Super Pro Studex Giant/Luxe, 40-50" x 8-1/2"	88.00
EH 505	For Tele Studex Compact/Luxe, 30-40" x 10"	94.50
EH 500	For Tele Studex Giant/Luxe, 40-50" x 10"	96.25

MICROPHONE FISHPOLES/LIGHTBOOMS, With SOFT GRIPS, HOLES For CORD, 3/8" - 1/4" SCREW, 3/8" - 5/8" ADAPTOR, CHARCOAL FINISH

555	2 Sections, range 2-1/2 - 4-1/2 ft., weighs 7/8 lb., supports 3 lbs.	\$ 59.95
556	3 Sections, range 2-1/2 - 6-1/2 ft., weighs 1 lb., supports 3 lbs.	79.95
557	4 Sections, range 2-1/2 - 9 ft., weighs 1-1/2 lbs., supports 1-1/2 lbs.	99.95



7680	6 Sections, range 2-1/2 - 12 ft., weighs 2-1/2 lbs., supports 1-1/2 lbs.	119.95
564 LM	5 Sections, range 1-1/2 - 7 ft., fits suitcases, etc., weighs 1-1/4 lbs., supports 3 lbs.	109.95
566 M	6 Sections, range 1-1/4 - 4-1/2 ft., fits briefcases, weighs 1-1/2 lbs., supports 3 lbs.	109.95
559	Clamp adaptor to fix fishpole/lightboom to tripods, heads, lightstands	39.95

EXTRA SOLID LIGHTSTANDS With STRONG BRACES, 5/8" PIN REVERSIBLE 3/8" - 1/4" SCREW, WHEEL, CHARCOAL FINISH

105/3	Giant Lightstand w/3 section column, 3-1/2 lbs., range 3-10 ft.	\$99.95
105/4	Compact Lightstand w/4 section column, 3-1/2 lbs., range 2-1/2 - 8-1/2 ft.	99.95

FOLD-AWAY COPY And CLOSE-UP STAND

542	Reprogilux fold-away copy and close-up stand w/spirit level	\$169.95
544	Macro stage 12" x 15", transparent w/adjustable 2 section column	49.95
546	Bispot L folding arms for Reprogilux w/copylights to 500 Watt	69.95
548	Bispot E folding arms for Reprogilux w/shoes for electronic flash	59.95
542L	Complete set of Reprogilux, Macro Stage and Bispot L	269.95
542E	Complete set of Reprogilux, Macro Stage and Bispot E	259.95
547	Clamp for Bispot 546, 548, attaches to tables, shelves, fences, etc.	49.95

PROJECTION STANDS With 4 LEGS, DIAMETER 1-1/2", PLATFORMS, For PROJECTORS To 250 Lbs.

588	Quadripod w/2 leg sections, range 40-59" (specify, and add platform)	\$399.95
589	Quadripod w/3 leg sections, range 27-67" (specify, and add platform)	449.95
65	13 x 16" medium platform, attaches to Quadripods, tripods, dollies	59.95
66	16 x 26" large platform, attaches to Quadripods, tripods, dollies	79.95
67	20 x 36" giant platform, attaches to Quadripods, tripods, dollies	99.95
526	Cremaillere gearlift column 18", for 588 or 589	189.95
529	Cremaillere gearlift column 32", for 588 or 589	299.95
595	Dolly with 4 5" wheels for Quadripod	POR

GRAFLEX/SUBSEA CORP.

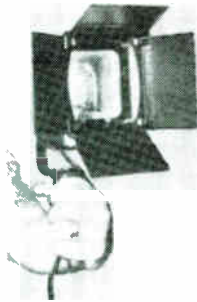
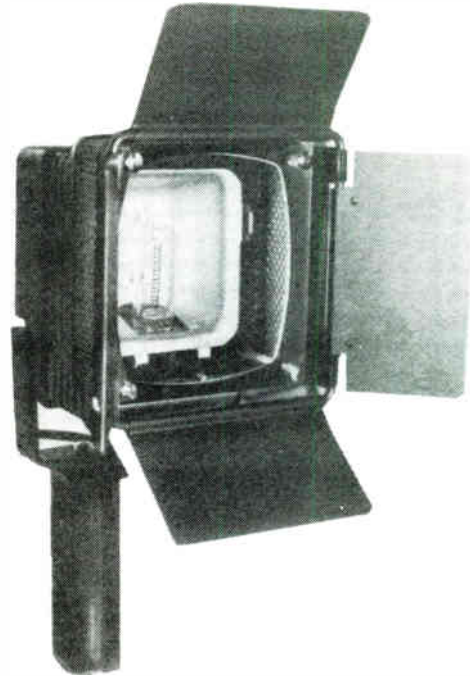
1030 West 15th Street
 Riviera Beach, FL 33404
 (305) 844-8937
 Telex 52710 GRAFSUB

VIDEO CAMERA LIGHT

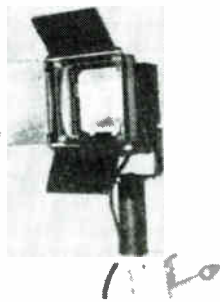
VIDEOLUX 1000 Watt

A professional quality videolight designed to be both versatile and highly efficient. The Videolux comes complete with bulb mounting bracketry and barn doors. An optional shoe mount is available for mounting your Videolux directly on your video camera.

For those who require economy, the Videolux 1000 (Cat. #3302) provides 1000 watts of light. It is built with high quality. Replacement bulbs are standard over-the-counter.



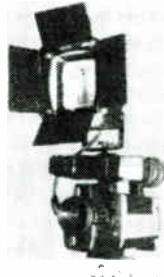
HAND-HELD



MOUNTED
 ON LIGHTSTAND



MOUNTED WITH VIDEO
 CAMERA ON A STANDARD
 TRIPOD



MOUNTED DIRECTLY
 ON CAMERA

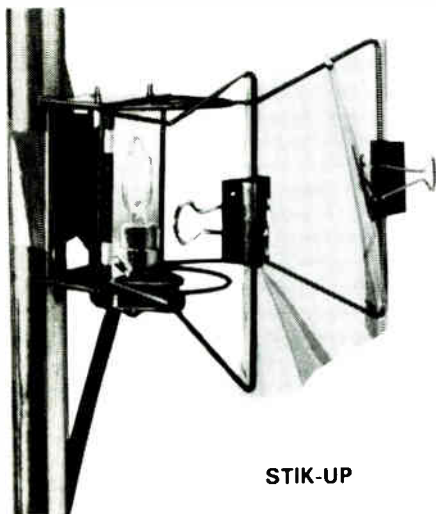
Cat. # 3302

SPECIFICATIONS	Videolux 1000
Standard Replacement Bulb	Yes
Watt Output	1000
Color Temperature (OK)	3400°
Safety Glass	Yes
Barndoors	Yes
Candle Power (Lumens)	33,000
Zoom	Yes
Built-In Fan	No
Removeable Handle	Yes
Camera Bracket Included	Yes
Maximum Continual Use	10 Min.
Price	\$75.00

THE GREAT AMERICAN MARKET

826 N. Cole Avenue
Hollywood, CA 90038
(213) 461-0200 TWX 910-494-1233

LIGHTING



STIK-UP

STIK-UP

- Compact single source luminaire
- Small, lightweight
- 100 watts, 3000 Kelvin
- Mounts in any position

Stik-up is a small, durable incandescent luminaire. It weighs only 9 oz. with its nine foot cord. Ultra light wire frame construction allows you to mount it where you need it — in any position by almost any means. Tape it to a stand, camera dolly, scenery, furniture. Hang it by picture wire. Stick it up with gaffer tape, masking tape, an alligator clip, even a clothespin! Convenient snap-on extension arms and clips allow you to use color filters, correction filters or diffusion material. And you can take it anywhere, tucked into your briefcase or utility bag.

Stik-up is ideal for television, film and still photography. Its 100 watt, 3000° Kelvin light source makes it an ideal miniature fill light. It creates the subtle reflection of dash lights in a car, the glow of a table lamp or candle, the ambience of a distant skyline. When you're in a tight spot, Stik-up can solve your problem. It's the ultimate trick for your bag of tricks, for better lighting made easier.

STIK-UP KIT

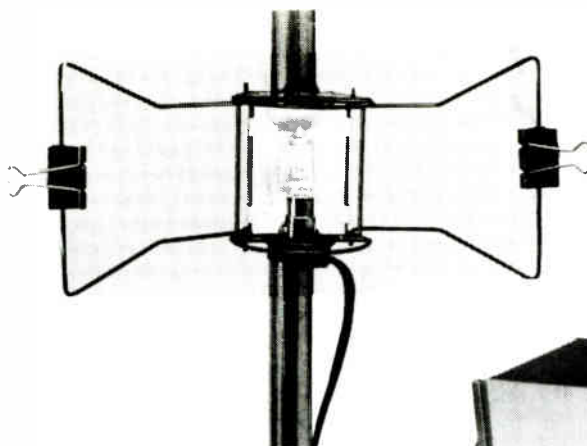
The ready-to-go Stik-up Kit contains three heads, three sets of extension arms, six clips and three lamps. It is available in either a re-usable carton or an Excalibur custom case.

TECHNICAL DATA

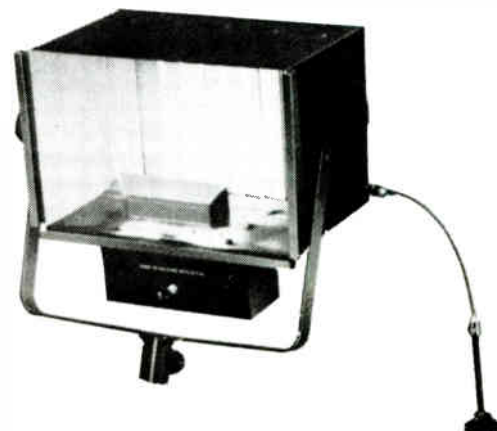
- Dimensions: 3' x 3' x 4'Ht
- Weight: 9 oz. with power cord
- Housing: Wire frame and steel
- Reflector: Diffused aluminum
- Lamp: Q100 CL/DC 120 V
- Power Cord: 9' flat BB/B, molded plastic U-ground plug

ORDERING STIK-UP

- 2600 Stik-up Kit: Three heads and accessories
- 2602 Stik-up Kit: In Excalibur custom case
- 2610 Stik-up head
- 2620 Extension arms (set of two)
- 2622 Clips (set of two)
- 2624 Mounting block
- 2020 Lamp
- 2150 Case for three heads and accessories



STIK-UP KIT



CAMRALITE

CAMRALITE

- Unique variable area reflector
- Keeps constant color temperature
- Mounts on any film or video camera

CamraLite is designed to mount on any film or video camera, in close proximity to the lens. It also accepts a 5/8" stud for use on a stand. Soft, yet efficient, it serves to lighten or erase the harsh effect of facial shadows in close-up work. Its reflection adds sparkle and life to the subject's eyes.

CamraLite is light weight and easy to use. It will not overheat or jam if left on during long rehearsals.

HOW IT WORKS

The rear wall of the CamraLite contains a unique variable area reflector, allowing the intensity of the light to be modulated without any fluctuation in the color temperature. As the distance between the subject and camera changes, a constant 3200°K can be maintained by adjusting the reflector. No variation in exposure is required. The reflector is controlled by a convenient shaft on the side of the fixture.

TECHNICAL DATA

- Dimensions: 8 1/2"H x 11 1/2"W x 6 1/2"D
- Length including yoke: 10 3/4"
- Weight: 2 1/2 lbs.
- Control shaft: 14" long. May be attached to either side of fixture
- Cable and connector: 6" high temperature lead, U-ground male plug
- Control: Separate toggle switches for each lamp
- Lamps: 120V/600W BHC/DYS/DYV
120V/420W EKB
30V/250W DYG
220V/650W DYR

ORDERING CAMRALITE

- 2320 Complete CamraLite kit
- 2325 CamraLite head
- 2330 Four-way barndoor
- 2331 Scrim frame
- 2332 Gel frame
- 2340 Lamp: BHC/DYS/DYV

THE GREAT AMERICAN MARKET

826 N. Cole Avenue
Hollywood, CA 90038
(213) 461-0200 TWX 910-494-1233

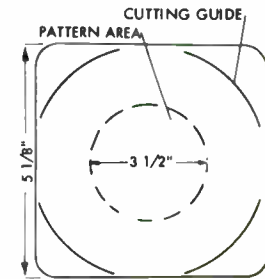
PATTERNS

THE GREAT AMERICAN PATTERN

The Great American Pattern is a custom designed template for use in ellipsoidal spotlights. Made of high quality, durable stainless steel, it is tough enough to stand up under intense heat at the gate. Cut it with scissors to fit any pattern holder.

The Great American Pattern is photo etched in a 4" x 4 1/2" matte. The pattern area does not exceed 3" in diameter. An Adaptor, Cat. #400, is available for use in spotlights with larger pattern holders. The Adaptor is 5-1/8" x 5-1/8".

The Great American Pattern—for projections that range from bold show-stoppers to subtle shadows. Special effects without special equipment, to add new dimensions to your production.



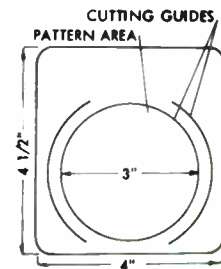
TV PATTERN

ADDITIONAL PATTERNS AVAILABLE FROM THE GREAT AMERICAN PATTERN

- 257 CLOUD 9
- 224 CLOUD 1
- 290 CLOUD 14B
- 226 CLOUD 3
- 228 CLOUD 5
- 230 CLOUD 7
- 267 FIRE
- 250 CRESCENT MOON
- 287 FIREWORKS B
- 231 REALISTIC STARS
- 326 WATER 1

- 328 WATER 3
- 270 FIREWORKS
- 234 STARBURST
- 244 SUPER STARS
- 245 EVENING STAR
- 289 CLOUD 14A
- 225 CLOUD 2
- 313 CLOUD 15
- 227 CLOUD 4
- 229 CLOUD 6
- 256 CLOUD 8

- 286 FIREWORKS A
- 295 SMALL MOONS
- 288 FIREWORKS C
- 232 LARGE STARS
- 327 WATER 2
- 268 LIGHTING
- 306 EXPLOSION
- 266 SUNBURST
- 243 STAR BREAKUP
- 314 SM. EVENING STARS



PATTERN



358 STARRY NIGHT



360 COMET



356 SPARKLER



366 SUNSET



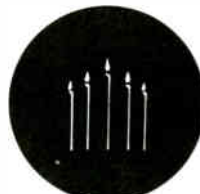
218 REALISTIC LEAVES



363 ROW OF TREES



362 PALM LEAVES



361 CANOLES



359 ENCORE



294 SUMMER LEAVES



215 BARE TREES



216 BARE BRANCHES



297 PALM TREES



217 JUNGLE LEAF



220 OENSE FOLIAGE

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Prices and Specifications Subject to Change Without Notice.

KAPCO MFG CO., INC.

1270 Jarvis Ave.
Elk Grove Village, IL 60007
(312) 437-5900 (800) 323-8551

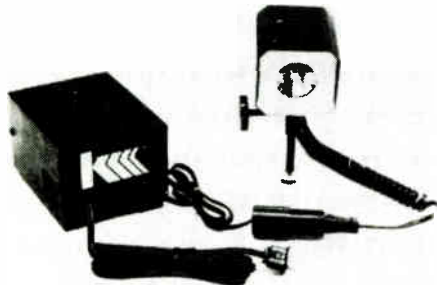
PORTABLE LIGHTS, CONNECTORS AND ACCESSORIES



L20



LP3



LK5

L20 K-Beam™ Quartz Light*

- Complete with 100 watt lamp installed
- Rated at 100 watts, but the unique design of this 12 volt light actually produces about 25% more light than a conventional 100 watt lamp.
- Convenient 5' cord with in-line switch and cigarette plug.
- Has a unique mounting bracket* that allows the L20 to swivel in any direction.
- Precision-engineered design reduces heat build-up. It remains cool to handle; radiates minimal heat from face of lamp.
- Can be shoe mounted or attached to any standard 3/8" post.

*Patents Pending

L20\$89.95

LL5055 Last Light

- Rechargeable glass-halogen spotlight
- Comes with recharger, mounting bracket and 25,000 candlepower GE lamp
- Throws a beam over 500' with up to 2-1/2 hours running time
- Built-in battery withstands severe discharge and temperature changes
- Available in black, beige or red

LL5055\$39.95

LK3075 Knight Light

- Lighter than the Last Light
- Lamp provides over 100,000 candlepower
- Convenient 6' heavy-duty cord with cigarette plug
- Available in black, beige or red

LK3075\$19.95

LP3 AC Power Module

This is the accessory power unit for the L20 K-Beam Quartz Light. Enables you to operate the K-Beam from an AC outlet.

LP3\$59.95

L29 100 Watt Quartz Lamp

Replacement lamp for the L20 K-Beam Quartz Light

L29\$25.95

M30 Deluxe Light Bracket*

This precision-engineered bracket weighs only eight ounces and can be disassembled into three parts for easy, compact storage. The bracket will hold video, still, and movie cameras on the base and Kapco shooting lights or strobes on the 3/8" post. Also attaches to any tripod. A must for hand-held work.

M30\$34.95

M22 Shoe Post

Positive "lock-down" mounting feature and a post that is notched at the top. Use it with the K-Beam light or other 3/8" mounting accessories.

M22\$12.95

M40 Shoe Adaptor

Designed for easy mounting on any stand or the deluxe M30 light bracket. It has a standard shoe mount on top and fits our LB1 (as shown) Dual Light Bracket or any 3/8" light stand.

M40\$7.95

LB1 Dual Light Bracket

For that extra flexibility and convenience when needed, this bracket will hold two K-Beam lights and can be mounted on a light stand or a camera. Or mount one light and any additional accessory suited to a 3/8" post.

LB1\$13.95

LB2050 K-Beam Spotlight

An incandescent lamp with a heavy-duty cord with cigarette lighter plug.

LB2050\$14.95

Special Purpose Item

R37 DC Voltage Converter

Converts 12 volts DC to either 3, 6 or 9 volts for powering most portable televisions, radios, calculators, toys, etc. Equipped with universal adaptor plugs and polarity reversal switch. Can be used with any Kapco pack.

R37\$8.95

ACCESSORIES

AL5010 Car charger cord\$19.95

A20 Accessory pouch16.95

C23 8' plug cord6.95

C24 12' Ext. cord9.95

V10 4-pin DIN 6' power cord w/cigarette plug11.95

V20 6' power cord bell w/cigarette plug11.95

V30 7-pin DIN 6' power cord11.95

V40 7-pin DIN 6' power cord w/cigarette plug11.95

V50 6' power cord w/cigarette plug11.95

V60 6' power cord w/cigarette plug11.95

V70 6' power cord w/cigarette plug18.95

V80 6' power cord w/cigarette plug11.95



3604



3606



3610

ALL UNITS PROVIDED WITH 39 INCH LEADS, C-CLAMP, SAFETY CABLE AND CONNECTOR

CATALOG NUMBER	DESCRIPTION	PRICE
3604	4-1/2" 750W quartz Fresnel, slide focus	\$250.00
23604	4 way Barndoor	65.00
13604	Color/Diffuser Frame	10.00
	QUARTZ LAMP FOR 3604: BWM 750W 3200°K 200 hrs.	83.00
3606	6-3/8" 750W Quartz Fresnel	260.00
23606	4 way Barndoor	75.00
13606	Color/Diffuser Frame	13.00
	QUARTZ LAMPS FOR 3606: EHC 500W 3200°K 500 hrs.	57.00
	EHF 750W 3200°K 300 hrs.	63.00
3608	8" 1000W Quartz Fresnel	370.00
23608	4 way Barndoor	100.00
13608	Color/Diffuser Frame	13.00
	QUARTZ LAMPS FOR 3608: CYV 1000W 3200°K 200 hrs.	97.00
	CXZ 1500W 3200°K 325 hrs.	133.00
3609	8" 1000W Quartz Fresnel	370.00
23609	4 way Barndoor	100.00
13609	Color/Diffuser Frame	13.00
	QUARTZ LAMP FOR 3609: FER 1000W 3200°K 500 hrs.	69.00
3610	10" 2000W Quartz Fresnel	510.00
23610	4 way Barndoor	130.00
13610	Color/Diffuser Frame	25.00
	QUARTZ LAMP FOR 3610: CYV 1000W 3200°K 200 hrs.	97.00
	CXZ 1500W 3200°K 325 hrs.	133.00
	CYX 2000W 3200°K 250 hrs.	133.00

NOTES: Oval Beam® 8" Fresnels available on Special Order

Pole-operated Fresnels available on Special Order

P.O.A. — Price On Application

ADD SUFFIX TO CATALOG NUMBER TO SPECIFY PROPER CONNECTOR

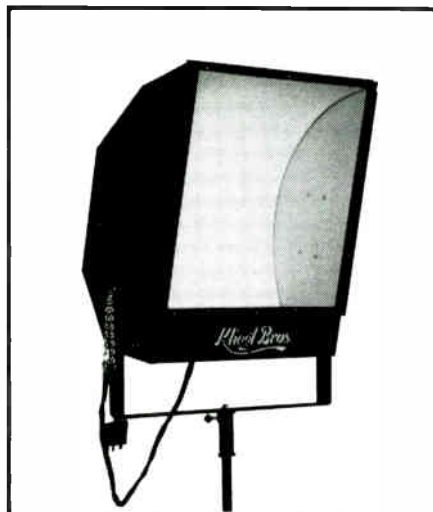
- UG Parallel blade U-ground, U.L. listed
- 955G 3 pole pin connector, U.L. listed
- TLG 3 pole twistlock, U.L. listed



3451



1000SE



6914

**ALL UNITS PROVIDED WITH 39 INCH LEADS, C-CLAMP,
SAFETY CABLE AND CONNECTOR**

CATALOG NUMBER	DESCRIPTION	PRICE
3451	16" 1000W Quartz Scoop	\$260.00
3452	16" 1000W Focusing Quartz Scoop	280.00
13451	Color/Diffuser Frame	40.00
13452	Color/Diffuser Frame	40.00
<p>QUARTZ LAMPS FOR 3451/3452:</p>		
	FDN 500W 3200°K 400 hrs. frosted	34.00
	EMD 750W 3200°K 400 hrs. frosted	46.00
	FHM 1000W 3200°K 300 hrs. frosted	39.00
	FWM 650W 3200°K 400 hrs. Watt Miser	43.00
1000SE	1000W Quartz Set Light	200.00
<p>QUARTZ LAMPS FOR 1000SE:</p>		
	FDN 500W 3200°K 400 hrs. frosted	34.00
	EMD 750W 3200°K 400 hrs. frosted	46.00
	FHM 1000W 3200°K 300 hrs. frosted	39.00
	FWM 650W 3200°K 400 hrs. Watt Miser	43.00
6912	2000W Soft Light	850.00
16912	Color/Diffuser Frame	50.00
<p>QUARTZ LAMPS FOR 6912:</p>		
	FHM 1000W 3200°K 300 hrs. frosted	39.00
	FWM 650W 3200°K 400 hrs. Watt Miser	43.00
6914	3000W Soft Light	860.00
16914	Color/Diffuser Frame	50.00
<p>QUARTZ LAMPS FOR 6914:</p>		
	FGT 1500W 3200°K 400 hrs. frosted	66.00
	FDB 1500W 3200°K 400 hrs. clear	66.00
DIFFUSION MATERIALS		
CATALOG NUMBER	DESCRIPTION	PRICE
TSP-2	Tough Spun. Replaces spun glass. Roll 2' x 50'	\$130.00
TRF-2	Tough Frost Diffusion Roll 2' x 50'	130.00
TSK-2	Tough Silk. Same diffusion qualities as real silk. Roll 2' x 50'	130.00
835	Spun glass. Roll 3' x 12'	30.00

ADD SUFFIX TO CATALOG NUMBER TO SPECIFY PROPER CONNECTOR

- UG Parallel blade U-ground, U.L. listed
- 955G 3 pole pin connector, U.L. listed
- TLG 3 pole twistlock, U.L. listed

Standard Systems (Include Dimmer Bank, Control Console and Control Cable)

SYSTEM #	DESCRIPTION	DIMMER BANK #	CONTROL CONSOLE #	PRICE
9000/TLG	9 — 2.4 KW Dimmers, Twistlock Receptacles	8926/TLG	7890	\$4900.00
9000/955G	9 — 2.4 KW Dimmers, Pin Connector Receptacles	8926/955G	7890	\$4900.00
9000/UG	9 — 2.4 KW Dimmers, U-Ground Receptacles	8926/UG	7890	\$4900.00
9000/S	9 — 2.4 KW Dimmers, Terminal Strip Output	8926/S	7890	\$4400.00
8000/955G	9 — 6.0 KW Dimmers, Pin Connector Receptacles	8960/955G	7890	\$9300.00
8000/S	9 — 6.0 KW Dimmers, Terminal Strip Output	8960/S	7890	\$8200.00

NOTE: A #7892/32 Control Cable is furnished with each system.

Control Cables



Catalog #7892
Console to Dimmer Bank
Control Cable

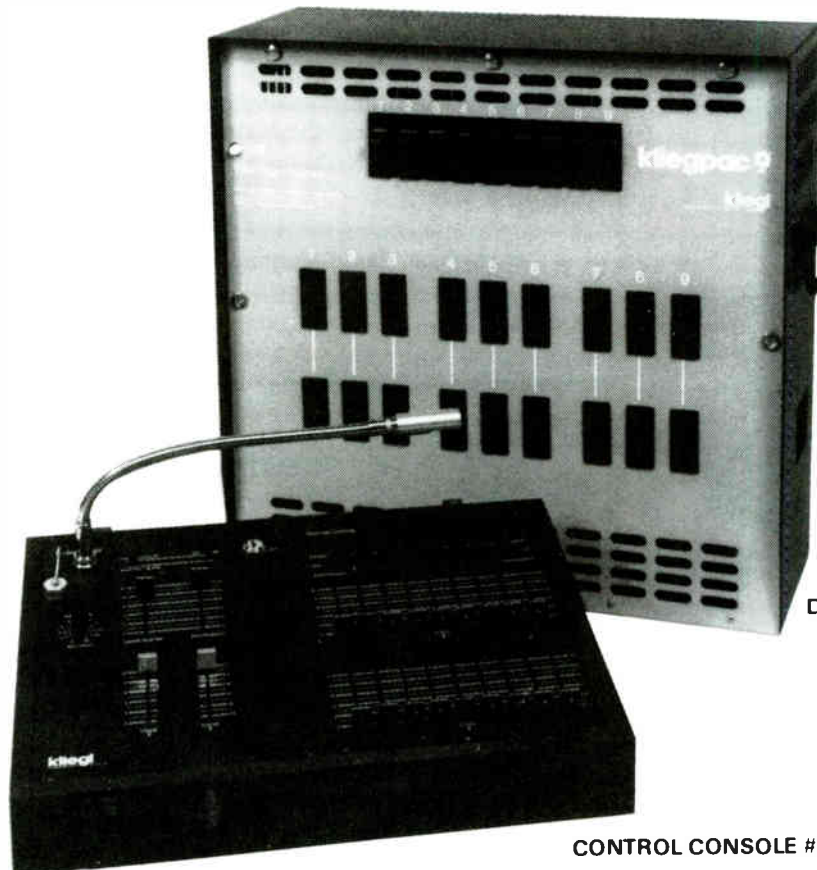
32' (10M) long with AMP connectors

Catalog #7893/3
Console to Console
Master/Slave Cable

3' (1M) long with AMP connectors

Other Control Cable lengths of 50, 75, 100, 200 and 250 ft. also available.

Catalog #7895
Cable to Cable Coupler
1' (.3M) long with AMP connectors



DIMMER BANK #8926/955G

CONTROL CONSOLE #7890

Prices and Specifications Subject to Change Without Notice.

VL-53

SIX STUDIO LIGHTING PACKAGES

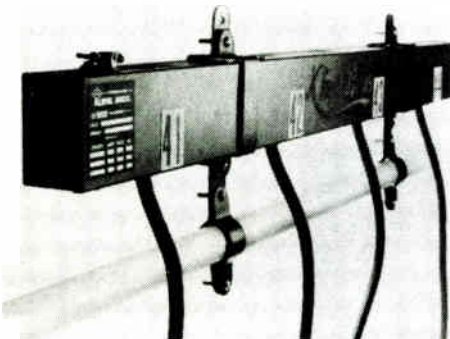
These packages have been designed and engineered by Kliegl to cover a broad spectrum of studio lighting applications as they apply to most commercial, educational, and industrial users. Each package has been carefully laid out to ensure that the compliment of lighting fixtures, distribution equipment and the lighting control system will prove adequate in the area for which it is designed.



LIGHTING FIXTURES

LIGHTING FIXTURES—A varying complement of Key, Back, Base, Fill and Set lights, including their accessories, are provided in every package. Pattern Projectors and special Cyc lighting instruments are included in certain packages. All fixtures are provided with 39' leads, C-clamp, safety cable and pin connector.

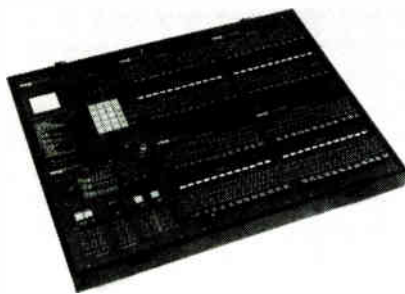
DISTRIBUTION EQUIPMENT—Wireway connector strips and wall outlet boxes are provided in various quantities for each package in order to ensure proper power distribution throughout the specified studio. Cyc drop boxes are also used in the three larger packages for powering the cyc lighting units.



DISTRIBUTION EQUIPMENT

LIGHTING CONTROL SYSTEM—An SCR multiplexed digital dimming system utilizing the "dimmer-per-circuit" concept has been designed for each of the studio packages. Each system consists of an SCR digital dimmer rack (or pack) and an ENTERTAINER portable, microprocessor-based control console. The digital dimming system uses bi-directional, multiplexed data streams between the console and the dimmer rack. A single 4 conductor, shielded cable replaces the large multi-conductor control cables required in older systems. The accuracy of the system is unaffected by electrical noise, temperature or aging of the components.

In addition to the above, each of the studio packages contains a studio layout and a system riser (flow) diagram. The packages are listed as follows:



LIGHTING CONTROL SYSTEM

CATALOG NUMBER	PACKAGE DESCRIPTION	PRICE
851520	15' x 20' (300 sq. ft.)	\$ 26,600.00
851825	18' x 25' (450 sq. ft.)	37,700.00
852030	20' x 30' (600 sq. ft.)	51,900.00
853040	30' x 40' (1200 sq. ft.)	86,200.00
853650	36' x 50' (1800 sq. ft.)	124,200.00
854060	40' x 60' (2400 sq. ft.)	166,200.00

Klieglkit 4Q-TV

Portable Kit for
 150 Sq. Ft. Area

Klieglkit 5Q-TV

Portable Kit for
 225 Sq. Ft. Area

The KLIEGLKIT 4Q-TV and 5Q-TV provide the ideal solution to the lighting requirements encountered in the remote TV and film location applications of today. In addition to portability, these kits contain the types of lighting fixtures the lighting professional needs in equipping an O.B. van for Electronic News Gathering.

The two kits are identical except for the inclusion of an additional SPOT head, with accessories, in the 5Q-TV kit. The carrying cases for either kit are the same. This allows one to start with a 4Q-TV kit and later add an additional SPOT or FLOOD head, with accessories, as required.

Contents of 4Q-TV

- 2 - #1720-UG 1000W Focusing SPOTS with Switch 10' Cord
- 2 - #11720 Diffuser Frames
- 2 - #21720 4-Way Barn Doors
- 2 - FBY 1000W Quartz Lamps
- 2 - #1750-UG 1000W FLOODS with Switch, 20' Cord & Integral 4-Way Barn Doors
- 2 - #11752 Diffuser Frames
- 2 - FHM 1000W Quartz Lamps
- 4 - #14360 Folding Stands
- 2 - #25E16/3UG Extension Cables, 25'
- 1 - #1700 Carrying Case
- PRICE** \$1550.00

Contents of 5Q-TV

- 3 - #1720-UG 1000W Focusing SPOTS with Switch, 10' Cord
- 3 - #11720 Diffuser Frames
- 3 - #21720 4-Way Barn Doors
- 3 - FBY 1000W Quartz Lamps
- 2 - #1750-UG 1000W FLOODS with Switch, 20' Cord & Integral 4-Way Barn Doors
- 2 - #11752 Diffuser Frames
- 2 - FHM 1000W Quartz Lamps
- 5 - #14360 Folding Stands
- 3 - 25E16/3UG Extension Cables, 25'
- 1 - #1700 Carrying Case
- PRICE** \$1960.00

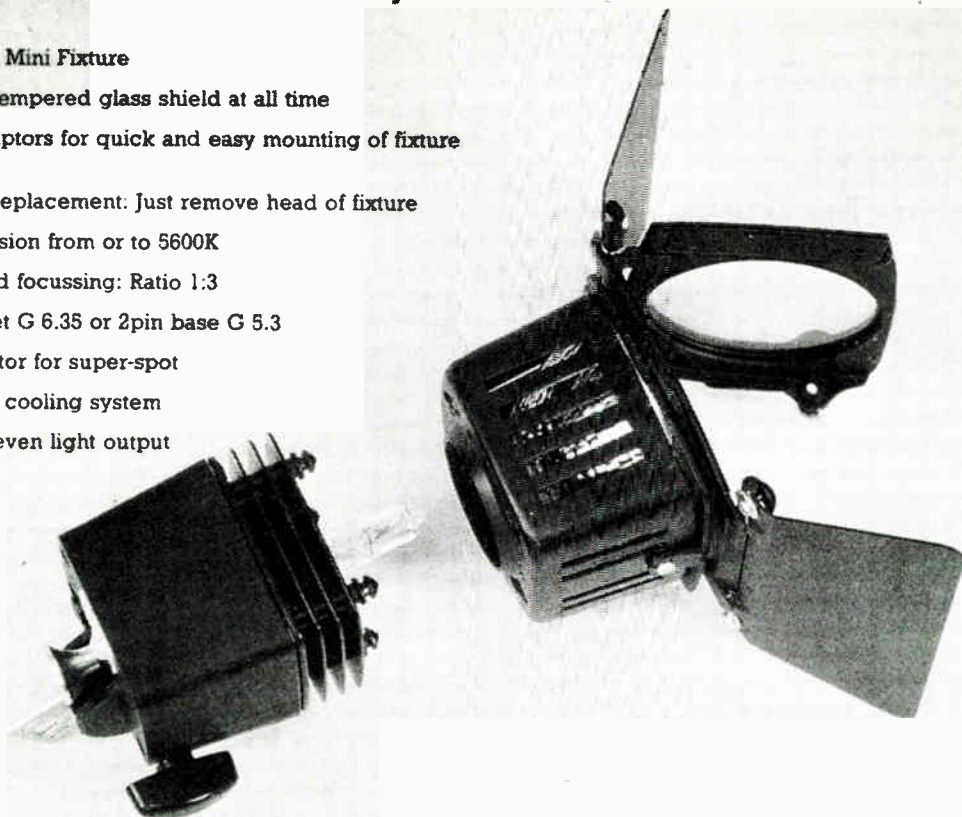


4Q-TV Power Requirements: 120V AC/DC at 33.3 Amps. Weight: 64 lbs. 5Q-TV Power Requirements: 120V AC/DC at 41.66 Amps. Weight: 75 lbs.

Kobold Profi Mini Light for Video – ENG – and TV

Features of the Kobold Profi Mini system:

- Super Light Mini Fixture
- Protective tempered glass shield at all time
- Various adaptors for quick and easy mounting of fixture on camera
- Easy lamp replacement: Just remove head of fixture
- Fast conversion from or to 5600K
- Spot to flood focussing: Ratio 1:3
- Lamp socket G 6.35 or 2pin base G 5.3
- Extra reflector for super-spot
- Established cooling system
- Maximum, even light output



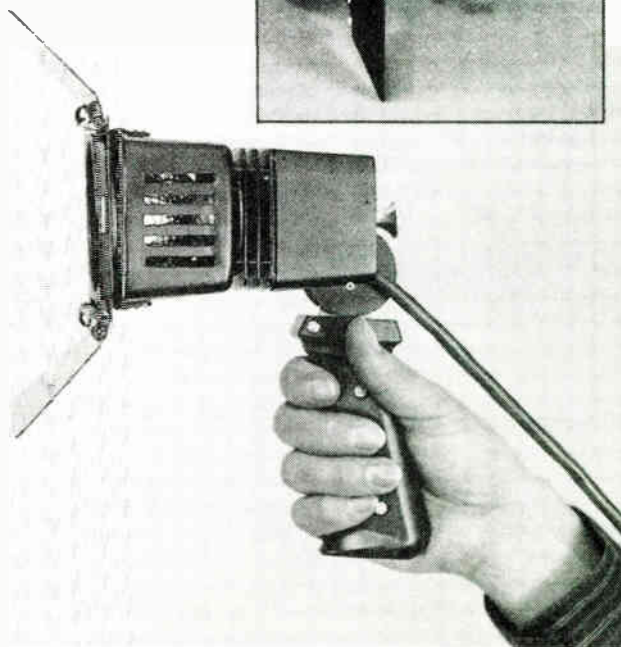
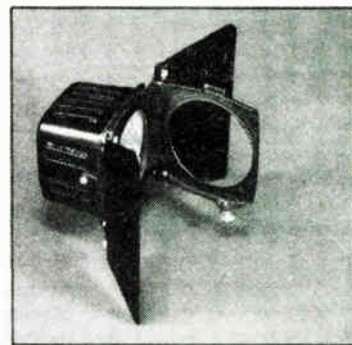
Kobold Design
Kobold Quality

Single fixtures:

Profi Mini 120
for mains operated
fixtures 120V, 250–300W,
2-pin mains cord 13 feet (4m),
handgrip, camera shoe and adapter
AD 16 B (5/8" bushing)

Profi Mini 30/120
for battery and mains operated
fixtures with battery cord 6 feet
(1.8m), MIL or Cannon plug, for 30V
battery.
For mains operating ad extension
cable 13ft. (4m) with 2-pin plug,
handgrip, camera shoe and adapter
AD 16 B (5/8" bushing)

Profi Mini 12
for battery operated fixtures
with battery cord 6 ft. (1.8m).
MIL or Cannon plug, handgrip,
camera shoe and adapter AD 16 B.



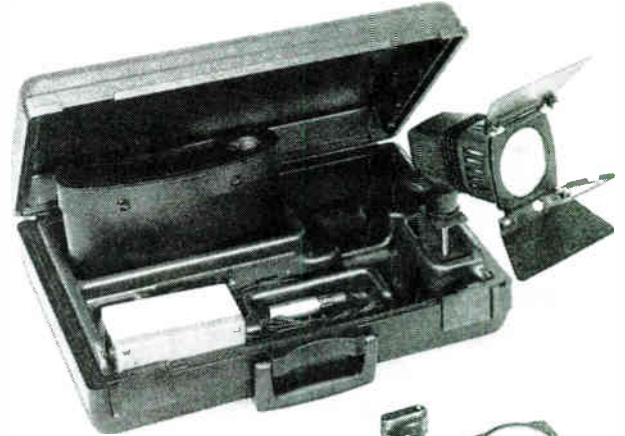


Transport case dimensions
20.5" x 15.7" x 4.1"
Weight 13.5 lbs

Profi Mini Kit 30/120

for battery and mains operated fixtures:

Profimini 120	Mini 120	2x
Profimini 30	Mini 30	1x
Extension cable	CAN MAINS	
	or	1x
	CAN MIL	
Adapter/bushing	AD 16 B	3x
Dicroic filter	DIC Mini h	3x
Diffusion filter	DIF Mini h	1x
Reflex plate	REF Mini h	1x
Handgrip	HG KS	2x
Alustands	TR Mini	2x
Table clamp	TC 1	2x
Transport case	MK 30/120	1x

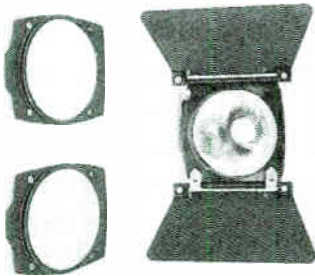


Transport case dimensions
16.5" x 13.0" x 4.5"
Weight 5.5 lbs

Profi Mini Kit 12

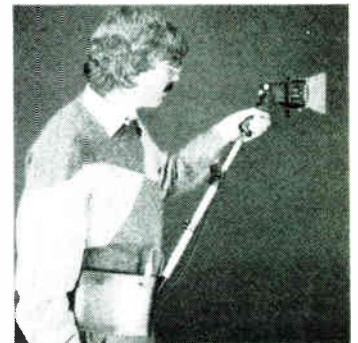
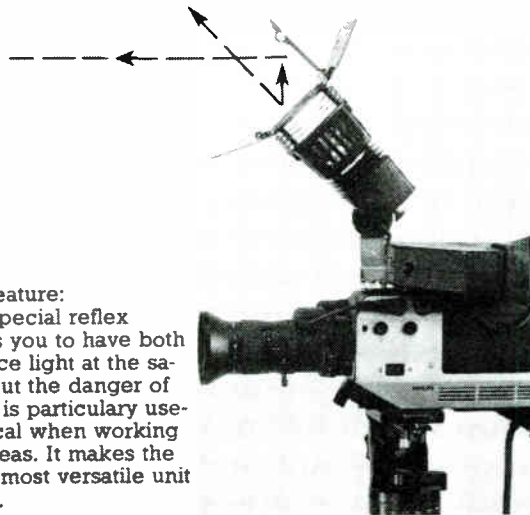
for battery operated fixtures

Profi Mini 12	Mini 12	1x
Power belt in leather case	G/BA 12/4	1x
Charger 12V	LA 12	1x
Handgrip	HG KS	1x
Adapter/bushing	AD 16 B	1x
Camera shoe	CS 250	1x
Dicroic filter	DIC Mini h	1x
Transport case	MK 12	1x



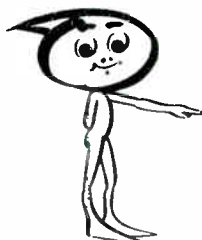
It is very easy to exchange the standard reflector for the super-spot. This super-spot gives you 770 footcandle at 10 feet distance.

New unique feature:
The use of a special reflex "leaf" enables you to have both key and bounce light at the same time without the danger of blinding. This is particularly useful and practical when working in confined areas. It makes the profi mini the most versatile unit on the market.



To hold a fixture, even the Profi Mini, for a longer time, is tiring. Therefore Kobold offers a telescopic support in leather quive.

For further details and information please contact your nearest KOBOLD distributor:



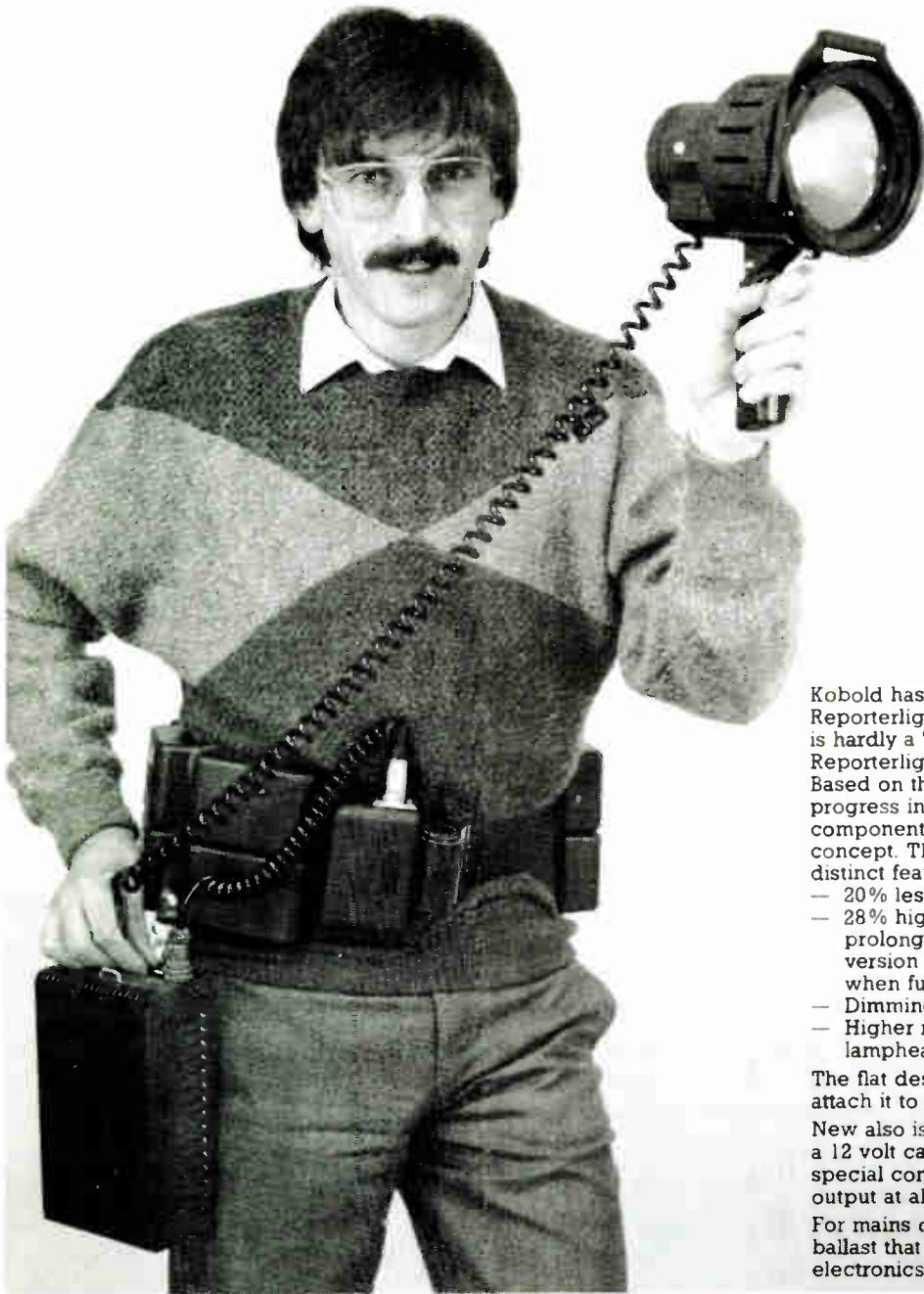
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Kobold SUN LIGHT

from your battery-belt or battery-pack



Kobold

Reporterlight
200/CID

- NEW DAYLIGHT UNIT with 200 W CID lamp
- NEW ELECTRONIC SQUARE WAVE BALLAST
- NEW DESIGN for Reporterlight CID Belt Version and KOBOLD Battery Pack System

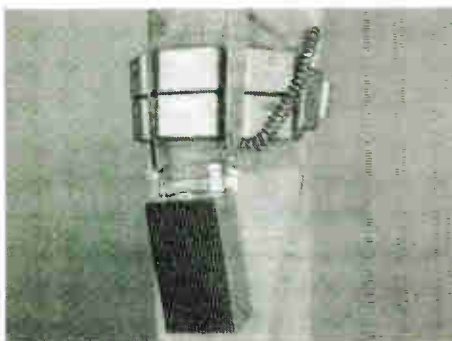
Kobold has been selling successfully now its Reporterlight Type 200 EL for 8 years. Today, there is hardly a TV-network that does not use this Reporterlight for its daily news gathering. Based on this long experience and thanks to the progress in the development of new electronic components, Kobold has developed a new concept. This new concept offers the following distinct features:

- 20% less weight for lamphead and ballast.
- 28% higher efficiency and consequently a prolonged operation time viz. 29 min. for 4 Ah version and 50 min. for the 7 Ah version, when fully charged.
- Dimming up to 50% of rated wattage possible.
- Higher reliability and easier servicing for both lamphead and electronic ballast.

The flat design of the electronic ballast enables to attach it to the battery belt.

New also is Kobold's car adaptor, to be used with a 12 volt car battery. This adaptor features a special control that guarantees a constant light output at all time during operation.

For mains operation, Kobold offers a new electronic ballast that operates independantly from the battery electronics.

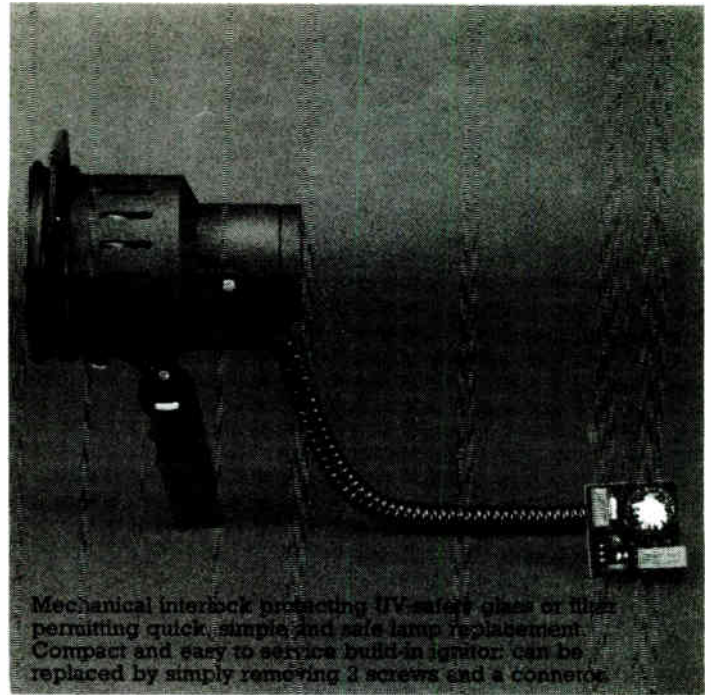
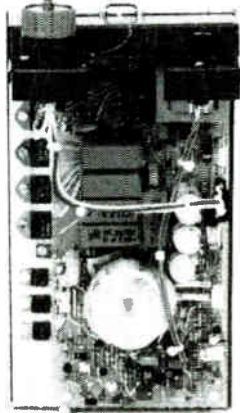


LAMPHEAD DLf 200 CID

- Housing made of heat resistant GRP material.
- Easy to handle spot to flood focus.
- Coiled power cord with 7-pin amphenol plug.
- Instant, hot re-strike.
- Optimal color temperature after only 20 sec. Maximal light output.

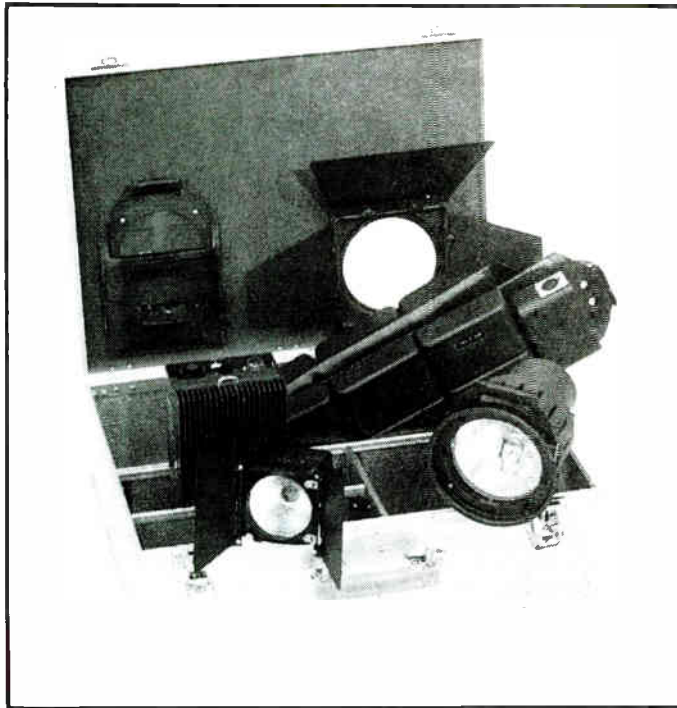
Electronic ballast BE 201

- Square wave ballast with new design.
- Minimum losses and therefor maximum efficiency
- Dimming up to 50% of rated wattage.
- 2-pin connector for battery
- 7-pin connector for lamphead
- Reduced dimensions, light weight.
- Only one printed circuit board.



Mechanical interlock protecting UV safety glass or filter permitting quick, simple and safe lamp replacement. Compact and easy to service built-in ignitor can be replaced by simply removing 2 screws and a connector.

Easy to service: replacement of printed circuit board by only removing 6 screws and 3 connectors.



We also offer our Reporterlight in 3 versions:

1. If you have already a 30 volt battery belt, Kobold offers a supplementary Kit:

Lamphead	DLf 200 CID
4-leaf barndoor	ST 1020
Metal halide lamp	CID 200
Battery-electronic	BE 201
Connection cable	
electronic/belt	DLf 203 CAN
Carrying strap	DLf 082
Diffusion filter	DLf 012 S
Conversion filter	DLf 017 S
Transport case	DLf 207

2. Reporterlight 200 CID-GB:

The transport case DLf 205 has an additional space for a battery belt.

3. Reporterlight 200 CID-KB:

In this Kit, the battery belt is replaced by the battery pack BA-30 EL/4 resp. BA-30 EL/7. These packs are to be connected to the battery electronics BE 201 by means of Kobold's „rapid action“ interlocking system.

The complete unit comprises:

Lamphead	DLf 200 CID
4-leaf barndoor	ST 1020
Metal halide lamp	CID 200
Battery-electronic	BE 201 K
NC-battery	BA-30 EL/4 resp.
	BA-30 EL/7
Carrying strap	DLf 082
Charger	LA-12/30
Diffusion filter	DLf 012 S
Conversion filter	DLf 017 S
Transport case	DLf 206

kobold

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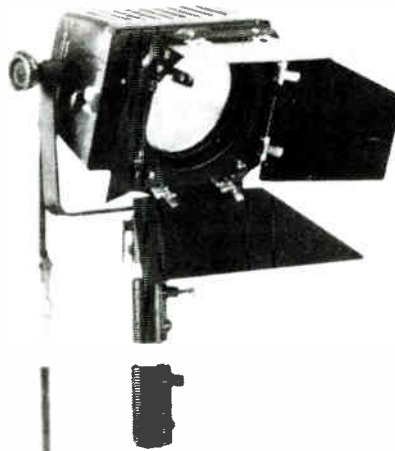
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VL-59

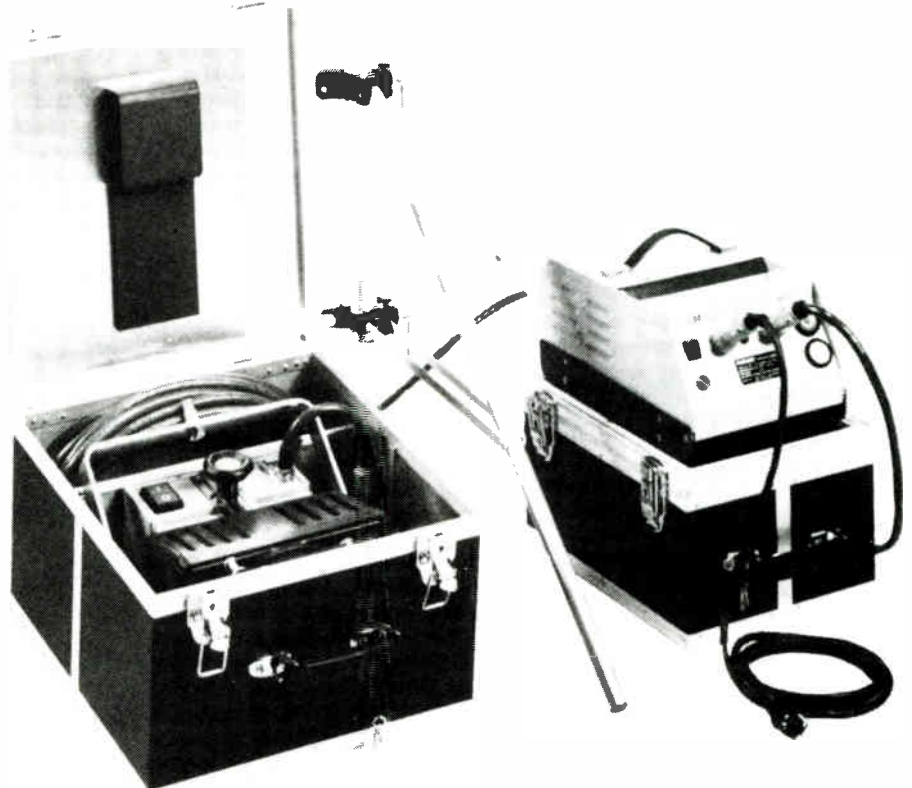
SPECIFICATION

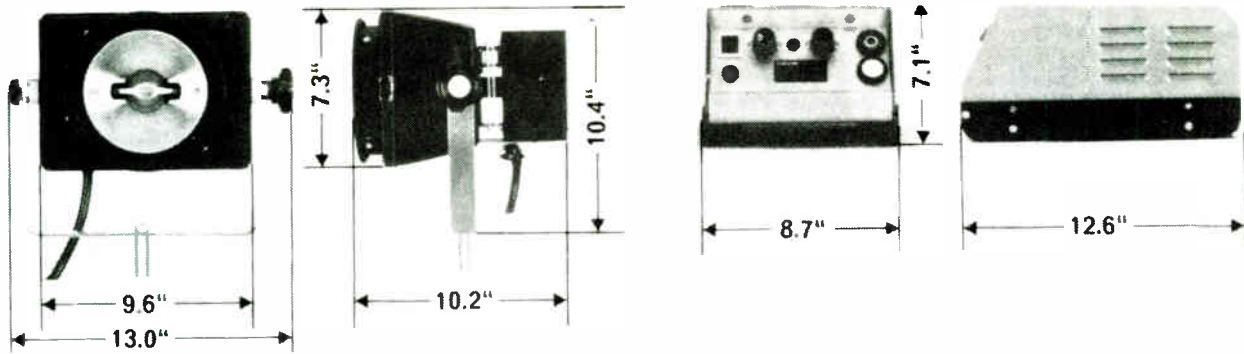
- DLf 020 S Head with ignitor circuit, 4 leaf barndoor with filter holder, time counter, yoke with 3/8" thread and 1 1/8" stud
- DLf 021 U Power supply with relay system 120 V, 60 Hz and 10 ft. power cord
- DLf 022 30 ft. extension cable
- DLf 023 575 W HMI lamp
- DLf 024 Heavy duty aluminum transport case for head, cable and accessories
- DLf 025 Heavy duty aluminum transport case for power supply



ACCESSORIES

- A 145 Spare UV safety glass. in pouch
- DLf 026 Diffusion filter in pouch
- DLf 027 Conversion filter 3200° K. in pouch
- TR 512 Aluminum stand: 45/126 1 1/8" bushing
- TR 513 Brake castor set for above
- TR 514 Extension leg/boom attachment for TR 512





Transport case dimensions:

lighting unit, accessories 19.3" x 15.0" x 9.8"

ballast 13.5" x 17.7" x 7.1"

Weight: lighting unit and barndoor 15.5 lbs
 cable 30 ft. 5.5 lbs
 case for above 12.2 lbs

ballast 16.0 lbs
 case for above 6.6 lbs

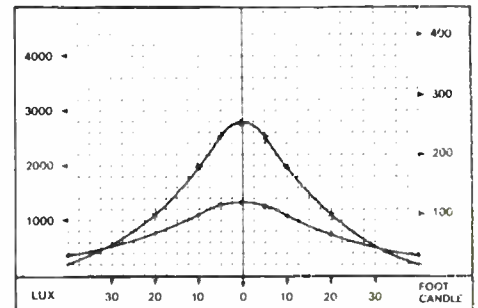
total weight: 55.8 lbs



Performance Data:

Lamp type: HMI 575 W
 Daylight color temperature: 5600° K
 Luminous flux: 49,000 lm
 Luminous efficiency: 85 lm/W
 Average life: 750 hours
 Power consumption: 7.0 A

Measuring distance: 15 ft.
 Flood: 125 fc
 Spot: 260 fc
 Focal ratio: 1 : 2



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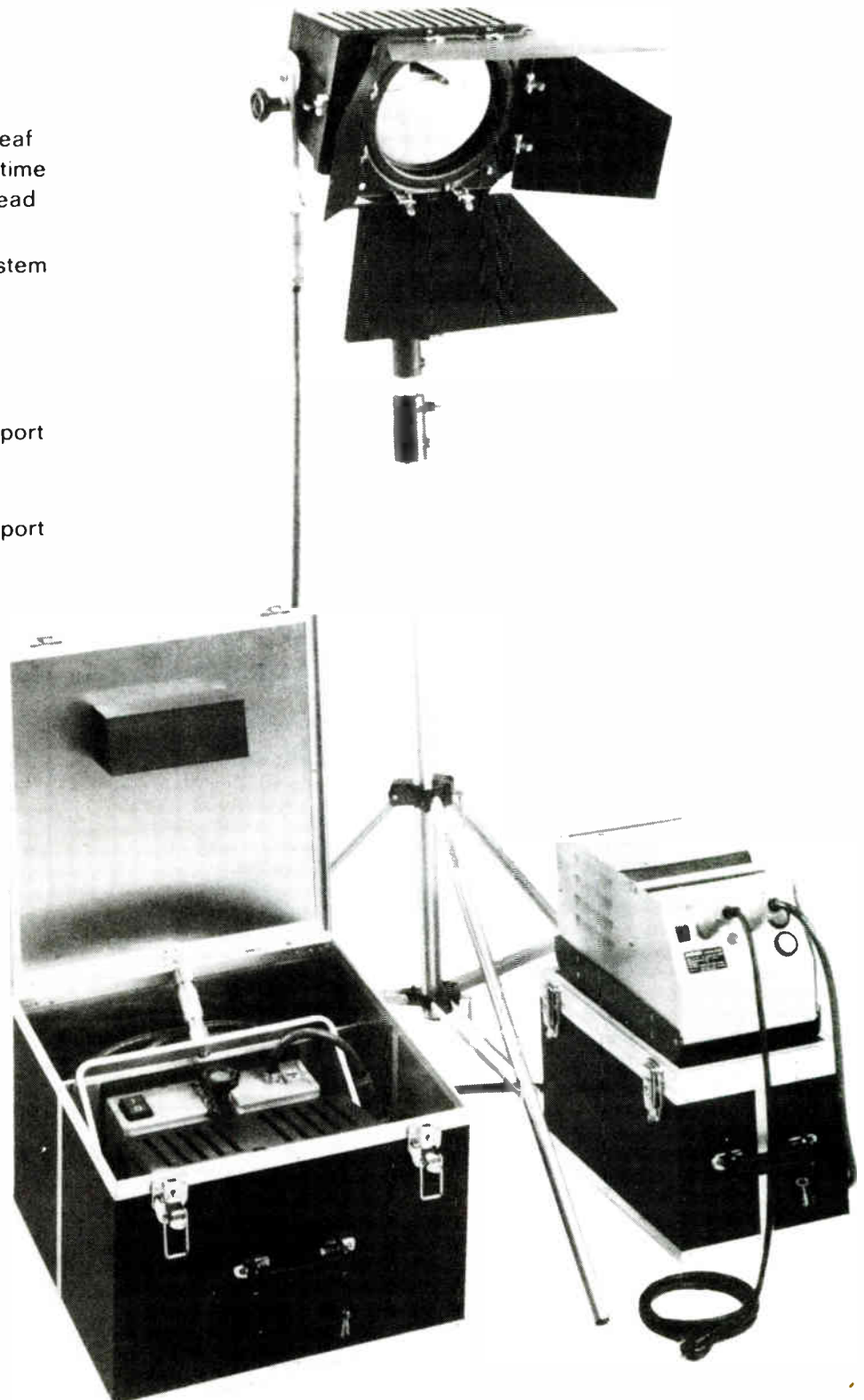
VL-61

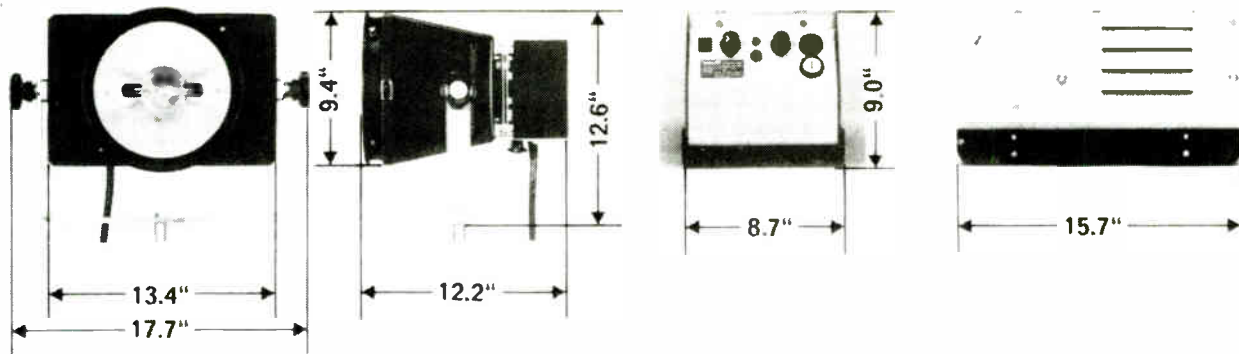
SPECIFICATION

- DLf 030 S Head with ignitor circuit, 4 leaf barndoor with filter holder, time counter, yoke with 3/8" thread and 1 1/8" stud
- DLf 031 U Power supply with relay system 120 V, 60 Hz and 10 ft. power cord
- DLf 032 30 ft. extension cable
- DLf 033 1200 W HMI lamp
- DLf 034 Heavy duty aluminum transport case for head, cable and accessories
- DLf 035 Heavy duty aluminum transport case for power supply

ACCESSORIES

- C 140 Spare UV safety glass, in pouch
- DLf 047 Diffusion filter, in pouch
- DLf 048 Conversion filter 3200° K, in pouch
- TR 25 Steel stand: 47/130", 1 1/8" bushing
- TR 513 Brake castor set for above
- TR 514 Extension leg/boom attachment for TR 25
- TR 36 Telescope: 47/86.5" for middle piece of TR 25





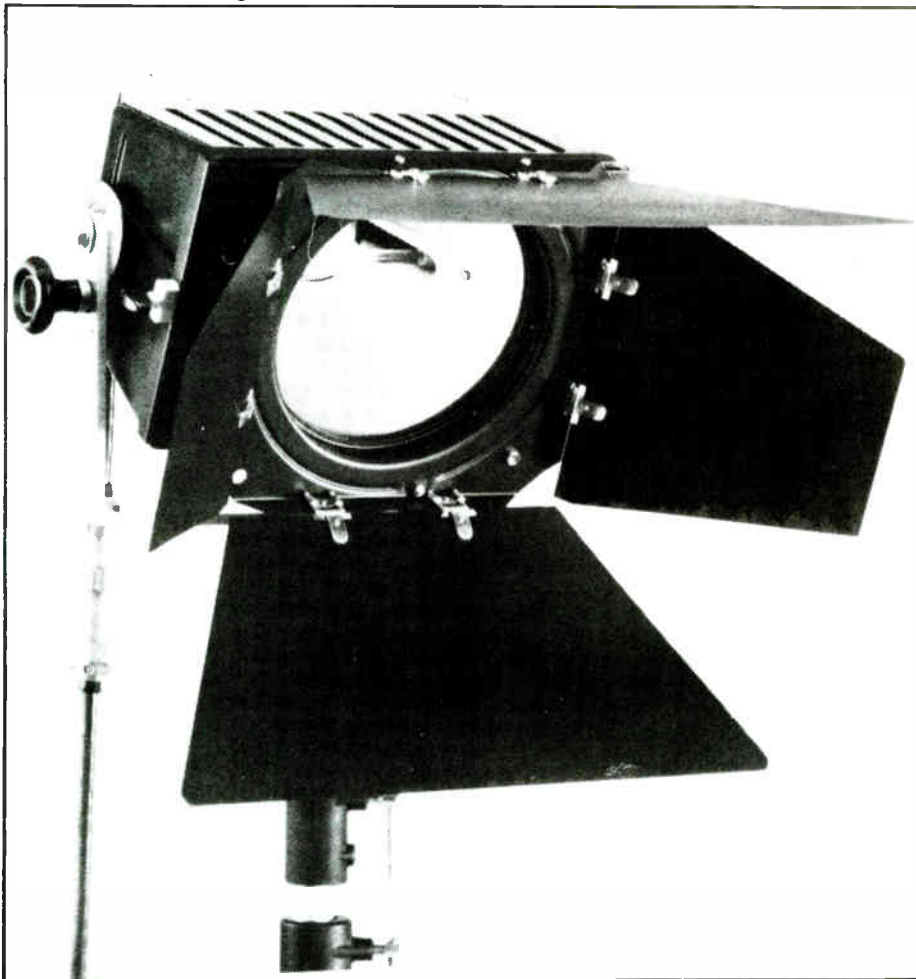
Transport case dimensions:

lighting unit, accessories 20.4" x 18.9" x 13.4"
 ballast 17.7" x 10.6" x 10.2"

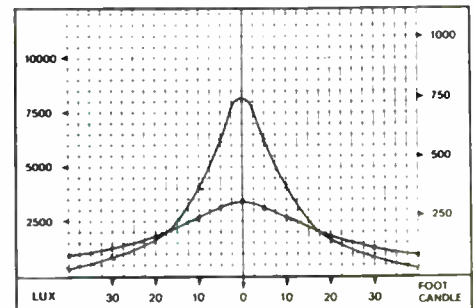
Weight:	lighting unit and barndoor	27.7 lbs
	cable 30 ft.	5.5 lbs
	case for above	16.6 lbs
	ballast	42.0 lbs
	case for above	8.8 lbs
	total weight:	100.6 lbs

Performance Data:

Lamp type: HMI 1200 W
 Daylight color temperature: 5600° K
 Luminous flux: 110,000 lm
 Luminous efficiency: 92 lm/W
 Average life: 750 hours
 Power consumption: 13 A



Measuring distance: 15 ft
 Flood: 316 fc
 Spot: 762 fc
 Focal ratio: 1 : 2.5

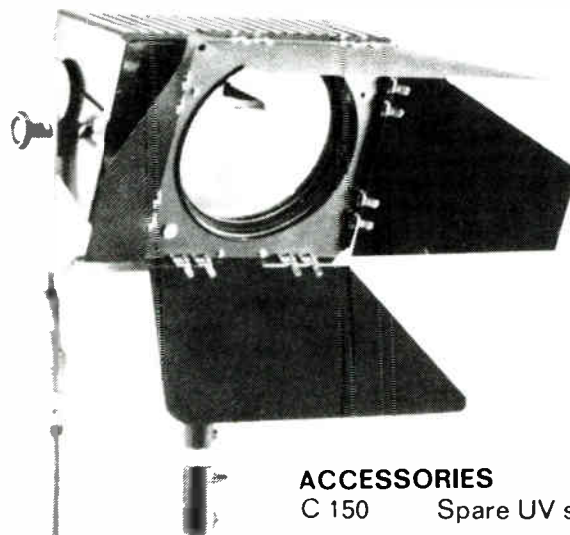


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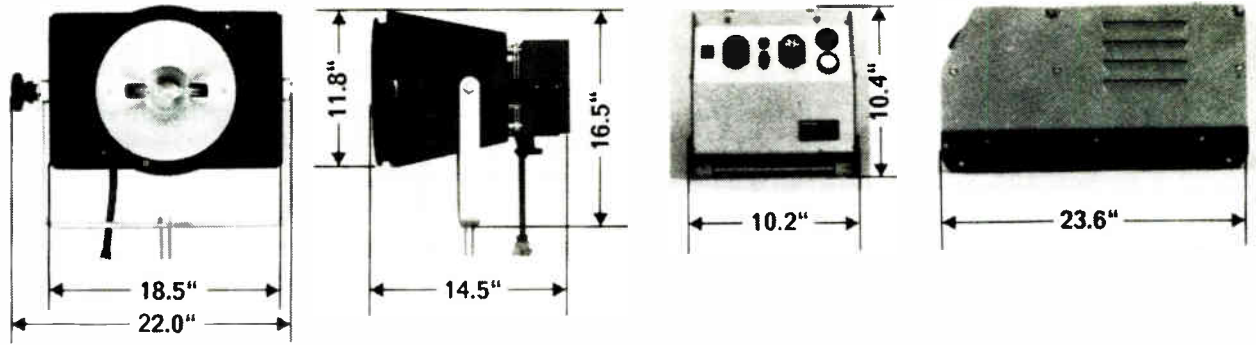
SPECIFICATION

- DLf 040 S Head with ignitor circuit, 4 leaf barndoor with filter holder, time counter, yoke with 3/8" thread and 1 1/8" stud
- DLf 041 U Power supply with relay system 120 V, 60 Hz and 10 ft. power cord
- DLf 042 30 ft. extension cable
- DLf 043 2500 W HMI lamp
- DLf 044 Heavy duty aluminum transport case for head, cable and accessories
- DLf 045 Heavy duty aluminum transport case for power supply

**ACCESSORIES**

- C 150 Spare UV safety glass, in pouch
- DLf 057 Diffusion filter, in pouch
- DLf 058 Conversion filter 3200° K, in pouch
- TR 30 Aluminum stand: 59/157", 1 1/8" bushing
- TR 36 Telescope: 47/86.5" for middle piece of TR 30 and TR 35
- TR 104 Brake castor set for above





Transport case dimensions:

lighting, accessories	22.8" x 24.0" x 16.1"
ballast	26.4" x 13.0" x 12.2"

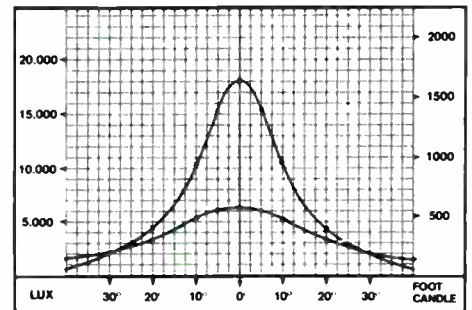
Weight:	lighting unit and barndoor	42.2 lbs
	cable 30 ft.	8.9 lbs
	case for above	26.6 lbs
	ballast	86.0 lbs
	case for above	24.0 lbs
<hr/>		
	total weight:	187.7 lbs

Performance Data:

Lamp type: HMI 2500 W
 Daylight color temperature: 5600° K
 Luminous flux: 240.000 lm
 Luminous efficiency: 96 lm/W
 Average life: 500 hours
 Power consumption: 25 A



Measuring distance: 15 ft.
 Flood: 604 fc
 Spot: 1673 fc
 Focal ratio: 1 : 2.75



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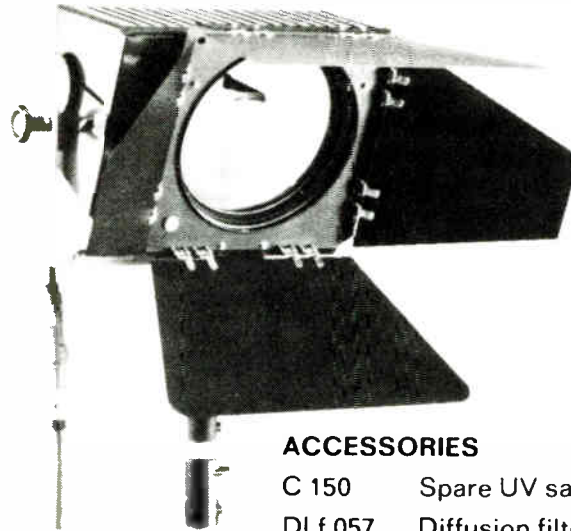
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VL-65

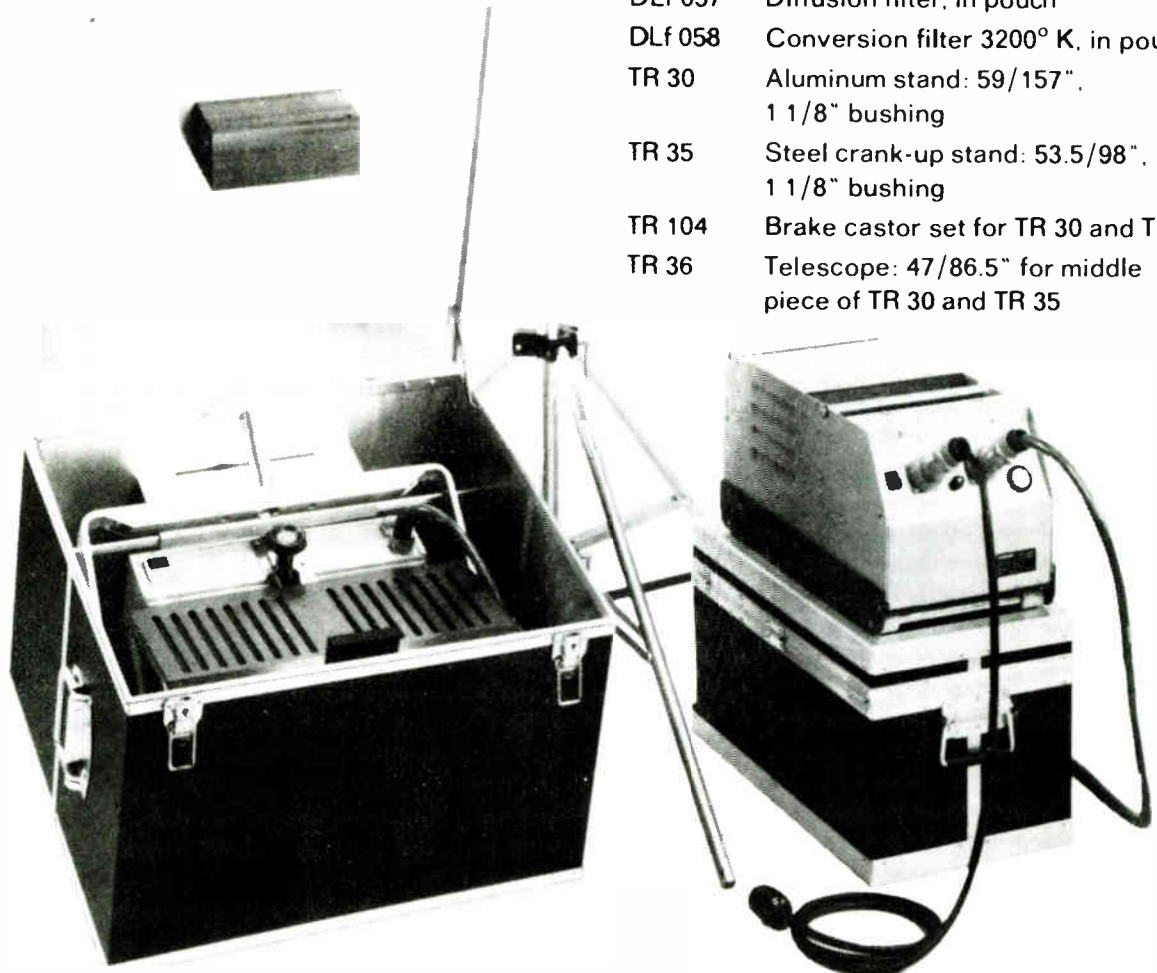
SPECIFICATION

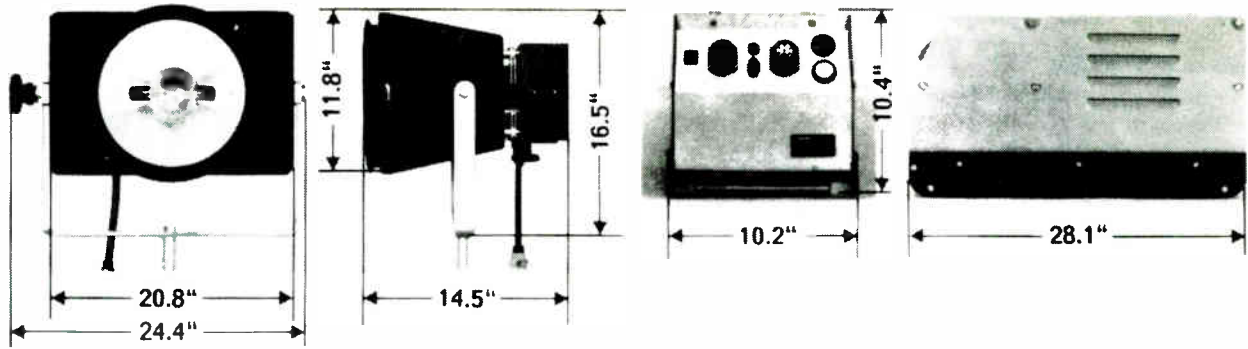
- DLf 050 S Head with ignitor circuit, 4 leaf barndoor with filter holder, time counter, yoke with 3/8" thread and 1 1/8" stud
- DLf 051 U Power supply with relay system 120 V, 60 Hz and 10 ft. power cord
- DLf 052 30 ft. extension cable
- DLf 053 4000 W HMI lamp
- DLf 054 Heavy duty aluminum transport case for head, cable and accessories
- DLf 055 Heavy duty aluminum transport case for power supply



ACCESSORIES

- C 150 Spare UV safety glass, in pouch
- DLf 057 Diffusion filter, in pouch
- DLf 058 Conversion filter 3200° K, in pouch
- TR 30 Aluminum stand: 59/157", 1 1/8" bushing
- TR 35 Steel crank-up stand: 53.5/98", 1 1/8" bushing
- TR 104 Brake castor set for TR 30 and TR 35
- TR 36 Telescope: 47/86.5" for middle piece of TR 30 and TR 35





Transport case dimensions:

lighting unit, accessories 22.8" x 27.1" x 16.1"
 ballast 30.7" x 13.0" x 12.2"

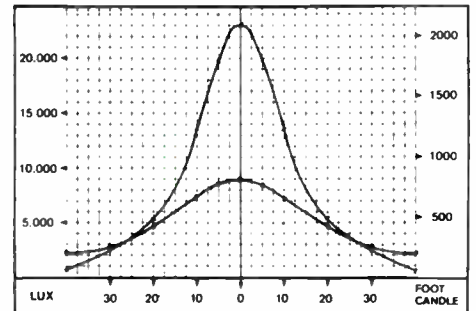
Weight:	lighting unit and barndoor	51.1 lbs
	cable 30 ft.	8.9 lbs
	case for above	28.9 lbs
	ballast	131.0 lbs
	case for above	31.0 lbs
	<hr/> total weight:	<hr/> 250.9 lbs

Performance Data:

Lamp type: HMI 4000 W
 Daylight color temperature: 5600° K
 Luminous flux: 410,000 lm
 Luminous efficiency: 102 lm/W
 Average life: 500 hours
 Power consumption: 39 A



Measuring distance: 15 ft
 Flood: 836 fc
 Spot: 2137 fc
 Focal ratio: 1 : 2.55



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MINI 250

„Ultra-Light“ Keylight: weight 1.1 lbs on inclusive 2-leaf barndoor and safety glass.

Ideal for use as:

- camera-mounted keylight (use camera-mount adaptor CS 250)
- hand held light (use handgrip HG-KS)
- clamp light (use adaptor AD-16)

Because of the extended range of available dichroic reflector/multi-mirror lamps, the Mini 250 can be mains as well as battery operated. For mains operation, the Mini 250 takes a 250 W, 120 V lamp, whereas for battery operated use 50 W, 75 W, 100 W, 12 V and a 250 W, 30 V lamps are available.

The lamp can be changed easily by removing the 2-leaf barndoor.

The safety glass can be easily replaced by a diffuse filter or a dichroic daylight conversion filter.

Transport case dimensions:
Weight:

20.5" x 15.7" x 4.1"
13.5 lbs

MINI 250 Kit 1

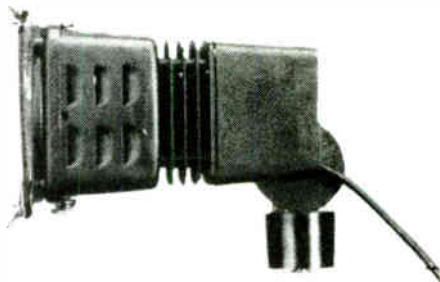
SPECIFICATION:

MINI 250	Keylight	3 x
TR-MINI	Aluminum stand 19/88", 5 8" stud	2 x
TC-1	Table clamp	1 x
HG-KS	Handgrip	1 x
AD-16	Adapter with 5/8" bushing	1 x
MK-250/1	Transport case	1 x

ACCESSORIES:

SG-MINI	Spare safety glass, in pouch
DIF-MINI	Diffusion filter, in pouch
DIC-MINI	Dichroic conversion filter 5500° K, in pouch
UM-MINI	Reflex umbrella white dia 27,5"
U-AD-MINI	Umbrella adaptor
BC-250	Battery connecting cord
P-5	Super-clamp with 5/8" bushing and stud
P-43 R	Alligator clamp with 5/8" stud





MINI 250 Kit 2

portable Kit

SPECIFICATION:

MINI 250	Keylight
BA-12	NiCad battery belt: 12 V, 4 Ah
TA-12	Leather case with carrying strap for BA-12
LA-12	Charger, 120/12 V
HG-KS	Handgrip
MK-250/2	Transport case

Transport case dimensions	Weight
Kit 2 16.5" x 13" x 4.5"	12.0 lbs
Kit 3 16.3" x 15" x 4.7"	30.0 lbs

Potential lighting per charge	Kit 2	by 100 W about 20 min
	Kit 3	by 250 W about 45 min
Charging time	Kit 2	10-12 hrs
	Kit 3	10-12 hrs

MINI 250 Kit 3

portable light for professional use

SPECIFICATION:

MINI 250 P	Keylight with 2-leaf barndoor, safety glass and voltage indicator
BA-30	NiCad battery pack, 30 V, 7 Ah, with electronic cut-off
TA-30	Leather case with carrying strap
SG-MINI	Spare safety glass, in pouch
DIF-MINI	Diffusion filter, in pouch
DIC-MINI	Dichroic conversion filter 5500° K, in pouch
HG-KS	Handgrip
MK-30	Transport case

ACCESSORIES: (Kit 3)

P-30/30	Hand held light, with 2 reflectors. "Spot/Soft", voltage indicator, filter holder with safety glass and with 3/8" connector for stand for lamps types DXM
SG-30 E	Spare safety glass, in pouch
DIC-30	Dichroic conversion filter 5500° K, in pouch




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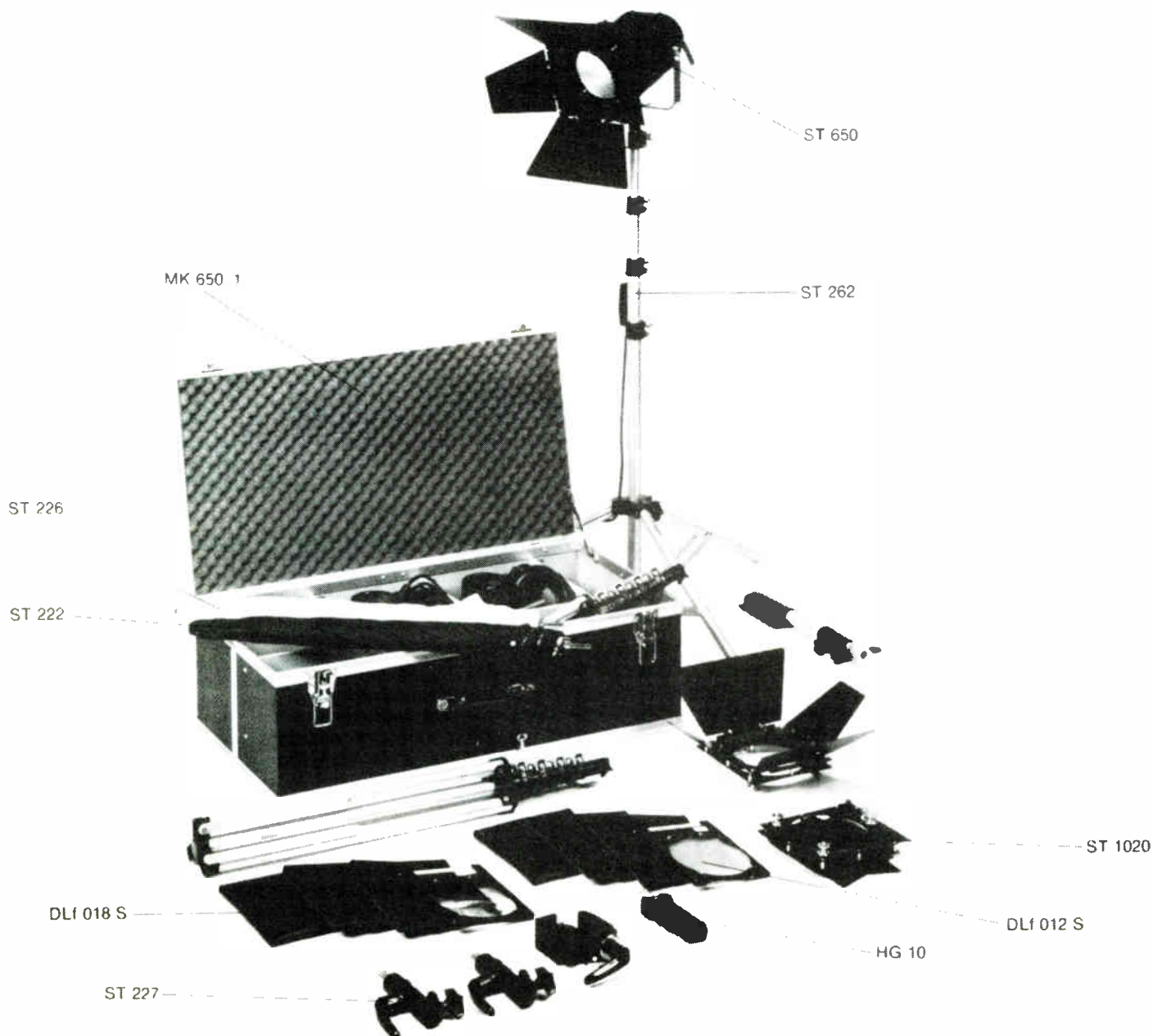
Features

HOUSING made of heat-resistant GRP material; lockable pivoting bracket with 3/8" thread on bracket and 5/8" bushing; ball-bearing axial focusing system; smooth and non-stick operation at any operating temperature; big rear-mounted control knob affording a good grip; 4-leaf barndoor, rotatable by 360° and featuring readjustable leaf clamping and insert for safety glass or filter. Optimum interior ventilation.

Electrical Design

Double insulated cables.

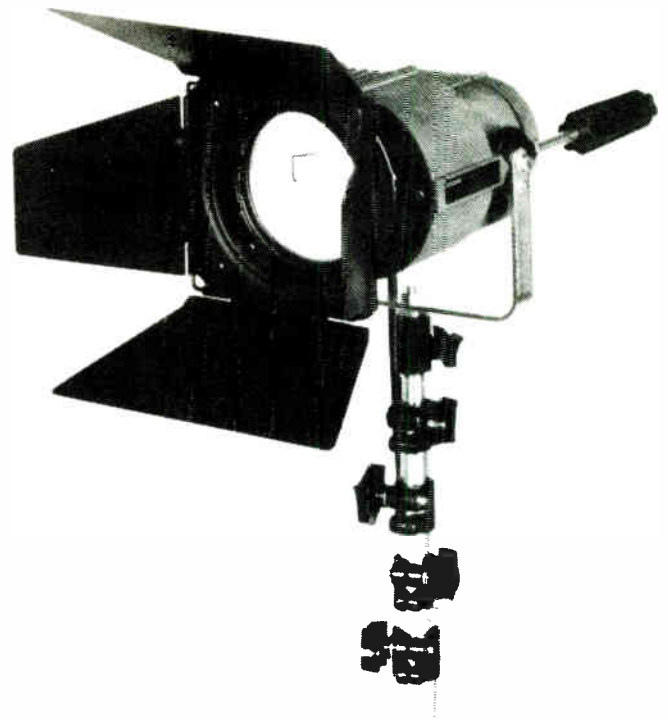
15 ft power cord with on/off switch located at approx. 5 ft from housing, build — in fuse designed for 650 W, 120 V. R 7 s halogen lamps, type FAD.



SPECIFICATION

ST 650 Kit 1

- ST 650 3x 650 W Fill & Bounce Light
- ST 1020 3x 4-Leaf barndoor
- ST 262 3x Aluminum stand; 27/94", 5/8" stud
- UM MINI 1x Reflex umbrella, silk-white, round 27.5"
- ST 227 Z 1x Holder for reflex umbrella
- P 43 R 1x Alligator clamp with 5/8" stud
- MK 650/1 Transport case

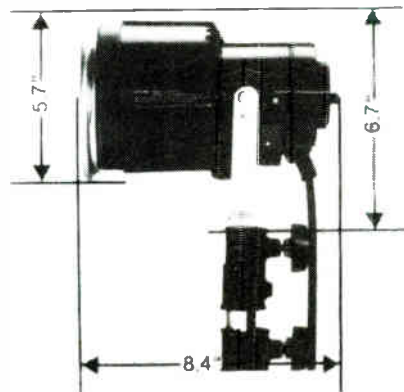
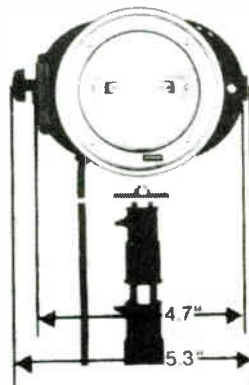


ACCESSORIES

- DLf 019 S Safety glass in frame; in pouch
- DLf 012 S Diffusion filter in frame; in pouch
- DLf 018 S Dichroic conversion filter 5500° K in frame, in pouch
- HG 10 Handgrip with 5/8" stud and 3/8" thread
- ST 226 Reflex umbrella, white, round 35"
- ST 222 Reflex umbrella, silver, round 41"
- ST 227 Adaptor for ST-222 and ST-226

Lamp: FAD, 650 W/120 V

Distance (feet)	footcandle	
	spot	flood
5	1750	385
10	270	110
15	130	60
20	80	40



Dimension
MK-650/1
28.3" x 15.0" x 11.0"

Weight
42.0 lbs

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DS 575 DS 575 A

575 W HMI Soft Light

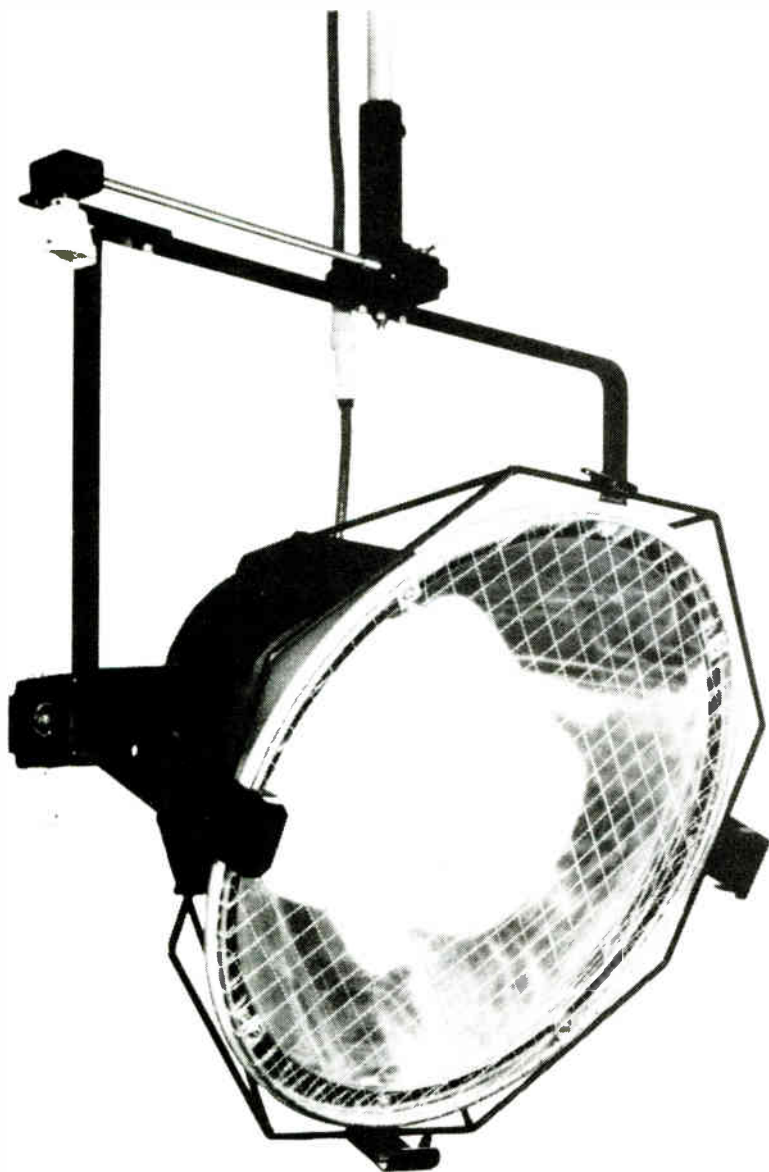
This unit produces an ultra-soft light at a colour temperature of 5200° K.

The 575 HMI-lamp is placed in an opaline globe which is precisely located in a large parabolic reflector, producing a very diffuse and nearly uniform light pattern at 80° angle and a marginal degradation of approx. 15%.

The broad lateral surfaces of the welded frame support the retaining bracket.

There are 2 versions viz. type DS 575 with a bracket with 1 1/8" stud, for use on a stand, and type DS 575 A being a pole operated unit to be suspended from the ceiling.

The insert of the unit houses the 575 HMI-lamp as well as the ignitor and the power supply cable. The lamp can easily be replaced by simple loosening the two screws at the rear side of the insert.



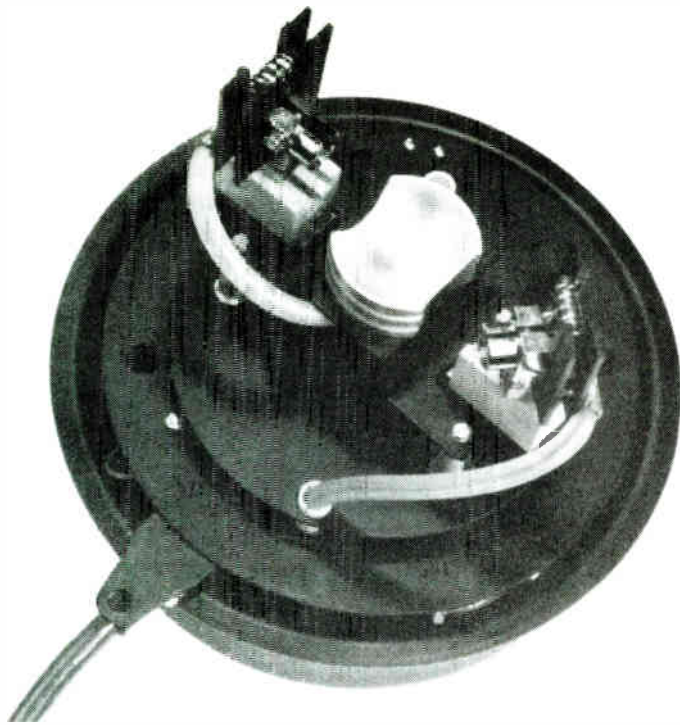
SPECIFICATION

DS 575

- DLS 060 Soft light head with ignitor circuit, bracket with 1 1/8" stud and protective grid.
- DLf 021 U Power supply with relay system, 120 V, 60 Hz and 10 ft power cord.
- DLf 022 30 ft extension cable.
- DLf 023 575 W HMI-lamp

DS 575 A

- DLS 060 A Pole-operated Soft Light head with ignitor circuit, bracket with 1 1/8" stud and protective grid.
- DLf 021 U Power supply; with relay system, 110 V and 10 ft power cord.
- DLf 022 30 ft extension cable.
- DLf 023 575 W HMI-lamp



Electrical Design

Symmetrically designed ignitor delivering 50% of the starting voltage to either lamp base.

Power cut-off for operator protection when unit is open.

Ballast equipped with hum-free tight-core reactance coils.

Two-chamber ballast design, keeping coils and electrical circuit separate.

Easy access to ballast components by loosening 2 screws and hinging down the front panel.

Front panel of ballast features power switch, fuse, power cord, lamp cable connector and ON/OFF button.

Ballast is for 120 V, 60 Hz. Ballasts for 220 V or 245 V, 50 Hz available upon request.

Performance Data:

Lamp type: HMI 575 W
 Daylight color temperature distribution: 5200° K
 Luminous flux: 49,000 Lm
 Luminous efficiency: 85 Lm/W
 Average life: 750 hours
 Power consumption: 7,0 A
 Efficiency: 56 fc
 Measuring distance: 15 ft



	Dimension	Weight
DLS 060/DLS 060 A:		41.0 lbs
Reflector dia:	25.5"	
Width of bracket:	29.0"	
Height of bracket:	20.0"	
Ballast:	12.6" x 8.7" x 7.1"	16.0 lbs

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The 1200 Watt Brite Beam Lamp is the latest development in arc discharge light sources.

Kobold's DL 1200 PAR fixture for this lamp is the latest addition to its line of daylight fixtures. This unit is especially suitable for use in Studios, Theatres and for Television (STTV-market).

Because of the use different lenses, the performance of the DL 1200 PAR exceeds that of a regular 1200 Watt fresnel unit.

Four Lens System Beam Specifications:

Lens		Maximum Intensity (cd)	Total Beam Angle (50%) (V x H)
VNSP	Very narrow spot	1.8×10^6	$7^\circ \times 10^\circ$
NSP	Narrow spot	1.3×10^6	$8^\circ \times 11^\circ$
MF	Medium flood	6.0×10^5	$10^\circ \times 22^\circ$
WF	Wide flood	1.7×10^5	$19^\circ \times 54^\circ$

Performance Data:

Average Rated Life 1000 hrs

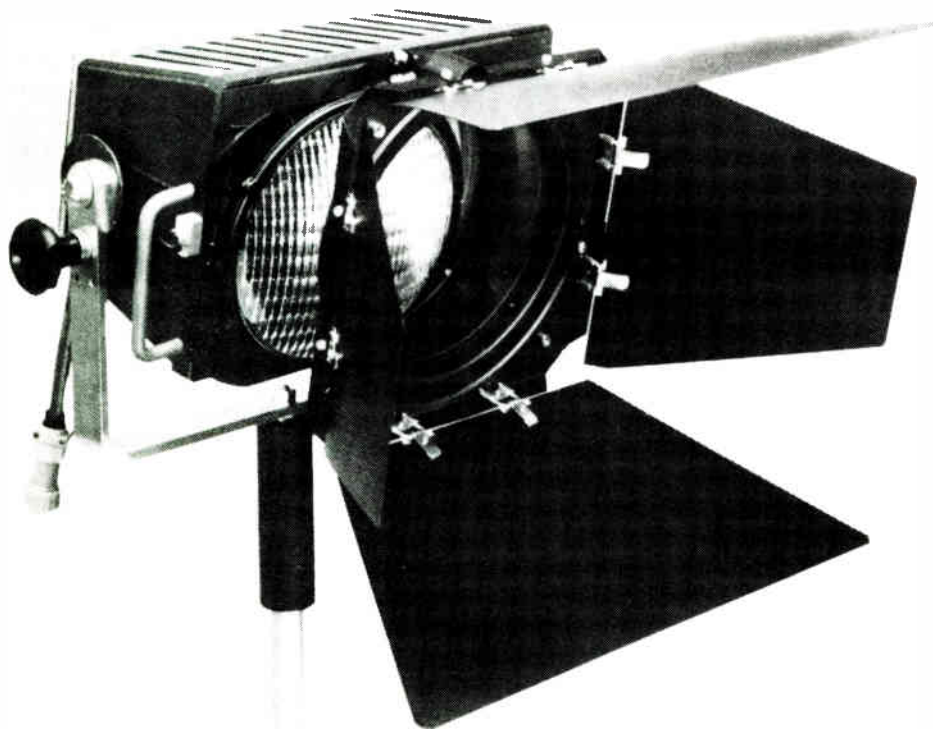
Physical

Base Type	G38 Bi Post
Arc Length	13 mm (.51 in.)
Maximum Overall Length	6.89 in
Bulb Diameter	8.1 in
Reflector Coating	Dichroic
Bulb Type	PAR 64



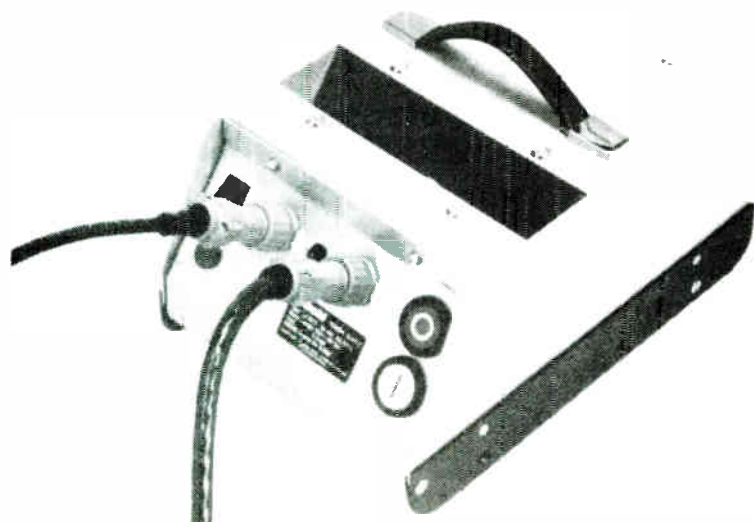
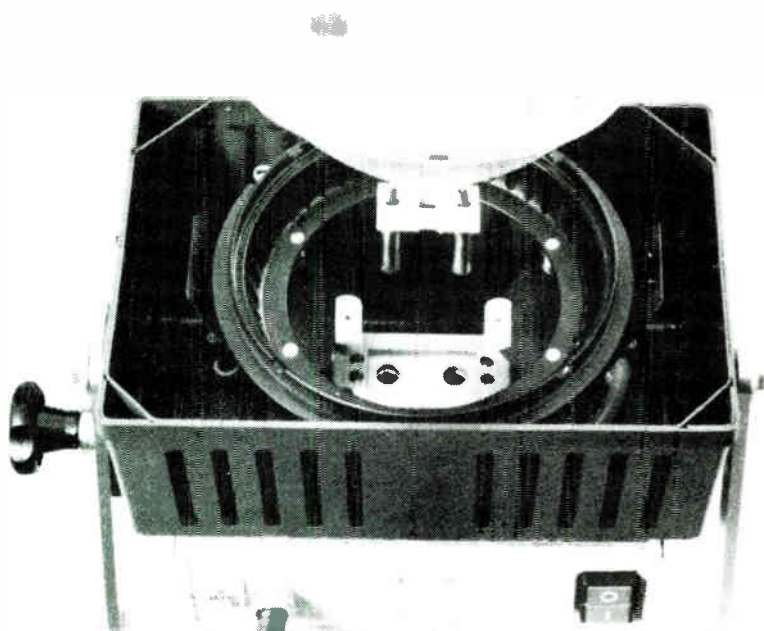
SPECIFICATION

- DLf 030 PAR Head with ignitor circuit, 4 leaf barndoor with filter holder, time counter, yoke with 3/8" thread and 1 1/8" stud
- DLf 031 U Power supply with relay system 120 V, 60 Hz and 10 ft. power cord
- DLf 032 30 ft. extension cable
- DLf 034 PAR Heavy duty aluminum transport case for head, cable and accessories
- DLf 035 Heavy duty aluminum transport case for power supply



ACCESSORIES

- DLf 047 Diffusion filter, in pouch
- DLf 048 Conversion filter 3200° K, in pouch
- TR 25 Steel stand: 47/130", 1 1/8" bushing
- TR 513 Brake castor set for above
- TR 514 Extension leg/boom attachment for TR 25
- TR 36 Telescope: 47/86.5" for middle piece of TR 25



Features

- Compact housing (same design as the DLf 1200 S unit).
- Rigidly mounted high voltage ceramic sockets.
- Double insulated high voltage leads.
- Adequate striking voltage to guarantee hot-restrike in all circumstances.
- Special lever construction for quick and easy lamp change.
- Opening in front plate of housing to insert lens.
- No light side-ways after lens is inserted.

Electrical Design

Symmetrically designed ignitor delivering 50% of the starting voltage to either lamp base.

Power cut-off for operator protection when unit is open.

Ballast equipped with hum-free tight-core reactance coils.

Two-chamber ballast design, keeping coils and electrical circuit separate.

Easy access to ballast components by loosening 2 screws and hinging down the front panel.

Front panel of ballast features power switch, fuse, power cord, lamp cable connector and ON/OFF button.

Ballast is for 120 V, 60 Hz. Ballasts for 220 V or 245 V, 50 Hz available upon request.

		20 ft	25 ft	30 ft	40 ft
Spot 7° / 10°	Fresnel Unit 2500 W	3330	2130	1480	830 CD
	DL-1200 PAR with VNSP	4630	2960	2040	1160 CD
Flood 54°	Fresnel Unit 2500 W	400	260	170	90 CD
	DL-1200 PAR with WF	450	290	200	110 CD


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REPORTERLIGHT 200 EL/D

Electronically controlled, i.e. "flicker-free" 200 W portable HMI-unit for battery or mains operation

200 EL/D-BN Battery/mains-operated unit

SPECIFICATION

DLf 080 D	Head with ignitor circuit, 4 leaf barndoor, filter holder, yoke with 3/8" thread and 5/8" stud and 7.5 ft. cable
DLf 012 S	Diffusion filter, in pouch
DLf 013	200 W HMI lamp
DLf 081 D	Portable electronic ballast with 3-step dimming switch
BA-30 EL 7	NiCad battery pack: 30 V, 7 Ah automatic cut-off for battery protection
DLf 088 U	Mains adapter with charger, voltage range 100-150 V
DLf 082	Carrying strap
DLf 083	Transport case
DLf 017 S	Conversion filter 3200° K, in pouch
HG 10	Handgrip with 5/8" stud

200 EL/D-B Battery-operated unit

SPECIFICATION

DLf 080 D	Head with ignitor circuit, 4 leaf barndoor, filter holder, yoke with 3/8" thread and 5/8" stud and 7.5 ft. cable
DLf 012 S	Diffusion filter, in pouch
DLf 013	200 W HMI lamp
DLf 081 D	Portable electronic ballast with 3-step dimming switch
BA-30 EL 7	NiCad battery pack: 30 V, 7 Ah automatic cut-off for battery protection
LA-12/30 T	Charger with 110/220 V "switch-over" for 30 V - 7 Ah, NiCad battery with 12 hour charger timer, in fully isolated plastic housing
DLf 082	Carrying strap
DLf 083	transport case
DLf 017 S	Conversion filter 3200° K, in pouch
HG 10	Handgrip with 5/8" stud

ACCESSORIES

D 87 S	Spare UV safety glass, in pouch
ST 262	Aluminum stand: 27/95", 5/8" stud
DLf 084	Rain protector shield for battery pack
DLf 086	12 ft. extension cable
DLf 087	Battery tester 24 - 30 V
DLf 088	Mains adaptor with charger, voltage range 150 - 250 V
DLf 089	Leather case for spare NiCad battery
DLf 090	Case for mains adaptor
DLf 091	Telescope: 3 extensions, 13/41", 5/8" stud and quiver
DLf 092	Remote control "on/off" to be fixed on telescope (for use with extension cord only)



Features

HOUSING made of heat-resistant GRP material; lockable pivoting bracket, 3/8" thread on bracket, 5/8" bushing; ball-bearing axial focusing system, smooth and non-stick operation at any operating temperature; big rear-mounted control knob affording a good grip; 4-leaf barndoor, rotatable by 360° and featuring readjustable leaf clamping; mechanical interlock protecting UV glass pane or filter; varnished aluminum housing comprising BATTERY, BATTERY ELECTRONICS and MAINS ADAPTOR; rapid-action link between battery and battery electronics and/or battery electronics and interlocking mains adapter; CHARGING UNIT made of GRP material.

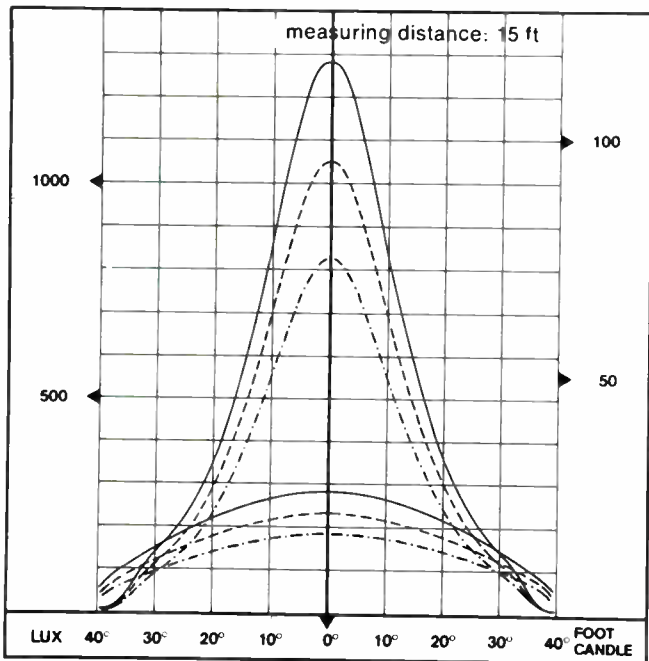
Electrical Design

LIGHTING UNIT featuring symmetrically designed ignitor; pluggable connections for easy disassembly and reassembly of components subject to wear; ON/OFF pushbutton; electrical system interlock operating whenever the lighting unit is open (for a lamp change) or if there is no UV pane; „green" LED display if unit is ready for operation, „red" display signalling imminent battery shutdown;

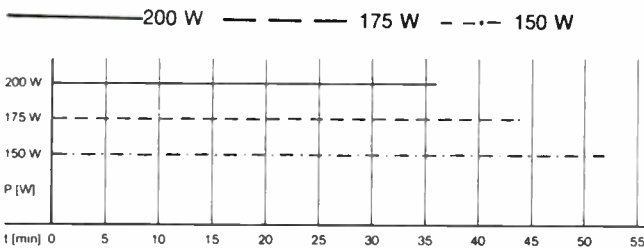
BATTERY ELECTRONICS having 3 main modules: DC converter including power control, square-wave output switch, ignition driver and unit-function monitor; 3-step lighting control: 100%, 87.5% and 75%; power control featuring a + 5% precision irrespective of battery voltage.

BATTERY having 2 blocks of 14 and 11 NC cells each, 7 Ah; battery tester; green, yellow, and red LEDs indicating battery status; CHARGING UNIT automatic switch-over; 110 V/220 V stabilized power, irrespective of cell number; synchronometer permitting charging times of up to 12 hrs to be set; mains-connection and charging indicator lamps.

MAINS ADAPTER featuring the following major modules: primary converter, rectification and filtering; charging unit fitted with up to 8 hr LED display indicating fully charged battery.

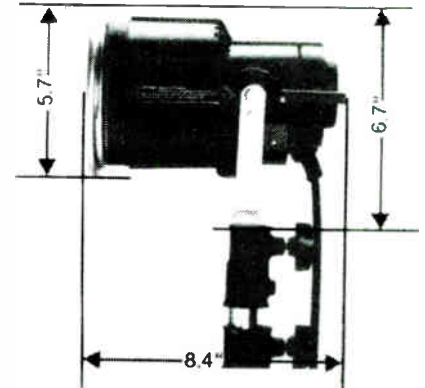
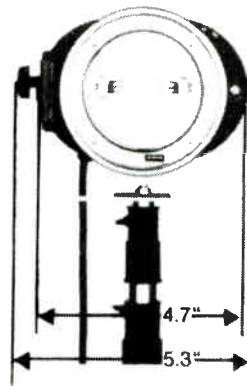


luminous efficiency and distribution for



Power/lighting time ratio. It is obvious that, say, at 150 W power, the lighting time available on a fully-charged battery is superior to the 200 W value by some 50%.

Dimensions and Weight Data:



	Dimensions (inch)	Weight (lbs)
Head, DLf 080 D		6.7
Electronics, DLf 081 D	6.1" x 4.8" x 8.8"	7.6
Battery, BA-30 EL/7	5.5" x 4.8" x 8.8"	14.2
Battery, BA-30 EL/4	4.2" x 4.8" x 8.8"	9.5
Mains adaptor DLf 088	6.3" x 4.8" x 8.8"	9.6
Charging unit LA-12/30 T	5.9" x 4.1" x 3.7"	4.3
Case, DLf 083	14.7" x 14.4" x 9.8"	11.1
200 EL/D-B, complete		45.5
200 EL/D-BN, complete		51.5



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VL-77

Video 600 Reporter Light

FEATURES

- High intensity halogen light in compact light-weight housing.
- Spot-to-flood possibility.
- Lockable pivoting bracket.
- Build-in fuse in housing.
- Equipped with safety glass.
- Sturdy housing made of heat resistant GRP material.
- For use with 600 W, 120 V, lamp type DYS.

SPECIFICATION

Video 600 Kit 1

- Video 600 3x 600 W Fill & Bounce Light
 ST 1020 2x 4-leaf barndoor
 TR MINI 3x Aluminum stand, 19/88", 5/8" stud
 UM MINI 1x Reflex umbrella, silk-white, round 27.5"
 ST 227 Z 1x Holder for reflex umbrella
 MK 600/1 Transport case

ACCESSORIES


(see also unit ST 650)

- DLf 019 S Safety glass in frame, in pouch
 DLf 012 S Diffusion filter in frame, in pouch
 DLf 018 S Dichroic conversion filter 5500° K in frame, in pouch
 HG 10 Handgrip with 5/8" stud and 3/8" thread
 ST 226 Reflex umbrella, white, round 35"
 ST 222 Reflex umbrella, silver, round 41"
 ST 227 Adaptor for ST 222 and ST 226
 P 43 R Alligator clamp with 16 mm stud

Lamp: DYS, 600 W/120 V

5	1950	415
10	280	80
15	140	40
20	90	25

Dimension	Weight
MK 600/1	
22.0" x 16.5" x 7.0"	26.5 lbs

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 New York, NY 10018
 (212) 947-0950 (818) 846-7740
 Telex: 666597UW Cable: Lowelight, NY

LIGHTING

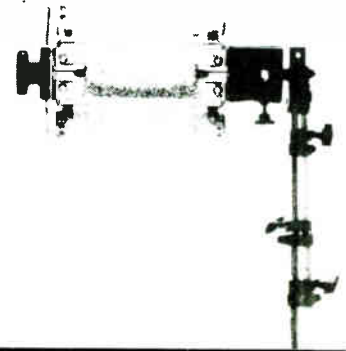
Lowel systems and kits have been in use since 1959 for video, film and still photography. They are a successful combination of innovative design, high strength materials, and careful workmanship. As a result, the lights and accessories are extremely efficient, lightweight and

durable. Their versatility is unequalled. We have received eight United States patents, an Academy Award Certificate and International acclaim.

Tota-Light

- Interchangeable 1000, 750 and 500 watt tungsten halogen lamps—120 volts • 800 watt lamp—220/240 volts • Patented gull-wing reflector produces remarkably efficient output • Exceptionally wide, smooth beam angle. One unit can provide even illumination of four walls from the corner of a room • Basically non-focusing, however, reflecting doors offer some intensity and spread control • Light control system: umbrella, gel frame, gels, small flags, and others
- Mounting system: stand, wall/door mount, clamps • Weighs only 2 1/4 lbs. (1.02 kg). Closes up compactly for storage/travel • Patent #3,852,582

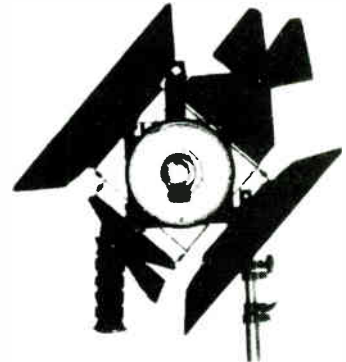
T1-10 Head \$107.00



Omni-Light

- Interchangeable 650, 600 and 420 watt tungsten halogen lamps—120 volts • 650 watt lamp—220 and 240 volts • 250 watt lamp—30 volts (battery operation) • 100 watt lamp—12 volts (automobile and battery operation) • Unprecedented spot/flood focusing range
- Interchangeable, special purpose reflectors • Uses many Tota-light accessories • Light control system: four way expandable barndoors, high intensity and other reflectors, umbrella, gel frame, gels, snoot, scrims, dichroic filter, cookaloris and others • Mounting system: stand, clamps, wall/door mount • Weighs only 2-5/8 lbs. (1.19kg)
- Patent #4,187,531

01-10 Head \$130.00



DP Light

- Interchangeable 1000, 750 and 500 watt tungsten halogen lamps—120 volts • 1000 and 650 watt lamps at 220 and 240 volts • Wide smooth beam pattern with continuous focusing to intense spot
- Quick change, special purpose reflectors • Convenient, fast, one-hand tilt control • Light control system: four way expandable barndoors, high intensity and other reflectors, large umbrella, gel frame, gels, scrims, dichroic filter, snoot, cookaloris and others
- Mounting system: famous KS stand, clamps, wall mount, and others • Weighs only 3-7/8 lbs. (1.76kg) • US Patent #D210927

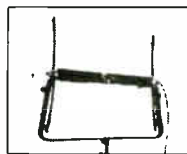
D2-10 Head \$145.00



Softlight 2

- 2000 watt maximum capacity. Uses two 1000, 750 or 500 watt lamps at 120 volts or two 800 watt lamps at 220/240 volts • Unit folds in half, nearly flat, for storage/travel • Large, soft-shadow source utilizes aluminized Nomex reflecting surface which will not scorch or discolor
- Light control system: adjustable and fixed barndoors for flare control, subject shading and gel mounting; gels • Mounting system: stand, clamps • Weighs only 8 lbs. (3.63kg) • Both lamps can be switched on and off individually • US Patent #3,712,978

S2-10 Head \$275.00



TOTA/OMNI SYSTEMS

TOTA-LIGHT, OMNI-LIGHT & REFLECTORS				
T1-10	tota-light	2 1/4 lbs	1.02 kg	107.00
O1-10	omni-light	2 3/4 lbs	1.19 kg	130.00
O1-13	omni-light 30v	2 1/4 lbs	1.02 kg	140.00
O1-15	#1 reflector	2 oz	57 g	12.50
O1-16	#2 reflector	2 oz	57 g	12.50
O1-17	#3 reflector	2 oz	57 g	12.50
O1-18	#4 reflector	2 oz	57 g	12.50

TOTA/OMNI LIGHT CONTROLS				
T1-20	tota-frame	6 oz	17 kg	24.50
	GELS: PACKAGE OF 5, 10x12" (25x30cm)			
T1-69	blue frost gels	2 oz	57 g	10.50
T1-70	day blue gels	2 oz	57 g	10.50
T1-71	rd 3 gels	2 oz	57 g	10.50
T1-72	frost gels	2 oz	57 g	10.50
T1-78	assorted gels	2 oz	57 g	10.50
T1-25	tota-brella	8 oz	23 kg	30.00
T1-34	tota-tatch	2 oz	57 g	11.00
T1-50	flexishaft 16" (2)	4 oz	11 kg	17.50
T1-52	tota-flag	4 oz	11 kg	15.00
T1-54	tota-flector	6 oz	17 kg	19.50
LFT	lightflector/tilter	1 1/4 lbs.	79 kg	75.00

OMNI LIGHT CONTROLS				
O1-20	complete barndoor	8 oz	23 kg	50.00
O1-21	barndoor frame	2 oz	57 g	23.50
O1-22	rectangular leaf	2 oz	57 g	10.00
O1-23	triangular leaf	1 oz	28 g	10.00
O1-50	diffused glass	3 oz	85 g	28.50
O1-51	dichroic filter	3 oz	85 g	77.50
O1-52	clear glass	3 oz	85 g	25.00
O1-53	snoot	4 oz	11 kg	26.00
O1-54	full scrim	2 oz	57 g	12.50
O1-55	half scrim	2 oz	57 g	12.50
O1-56	graduated scrim	2 oz	57 g	15.00
O1-57	cookaloris	2 oz	57 g	12.50

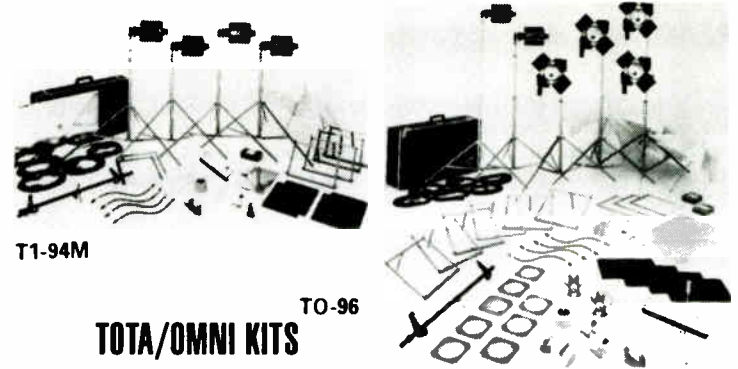
TOTA/OMNI SUPPORTS & MOUNTS				
O1-33	omni-stand	2 1/4 lbs	1.30 kg	82.00
KPH	half pole	1 lb	45 kg	40.00
SC-10	large space-clamp	1 1/2 lbs	68 kg	48.50
SC-20	small space-clamp	1 1/4 lbs	57 kg	42.50
T1-30	tota-clamp	4 oz	11 kg	18.50
T1-32	tota-mount	10 oz	28 kg	25.00
GT-12	gaffer-tape 12 yards	8 oz	23 kg	8.50
GT-30	gaffer-tape 30 yards	1 1/2 lbs	57 kg	16.50
LSS	screw-in stud (2)	3 oz	85 g	10.50
T1-35	tota-daptor	4 oz	11 kg	15.00
T1-36	tota-tilter	4 oz	11 kg	21.00

TOTA/OMNI CABLES				
T1-80	16' tota/omni cable	13 oz	37 kg	22.50
O1-81	5' omni 30v cable	7 oz	20 kg	32.50
O1-82	omni 12v car adaptor	1 oz	28 g	5.00
LQE25	25' extension cable	2 1/2 lbs	1.08 kg	23.50
KCC	cable clips (40)	4 oz	11 kg	9.00
K4CC	cable clips (10)	1 oz	28 g	4.50

TOTA/OMNI STORAGE				
T1-61	tota-lampak	2 oz	57 g	13.50
O1-61	omni-lampak	2 oz	57 g	13.50
T0-61	tota/omni lampak	2 oz	57 g	13.50
O1-65	tota-packet	2 oz	57 g	11.50
T1-85	tota case	5 lbs	2.27 kg	89.00
T0-87	molded tota/omni case 87	10 lbs	4.54 kg	115.00
TO-84M	molded tota/omni case 84M	12 1/2 lbs	5.67 kg	165.00
O1-86M	molded omni case 86M	14 1/2 lbs	6.58 kg	195.00
T0-89	heavy duty case	28 lbs	12.70 kg	395.00
T1-82	tota tube case	2 3/4 lbs	1.08 kg	78.00

LAMPS FOR TOTA-LIGHT tota lampak available—stores 5 lamps				
EHZ	120v.	300w.	2000hr.	frost 2900°K 50.00
FDN	120v.	500w.	400hr.	frost 3200°K 31.00
FCZ	120v.	500w.	2600hr.	frost 3000°K 35.00
EMD	120v.	750w.	400hr.	frost 3200°K 40.00
FHM	120v.	1000w.	300hr.	frost 3200°K 35.00
EMF	240v.	800w.	250hr.	frost 3200°K 37.00

LAMPS FOR OMNI LIGHT omni lampak available—stores 6 lamps				
EYL	12v.	100w.	50hr.	clear 3200°K 16.00
DYG	30v.	250w.	15hr.	clear 3400°K 23.00
EKB	120v.	420w.	75hr.	clear 3200°K 30.00
DYS/DYV	120v.	600w.	75hr.	clear 3200°K 23.00
EKD	120v.	650w.	25hr.	clear 3400°K 30.50
DYR/220	220v.	650w.	50hr.	clear 3200°K 35.50
DYR/240	240v.	650w.	50hr.	clear 3200°K 35.50

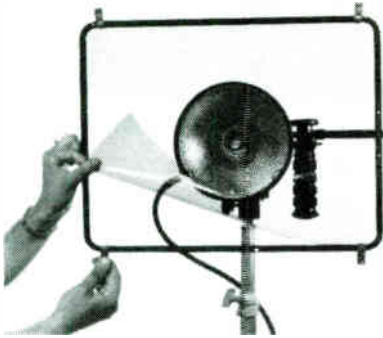


TOTA/OMNI KITS			
T1-93M	carry-on kit	19 lbs.	8.62 kg. 655.00
3 tota-lights, 16' cables (less lamps), 3 tota-frames, assorted gels; 3 tota-flags, 1 tota-flector; 4 flexishafts; 1 tota-mount, 1 tota-clamp; 1 small space-clamp, 1 12 yard gaffer-tape; 1 tota-lampak, 1 tota-case (T1-85)			
T1-90	tube kit	14 lbs.	6.35 kg. 495.00
2 tota-lights, 16' cables (less lamps); 1 tota-brella; 1 tota-frame, 1 assorted gels, 2 omni-stands; 1 tota lampak, 1 tube case (T1-85)			
T1-92M	trans-kit	29 lbs.	13.15 kg. 745.00
3 tota-lights, 16' cables (less lamps); 3 tota-brellas; 3 omni-stands; 1 tota-lampak, 1 tota/omni molded case (TO-87)			
T1-94M	14 kit	42 lbs.	19.05 kg. 1290.00
4 tota-lights, 16' cables (less lamps); 1 tota-brella, 4 tota-frames; 2 assorted gels, 1 lightflector/tilter, 4 tota-flags, 1 tota-flector, 4 flexi shafts, 1 tota-tatch, 4 omni-stands; 1 tota-mount, 1 tota-clamp; 1 large space-clamp; 1 12 yard gaffer-tape, 1 tota-lampak, 1 molded tota/omni case (TO-84M)			
O1-92	action kit	30 lbs.	13.61 kg. 920.00
3 omni-lights, 16' cables, #1 reflectors (less lamps); 3 omni-barndoors, 3 omni-stands; 1 omni-lampak; 1 molded tota/omni case (TO-84M)			
O1-93	omni 3 kit	34 lbs.	15.42 kg. 1115.00
3 omni-lights, 16' cables, #1 reflectors (less lamps); 3 omni-barndoors, 2 full scrims; 1 half scrim; 4 tota-frames; 3 tota-flags; 2 assorted gels; 3 omni-stands; 1 tota-mount, 1 tota-clamp; 1 12 yard gaffer-tape; 1 omni-lampak, 1 molded tota/omni case (TO-84M)			
O1-94M	spatial kit	44 lbs.	19.96 kg. 1450.00
4 omni-lights, 16' cables, #1 reflectors (less lamps); 4 omni-barndoors, 1 #3 superspot reflector, 1 diffused glass, 2 full scrims, 1 half scrim, 1 graduated scrim, 4 tota-frames; 2 assorted gels, 4 omni-stands, 1 large space-clamp; 1 tota-clamp; 1 omni-lampak, 1 molded omni case (O1-86M)			
TO-97	basically 3 kit	28 lbs.	12.70 kg. 795.00
2 tota-lights, 16' cables (less lamps), 1 omni-light 16' cable, #1 reflector (less lamp); 1 omni-barndoor, 1 full scrim, 1 tota-brella, 1 tota-frame, 1 assorted gels, 3 omni-stands, 1 tota/omni lampak, 1 tota/omni molded case (TO-87)			
TO-95	ambi kit	41 lbs.	18.60 kg. 1395.00
2 tota-lights, 16' cables (less lamps); 2 omni-lights, 16' cables, #1 reflectors (less lamps); 2 omni-barndoors, 2 full scrims, 1 half scrim, 2 tota-brellas, 4 tota-frames, 2 assorted gels, 2 tota flags, 1 tota-flector, 4 flexi shafts, 1 tota-tatch, 4 omni-stands, 1 tota-mount, 2 tota-clamps, 1 12 yard gaffer-tape, 2 tota/omni lampaks, 1 molded tota/omni case (TO-84M)			
TO-98	elemental kit	31 lbs.	14.06 kg. 895.00
1 tota light, 16' cable (less lamp), 2 omni-lights, 16' cables, #1 reflectors (less lamps), 2 omni-barndoors, 1 full scrim, 1 tota-brella; 2 tota-frames, 1 assorted gels, 3 omni-stands, 1 tota/omni lampak, 1 tota/omni molded case (TO-87)			
TO-96	solo kit	60 lbs.	27.22 kg. 2190.00
2 tota-lights, 16' cables (less lamps); 4 omni-lights, 16' cables, #1 reflectors (less lamps), 2 #3 superspot reflectors, 4 omni-barndoors, 2 diffused glass 2 full scrims, 2 half scrims, 1 graduated scrim, 1 cookaloris, 3 tota-brellas, 6 tota-frames, 3 assorted gels, 1 lightflector/tilter, 4 tota-flags, 1 tota-flector, 4 flexi-shafts, 5 omni-stands, 1 tota-mount, 2 tota clamps, 1 large space clamp, 2 tota-tatches, 1 12 yard gaffer-tape, 2 screw-in studs, 2 tota/omni lampaks, 1 molded omni case (O1-86M)			
TO ORDER ABOVE KITS WITH HEAVY DUTY CASE (TO-89) SUBSTITUTED FOR STANDARD KIT CASE, SEE BELOW:			
T1-93MHD	carry-on hd case	42 lbs	10.05 kg 960.00
T1-90HD	tube kit hd case	40 lbs	18.14 kg 810.00
T1-92MHD	trans/hd case	47 lbs	21.31 kg 1025.00
T1-94MHD	14/hd case	58 lbs	26.30 kg 1520.00
O1-92HD	action/hd case	45 lbs	20.41 kg 1150.00
O1-93HD	omni 3/hd case	49 lbs	22.22 kg 1345.00
O1-94MHD	spatial/hd case	57 lbs	25.85 kg 1650.00
TO-97HD	basically 3/hd case	46 lbs	20.86 kg 1075.00
TO-95HD	ambi/hd case	56 lbs	25.40 kg 1625.00
TO-98HD	elemental/hd case	49 lbs	22.22 kg 1175.00
TO-96HD	solo kit/hd	73 lbs	33.11 kg 2390.00

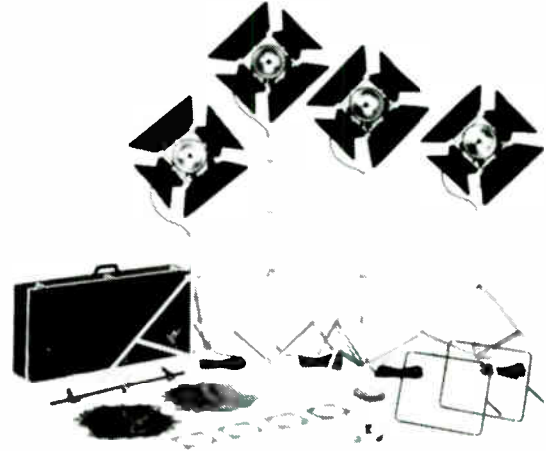


475 Tenth Avenue
New York, NY 10018
(212) 947-0950 (818) 846-7740
Telex: 666597UW Cable: Lowelight, NY

LIGHTING SYSTEMS AND KITS



DP WITH GEL FRAME



D2-97

DP SYSTEM

DP LIGHT & REFLECTORS

D2-10	dp light	3 ³ / ₈ lbs.	1.76 kg	145.00
D2-15	#1 reflector	2 oz	57 g	13.00
D2-17	#3 reflector	2 oz	57 g	13.00
D2-18	#4 reflector	2 oz	57 g	13.00

DP LIGHT CONTROLS

D2-20	complete barndoor	1 lb.	45 kg	60.00
D2-21	barndoor frame	4 oz	11 kg	25.00
D2-22	rectangular leaf	4 oz	11 kg	13.00
D2-23	triangular leaf	2 oz	57 g	13.00
D2-50	diffused glass	4 oz	11 kg	32.50
D2-51	dichroic filter	4 oz	11 kg	107.50
D2-52	clear glass	4 oz	11 kg	28.50
D2-53	snoot	6 oz	17 kg	36.50
D2-54	full scrim	3 oz	85 g	14.50
D2-55	half scrim	3 oz	85 g	14.50
D2-56	graduated scrim	3 oz	85 g	17.00
D2-57	cookaloris	3 oz	85 g	14.50
D2-24	dp frame	8 oz	23 kg	38.50
GELS: PACKAGE OF 4, 12x16" (30x41 cm)				
D2-69	blue frost gels	2 oz	57 g	13.50
D2-70	day blue gels	2 oz	57 g	13.50
D2-71	nd 3 gels	2 oz	57 g	13.50
D2-72	frost gels	2 oz	57 g	13.50
D2-78	mixed gels	2 oz	57 g	13.50
D2-25	dp brella	21 oz	40 kg	48.50
T1-50	flexi-shaft 16" (2)	4 oz	11 kg	17.50
T1-52	tota-flag	4 oz	11 kg	15.00
T1-54	tota-flector	6 oz	17 kg	19.50
LFT	lightflector/tilter	1 ¹ / ₄ lbs	79 kg	75.00

DP SUPPORTS AND MOUNTS

KS	ks stand	4 ¹ / ₂ lbs.	2.10 kg	103.00
KP	full pole	1 ³ / ₈ lbs	.62 kg	47.50
KPH	half pole	1 lb	45 kg	40.00
LC	lowel casters (3)	2 ³ / ₈ lbs	1.08 kg	47.50
LA	lowel anchors (4)	12 oz	34 kg	9.00
LW	lowel weight	4 ¹ / ₄ lbs	1.93 kg	22.50
SC-10	large space-clamp	1 ¹ / ₂ lbs	.68 kg	48.50
SC-20	small space-clamp	1 ¹ / ₄ lbs.	.57 kg	42.50
D2-32	tape-up bracket	8 oz	.23 kg	27.50
GT-12	gaffer-tape 12 yards	8 oz	.23 kg	8.50
GT-30	gaffer-tape 30 yards	1 ¹ / ₄ lbs	.57 kg	16.50
T1-30	tota-clamp	4 oz	11 kg	18.50
KI-10	interlink	12 oz	.34 kg	21.50
KG	grip	1 ³ / ₄ lbs	.79 kg	27.50
LSS	screw-in stud (2)	4 oz	11 kg	10.50

DP CABLES & STORAGE

LQE25	25' extension cable	2 ³ / ₈ lbs	1.08 kg.	23.50
KCC	cable clips (40)	4 oz	11 kg	9.00
K4CC	cable clips (10)	1 oz	28 g	4.50
D2-61	dp lampak	2 oz	57 g	13.50
MCSEM	molded multi case	16 ¹ / ₂ lbs	7.49 kg	195.00
D2-89	heavy duty case	37 lbs.	17 kg	425.00

DP RETROFIT

D2-05	quartz d retrofit	8 oz	.23 kg	10.00
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DP KITS

D2-95	dp brella kit	48 lbs.	21.78 kg.	1025.00
3 dp lights, #1 reflector (less lamps); 3 dp brellas, 3 ks stands; 1 dp lampak; 1 molded multi case				
D2-93	dp 3 kit	45 lbs.	20.41 kg.	1075.00
3 dp lights, #1 reflector (less lamps); 3 dp barndoors, 3 ks stands; 1 dp lampak; 1 molded multi case				
D2-94	dp 4 kit	55 lbs.	24.95 kg.	1375.00
4 dp lights, #1 reflectors (less lamps); 4 dp barndoors, 4 ks stands; 1 dp lampak; 1 molded multi case				
D2-96	dp remote kit	52 lbs.	23.58 kg.	1475.00
3 dp lights, #1 reflectors (less lamps); 3 dp barndoors, 1 #3 superspot reflector; 1 diffused glass, 1 full scrim, 1 graduated scrim, 1 dp brella, 3 dp frames; 1 mixed gels; 1 pack day blue gels, 1 lightflector/tilter, 2 tota-flags; 2 flexi-shafts; 3 ks stands; 1 large space clamp; 1 dp lampak; 1 molded multi case				
D2-97	close quarters kit	58 lbs.	26.31 kg.	1595.00
4 dp lights, #1 reflectors (less lamps); 1 #3 superspot reflector, 4 dp barndoors; 2 full scrims; 1 half scrim, 1 graduated scrim, 2 dp frames; 1 mixed gels; 1 pack day blue gels; 4 ks stands; 1 large space-clamp; 1 dp lampak; 1 molded multi case				

TO ORDER ABOVE KITS WITH HEAVY DUTY CASE [D2-89] SUBSTITUTED FOR STANDARD KIT CASE, SEE BELOW:

D2-95HD	dp brella/hd case	68 ¹ / ₂ lbs	31.06 kg	1255.00
D2-93HD	dp 3/hd case	65 ¹ / ₂ lbs.	29.70 kg	1305.00
D2-94HD	dp 4/hd case	75 ¹ / ₂ lbs.	34.24 kg.	1605.00
D2-96HD	dp remote/hd case	72 ¹ / ₂ lbs.	32.88 kg	1705.00
D2-97HD	close quarters/hd case	78 ¹ / ₂ lbs	35.60 kg	1825.00

LAMPS FOR DP LIGHT

dp lampak available—stores 4 lamps

EHC	120v.	500w.	300hr.	clear	3200°K	52.00
EHD	120v.	500w.	2000hr.	clear	3000°K	52.00
EHF	120v.	750w.	300hr.	clear	3200°K	58.00
EHG	120v.	750w.	2000hr.	clear	3000°K	58.00
FEL	120v.	1000w.	300hr.	clear	3200°K	52.00
FKR/220	220v.	650w.	300hr.	clear	3100°K	65.00
FEP/220	220v.	1000w.	150hr.	clear	3200°K	60.00
FKR/240	240v.	650w.	300hr.	clear	3100°K	65.00
FEP/240	240v.	1000w.	150hr.	clear	3200°K	60.00

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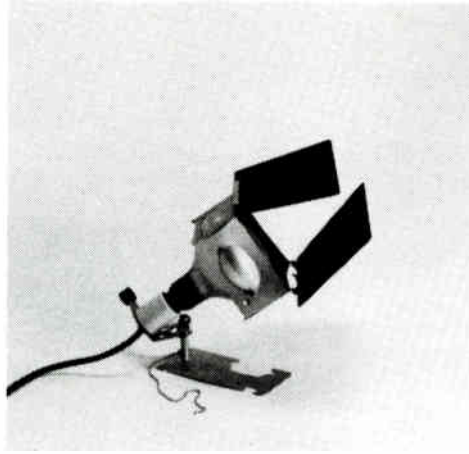


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Telex: 666597UW Cable: Lowel-light, NY

LIGHTING SYSTEMS/ KITS AND REFLECTORS



SOFTLIGHT 2



LOWEL-LIGHT



REFLECTORS

SOFTLIGHT SYSTEM

SOFTLIGHT 2 & GELS

S2-10	softlight 2	8 lbs.	3.63 kg.	275.00
S2-20	complete barndoor	2 lbs.	.91 kg.	72.50
S2-21	top or bottom door	10 oz.	.28 kg.	30.00
S2-22	side barndoor	5 oz.	.14 kg.	15.00
S2-30	reflector shell	6 oz.	.17 kg.	68.00
GELS: PACKAGE OF 3, 24x34" (61x86cm)				
S2-69	blue frost gels	7 oz.	.20 kg.	29.50
S2-70	day blue gels	7 oz.	.20 kg.	29.50
S2-71	n.d. 3 gels	7 oz.	.20 kg.	29.50
S2-72	frost gels	7 oz.	.20 kg.	29.50

SOFTLIGHT 2 SUPPORTS & MOUNTS

KS	ks stand	4 1/2 lbs.	2.10 kg.	103.00
KP	full pole	1 3/4 lbs.	.62 kg.	47.50
KPH	half pole	1 lb.	.45 kg.	40.00
SC-10	large space-clamp	1 1/2 lbs.	.68 kg.	48.50
SC-20	small space-clamp	1 1/4 lbs.	.57 kg.	42.50
KG	grip	1 3/4 lbs.	.79 kg.	27.50
KI-10	interlink	12 oz.	.34 kg.	21.50
T1-30	total-clamp	4 oz.	.11 kg.	18.50
KWW	water weight	8 oz.	.23 kg.	16.50
LW	lowel weight	4 1/4 lbs.	1.93 kg.	22.50
LC	lowel casters (3)	2 3/4 lbs.	1.08 kg.	47.50

STORAGE

KCC	cable clips (40)	4 oz.	.11 kg.	9.00
K4CC	cable clips (10)	1 oz.	.28 g.	4.50
T1-61	total lampak	2 oz.	.57 g.	13.50
S2-51M	molded softlight case	13 lbs.	5.90 kg.	175.00
S2-53M	molded softlight case	13 lbs.	5.90 kg.	165.00
RU	roll-up carrier	3 1/4 lbs.	1.47 kg.	98.50

SOFTLIGHT RETROFIT

S2-06	softlight retrofit	1 7/8 lbs.	.85 kg.	39.00
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SOFTLIGHT KITS

S2-92	standard soft kit	29 lbs.	13.15 kg.	600.00
1 softlight 2 (less lamps); 1 ks stand; 1 complete set barndoors;				
1 total-lampak; 1 molded softlight case. (S2-51M)				
S2-91	light soft kit	24 lbs.	10.89 kg.	510.00
1 softlight 2 (less lamps); 1 complete set barndoors; 1 total-lampak;				
1 molded softlight case. (S2-51M)				
S2-93	triple soft kit	43 lbs.	19.50 kg.	1125.00
3 softlight 2 (less lamps); 3 complete set barndoors; 1 total-lampak;				
1 molded softlight 3 case. (S2-53M)				

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VL-82

LAMPS FOR SOFTLIGHT 2 total lampak available—stores 5 lamps

FDL	120v.	500w.	400hr.	clear	3200°K	32.00
FCL	120v.	500w.	2600hr.	clear	3000°K	26.00
EJG	120v.	750w.	400hr.	clear	3200°K	40.00
EME/EJB	240v.	800w.	250hr.	clear	3200°K	37.00
FCM	120v.	1000w.	300hr.	clear	3200°K	32.00

LOWEL-LIGHT SYSTEM

LOWEL-LIGHT & ACCESSORIES

LL1	lowel-light	10 oz.	.28 kg.	32.50
BR40	barndoor	4 oz.	.11 kg.	32.50
BR-1	replacement flap	1 oz.	.28 g.	8.00
BR-2	complete bulbmount only	3 oz.	.86 g.	18.00
GT-12	gaffer-tape 12 yards	8 oz.	.23 kg.	8.50
GT-30	gaffer-tape 30 yards	1 1/4 lbs.	.57 kg.	16.50
K5C	lowel-light case	2 1/2 lbs.	.96 kg.	67.50

LOWEL-LIGHT KIT

K5BR	lowel-light K5BR kit	8 1/4 lbs.	3.74 kg.	360.00
5 lowel-lights (less lamps); 1 12 yard gaffer-tape; 5 barndoors;				
1 lowel-light case.				

REFLECTORS

REFLECTORS

LFT	lightflector/tilter	1 3/4 lbs.	.79 kg.	75.00
LF	lightflector	1 1/2 lbs.	.74 kg.	57.00
T1-54	total-flector	6 oz.	.17 kg.	19.50
V44A	variflector II	14 lbs.	6.35 kg.	265.00
V44RS	replacement panel	7 1/4 lbs.	3.29 kg.	110.00
V44CK	side channels (2)	3 1/2 lbs.	1.59 kg.	115.00

SUPPORTS & MOUNTS

GS	grand stand	6 lbs.	2.72 kg.	165.00
KS	ks stand	4 1/2 lbs.	2.10 kg.	103.00
O1-33	omni-stand	2 1/2 lbs.	1.30 kg.	82.00
LA	lowel anchors (4)	12 oz.	.34 kg.	9.00
LW	lowel weight	4 1/4 lbs.	1.93 kg.	22.50
T1-36	total-tilter	4 oz.	.11 kg.	21.00
T1-50	flexi-shaft 16" (2)	4 oz.	.11 kg.	17.50
T1-30	total-clamp	4 oz.	.11 kg.	18.50
T1-34	total-tatch	2 oz.	.57 g.	11.00
LC	lowel casters (3)	2 3/4 lbs.	1.08 kg.	47.50

STORAGE

V44CC	variflector case	4 1/4 lbs.	1.93 kg.	88.00
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KIT

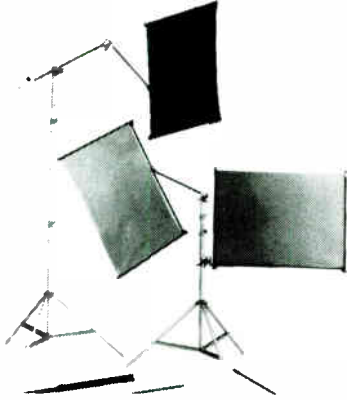
V44SC	variflector II kit	25 lbs.	11.34 kg.	495.00
1 variflector II; 1 grand stand; 4 lowel anchors; 1 variflector case				

Prices and Specifications Subject to Change Without Notice.



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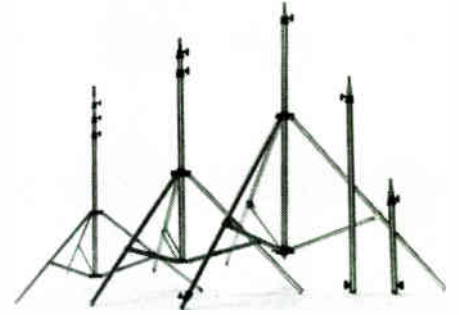
LIGHTING SUPPORT SYSTEMS AND ACCESSORIES



**FRAME-UP LOBO & LOBO ARM
CLAMPS & MOUNTS**



CLAMPS AND MOUNTS



STANDS, POLES, BOOMS, RIGS

CLAMPS			
SC-10	large space-clamp	1½ lbs.	68 kg.
SC-20	small space-clamp	1¼ lbs.	57 g
SC-15	large bar	8 oz.	23 kg.
SC-25	small bar	4 oz.	11 kg.
SC-35	clamping arm (1)	6 oz.	17 kg.
SC-30	stud bracket	4 oz.	11 kg.
T1-30	tota-clamp	4 oz.	11 kg.
KG	grip	1¾ lbs.	79 kg.
KI-10	interlink	12 oz.	34 kg.
KI-11	double male stud	4 oz.	11 kg.

MOUNTS			
T1-32	tota-mount	10 oz.	28 kg.
D2-32	tape-up bracket	8 oz.	23 kg.
GT-12	gaffer-tape 12 yards	8 oz.	23 kg.
GT-30	gaffer-tape 30 yards	1¼ lbs.	57 kg.
LSS	screw-in stud (2)	4 oz.	11 kg.
T1-35	tota-daptor	4 oz.	11 kg.
T1-36	tota-tilter	4 oz.	11 kg.
F1-30	lowel lobo	10 oz.	28 kg.
F1-40	lobo arm	3 oz.	85 g

STANDS, POLES, BOOMS, RIGS

STANDS & POLES			
GS	grand stand	6 lbs.	2 72 kg
KS	ks stand	4½ lbs	2 10 kg
O1-33	omni-stand	2¾ lbs	1 30 kg
KP	full pole	1¾ lbs	62 kg
KPH	half pole	1 lb	45 kg

ACCESSORIES			
LC	lowel casters (3)	2¾ lbs	1 08 kg
LA	lowel anchors (4)	12 oz	34 kg
LW	lowel weight	4¼ lbs	1 93 kg
KWW	water weight	8 oz	23 kg
KCL	ceiling link	10 oz	28 kg
T1-30	tota-clamp	4 oz.	11 kg
KG	grip	1¾ lbs	79 kg
KI-10	interlink	12 oz	34 kg
KI-11	double male stud	4 oz	11 kg

STORAGE			
MCSEM	molded multi case	16½ lbs	7 49 kg
V44CC	variflector case	4¼ lbs	1 93 kg
T1-82	tube case	2¾ lbs	1 08 kg
RU	roll-up carrier	3¼ lbs	1 47 kg

BOOMS & RIGS			
SP-90	big boom	20½ lbs.	9.30 kg.
	1 grand stand; 1 grip, 1 full pole, 2 lowel weights, 1 set lowel casters (3) 1 package cable clips (10).		
SP-91	basic boom	19 lbs.	8.62 kg.
	1 ks stand; 1 grip; 1 full pole, 2 lowel weights, 1 set lowel casters (3). 1 package cable clips (10)		
SP-92	hi-lo-elbow	7 lbs.	3.17 kg.
	1 ks stand; 1 grip; 1 half pole		
SP-93	background support	13½ lbs.	6.12 kg.
	2 ks stands; 2 interlinks, 2 full poles.		

FLAGS, GELS, UMBRELLAS

FLAGS, FRAMES, UMBRELLAS, MATS, GELS			
F1-15	standard frame-up	14 oz.	40 kg.
F1-20	large frame-up	1 lb.	45 kg.
D2-24	dp frame	8 oz.	23 kg.
T1-20	tota-frame	6 oz.	17 kg.
T1-52	tota-flag	4 oz.	11 kg.
B1-25	big brella	3½ lbs.	1.59 kg.
D2-25	dp brella	21 oz.	6.6 kg.
T1-25	tota-brella	8 oz.	23 kg.
MATS FOR STANDARD FRAME-UP: 20x24" (50x60cm)			
F1-42	black mat	3 oz.	85 g.
F1-43	translucent mat	3 oz.	85 g.
MATS FOR LARGE FRAME-UP: 24x34" (61x86cm)			
F1-52	black mat	4 oz.	11 kg.
F1-53	translucent mat	4 oz.	11 kg.
STANDARD FRAME-UP GELS: PACKAGE OF 3, 20x24" (50x60cm)			
F1-70	day blue gel	4 oz.	.11 kg.
F1-71	n.d. 3 gel	4 oz.	.11 kg.
F1-72	frost gel	4 oz.	.11 kg.
LARGE FRAME-UP & SOFTLIGHT 2 GELS: PACKAGE OF 3, 24x34" (61x86cm)			
S2-69	blue frost gels	7 oz.	20 kg
S2-70	day blue gels	7 oz.	20 kg.
S2-71	n.d. 3 gels	7 oz.	20 kg.
S2-72	frost gels	7 oz.	20 kg.
S2-79	special colors	7 oz.	20 kg.
DP GELS: PACKAGE OF 4, 12x16" (30x41cm)			
D2-69	blue frost gels	2 oz.	57 g.
D2-70	day blue gels	2 oz.	57 g.
D2-71	n.d. 3 gels	2 oz.	57 g.
D2-72	frost gels	2 oz.	57 g.
D2-78	mixed gels	2 oz.	57 g.
TOTA/OMNI GELS: PACKAGE OF 5, 10x12" (25x30cm)			
T1-69	blue frost gels	2 oz.	57 g.
T1-70	day blue gels	2 oz.	57 g.
T1-71	n.d. 3 gels	2 oz.	57 g.
T1-72	frost gels	2 oz.	57 g.
T1-78	assorted gels	2 oz.	57 g.

MOUNTING DEVICES			
F1-30	lowel lobo	10 oz.	28 kg
F1-40	lobo arm	3 oz.	85 g
GS	grand stand	6 lbs.	2 27 kg
KS	ks stand	4½ lbs	2 10 kg
O1-33	omni-stand	2¾ lbs	1 30 kg
T1-50	flexi-shaft (2)	4 oz	11 kg.
T1-30	tota-clamp	4 oz.	11 kg
T1-34	tota-latch	2 oz.	57 g
T1-35	tota-daptor	4 oz	11 kg
KG	grip	1¾ lbs	79 kg
KI-10	interlink	12 oz	34 kg
SC-10	large space-clamp	1½ lbs	68 kg
SC-20	small space clamp	1¼ lbs	57 kg
LW	lowel weight	4¼ lbs	1 93 kg
RU	roll-up carrier	3¼ lbs	1 47 kg

FRAME-UP SETS			
F1-90	standard frame-up set	3½ lbs.	1.6 kg.
	2 standard frame-ups, 3 lobos, 1 lobo arm		
F1-95	large frame-up set	4 lbs.	1.80 kg.
	2 large frame-ups; 3 lobos; 1 lobo arm		

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Prices and Specifications Subject to Change Without Notice.

VL-83

LTM CORP. OF AMERICA

1160 N. Las Palmas Ave.
Hollywood, CA 90038 1209
(213) 460-6166 Telex 67-7693

LIGHTING

STUDIO/INCANDESCENT LIGHTING...THE LT SERIES

LTM has introduced a complete line of Fresnel Studio/Incandescent Lighting instruments from 1,000 watts to 10,000 watts.

These fixtures are ideal for set lighting for motion picture and TV studios.

They all have a wide focusing range which provides precise beam control while maintaining a perfectly smooth, even spread of light.

The LT series are constructed of cast and steel-sheet housing...welded and waterproof. They all use convex fresnel lenses and Type A9 polished aluminum reflectors. Wire safety guards protect the fresnels.

All fixtures are finished in a black enamel with gold accents.

The LT series comes in three different operating versions.

LT1000W-7" Fresnel

- Manual—all controls function by hand \$332.00
- Pole-Operated—the true studio light, used only suspended. The light is actuated from the ground by means of a pole 478.00
- Remote control—the studio light of the future. The LT Remote Control lights feature "joy stick" control for panning (right and left), tilting (up and down), focusing (spot to flood) and on/off from one central control console

LT 1000W-7" Fresnel \$1338.00

- 4-Leaf Rotating Barndoor 49.00
- Hinged Gel Frame 21.00
- Single Scrim Full or Half 9.20
- Double Scrim Full or Half 11.50

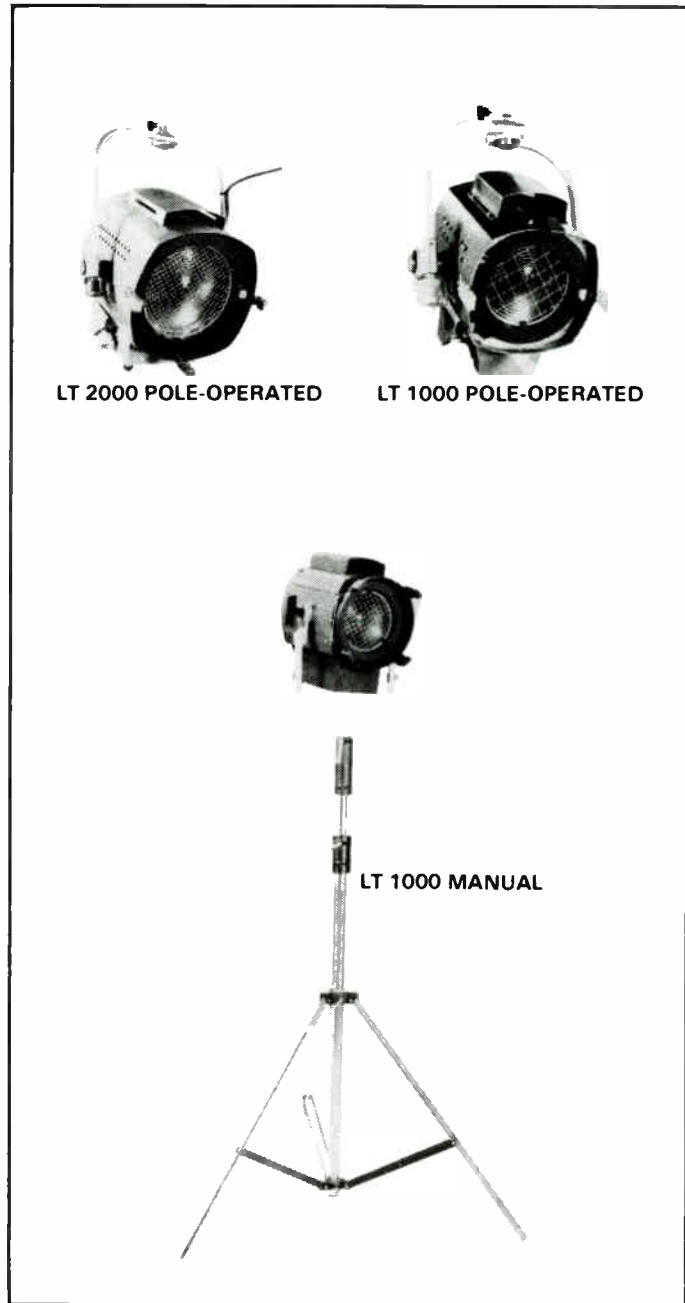
LT Mini 1000W-5-1/6" Fresnel (Manual only) \$332.00

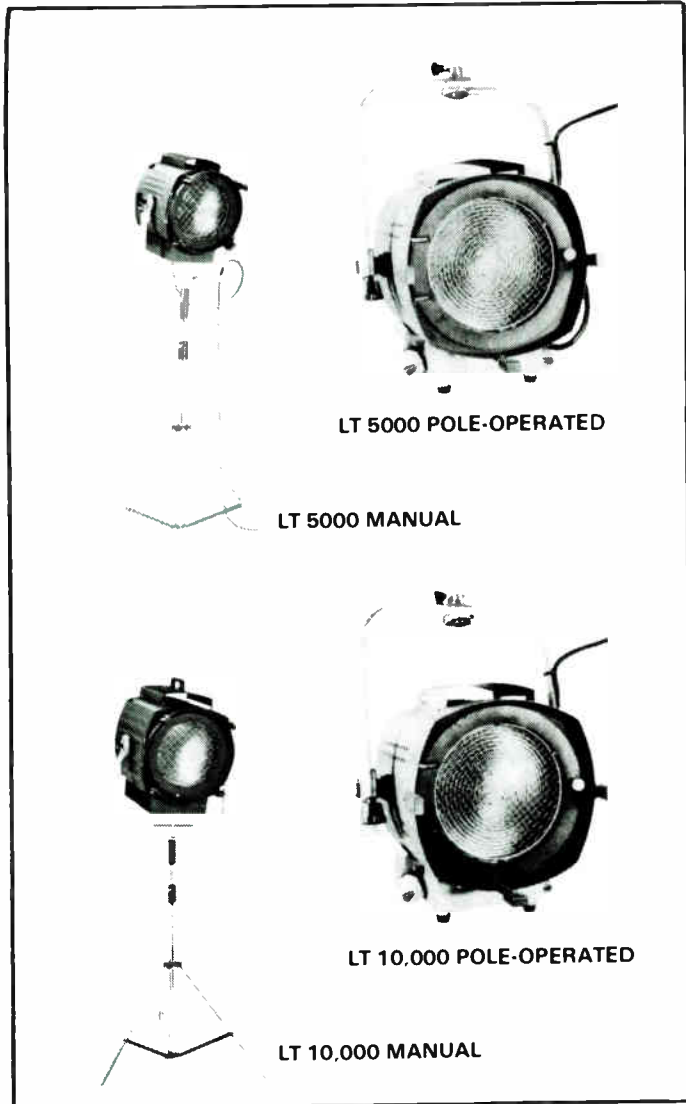
LT 2000W-10" Fresnel

- Manual—all controls function by hand \$526.00
- Pole-Operated—the true studio light, used only suspended. The light is actuated from the ground by means of a pole 625.00
- Remote Control—the studio light of the future. The LT Remote Control lights feature "joy stick" control for panning (right and left), tilting (up and down), focusing (spot to flood) and on/off from one central control console

LT 2000W-10" Fresnel \$1743.00

- 4-Leaf Rotating Barndoor 68.00
- Hinged Gel Frame 28.00
- Single Scrim Full or Half 9.20
- Double Scrim Full or Half 11.50





LT 5000 POLE-OPERATED

LT 5000 MANUAL

LT 10,000 POLE-OPERATED

LT 10,000 MANUAL

STUDIO/INCANDESCENT LIGHTING

LT 5000W-12" Fresnel

- Manual—all controls function by hand **\$925.00**
- Pole-Operated—the true studio light, used only suspended. The light is actuated from the ground by means of a pole **1100.00**
- Remote Control—the studio light of the future. The LT Remote Control lights feature "joy stick" control for panning (right and left), tilting (up and down), focusing (spot to flood) and on/off from one central control console **3080.00**
- 4-leaf Rotating Barndoor **88.00**
- Hinged Gel Frame **33.00**
- Single Scrim Full or Half **14.95**
- Double Scrim Full or Half **18.40**

LT 10,000W-14" Fresnel

- Manual—all controls function by hand **\$1339.00**
- Pole-Operated—the true studio light, used only suspended. The light is actuated from the ground by means of a pole **1591.00**
- Remote Control—the studio light of the future. The LT Remote Control lights feature "joy stick" control for panning (right and left), tilting (up and down), focusing (spot to flood) and on/off from one central control console **4455.00**
- 4-leaf Rotating Barndoor **133.00**
- Hinged Gel Frame **63.00**
- Single Scrim Full or Half **16.90**
- Double Scrim Full or Half **18.40**

CYC Lights

LTM's cyc lights use unsymmetrical reflectors which provide even, smooth lighting of cycloramas when hung overhead.

CYC 1000-1000 watts of power, steel-sheet welded construction with wire guard front and color gel frame.

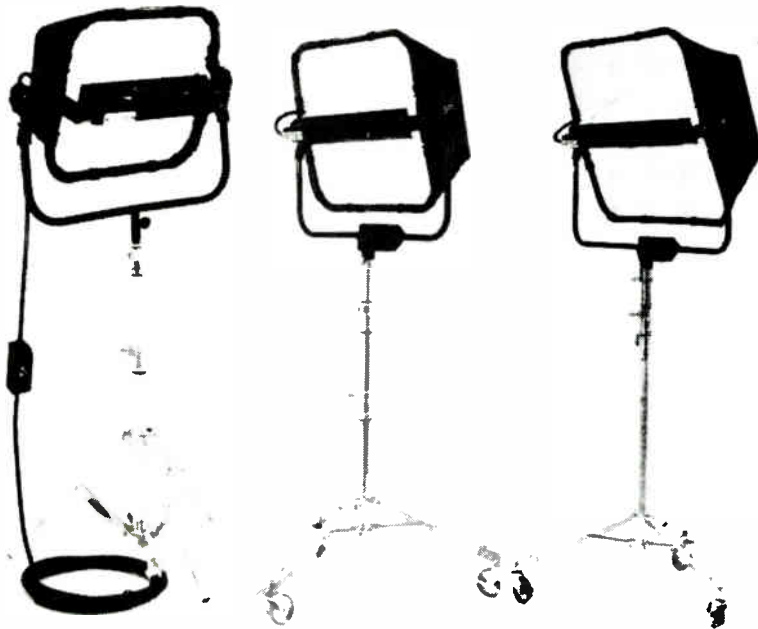
CYC 1000W-CYC Light w/Color Frame \$ 225.00

Cyclomodul

A combination of four CYC 1000s providing the possibility of instant color changes during a scene.

Cyclomodul Four—4-light w/wireguard & 4-color frame \$900.00

Cyclomodul Pole-Operated—w/wireguard & 4-color frame . . 1050.00



2111S
2121S

2841G
2842G

3541G
3542G

THE CONVERTIBLE SOFTLIGHT

Rugged frame constructed of light weight high stress aircraft tubing.

Convertible design with non-removable soft reflector facilitates instant set up and knock down of fixture.

High performance soft reflector coated with easy to clean, ultra high temperature white reflecting surface that resists color temperature shifts associated with conventional painted softlights.

Rotating light bar provides ultimate control of light intensity and direction.

Lamp reflectors designed for maximum lamp cooling.

Wiring operates inside ventilated heat sink channel.

Switches removed from lamp housing for cooler operation.

Complete line of accessories.

2111S

21" 1000 watt convertible softlight for multiple purpose location or studio operation. Supplied with inline switched 25' power cord and choice of plug. Includes rotating light bar feature.

TECHNICAL SPECIFICATIONS:

Size: 21" x 18"

Weight: 18 lbs. w/cable

Rating: 8.3 amp maximum at 1000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 25' 3 conductor #16 AWG SO power cord with choice of plug.

Switching: Single inline switch.

Lamps: Single Tungsten-Halogen lamp.

2121S

21" 2000 watt convertible softlight for multiple purpose location or studio operation. Supplied with inline switched 25' power cord and choice of plug. Includes rotating light bar feature.

TECHNICAL SPECIFICATIONS:

Size: 21" x 18"

Weight: 18 lbs. w/cable

Rating: 16.6 amp maximum at 2000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 25' 3 conductor #14 AWG SO power cord with choice of plug.

Switching: Single inline switch.

Lamps: Single Tungsten-Halogen lamp.

2821S

28" 2000 watt convertible softlight for multiple purpose location or grid operation. Supplied with inline switched 25' power cord and choice of plug. Includes rotating light bar feature.

TECHNICAL SPECIFICATIONS:

Size: 28" x 24"

Weight: 21.5 lbs. w/cable

Rating: 16.6 amp maximum at 2000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 25' 3 conductor #14 AWG SO power cord with choice of plug.

Switching: 2 inline switches.

Lamps: 2 Tungsten-Halogen lamps.

2841G

28" 4000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Single 60 amp flush mount grounding pin plug provided for single circuit operation. Requires 0083 or 0083P header cable. Header cable not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 28" x 24"

Weight: 18.5 lbs. w/o cable

Rating: 33.3 amp maximum at 4000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 1-25' 3 conductor #8 AWG SO header cable attachable to 60 amp flush mount grounding pin plug at switch box required

2842G

28" 4000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Two 20 amp flush mount grounding pin plugs provided for two circuit operation. Requires two 0143 or 0143P header cables. Header cables not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 28" x 24"

Weight: 18.5 lbs. w/o cable

Rating: 33.3 amp maximum at 4000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 2-25' 3 conductor #14 AWG SO header cables attachable to 2 20 amp flush mount grounding pin plugs at switch box required

Switching: 2 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 2 lamps, individually switched.

3541G

35" 4000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Single 60 amp flush mount grounding pin plug provided for single circuit operation. Requires 0083 or 0083P header cable. Header cable not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 35" x 30"

Weight: 22.5 lbs. w/o cable

Rating: 33.3 amp maximum at 4000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 1-25' 3 conductor #8 AWG SO header cable attachable to 60 amp flush mount grounding pin plug at switch box required.

Switching: 2 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 2 lamps, individually switched.

3542G

35" 4000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Two 20 amp flush mount grounding pin plugs provided for two circuit operation. Requires two 0143 or 0143P header cables. Header cables not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 35" x 30"

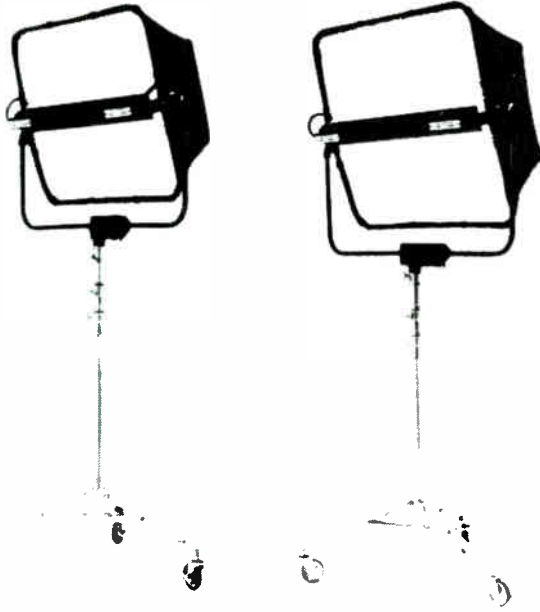
Weight: 22.5 lbs. w/o cable

Rating: 33.3 amp maximum at 4000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 2-25' 3 conductor #14 AWG SO header cables attachable to 2 20 amp flush mount grounding pin plugs at switch box required.

Switching: 2 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 2 lamps, individually switched.



3561G

**4281G
4282G**

THE CONVERTIBLE SOFTLIGHT

Rugged frame constructed of light weight high stress aircraft tubing.

Convertible design with non-removable reflector facilitates instant set up and knock down of fixture.

High performance soft reflector coated with easy to clean, ultra high temperature white reflecting surface that resists color temperature shifts associated with conventional painted softlights.

Rotating light bar provides ultimate control of light intensity and direction.

Lamp reflectors designed for maximum lamp cooling.

Wiring operates inside ventilated heat sink channel.

Switches removed from lamp housing for cooler operation.

Complete line of accessories.

3561G

35" 6000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Single 60 amp flush mount grounding pin plug provided for single circuit operation. Requires 0063 or 0063P header cable. Header cable not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 35" x 30"

Weight: 22.5 lbs. w/o cable

Rating: 50 amp maximum at 6000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 1-25' 3 conductor #6 AWG SO header cable attachable to 60 amp flush mount grounding pin plug at switch box required.

Switching: 2 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 3 lamps with center lamp switched independently of two outboard lamps.

4281G

42" 8000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Single 100 amp flush mount grounding pin plug provided for single circuit operation. Requires 0043 or 0043P header cable. Header cable not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 42" x 36"

Weight: 27 lbs. w/o cable

Rating: 66.6 amp maximum at 8000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 1-25' 3 conductor #4 AWG SO header cable attachable to 100 amp flush mount grounding pin plug required.

Switching: 4 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 4 lamps, individually switched.

4282G

42" 8000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Two 60 amp flush mount grounding pin plugs provided for two circuit operation. Requires two 0083 or 0083P header cables. Header cables not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 42" x 36"

Weight: 27 lbs. w/o cable

Rating: 66.6 amp maximum at 8000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 2-25' 3 conductor #8 AWG SO header cables attached to 2 60 amp flush mount grounding pin plugs required.

Switching: 4 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 4 lamps, individually switched.



7716G

77" 16000 watt convertible softlight with rotating light bar for multiple purpose location or studio operation. Two 100 amp flush mount grounding pin plugs provided for two circuit operation. Requires two 0043 or 0043P header cables. Header cables not included in base price.

TECHNICAL SPECIFICATIONS:

Size: 77" x 42"

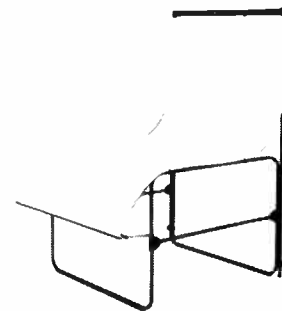
Weight: 50 lbs. w/o cable

Rating: 133 amp maximum at 16000 watts. 120/240 volts, A.C. or D.C. operation.

Cable: 2-25' 3 conductor #4 AWG SO header cables attached to 2 100 amp flush mount grounding pin plugs required.

Switching: 4 switches mounted in permanent switch box attached to pivoting yoke.

Lamps: 8 lamps, switched 2 per switch.



9951T

Totally unobstructed translucent camera table for highlight control shadow elimination, and special effects photography.

FEATURES INCLUDE:

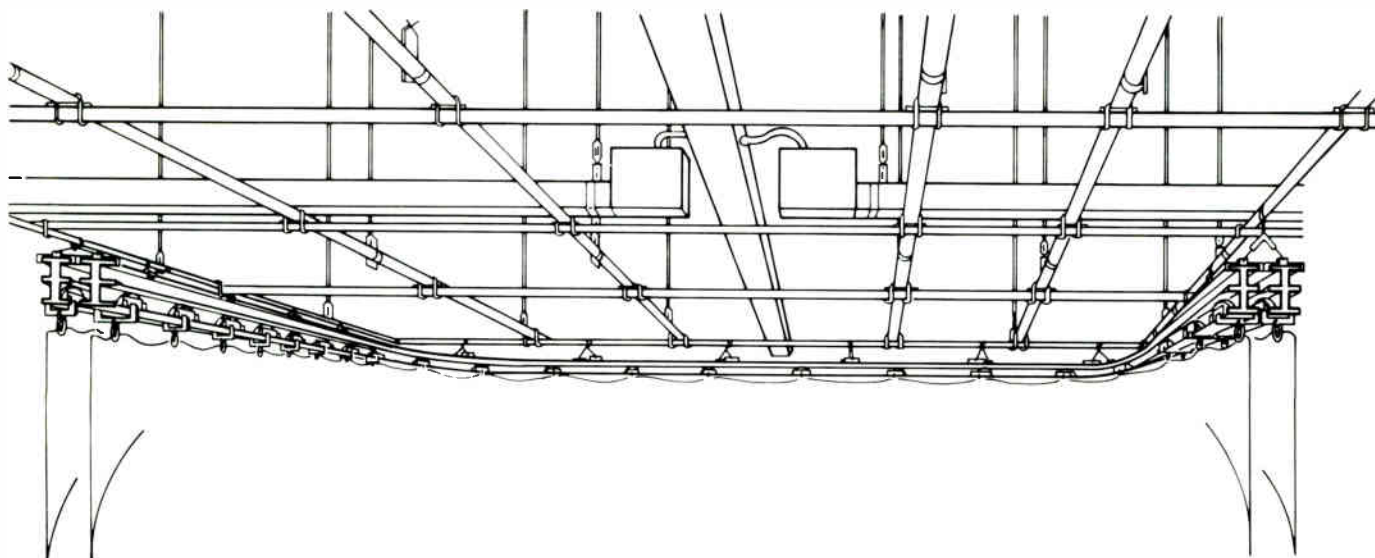
51" x 100" overall dimension with unobstructed shooting area of 46" x 96"

Adjustable front sweep allows user maximum control of foreground space.

Standard surface is non-reflective matt on one side with glossy surface opposite side.

User may select from numerous commercially available translucent colored or textured surfaces.

Fast, easy, no error assembly and knock down.



Studio cycloramas can be tied directly to a pipe grid, but curtain track is recommended for hanging to allow maximum versatility. The most flexible installation has at least a double-run of track, to permit the size of the shooting area to be changed. Compute the length of each track separately; add any necessary footage for off camera storage. Switchers are used to move curtains from one track to another with ease. An individual curtain track is sold on a "per foot" basis, complete with all necessary accessories for standard installation. This includes: the track channel, as ordered, cut to the nearest even foot. (We do not ship in less than foot increments; i.e., if you need 12 1/2 feet, order 13 feet.) One master carrier, one single carrier per 12 inches of track, and hanging clamps to suspend on 5 foot centers are included. If closer centers are required because of your installation configuration, they must be ordered at additional charge. To order, compute the number of feet. Advise us of this amount. We will ship necessary items for standard installation with instructions for assembly.

#76064 Versatile, I-beam track, for installations up to 75 feet long and 30 feet high, rigged for walk-along operation. Ideal for most motion picture and TV studio cycloramas. This track is shipped straight, for on the job curving. A bending tool for accurate curving is listed and must be ordered separately. Track can be curved without this special tool.
#76064 I-beam track - \$13.83 per foot.

#502 Heavy duty track, used for walk-along installations over 30 feet high or 75 feet long. This track must be factory curved and requires drawings for special radii. Standard radii beginning at 2 feet minimum.

#502 Heavy duty track - \$34.40 per foot, includes curving

PIPE AND WALL BRACKETS

#76374 Bending Tool (For use with #76064 track)

#76450 Pipe Clamps for 1 1/2" I.D. pipes

#76394 Wall Bracket 18", for single cyc track

#76395 Wall Bracket 24", for double cyc track

The following switchers are available to facilitate moving of curtains from one track to another or from storage tracks to set locations.

SWITCHERS FOR #76064 TRACK

#143-2 2-way switcher

#143-3 3-way switcher

4 and 5-way switchers available on request.

SWITCHERS FOR # 502 HEAVY DUTY TRACK

#503 2-way switcher

OLESEN

1535 Ivar Ave.
Hollywood, CA 90028
(213) 461-4631

CYCLORAMA CURTAINS, TRACKS, PIPE GRIDS AND ELECTRICAL DISTRIBUTION DEVICES

CYCLORAMA CURTAINS

Cyclorama curtains are available in various fabrics as listed below. Cycloramas are manufactured to your size specifications with jute webbing triple stitched at the top; snaps for attaching to track; or grommets with tie-lines to tie on pipe; snaps or ties on 12" centers. Bottom finished with either canvas chain picket, with chain, or pipe pocket, without pipe; side finished with 2" hems. Seamed with vertical seams. Horizontal seams and seamless available on special request. All materials supplied flameproofed.

MUSLIN CYCLORAMA

Medium weight, unbleached muslin cycloramas are available in three colors, natural, light blue, and 60% reflectance gray.

With Vertical Seams
 88921 Natural \$.58/sq. ft.
 88922 Light Blue75/sq. ft.
 88923 60% Reflectance Gray85/sq. ft.
 Seamless
 Natural: Hgts. to 18' and any lgth. to 180' POR
 Hgts. to 18-32' and any lgth. to 180' POR
 Light Blue: Hgts. to 18' and any lgth. to 180' POR
 60% Reflectance Gray: Hgts. to 18' and any lgth to 180' POR
 Larger sizes in blue and reflectance gray available on special request.

SOLID SEAMLESS LINO

A useful fabric, woven so mesh holes are filled for opacity. It is slightly toothed-in texture and is useful for television, since it does not show wrinkles and is non-reflective. Woven in one size approximately, 28 feet wide. Cycloramas made of this fabric are finished at approximately, 27 1/2 feet high, lengths up to approximately 180 feet long.

White POR
 Blue POR
 Reflectance Gray POR
 Black POR

VELOUR CYCLORAMAS

Heavy pile curtain fabric. Comes in two weights, heavy and medium. 100% cotton, flameproof, 54" wide. Cycloramas of this fabric have vertical seams. Colors listed below are in stock. We can supply over 40 other shades. Interesting effects can be accomplished by alternating color panels. Bi-parting curtains, with fullness sewn in, are available on request.

Black	Navy Blue
Flame	Gold
Red	Gray
Bright Blue	

Heavy weight Velour Cycloramas \$1.85/sq. ft.
 Medium weight Velour Cycloramas 1.71/sq. ft.

VELOURETTE CYCLORAMAS

A napped fabric, lighter in weight than velour. Good opacity and useful for economical draperies and cycloramas. 100% cotton, flameproof, 54" wide, cycloramas of this fabric have vertical seams. Bi-parting curtains with fullness sewn in, are available on request.

Black	Bright Blue
Gold	Reflectance Gray
Red	Chroma Key Blue
Forest Green	Beige

Velourette Cycloramas \$1.46/sq. ft.

SPECIAL EFFECTS CURTAINS

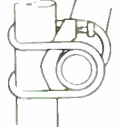
Fabrics for special effects are available as follows:

- Lame Curtains
- Rain curtains
- Shimmer curtains
- Sharktooth Scrim drops

Prices on request.

PIPE GRIDS

Useful for small studio installations or where ceiling height does not permit use of live rigging. Used for hanging of cyclorama tracks, electrical distribution devices and lighting fixtures. Minimum size 15 ft. by 20 ft. Consists of 1 1/2" I.D. pipes, dead hung at right angles on 4 ft. centers. Complete with wall brackets and ceiling hangers. Includes standard mounting hardware.



Motorized or counterweight rigging on request.

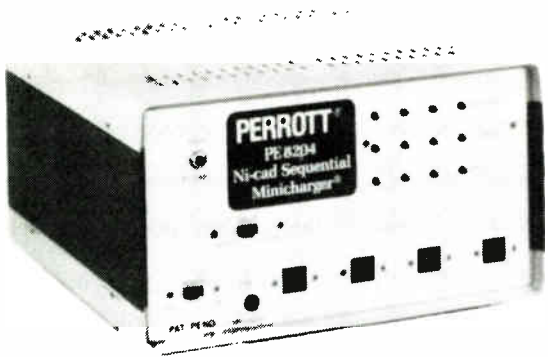
29730 Pipe Clamp.
 The safest method of clamping two 1 1/2" pipes at right angles to one another \$13.50

ELECTRICAL DISTRIBUTION DEVICES

To allow total flexibility in connecting your lights to your dimming or power system. Connector strips are manufactured to any length in even foot increments with 18", 20 amp pigtailed on any center (multiples of 3") and a choice of pin plug, Edison type or twist lock connectors. Supplied with double hanging brackets to be used on a maximum of 7 ft. centers, for mounting on top of 1 1/2" I.D. pipe. Special hangers available on request. All connector strips are U.L. listed.

Prices on request.

7201 Lee Highway
 Falls Church, VA 22046
 (703) 532-0700



PE 8204

- Sequential multiple 2 hr. Ni-Cad fast Minicharger®
 - Minicharger® reliability with microprocessor controls
 - Charges any combination of four (4) 10-12 cell 4.0 AH ("D") or 7.0 AH ("F") packs sequentially
 - Charges any combination of four (4) 22-24 cell 4.0 AH ("D") or 7.0 AH ("F") packs sequentially
 - High impact sturdy construction
 - Lightweight (5-1/4 lbs.); compact 10-1/4" x 9-3/4" x 5-1/2"
 - Eliminates need for temperature sensors
 - Circuit breaker protected
 - 100% quality tested both electronically and manually
- PE 8204** **\$950.00**



THE PERROTT ON-CAMERA LIGHT

- No heat build up
- Consistent light pattern — No holes — No shadows
- Can be powered with any 14.4 volt battery
- Ultra miniaturized design — sturdy welded construction
- Convenient 5-pin XLR connector
- Handheld or mounts virtually anywhere — camera, light, stand, tripod, accessory shoes, etc.
- 100% quality control inspected, electronically and manually

Specifications

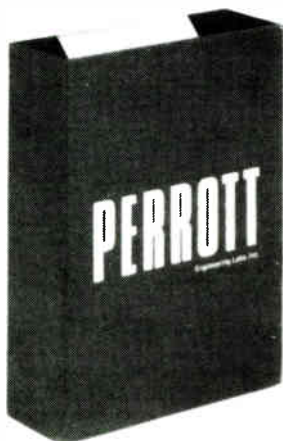
Color Temperature: 3500° Kelvin
 Volts (nominal): 14.4
 Running Time Available:

Amp Hours	Hours
4.0	.75
8.0	1.50

Weight: 1.0 lbs. (Head, 8.0 oz.; cord, 8.0 oz.)
 Size: 2-1/2" x 2-1/2" x 3"
 Connectors: 5-pin XLR
 Lamp Type: FLR

The Perrott On-Camera Light **\$195.00**

NOTE: The Perrott Lite® can be used with virtually any ENG/EFP camera in the field. To double the running time of the Perrott Lite®, use the Perrott PE-52-4 NiCad® Dual Output Belt.



PE 9037 (KWIK-KLIP®) Battery Carrier **\$185.00**
PRB 9037 (Snap-On™) Battery Carrier **185.00**

Basic Purpose: Allows user versatility and economy of using a VTR battery to power camera.

- Features:**
- Mates with KWIK-KLIP® or Snap-On™ battery mount.
 - Impact resistant metal construction.
 - 100% quality inspected both electronically & manually.
 - Spring tension prevents rattle.
 - Configured for Silver-Zinc or Ni-Cad VTR battery.

Size: 5-1/6" x 1-3/4" x 6-3/4"
Weight: .75 lbs.

ROSCO LABORATORIES, INC.

36 Bush Ave.
Port Chester, NY 10573
(914) 937-1300 Telex 131472

LIGHT CONTROL MEDIA



COLOR MEDIA PRODUCTS

Roscolux

The most durable color filter. Available in 111 colors and diffusers. Sold under the trade name "Supergel" overseas.

Sheets: 20" x 24"	\$ 4.25
Rolls: 24" x 50'	109.50
Swatchbook	2.50

Diffusion Test Kit

Nineteen 10" x 12" sheets of Rosco diffusion materials packed in a handy plastic pack. The kit includes a Technote which details the characteristic of each diffuser. \$19.95

Roscolux Diffusion

A range of filters in the stable Roscolux base, designed to alter the shadow characteristics or the beam shape of a light. Available in 17 colors.

Sheets: 20" x 24"	\$ 4.25
Rolls: 24" x 50'	109.50

Roscolene

The most widely used color media in the world. Available in 62 colors.

Sheets: 20" x 24"	\$ 3.25
Rolls: 24" x 50'	94.00
Swatchbook	2.50

Super Heat Shield

A protective transparent filter of extremely heat stable polymer, specially designed to deflect heat. This product should be placed between the bulb and the color filter, allowing space for the escape of heated air.

1991 2 mil. 20x24	\$ 7.50
-------------------	---------

Roscogel

The traditional color media, still produced in 74 proven colors. Ideal for short run or low budget productions.

Sheets: 20" x 24"	\$ 2.00
Swatchbook	2.50

Safety Frames

The replacement for hazardous metal color frames. Special, heavy-weight, flame retardant fiberboard will not transmit heat to the filter. Remains cool for safe handling.

8620 3½" (4¼ x 4¼)	\$.80
8621 6" (7½ x 7½)	1.05
8622 8" (10 x 10)	1.90
8623 4½" (Mini-ellipse)	.95

UV Filter

A virtually transparent filter, specially coated to absorb ultra-violet rays. The material allows less than 10% transmission below 390 nanometers.

20" x 24"	\$ 4.25
48" x 100 sq. ft.	104.00

Fluorescent Sleeves

For simple and economical control of fluorescent lighting. Clear carrier sleeve is supplied with one insert filter in any of the 62 Roscolene colors. 48" Roscosleeve. \$ 6.00

Prism Filters

Three different styles of holographically produced films that break light up into different effects.

Each filter is 9" square.	\$10.00
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Pin Beam Prism Filters

Two styles specially designed for use with pin beams (rain light). These filters are 6" square and are a rigid 10 mils. thick. Each design allows a central beam of light with the prismatic effect radiating outward from its center. Linear and Circle. \$ 9.00

Marcplot

A fresh approach to teaching and creating lighting design. Basic kit includes 220 magnetized markers, a special marking pen and a complete manual written by Marc B. Weiss.

8450 Marcplot kit	\$ 49.95
8451 Marcplot board 24" x 36"	49.95

ROSCO LABORATORIES, INC.

36 Bush Ave.
Port Chester, NY 10573
(914) 937-1300 Telex 131472

LIGHT CONTROL MEDIA

CINEGEL PRODUCTS

DAYLIGHT CONVERSION FILTERS

RoscoSun Daylight Conversion Filters are used when shooting in an interior at a 3200 K balance. They are required at windows or other openings to convert incident daylight to an approximation of 3200°K. Partial conversions are utilized where less than full correction (a cooler or bluer daylight appearance) is preferred. All roll materials are 100 sq. ft., 58" wide, and are optically clear.

No.	Name	Description	Price
3401	RoscoSun 85	Converts 5500°K daylight to a nominal 3200°K	\$104.00
3407	RoscoSun CTO	Converts 5500°K daylight to a nominal 2900°K	104.00
3408	RoscoSun 1/2 CTO	Converts 5500°K daylight to a nominal 3800°K	104.00
3409	RoscoSun 1/4 CTO	Converts 5500°K daylight to a nominal 4500°K	104.00
3761	Roscolex 85	Optically clear rigid acrylic. Panel, 51" x 100" Performs same function as Roscosun 85	147.00

NEUTRAL DENSITY FILTERS

RoscoSun Neutral Density Filters reduce the level of incident daylight. Two of the materials also convert daylight to a nominal 3200°K. Except for RoscoScrim (54" wide) all roll materials are 100 sq. ft., 58" wide and are optically clear.

No.	Name	Description	Price
3402	RoscoSun N3	Reduces light intensity <u>one</u> stop.	\$104.00
3403	RoscoSun N6	Reduces light intensity <u>two</u> stops.	104.00
3404	RoscoSun N9	Reduces light intensity <u>three</u> stops.	104.00
3405	RoscoSun 85N3	Reduces light intensity <u>one</u> stop and converts daylight to nominal 3200°K	109.00
3406	RoscoSun 85N6	Reduces light intensity <u>two</u> stops and converts daylight to nominal 3200°K	109.00
3809	RoscoScrim	Perforated material, 54" wide, reduces light intensity <u>two</u> stops with no effect on Kelvin.	104.00
3762	Roscolex N3	Optically clear rigid acrylic panel, 51" x 100". reduces light intensity <u>one</u> stop.	147.00
3763	Roscolex N6	Optically clear rigid acrylic panel, 51" x 100". reduces light intensity <u>two</u> stops	147.00

TUNGSTEN CONVERSION FILTERS

Rosco Tungsten Conversion Filters convert incandescent 3200° Kelvin sources to nominal daylight. These filters offer a deep-dyed base for optical clarity and high heat stability. They are 54" wide, 100 sq. ft.

No.	Name	Description	Price
3202	Tough Blue 50 (Full Blue)	Boosts 3200°K to nominal 5500°K daylight	\$104.00
3204	Tough Booster Blue (Half Blue)	Boosts 3200°K to 4100°K	104.00
3206	Tough 1/2 Booster Blue (Third Blue)	Boosts 3200°K to 3800°K	104.00
3208	Tough 1/4 Booster Blue (Quarter Blue)	Boosts 3200°K to 3500°K	104.00
3216	Tough 1/8 Blue (Eighth Blue)	Boosts 3200°K to 3300°K	104.00

FLUORESCENT LIGHT FILTERS

Standard cool white or daylight fluorescent tubes offer a reasonable approximation of photographic daylight except for their excessive green content. Two separate techniques are available to deal with this situation—balance all sources to the fluorescents or balance the fluorescents to the sources. Rosco Product 3304 is applied to windows or daylight sources and 3306 to 3200°K sources, respectively, to balance them to the fluorescent lights. Rosco Products 3308, 3313, 3314, 3310 and 3311 are applied to the fluorescent lights to convert them to either 3200° Kelvin or nominal daylight. All roll materials are 54" wide, 100 sq. ft., and are optically clear.

No.	Name	Description	Price
3304	Tough Plusgreen	Converts daylight to match fluorescents	\$104.00
3315	Tough 1/2 Plusgreen	Adds partial green to Daylight and 3200°K sources for balancing with fluorescents and discharge lamps. Equivalent to CC15 Green.	104.00
3316	Tough 1/4 Plusgreen	Adds partial green to Daylight and 3200°K sources for balancing with fluorescents and discharge sources. Equivalent to CC075 Green.	104.00
3306	Tough Plusgreen 50	Converts 3200°K sources to match cool white fluorescents	104.00
3308	Tough Minusgreen	Converts cool white fluorescents to nominal daylight by absorbing excess green output.	104.00
3313	Tough 1/2 Minusgreen	Partial green absorbing filter equivalent to 0.15cc Magenta. Useful on some fluorescent types or discharge sources.	104.00
3314	Tough 1/4 Minusgreen	Partial green absorbing filter equivalent to 0.075cc Magenta. Useful on some fluorescent types or discharge sources.	104.00
3310	Fluorofilter	Converts cool white fluorescents to 3200° Kelvin.	104.00
3311	Fluorofilter	Same as 3310 in 4 foot sleeves for covering lamps.	7.75

CINECOLOR

Rosco's Cinecolor range is a series of effects colors available in rolls that are a full 48" wide, 100 sq. ft. ea. \$104.00

ARC LIGHT FILTER

Rosco's Cinegel System offers a wide range of filters for carbon arcs, HMI, CID and CSI lamps. They vary in the character and the amount of color correction provided to deal with the ages of the lamps in use and other operating conditions. All materials are 100 sq. ft., and are fabricated in a deep dyed base for optical and high heat stability.

No.	Name	Description	Width	Price
3107	Tough Y1	A pale straw filter used in U.S. on H.M.I. or white flame arcs to absorb U.V. and reduce Kelvin for daylight balance.	30"	\$104.00
3110	Tough WF Green	Because of generally higher ambient Kelvin, 48" preferred in Europe for the same purpose as Tough Y1.	48"	104.00
3106	Tough MTY	A single filter combining MT2 and Y1 for correction of 5500°K white flame arcs and H.M.I. to 3200°K.	54"	104.00
3102	Tough MT2	When used in combination with Y1, converts white flame arcs to 3200°K. Also useful as an amber conversion filter on H.M.I. and CID conversion.	54"	104.00
3115	Tough 1/2 MT2	A partial amber conversion for use on Arcs and H.M.I.	54"	104.00
3116	Tough 1/4 MT2	Pale amber correction for arcs and H.M.I.	54"	104.00
3134	Tough MT 54	A pale straw correction for white flame arcs or H.M.I.	48"	104.00
3114	Tough UV Filter	A clear slightly tinted filter that absorbs 90% of UV wavelengths below 390 nm. For absorbing UV output of arc sources.	54"	104.00

DIFFUSION MATERIALS

Rosco's Cinegel System includes the broadest range of diffusion material available 18 different products, plus four which combine diffusion and a blue tint to boost Kelvin temperature. All diffusers are 100 sq. ft. "Tough" designation indicates heat stable filter. "Soft" diffusion should be placed at a distance.

No.	Name	Width	Price
3002	Soft Frost	54"	\$ 60.00
3023	Wide Soft Frost	72"	80.00
3004	Half Density	54"	60.00
	Soft Frost		
3014	Hilite	55"	115.00
3032	Light Grid Cloth	43"	85.00
3030	Grid Cloth	40"	85.00
3000	Tough Rolux	49"	80.00
3001	Light Tough Rolux	49"	80.00
3006	Tough Spun	55"	80.00
3007	Light Tough Spun	51"	80.00
3022	1/4 Tough Spun	54"	80.00
3008	Tough Frost	48"	80.00
3009	Light Tough Frost	48"	80.00
3010	Opal Tough Frost	48"	80.00
3011	Tough Silk	54"	80.00
3026	Tough White Diffusion	48"	80.00
3821	RoscoBounce White (W)	48"	45.00

REFLECTION MEDIA

Rosco's reflector materials offer a wide variety of choices for surfacing reflector boards or for use wherever reflected light is required. The product designation generally indicates the quality of the reflection. These materials are fabricated in a durable, washable plastic laminate. They are 100 sq. ft. and 54" wide (except for RoscoBounce W, which is 48" wide).

No.	Description	Price
3801	Roscoflex M (mirror)	\$ 85.00
3802	Roscoflex H (hard)	85.00
3803	Roscoflex S (soft)	85.00
3804	Roscoflex SS (supersoft)	85.00
3805	Roscoflex G (gold tinted)	85.00
3806	Roscoflex C (cool blue tint)	85.00
3807	Roscoflex D (daylight blue/silver)	85.00
3808	Roscoflex F (featherweight)	85.00
3809	Roscoflex W (white/silver)	104.00
	(perforated silver/black)	
3810	Roscoflex W (white/silver)	85.00
3821	RoscoBounce W (white)	45.00

DIFFUSION/BOOSTER MATERIALS

These filters offer the same diffusion properties as those described above, but contain a deep-dyed blue correction, integral to the material, which raises the Kelvin temperature of 3200°K sources. These materials are 54" wide, 100 sq. ft.

No.	Name	Description	Price
3025	Tough 1/2 Diffuses and Booster Frost	increases 3200°K sources to 3300°K	\$85.00
3012	Tough Booster Silk	Diffuses and increases 3200°K sources to 3500°K	85.00
3013	Tough Booster Frost	Diffuses and increases 3200°K sources to 3800°K	85.00
3017	Tough Blue Frost	Diffuses and increases 3200°K sources to nominal daylight.	85.00

ROSCOBOND

Pressure sensitive adhesive for bonding Roscoflex media to aluminum or other non-porous board surfaces.

No.	Description	Price
8202	Roscobond Quart	\$ 6.75
8203	Roscobond Gallon	21.50

ROSCOPAKS

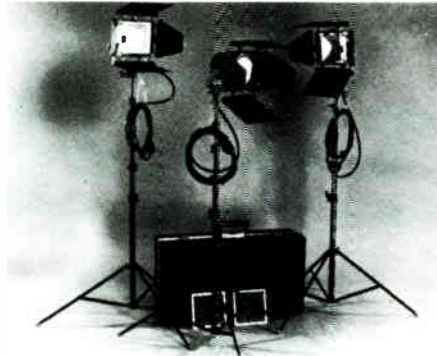
Roscopak materials are lightweight, yet strong and durable. These materials can be taped or tacked to virtually any wall, ceiling or panel and turn that area into an efficient reflector. Each Roscopak consists of 18 sq. ft. of material packaged in a handy pocket size pouch.

No.	Description	Price
8502	RoscoPak F (silver)	\$15.00
8503	RoscoPak D (blue/silver)	15.00
8509	RoscoPak G (gold/silver)	15.00
8510	RoscoPak W (white/silver)	15.00

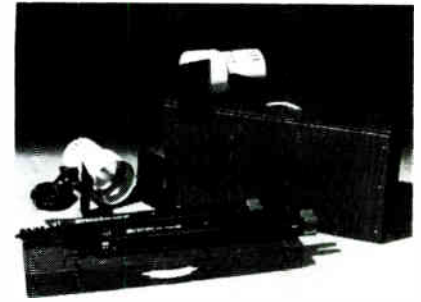
27740 Hopkins Ave.
Valencia, CA 91355
(805) 257-4447



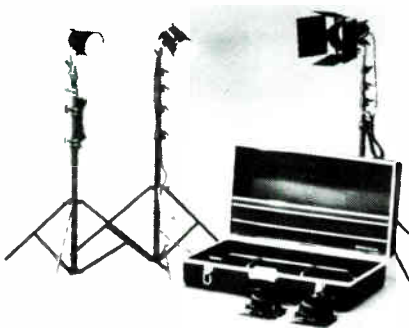
K2R



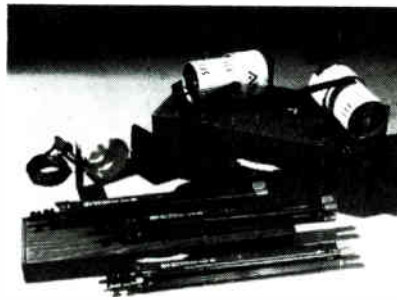
K50



K62



K33



K63



K22U

K2R 1800 Watt Quartz Location Kit \$295.00

A complete location lighting kit in an attache case. The most compact 3 light kit on the market with a price to match.

3	700	401101	600 watt quartz units
3	DYH	401928	600 watt 3200°K quartz lamps
3	S6R	401242	6' Steel Stands
1	634L	402202	Carrying Case

Size: 18" x 12" x 6" Weight: 15 lbs.

K2R Accessories:

701	401301	Barn doors for 700 quartz unit	\$36.95
G5	401264	Gaffer grip — portable light mount	14.95

K33 1800 Watt Quartz Location Kit \$529.95

A complete lighting system at a popular price; contains everything needed for professional results.

3	700	401101	600 watt quartz units
3	DYH	401928	600 watt 3200°K quartz lamps
3	701	401301	Barn doors for 700 quartz units
3	SA28	401233	8' aluminum stands
1	650	402208	Carrying case

Size: 24 1/2" x 14 1/2" x 6 3/4" Weight: 17 lbs.

K33 Accessories:

G5	401264	Gaffer grip — portable light mount	\$14.95
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K50 1800 Watt Quartz Location Kit \$699.95

Excellent versatility with professional results is offered in this 3-light kit featuring a 600 watt key and 2 600 watt broad fill lights.

1	760	401112	600 watt quartz key unit
2	770	401113	600 watt quartz broad units
3	DYH	401928	600 watt 3200°K quartz lamps
3	771	401325	Barn doors
2	712	401312	Single scrims
3	SA28	401233	8' aluminum stands
1	650	402208	Carrying case

Size: 24 1/2" x 14 1/2" x 6 3/4" Weight: 22 lbs.

K50 Accessories:

G5	401264	Gaffer grip — portable light mount	\$14.95
712	401312	Single scrim	11.95

K63 1800 Watt Quartz Location Kit \$324.95

3 light kit offers excellent portability and versatility for basic photographic and video applications.

3	Q60	401130	600 watt quartz units
3	DYS/DYV	401970	600 watt 3200°K quartz lamps
3	S9	401240	6' 4-legged steel stands
1		105664	Light case
1		300779	Stand case

Size: Stand case 29 1/2" x 8 1/2" x 2 3/4" Weight: 23 lbs., 10 oz.
Light case 29 1/2" x 13 3/4" x 8 1/2"

K62 1200 Watt Quartz Location Kit \$239.95

Basic 2 light quartz kit permits professional results in photographic and video applications, offers room for additional light and stand to be added at a later date.

2	Q60	401130	600 watt quartz units
2	DYS/DYV	401970	600 watt 3200°K quartz lamps
2	S9	401240	6' 4-legged steel stands
1		105664	Light case
1		300779	Stand case

Size: Stand case 29 1/2" x 8 1/2" x 2 3/4" Weight: 17 lbs., 1 oz.
Light case 29 1/2" x 13 3/4" x 8 1/2"

K22U 1200 Watt Quartz Location Kit \$349.95

An excellent starter for the serious amateur photographer or videographer offers room for additional accessories.

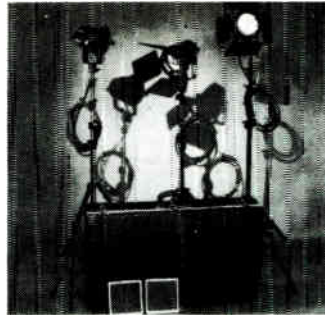
2	700	401101	600 watt quartz lamps
2	DYH	401928	600 watt 3200°K quartz lamps
2		670002	38" white umbrellas
2		670033	Combination light and umbrella mounts
2	S7	401239	6 ft. steel stands
1	650	402208	Carrying case

Size: 24 1/2" x 14 1/2" x 6 3/4" Weight: 15 lbs., 10 oz.

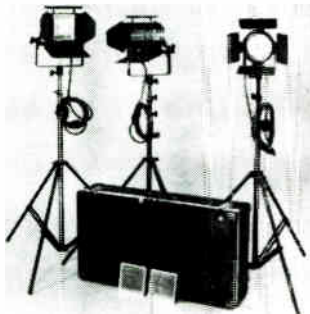
K22U Accessories:

701	401301	Barn Doors for 700 Quartz Unit	\$36.95
G3	401263	Gaffer grip — 3.8" portable light mount	14.95

K71



K73



K74



K75



K76

K71 1800 Watt Professional Focusing Quartz Location Kit

\$900.00

Versatility is the key word in this professional quartz lighting kit featuring the flexibility of 3 focusing units which allow smooth transition from spot to flood.

3	710	401102	600 watt focusing quartz lamps
3	DYH	401928	600 watt 3200°K quartz lamps
2	711	401307	Barn doors
2	712	401312	Single scrims
3	SA10	401235	10' aluminum stands
1	674	402206	Carrying case

Size: 29" x 18" x 8" Weight: 28 lbs.

K71 Accessories

711	401307	Barn doors	\$34.95
712	401312	Single scrim	11.95
G5	401264	Gaffer grip — portable light mount	14.95

K72 1900 Watt Professional Quartz Location Kit

\$925.00

Key in on the action with this professional kit featuring a 600 watt focusing unit and 2 650 watt broad units. Ideal for smaller set applications.

2	740	401104	650 watt quartz broad units
2	FBX	620050	650 watt 3200°K quartz lamp
2	742	401319	Single scrims
1	710	401102	600 watt focusing quartz unit
1	DYH	401928	600 watt 3200°K quartz lamp
1	711	401307	Barn doors
3	SA48	401234	8' aluminum stands
1	674	402206	Carrying case

Size: 29" x 18" x 8" Weight: 30 lbs.

K72 Accessories

712	401312	Single scrim	\$11.95
G5	401264	Gaffer grip — portable light mount	14.95
	401260	30" Stand Extension	12.95

K73 3000 Watt Professional Focusing Quartz Location Kit

\$995.00

Extra coverage and reach are provided in this kit featuring 3 1000 watt focusing units.

3	720	401103	1000 watt focusing quartz units
3	FBY	620140	1000 watt 3200°K quartz lamps
2	721	401308	Barn doors
2	722	401316	Single scrims
3	SA48	401234	8' aluminum stands
1	674	402206	Carrying case

Size: 29" x 18" x 8" Weight: 32 lbs.

K73 Accessories

721	401308	Barn doors	\$42.95
G5	401264	Gaffer grip — portable light mount	14.95
	401260	30" Stand Extension	12.95

K74 3000 Watt Professional Quartz Location Kit

\$1035.00

Our most powerful 3 unit lighting kit offers the versatility and flexibility of 2 1000 watt broad units and a 1000 watt focusing unit.

2	750	401105	1000 watt quartz broad units
2	FHM	620380	1000 watt 3200°K quartz lamps
2	752	401322	Single scrims
1	720	401103	1000 watt focusing quartz unit
1	FBY	620140	1000 watt 3200°K quartz lamp
1	721	401308	Barn doors
3	SA48	401234	8' Aluminum stands
1	674	402206	Carrying case

Size: 29" x 18" x 8" Weight: 34 lbs.

K74 Accessories

722	401316	Single scrim	\$14.95
G5	401264	Gaffer grip — portable light mount	14.95
	401260	30" Stand Extension	12.95

K75 2500 Watt Professional Quartz Location Kit

\$1225.00

Everything you need and more is found in this Smith-Victor 4 light kit. Two each focusing and broad units provide excellent lighting for both studio and location use in photographic and video applications.

2	740	401104	650 watt quartz broad units
3	FBX	620050	650 watt 3200°K quartz lamps
2	742	401319	Single scrims
2	710	401102	600 watt focusing quartz unit
3	DYH	401928	600 watt 3200°K quartz lamps
2	721	401308	Barn doors
4	SA48	401234	8' aluminum stands
1	674	402206	Carrying case

Size: 29" x 18" x 8" Weight: 35 lbs.

K75 Accessories

712	401312	Single scrim	\$11.95
G5	401264	Gaffer grip — portable light mount	14.95
	401260	30" Stand Extension	12.95

K76 4000 Watt Professional Quartz Location Kit

\$1400.00

A winning combination is found in this, Smith-Victor's most complete lighting kit. The pairing of 2 1000 watt focusing and 2 1000 watt broad units make this Smith-Victor's most versatile and powerful kit.

2	750	401105	1000 watt quartz units
3	FHM	620380	1000 watt 3200°K quartz lamps
2	752	401322	Single scrims
2	720	401103	1000 watt focusing quartz units
3	FBY	620140	1000 watt 3200°K quartz lamps
2	721	401308	Barn doors
2	722	401316	Single scrims
4	SA48	401234	8' aluminum stands
1	674	402206	Carrying case

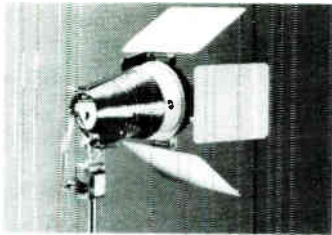
Size: 29" x 18" x 8" Weight: 41 lbs.

K76 Accessories

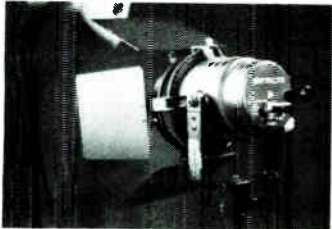
G5	401264	Gaffer grip — portable light mount	\$14.95
	401260	30" Stand Extension	12.95

Prices and Specifications Subject to Change Without Notice.

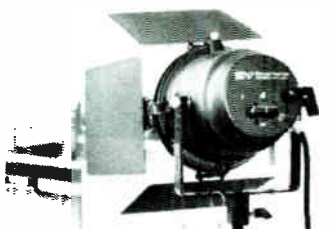
27740 Hopkins Ave.
Valencia, CA 91355
(805) 257-4447



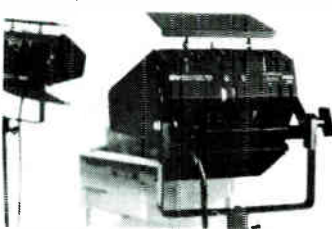
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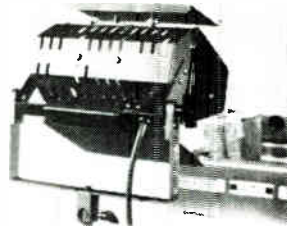
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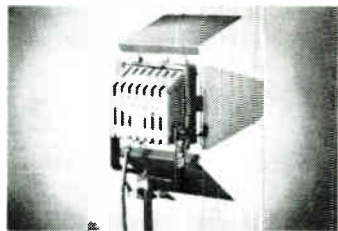
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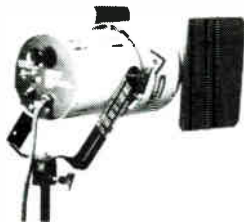
750



760



770



Q60



Q120

MODEL 720

Similar in design to the 710, the 720 focusing quartz unit delivers up to 1000 watts output for more demanding applications. Complete with safety wire.

Rating: 120 volts—8.4 amps at 1000 watts. **Socket:** Recessed single contact (R7S). **Switch:** In-line. **Cable:** 10 ft. 3-wire grounded. **Construction:** Vented aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Soft-grained spun aluminum.

720	401103	1000 Watt Focusing Light	\$130.00
FBY	620140	1000 Watt Lamp, 3200°K, 120 Volt, Frosted	40.50
721	401308	Barn Door for 720	42.95
722	401316	Sgl. Scrim for 720	14.95

MODEL 740 U_L

The Model 740 650 watt quartz broad light provides rectangular, flat, even fill illumination over large areas. Permanently attached 4-leaf barn doors provide positive light control with sharp, even cut-off.

Large insulated handle for easy adjustment. Perfect for photographic and video applications, the 740 is also ideal as a copy light. Complete with safety wire.

Rating: 120 volt—5.5 amps at 650 watts. **Socket:** Recessed single contact (R7S). **Switch:** In-Line. **Cable:** 10 ft., 3-wire grounded. **Construction:** Vented Steel. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Embossed, soft-etched aluminum.

740	401104	650 Watt Broad Light, Inc. Barndoors	\$145.00
FBX	620060	650 Watt Lamp, 3200°K, 120 Volt, Frosted	28.25
742	401319	Sgl. Scrim for 740	11.95

MODEL 750 U_L

Similar in design to the 740, the 750 quartz broad unit provides 1000 watts of fill illumination over large areas. Permanently attached 4-leaf barn doors provide sharp, even cut-off. Ideal for photographic, video, and graphic arts applications. Complete with safety wire.

Rating: 120 Volt—8.4 amps at 1000 watts. **Socket:** Recessed single contact (R7S). **Switch:** In-line. **Cable:** 10 ft. 3-wire grounded. **Construction:** Vented Steel. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Embossed, soft-etched aluminum.

750	401105	1000 Watt Broad Light, Inc. Barndoors	\$150.00
FHM	620380	1000 Watt Lamp, 3200°K, 120 Volt, Frosted	38.00
752	401322	Sgl. Scrim for 750	12.95

760 U_L

The fixed focus 760 is a general purpose 600 watt quartz fill light for photographic and video applications. High efficiency pebble-finished aluminum reflector provides even coverage over entire lighted area. Safety wire provided.

Rating: 120 Volt—5.4 amps at 600 watts. **Socket:** Miniature 2-pin (G5.3). **Switch:** In-line. **Cable:** 10 ft., 3-wire grounded. **Construction:** Double-wall vented aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Pebble-finish spun aluminum.

760	401112	600 Watt Fill Light	\$90.00
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770

An economical, compact 600 watt quartz broad unit, the 770 provides rectangular, flat even illumination over large areas. All aluminum construction provides for cool operation. For photographic, video, and graphic arts applications. Safety wire provided.

Rating: 120 Volt—5.4 amps at 600 watts. **Socket:** Miniature 2-pin (G5.3) **Switch:** In-line. **Cable:** 10 ft., 3-wire grounded. **Construction:** Vented aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Embossed, soft-etched aluminum.

770	401113	600 Watt Broad Light	\$80.00
DYH	401928	600 Watt Lamp, 3200°K, 120 Volt, Clear	24.50
771	401325	Barn Door for 760 and 770	39.95
712	401312	Sgl. Scrim for 760 and 770	11.95

Q60 U_L

Contemporary-styled, general purpose 600 watt quartz unit for basic photographic and video applications. The Q60 features baffled and vented construction for cool operation. Supplied with permanently attached 2-leaf barn doors.

Rating: 120 Volt—5.4 amps at 600 watts. **Socket:** 2-pin prefocus (GZ9.5). **Switch:** Unit-mounted. **Cable:** 10 ft., 3-wire grounded. **Construction:** Vented and baffled aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Pebble-finish spun aluminum.

Q60	401130	600 Watt Fill light, Inc. Barndoors	\$70.00
DYS/DYV	401970	600 Watt Lamp, 3200°K, Clear	22.10

Q120 U_L

Q125 U_L

A general purpose 12" quartz reflector, the 600 watt Q120 provides a soft, diffused beam pattern for photographic and video fill applications. Vented and baffled construction permits cool operation. Swivel yoke allows for easy positioning at any angle. Q125 is similar to Q120 but supplied with high-low switch.

Rating: 120 Volt—5.4 amps at 600 watts. **Socket:** 2-pin prefocus (GZ9.5) **Switch:** Unit-mounted. **Cable:** 10 ft., 3-wire grounded. **Construction:** Vented and baffled aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Etched, spun aluminum.

Q120	401116	600 Watt 12" Reflector	\$75.00
Q125	401117	600 Watt 12" Reflector with High/Low Switch	99.50
DYS/DYV	401970	600 Watt Lamp, 3200°K, 120 Volt, Clear	22.10
BD120	401344	Barn Door and Filter Holder for Q120/Q125	41.95

QUARTZ UNITS

MODEL 700

The Model 700 quartz light is a low cost, compact 600 watt flood featuring a broad, even beam pattern. Unit is supplied with a 600 watt 75 hr. DYH lamp rated at 3200°K.

Unit shown with optional 701 - 401301 4-Leaf barn doors.

Rating: 120 volt — 5.4 amps at 600 watts. **Socket:** Miniature 2-Pin (G5.3). **Switch:** Unit-Mounted. **Cable:** 10 foot, 2 Wire. **Construction:** Phenolic Resin. **Mounting:** Universal — 3/8" to 5/8". **Reflector:** Etched aluminum.

700	401101	600 Watt Quartz Light with DYH Lamp	\$60.00
DYH	401928	600 Watt Lamp, 3200°K, 120 Volt, Clear	24.50
701	401301	Barn Door for 700	36.95

MODEL 710 U_L

A professional 600 watt focusing quartz unit, the 710 is well suited for key, fill and backlighting applications. Rear-mounted focusing lever allows easy flood to spot control. Ideal for photographic and video applications. Complete with safety cable.

Rating: 120V—5.4 Amps at 600 watts. **Socket:** Miniature 2-Pin (G5.3). **Switch:** In-line. **Cable:** 10 ft., 3-wire grounded. **Construction:** Double-wall vented aluminum. **Mounting:** Universal—3/8" to 5/8". **Reflector:** Pebble-finish spun aluminum.

710	401102	600 Watt Focusing Light	\$109.95
DYH	401928	600 Watt Lamp, 3200°K, 120 Volt, Clear	24.50
711	401307	Barn Door for 710	34.95
712	401312	Sgl. Scrim for 710	11.95

Prices and Specifications Subject to Change Without Notice.

VL-95

27740 Hopkins Ave.
Valencia, CA 91355
(805) 257-4447

Aluminum Stands

Strength and stability need not be sacrificed in a lighter weight stand. Smith-Victor aluminum stands offer compactness and portability and are the ideal answer for the photographer on the go.

Standard Models

- SA24 401231** Folding to 14", this 3/8" mount 3-section stand extends to 46" making it ideal for low background lighting. **\$39.95**
- SA28 401233** 8', 3/8" mount 5-section folds to only 22-1/2". **\$54.95**
- SA210 401236** 10' 5-section version of SA28 folds to 27". 3/8" mount. **\$60.00**

Deluxe Professional Stands

- SA8 401232** 8' double-braced tubular leg 5-section stand folds to 3/8" mount. **\$85.00**
- SA10 401235** 10' 5-section version of SA8 folds to 27-1/2". 3/8" mount. **\$87.00**
- SA48 401234** 8' heavy-duty, 5/8" mount 3-section stand for most demanding applications. Folds to 27-1/2". **\$80.00**

Steel Stands

S-V steel stand offers strength, stability, and years of dependable, trouble-free service at the most economical price. Ideal for studio applications, these general purpose stands are available in heights from 6 to 10 feet.

- S2 401228** 6-1/2' 2-section stand folds to 42". 3/8" mount. **\$20.95**
- S3 401229** 8' heavy-duty 3-section stand folds to 36". 3/8" mount. **\$31.95**
- S4 401230** 10' heavy-duty 4-section stand folds to 37". 3/8" mount. **\$36.95**
- S6R 401242** 6' 4-section stand disassembles for easy storage and portability. 3/8" mount. **\$31.95**
- S7 401239** Compact 6' model folds to 22". 3/8" mount. **\$31.95**
- S9 401240** 6' stand is designed to give extra stability with the addition of a 4th leg. 3/8" mount. Folds to 27". **\$34.95**
- S84 401241** 8' 5/8" mount version of S9 folds to 37". **\$36.95**

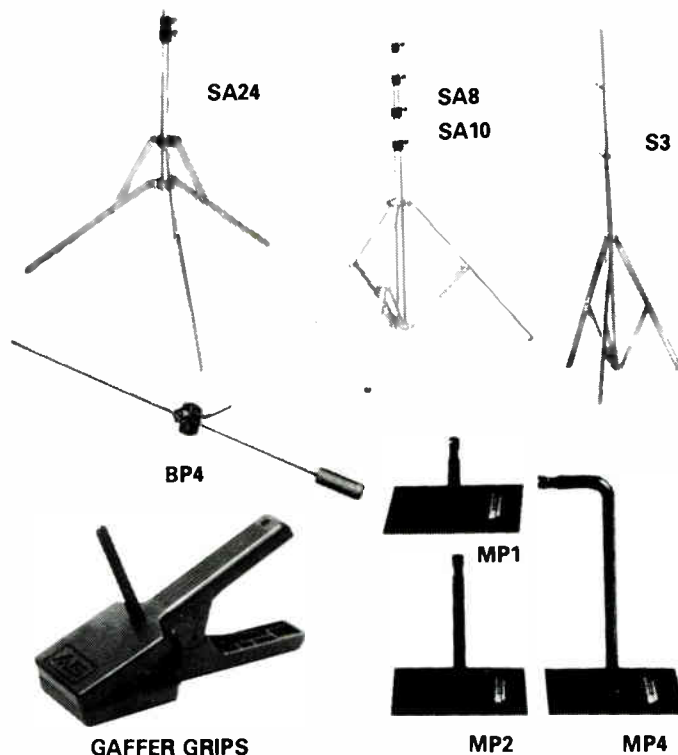
BR10 401250

This professional 4-legged roller base stand is equipped with a 10 ft., 5/8" mount upright. Solid steel legs feature 4 locking ball-bearing casters to prevent creeping or rolling on uneven surfaces. **\$170.00**

Boom and Boom Lights

More than just an accessory, the boom is truly the professional way to light a subject. The addition of a boom-mounted accent or hair light can mean the difference between a "good" photograph and a "great" photograph.

BP4 401224 This versatile light boom incorporates a 2 lb. counterweight mounted on a 51" steel shaft. An adjustable locking swivel allows for unlimited positioning. Fits all 3/8" mount stands. Also doubles as a microphone boom. **\$57.00**



Stand Extension 401260

Add up to 30" to any 3/8" - 5/8" mount light stand. May also be used as a crossarm to mount 2 light units on a single stand.

401260 Stand Extension 5/8" mount (adds 30") \$12.95

85 Mini Boom 401012 A winning combination — a boom arm and light in one. Using either spot or flood reflector lamps, the mini-boom provides the solution to many lighting problems. 44" aluminum boom with counterweight features a 660 watt swivel socket easily adjusted to any position by means of attached control handle. Unit comes with 12 ft. cord and fits any 3/8" mount stand. **\$49.95**

Mounts

Smith-Victor offers 3 wall mount brackets with various stud lengths to fit a variety of applications. Base plates on all models measure 4" x 6". Wall mounts are ideally suited for permanent installations when a grid system is not feasible. They may also be gaffer-taped to walls for location shooting.

- MP1 401217** 3" long 5/8" dia. stud **\$19.95**
- MP2 401218** 6" long, 5/8" dia. stud **19.95**
- MP4 401220** 9" long, 5/8" dia. stud with 90° bend **\$21.95**

C7 401216 For heavy-duty applications, this professional 5/8" mount, C-clamp is ideal for grid-type applications. Can be clamped to any pipe up to 2" O.D. **\$24.95**

G3-G5 This spring-loaded Lexan® casting takes over where the C1 clamp leaves off. Equipped with a 3" long stud, the gaffer grip clamps to any surface up to 2-1/2" wide. Rubber cleats prevent marring. Pre-drilled to accept an extra stud allowing you to mount 2 lights. Extra studs available.

Gaffer Grips

- G3 401263** 3/8" mount **\$14.95**
- G5 401264** 5/8" mount **14.95**



Model Q250 Video Camera Light

Designed to mount on any video camera shoe, the Model Q250 is a compact 250 watt flood unit featuring a broad, even beam pattern. Lightweight and equipped with an extra long 15' cord, the light can be adjusted to a variety of angles to fill a host of camera situations. Model Q250 will enhance colors and eliminate undesirable shadows. Complete with 250 watt 3200°K, 50 hour quartz lamp and shoe mount bracket.

Specifications:

Model Q250 (401135)

- Rating: 120V — 2.8 amps at 250 watts
- Socket: Miniature 2-pin (G5.3)
- Switch: Unit-mounted
- Cable: 15', 2 wire
- Construction: Phenolic resin
- Mounting: Shoe mount bracket supplied
- Reflector: Etched aluminum

Model Q250 \$54.95

Accessory:

QL250 (401906) Replacement 250 watt, 120V.
3200°K quartz lamp for SV Q250.
May also be used in SV models
700, 710, 760 and 770. \$22.95

Micro 100 Pack

Eliminate unwanted shadows and enrich colors with the Micro 100 Light Pack. Complete with 100 watt 3200°K lamp, the lighting unit is designed for safety with vented spun aluminum housing and reflector, with integral tempered safety glass. Camera shoe and microphone mount make the light unit especially convenient to use with any video camera. The Micro 100 Pack comes complete with light unit, battery, charger and its own handsome carrying case.

Specifications:

Micro 100 Pack (401477)

Lighting Unit: See below

Battery: 12VDC, 50AH sealed lead acid cells

Case: 9-3/4"H x 7-1/2"W x 3-1/2"D
Polyethylene case w/nylon webbing strap

Charger: 110-120VAC, 500 milliamp/hr. taper
charger

Weight: 7.25 lbs. (including light and charger)

Micro 100 Pack (401477) \$109.95

Components/Accessory

Micro 100 Micro light head only with FCR lamp
(401142) and coil cord \$ 49.95

BP-2C 12V battery pack w/case,
(662009) strap cord 69.95

BP-6 Auxiliary 9.6V battery pack w/charger
(662101) for Betamovie 129.95

STRAND CENTURY, INC.

P.O. Box 9004
Rancho Dominguez, CA 90224
(213) 637-7500 Telex 664741

PORTABLE LIGHTING KITS



KIT IV



KIT V



KIT VII

PORTABLE LIGHTING KITS

A wide choice of compact, lightweight complete lighting kits, with rugged, fitted cases.

Catalog Number	Description						Price
1051	Kit I, Fitted Case with: 3-4500MP Pulsars 3-1310 4-Leaf Barndoors 1-1225 Full Double Scrim	1-1226 1-1227 1-1228	Half Double Scrim Full Single Scrim Half Single Scrim	3-DYS 3-1529	600W Lamps Pulsar Stands	\$790.00	
1053	Kit III, Fitted Case with: 3-4501MP Lanebeam 650 2-1230 Accessory Holders 2-1324 4-Leaf Barndoor	1-1216 1-1217 3-FAD	Double Scrim Single Scrim	3-1530	Stands	\$765.00	
1054	Kit IV, Fitted Case with: 2-4501MP Lanebeam 650 2-1230 Accessory Holders 2-1324 4-Leaf Barndoors	1-1216 1-1217 2-4801MP	Double Scrim Single Scrim Mini Fill 1000	2-FAD 2-FCM 4-1530	650W Lamps 1000W Lamps Stands	\$990.00	
1055	Kit V, Fitted Case with: 2-4503MP Lanebeam 1000 2-1230 Accessory Holders 2-1324 4-Leaf Barndoors 1-1216 Double Scrim	1-1217 3-4801MP 2-DXW 3-FCM	Single Scrim Mini Fill 1000	1-1963 4-1535	Gaffer Grip with 5/8" (15mm) stud Stands	\$1165.00	
1056	Kit VI, Fitted Case with: 4-4501MP Lanebeam 650 4-1230 Accessory Holders 4-1324 Barndoors	2-1216 2-1217 4-FAD	Double Scrim Single Scrim	4-1535	Stands	\$1105.00	
1057	Kit VII, Fitted Case with: 4-4503MP Lanebeam 1000 4-1230 Accessory Holders 4-1324 Barndoors	2-1216 2-1217 4-DXW	Double Scrim Single Scrim	4-1535	Stands	\$1105.00	
1061	Kit X, Fitted Case with: 2-4505MP Lanebeam 2000 2-1325 4-Leaf Barndoors 1-1221 Double Scrim	1-1222 1-1223 1-1224	Single Scrim Half Double Scrim Half Single Scrim	2-1535	Stands	\$995.00	

NOTES

Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120V unless otherwise noted. For international applications, designate 100, 120, 220 or 240V operation.

STRAND CENTURY, INC.

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741

PORTABLE LIGHTING UNITS

PORTABLE LIGHTING UNITS

Light, compact, efficient focusing floodlights, ideally suited for location and remote use. Complete with 12' (3.6m) cord and switch, and 5/8" (16mm) stud for stand mounting.

Pulsar 600 — Fiberglass Housing

4515MP 600W Pulsar, variable focus, stand mount\$120.00

ACCESSORIES

1310	4-Way Barndoor	\$25.00
1133	Color or Diffuser Frame	12.00
1141	Outrigger Color or Diffuser Frame	80.00
1281	Dichroic Filter	80.00
1225	Full Double Scrim	11.25
1226	Full Single Scrim	11.25
1227	Half Double Scrim	11.25
1228	Half Single Scrim	11.25

LAMPS

DYS	600W 75 hrs.	†
DYG	250W 15 hrs., 30V	†
DYR	650W 50 hrs., 220 or 240V	†

lanebeam 650 — Fiberglass Housing

4501MP 650W lanebeam, variable focus, stand mount\$116.00
 4501GG Same, with flexible arm and gaffer grip 150.00
 4502MP Same, for 220 or 240V operation 116.00

ACCESSORIES

1230	Accessory Holder (for all accessories)	\$ 31.00
1324	4-Way Barndoor	28.00
1282	Dichroic Filter (converts 3200°K to 5600°K)	112.00
1216	Full Double Scrim	11.25
1217	Full Single Scrim	11.25
1218	Half Double Scrim	11.25
1219	Half Single Scrim	11.25

LAMPS

EHR	400W 2000 hrs., 3000°K	†
FDA	400W 250 hrs.	†
FAD	650W 100 hrs.	†
FBX	650W 100 hrs.	†
DXX	800W 50 hrs., 220 or 240V	†

lanebeam 1000 — Fiberglass Housing

4503MP 1000W lanebeam, variable focus, stand mounted\$116.00
 4503GG Same, with flexible arm and gaffer grip 150.00

ACCESSORIES

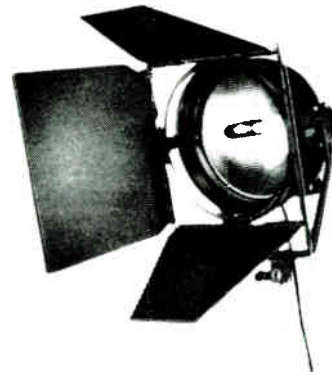
1230	Accessory holder (for all accessories)	\$ 31.00
1324	4-Way Barndoor	28.00
1282	Dichroic Filter (converts 3200°K to 5600°K)	112.00
1216	Full Double Scrim	11.25
1217	Full Single Scrim	11.25
1218	Half Double Scrim	11.25
1219	Half Single Scrim	11.25

LAMPS

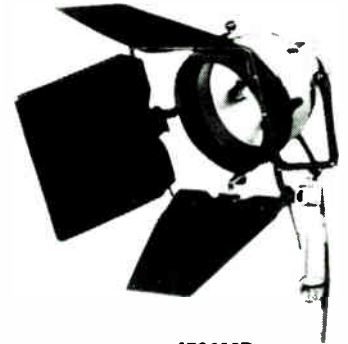
FCB	600W 75 hrs.	†
DXW	1000W 150 hrs.	†
FBY	1000W 150 hrs.	†

lanebeam 2000

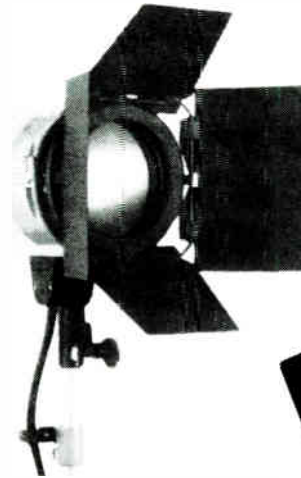
4505MP 2000W lanebeam, variable focus, stand mounted
 with integral accessory holder\$285.00
 4506MP Same, for 220 or 240V operation 285.00



4505MP



4501MP



4515MP



4503MP

ACCESSORIES

1325	4-Way Barndoor	\$ 52.00
1283	Dichroic Filter (converts 3200°K to 5600°K)	310.00
1221	Full Double Scrim	11.50
1222	Full Single Scrim	11.50
1223	Half Double Scrim	11.50
1224	Half Single Scrim	11.50

LAMPS

FER	1000W 500 hrs.	†
DVV	1500W 300 hrs.	†
FEY	2000W 300 hrs.	†
FEX	2000W 300 hrs., 220 or 240V	†

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP—Three Pin
 GTL—Twistlock
 GR—Parallel Blade U-Ground
 HGP—Harj-lock Pin Connector
- To specify fixture type add suffix to catalog number:
 MP—For stand mounting, with 23' (7m) cable and in-line switch
 PO—For pole operation
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation
- † Contact Strand Century for current lamp prices

STRAND CENTURY, INC.

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741

PORTABLE LIGHTING/FLOODLIGHTS/ HMI SYSTEMS

Mini-Fill 1000

Compact high intensity fill light—wide angle smooth beam.

4801MP 1000W Mini-Fill floodlight with integral
 4-Way Barndoor and cable **\$220.00**

LAMPS

FDN 500W 400 hrs. †
EMP 750W 400 hrs. †
FCM 1000W 500 hrs. †
FHM 1000W 500 hrs. †
EMF 800W 250 hrs. †

Broad

Small versatile floodlight for television, photography and motion picture applications.

4520TV 1000/1500W Broad/Location Softlight, hanging ... **\$137.00**

4520MP Same, stand mount **137.00**

4521 Same, for 220 or 240V operation **158.00**

ACCESSORIES

1344 4-Way Barndoor **\$48.00**

1155 Outrigger Color/Diffuser Frame **96.00**

LAMPS

FFT 1000W 400 hrs. †

FDB 1500W 400 hrs. †

P2/7 1000W 200 hrs., 220 or 240V †

P2/12 1250W 200 hrs., 220 or 240V †

Par 64 Holders

Low cost, compact units for a choice of Par lamps.

4755 Par 64 Holder **\$48.00**

ACCESSORIES

1110 Color Frame **\$6.50**

1408 8-Way Barndoor **84.00**

LAMPS

FFN 1000W 400 hrs., Narrow Spot †

FFP 1000W 400 hrs., Spot †

FFR 1000W 400 hrs., Medium Flood †

FFS 1000W 400 hrs., Wide Flood †

CP60 300 hrs., Narrow Spot 220 or 240V †

CP61 300 hrs., Medium Flood 220 or 240V †

CP62 300 hrs., Wide Flood 220 or 240V †

Strand Century/Ianiro HMI Daylight Systems

A range of Fresnels by Ianiro, utilizing super high efficiency HMI lamps (up to 102 LPW at 5600°K). Each system is complete with ballast, starter, cables and accessories.

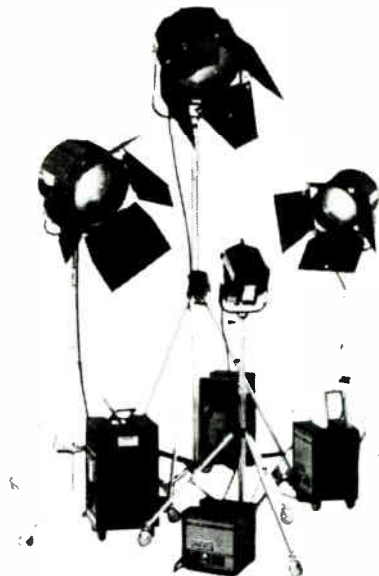
3360MP 575W System with: 6" (150mm) Fresnel,
 Wireguard, 8-Way Barndoor and Color Frame
 Ballast and cables **\$2100.00**

3570MP 1200W System with: 10" (250mm) Fresnel,
 Wireguard, 8-Way Barndoor and Color Frame
 Ballast and cables **2730.00**

3680MP 2500W System with: 12" (300mm) Fresnel,
 Wireguard, 8-Way Barndoor and Color Frame
 Ballast and cables **4015.00**

3790MP 4000W System with: 14" (350mm) Fresnel,
 Wireguard, 8-Way Barndoor and Color Frame
 Ballast and cables **5723.00**

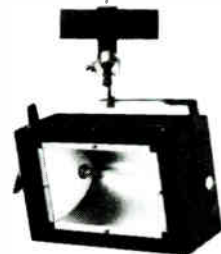
3796MP 6000W System with: 14" (350mm) Fresnel,
 Wireguard, 8-Way Barndoor and Color Frame
 Ballast and cables **9251.00**



**HMI DAYLIGHT
 SYSTEMS**



4801MP



4520

HMI Performance Data

Catalog Number	Distance	Spot Focus Footcandles (lux)	1/10 Peak Diameter	Flood Focus Footcandles (lux)	1/10 Peak Diameter
3360	20' (6m)	500 (5555)	6' (1.8m)	55 (625)	22 6" (6.8mm)
3570	25' (7.5m)	1120 (12 440)	5 8" (1.7m)	80 (890)	32' (8.6mm)
3680	35' (10.5m)	898 (9980)	13 7" (4.1m)	82 (910)	52 9" (15.9mm)
3790	50' (15m)	960 (10 670)	14" (4.2m)	74 (820)	61 5" (18.5mm)
3796	70' (21m)	1295 (14 400)	14 7" (4.4m)	65 (750)	85 4" (25.6mm)

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP—Three Pin
 GTL—Twistlock
 GR—Parallel Blade U-Ground
 HGP—Harj-lock Pin Connector
- To specify fixture type add suffix to catalog number:
 MP—For stand mounting, with 23' (7m) cable and in-line switch
 PO—For pole operation
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation

† Contact for current lamp prices

STRAND CENTURY, INC.

P.O. Box 9004
Rancho Dominguez, CA 90224
(213) 637-7500 Telex 664741

FRESNELS



3101MP



3301TV



3501TV



3601TV

STRAND CENTURY/IANIRO FRESNELS

Efficient, soft edged beam with excellent barndooring characteristics for high performance situations.

3" (76mm) 200W "Mizar"

3101TV	3" (76mm) Fresnel, hanging	\$189.00
3101MP	3" (76mm) Fresnel, stand mount	189.00

ACCESSORIES

1310	4-way barndoor	\$25.00
1133	Color or diffuser frame	12.00
1225	Full double scrim	11.25
1226	Full single scrim	11.25
1227	Half double scrim	11.25
1228	Half single scrim	11.25
1183	Variable cone	74.25
1500	Safety cable for hanging	8.75

LAMPS

100Q/CL/DC	100W 1000 hrs	†
150Q/CL/DC	150W 2000 hrs	†
FEV	200W 50 hrs	†

6" (152mm) 1000W "Polaris"

3301TV	6" (152mm) 1000W Fresnel, hanging	\$228.00
3301PO	6" (152mm) 1000W Fresnel, pole-op	357.00
3301MP	6" (152mm) 1000W Fresnel, stand mount	252.00

ACCESSORIES

1300	8-Way rotatable barndoor	\$64.00
1144	Color or diffuser frame	16.00
1201	Full double scrim	16.00
1202	Full single scrim	16.00
1203	Half double scrim	16.00
1204	Half single scrim	16.00
1123	Wireguard	11.00
1170	2-1/4" (57mm) cone	37.00
1171	3" (76mm) cone	37.00
1941	Operating Pole 6' (1.8m), 2.1 lb. (0.95kg)	85.00
1942	Operating Pole 9'3" (2.8m), 2.8 lb. (1.3kg)	90.00
1943	Operating Pole 12'7" (3.8m), 3.5 lb. (1.6kg)	96.00
1944	Operating Pole 15'10" (4.8m), 4.2 lb. (1.9kg)	106.00

LAMPS

EGN	500W 100 hrs	†
EGR	750W 200 hrs	†
EGT	1000W 200 hrs	†
CP39	650W 100 hrs. 220 or 240V	†
CP40	1000W 200 hrs. 220 or 240V	†

10" (254mm) 2000W "Castor"

3501TV	10" (254mm) 2000W Fresnel, hanging	\$357.00
3501PO	10" (254mm) 2000W Fresnel, pole-op	490.00
3501MP	10" (254mm) 2000W Fresnel, stand-mount	420.00

ACCESSORIES

1301	8-Way rotatable barndoor	\$101.00
1145	Color or diffuser frame	32.00
1208	Full double scrim	21.25
1209	Full single scrim	21.25
1210	Half double scrim	21.25

1211	Half single scrim	21.25
1125	Wireguard	16.00
1173	4-3/8" (111mm) cone	80.00
1174	6" (152mm) cone	80.00
1175	7-3/4" (197mm) cone	80.00

LAMPS

CYV	1000W 200 hrs.	†
CXZ	1500W 325 hrs	†
CYX	2000W 250 hrs	†
CP41	2000W 400 hrs. 220 or 240V	†

12" (305mm) 5000W "Pollux"

3601TV*	12" (305mm) 5000W Fresnel, hanging	\$648.00
3601PO*	12" (305mm) 5000W Fresnel, pole-op	770.00
3601MP*	12" (305mm) 5000W Fresnel, stand-mount	697.00

ACCESSORIES

1302	8-way rotatable barndoor	\$133.00
1146	Color or diffuser frame	37.00
1212	Full double scrim	42.50
1213	Full single scrim	42.50
1214	Half double scrim	42.50
1215	Half single scrim	42.50
1126	Wireguard	32.00
1176	6-1/4" (159mm) cone	101.00
1177	9" (229mm) cone	101.00
1178	11" (279mm) cone	101.00

LAMPS

DPY	5000W 500 hrs	†
CP29	5000W 500 hrs. 220 or 240V	†

*NOTE: Units Include Wireguard

Ianiro Fresnel Performance Data

Catalog Number	Distance	Spot Focus		Flood Focus		Lamp
		Footcandles (Lux)	1/2 Peak Diameter	Footcandles (Lux)	1/2 Peak Diameter*	
3101	10' (3m)	234 (2600)	1' 4" (4m)	31 (350)	8' 3" (2.5m)	FEV
3301	15' (4.5m)	560 (6222)	1' 7" (5m)	48 (533)	16' 5" (5m)	EGT
3501	25' (7.5m)	423 (4708)	5' (1.5m)	63 (702)	25' (7.5m)	CYX
3601	35' (10.5m)	449 (4989)	8' (2.4m)	81 (907)	39' 6" (11.9m)	DPY

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
GP — Three Pin
GTL — Twistlock
GR — Parallel Blade U-Ground
HGP — Harj-lock Pin Connector
- To specify fixture type add suffix for catalog number:
MP — For stand mounting, with 23' (7m) cable and in-line switch
PO — For pole operation
TV — With C-clamp for hanging
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation
- † Contact Strand Century for current lamp prices

Prices and Specifications Subject to Change Without Notice.

VL-101

STRAND CENTURY, INC.

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741

FRESNELS



5" (125mm) 1000W Bambino

- 3201 5" (125mm) 1000W Fresnel, hanging \$196.00
- 3201MP 5" (125mm) 1000W Fresnel, stand mount 196.00

ACCESSORIES

- 1306 8-Way rotatable barn door \$84.00
- 1143 Color or diffuser frame 16.00
- 1200 Full double scrim 16.00
- 1205 Full single scrim 16.00
- 1206 Half double scrim 16.00
- 1207 Half single scrim 16.00

LAMPS

- ERN 500W 100 hrs. †
- EGR 750W 200 hrs. †
- EGT 1000W 200 hrs. †
- CP39 650W 100 hrs., 220 or 240V †
- CP40 1000W 200 hrs., 220 or 240V †

6" (150mm) 2000W Bambino

- 3302* 6" (150mm) 2000W Fresnel, hanging \$392.00
- 3302PO* 6" (150mm) 2000W Fresnel, pole-op 532.00
- 3302MP* 6" (150mm) 2000W Fresnel, stand mount 392.00

ACCESSORIES

- 1300 8-Way rotatable barn door \$ 64.00
- 1144 Color or diffuser frame 16.00
- 1201 Full double scrim 16.00
- 1202 Full single scrim 16.00
- 1203 Half double scrim 16.00
- 1204 Half single scrim 16.00
- 1123 Additional wireguard 11.00
- 1170 2" (50mm) cone 37.00
- 1171 3" (75mm) cone 37.00
- 1172 4" (100mm) cone 37.00
- 1941 Operating Pole 4' (1.2m), 2.1 lb. (0.97kg) 85.00
- 1942 Operating Pole 8' (2.4m), 2.8 lb. (1.3kg) 90.00
- 1943 Operating Pole 11' (3.3m), 3.5 lb. (1.6kg) 96.00
- 1944 Operating Pole 15' (4.2m), 4.2 lb. (1.9kg) 106.00

LAMPS

- CYV 1000W 200 hrs. †
- CYZ 1500W 325 hrs. †
- CYX 2000W 250 hrs. †
- CP41 2000W 400 hrs. 220 or 240V †

10" (250mm) 5000W Bambino

- 3505* 10" (250mm) 5000W Fresnel for hanging \$ 665.00
- 3505PO* 10" (250mm) 5000W Fresnel, pole-op 767.00
- 3505MP* 10" (250mm) 5000W Fresnel, stand mount 616.00

ACCESSORIES

- 1301 8-Way rotatable barn door \$101.00
- 1145 Color or diffuser frame 32.00
- 1208 Full double scrim 21.25
- 1209 Full single scrim 21.25
- 1210 Half double scrim 21.25
- 1211 Half single scrim 21.25
- 1125 Additional wireguard 16.00
- 1173 4 1/4" (105mm) cone 80.00
- 1174 6" (150mm) cone 80.00
- 1175 7 1/2" (195mm) cone 80.00
- 1941 Operating Pole 4' (1.2m), 2.1 lb. (0.97kg) 85.00
- 1942 Operating Pole 8' (2.4m), 2.8 lb. (1.3kg) 90.00
- 1943 Operating Pole 11' (3.3m), 3.5 lb. (1.6kg) 96.00
- 1944 Operating Pole 15' (4.2m), 4.2 lb. (1.9kg) 106.00

LAMPS

- DPY 5000W 500 hrs. †
- CP29 5000W 500 hrs., 220 or 240V †

14" (350mm) 10,000W Bambino

- 3701* 14" (350mm) 10,000W Fresnel, hanging \$1015.00
- 3701PO* 14" (350mm) 10,000W Fresnel, pole-op 1141.00
- 3701MP* 14" (350mm) 10,000W Fresnel, stand mount 1015.00

ACCESSORIES

- 1302 8-Way rotatable barn door \$133.00
- 1146 Color or diffuser frame 37.00
- 1147 Outrigger color frame 212.00
- 1212 Full double scrim 42.50
- 1213 Full single scrim 42.50
- 1214 Half double scrim 42.50
- 1215 Half single scrim 42.50
- 1126 Additional wireguard 32.00
- 1176 6" (150mm) cone 101.00
- 1177 9" (225mm) cone 101.00
- 1178 11" (275mm) cone 101.00
- 1941 Operating Pole 4' (1.2m), 2.1 lb. (0.97kg) 85.00
- 1942 Operating Pole 8' (2.4m), 2.8 lb. (1.3kg) 90.00
- 1943 Operating Pole 11' (3.3m), 3.5 lb. (1.6kg) 96.00
- 1944 Operating Pole 15' (4.2m), 4.2 lb. (1.9kg) 106.00

LAMPS

- DTY 10,000W 300 hrs. †
- CP83 10,000W 500 hrs., 220 or 240V †

* Add LA to specify lens door for drop-in accessories.
 Units include wireguard.

† Contact for current lamp prices.

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP—Three Pin
 GTL—Twistlock
 GR—Parallel Blade U-Ground
 HGP—Harj-lock Pin Connector
- To specify fixture type add suffix to catalog number:
 MP—For stand mounting, with 23' (7m) cable and in-line switch
 PO—For pole operation
- TV—with C-Clamp for hanging
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation

Ianiri Bambino Performance Data

Catalog Number	Distance	Spot Focus		Flood Focus		Lamp
		Footcandles (Lux)	1/10 Peak Diameter	Footcandles (Lux)	1/10 Peak Diameter	
3201	15 (4.5m)	675 (7500)	4 2" (1.26m)	63 (700)	20 2" (6.1m)	EGT
3302	20 (6m)	385 (4305)	7 (2.1m)	52 (580)	29 (8.7m)	CYX
3505	35 (10.5m)	448 (4985)	11 5 (3.5m)	65 (725)	41 6 (12.6m)	DPY
3701	50' (15m)	328 (3645)	22 5 (6.8m)	60 (665)	61 6 (18.5m)	DTY

STRAND CENTURY, INC.

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741

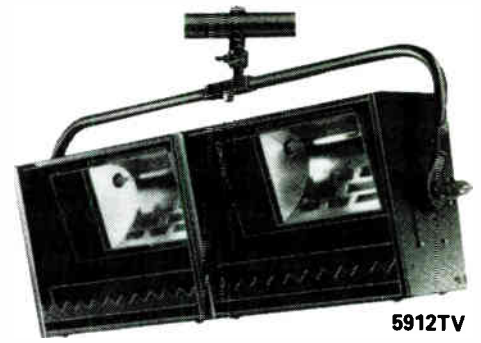
LIGHTING/PROJECTORS



4604



4271



5912TV

Scoops

Wide-angle, smooth beam, variable in the focusing units.

- 4271 1000W 14" (356mm) Fixed Spread Scoop \$195.00
- 4291 1000W 14" (356mm) Focusing Scoop 220.00
- 4273A 2000W 18" (457mm) Fixed Spread Scoop 230.00

ACCESSORIES

- 1116 Color Frame for 4271, 4291 \$ 30.00
- 1119A Color Frame for 4273 35.00

LAMPS FOR 4271, 4291

- EGD 500W 150 hrs., 3100°K †
- EGE 500W 2000 hrs., 3000°K †
- EGF 750W 250 hrs. †
- EGG 750W 2000 hrs., 3000°K †
- EGK 1000W 400 hrs. †
- EWE 1000W 250 hrs., 220 or 240V †

LAMPS FOR 4273

- DSE 1000W 750 hrs., 3050°K †
- DSF 1500W 1000 hrs. †
- Q2000/4/95 2000W 750 hrs. †
- CP59 2000W 300 hrs., 220 or 240V †

Performance Data

Catalog Number	Distance	Footcandles (Lux)	Lamp
4271	10' (3m)	115 (1235)	EGK
4291	10' (3m)	(spot) 178 (1915)	EGK
4273A	10' (3m)	177 (1900)	O2000/4/95

Scenic Projectors

- 4604 HMI 4000W Pani Slide Projector for use with 7-1/8" (180mm) slides, complete with two-slide rotatable carrier, locking castered trolley and 120 VAC ballast. Accepts 1381 to 1387 Objective Lenses \$18,500.00
- 4605 5000W Pani Scenic Projector for use with 7-1/8" (180mm) sq. slides, complete with two-slide rotatable slide carrier and locking castered trolley. Accepts 1381 to 1387 Objective Lenses 7,300.00

Cyclorama Lighting

Ianiro "IRIS" Cyc Lights and "PALLAS" Groundrow Lights—Compartmented units using linear sources which produce smooth, shadowless illumination. Complete with color frames.

- 5911TV One light, Iris Cyc Light \$193.00
- 5912TV Two light, two circuit Iris 2 Cyc Light 368.00
- 5913TV Three light, three circuit Iris 3 Cyc Light 511.00
- 5914TV Four light, four circuit Iris 4 Cyc Light 630.00
- 5915 One light, Mini Cyc Light (color frame not included) .. 151.00
- 5921 One light Pallas 1 Rigid Groundrow 172.00
- 5923 Three light Pallas 3 Rigid Groundrow 550.00
- 5924 Four light Pallas 4 Rigid Groundrow 609.00
- 5933 Three light Pallas 3 Hinged Groundrow 620.00
- 5934 Four light Pallas 4 Hinged Groundrow 676.00
- 5901TV One light, Iris 1 Cyc Light for 220/240V operation ... 200.00
- 5902TV Two light, Iris 2 Cyc Light for 220/240V operation ... 385.00
- 5903TV Three light, Iris 3 Cyc Light for 220/240V operation ... 537.00
- 5904TV Four light, Iris 4 Cyc Light for 220/240V operation ... 662.00
- 5905TV One light, Mini Cyc Light for 220/240V operation (color frame not included) 151.00
- 5941 One light, Pallas 1 Rigid Groundrow for 220/240V operation 172.00
- 5943 Three light, Pallas 3 Rigid Groundrow for 220/240V operation 550.00
- 5944 Four light, Pallas 4 Rigid Groundrow for 220/240V operation 609.00
- 5945 Three light, Pallas 3 Hinged Groundrow for 220/240V operation 620.00
- 5946 Four light, Pallas 4 Hinged Groundrow for 220/240V operation 676.00

ACCESSORIES

- 1151 Additional Color Frame for Iris Cyc Lights \$ 26.50
- 1155 Outrigger Color Frame for Mini Cyc Light 96.50

LAMPS

- FFT 1000W 300 hrs. †
- FDB 1500W 400 hrs. †
- FGT 1500W 400 hrs. †
- P2/10 625W 200 hrs., 220 or 240V †
- P2/7 1000W 200 hrs., 220 or 240V †
- P2/12 1250W 200 hrs., 220 or 240V †

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP—Three Pin
 GTL—Twistlock
 GR—Parallel Blade U-Ground
- HGP—Harj-lock Pin Connector
- TV—with C-clamp for hanging
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation
- † Contact Strand Century for current lamp prices

Prices and Specifications Subject to Change Without Notice.

VL-103

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741



3380



3480



3142

STRAND CENTURY FRESNELITE® SPOTLIGHTS

Economical, efficient, soft edged beam. Variable in spread from an intense spot to a medium angle flood.

3" (76mm) Fresnelite

- 3142 3" (75mm) 150/250W Fresnel Spotlight Table Base,
 6' (1.8m) Cord and Plug \$135.00

ACCESSORIES

- 1104 Color Frame \$ 4.00
 1311 8-Way Barndoor 50.00
 1555 C-Clamp 10.00

LAMPS

- Q150CL/DC 150W 2000 hrs., 2600°K †
 FEV 200W 50 hrs. †
 Q250CL/DC 250W 2000 hrs., 3000°K †

6" (152mm) Fresnelite

- 3380 6" (152mm) 500/1000W Fresnel Spotlight \$165.00
 3390 6" (152mm) 500/1000W Fresnel Spotlight with
 GX9.5 bi-post socket, for 220 or 240V
 operation only 165.00

ACCESSORIES

- 1108 Color Frame \$ 4.25
 1332 High Hat 16.50
 1350 Accessory Safety Clip Assembly 7.00
 1406 8-Way Barndoor 59.00

LAMPS FOR 3380

- BTL 500W 500 hrs., 3050°K †
 BTM 500W 100 hrs. †
 BTP 750W 200 hrs. †
 BTN 750W 500 hrs., 3050°K †
 BTR 1000W 200 hrs. †
 CP51 650W 100 hrs., 220 or 240V †
 CP52 1000W 200 hrs., 220 or 240V †

LAMPS FOR 3390

- CP23 650W 100 hrs., 220 or 240V †
 CP24 1000W 200 hrs., 220 or 240V †

8" (203mm) Fresnelite

- 3480 8" (203mm) 1000/2000W Fresnel Spotlight \$281.00
 3490 8" (203mm) 2000W Fresnel Spotlight with
 GY16 bi-post socket, for 220 or 240V operation only . 281.00

ACCESSORIES

- 1110 Color Frame \$ 6.50
 1333 High Hat 16.50
 1358 Accessory Safety Clip Assembly 7.00
 1408 8-Way Barndoor 84.00

LAMPS FOR 3480

- BVT 1000W 500 hrs., 3050°K †
 BVV 1000W 200 hrs. †
 CWZ 1500W 325 hrs. †
 BVW 2000W 250 hrs. †

LAMPS FOR 3490

- CP43 2000W 400 hrs., 220 or 240V †

Performance Data						
Catalog Number	Distance	Spot Focus		Flood Focus		Lamp
		Footcandles (Lux)	1/10 Peak Diameter	Footcandles (Lux)	1/10 Peak Diameter	
3142	10' (3m)	58 (640)	2.8 (.8m)	22 (245)	11.1 (3.3m)	FEV
3380	20' (6m)	438 (4861)	4.6 (1.4m)	46 (511)	25.4 (7.7m)	BTR
3480	30' (9m)	458 (5084)	7.5 (2.3)	39 (433)	40.5 (12.2m)	BVV

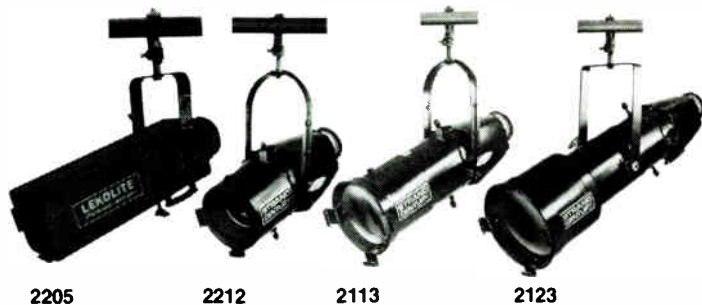
NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP—Three Pin
 GTL—Twistlock
 GR—Parallel Blade U-Ground
 HGP—Harj-lock Pin Connector
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation
- † Contact Strand Century for current lamp prices

STRAND CENTURY, INC.

SPOTLIGHTS

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741



LEKOLITE® SPOTLIGHTS

All Lekolites include 4 shutters and template slot. Lekolites with iris kit also include shutters and template slot. All units with plano convex lenses.

- 2205** 4-1/2" (114mm) **\$185.00**
 Measurement: 8" x 8" x 20" (203 x 203 x 508mm)
 150/500W Variable Focus Ellipsoidal 15 lbs. (6.8kg)

ACCESSORIES

- 1105** Color Frame **\$ 4.00**
1331 High Hat **16.50**
1345 Pattern Holder **14.00**
1352 Set of 6 Patterns **27.50**
1355 Iris Kit **99.00**
1500 Safety Cable **8.75**

LAMPS

- 150Q/CL** 150W, 2000 hrs., 2900°K †
EHT 250W, 2000 hrs., 2900°K †
Q400CL/MC 400W, 2000 hrs., 2900°K †
EVR 500W, 2000 hrs., 2900°K †
JD500 500W, 300 hrs., 3000°K (220/240V) †

Performance Data

1/10 Peak Angle	Distance	Footcandles (Lux)	1/10 Peak Diameter	Lamp
25°	25' (7.6m)	42 (465)	11' (3.3m)	EVR
30°	20' (6m)	63 (695)	10.8' (3.3m)	EVR
40°	15' (4.5m)	93 (1036)	10.95' (3.3m)	EVR
50°	12.5' (3.8m)	122 (1355)	11.6' (3.5m)	EVR

500/750/1000W UNITS

- 2204** 4-1/2" (114mm) 500/1000W Lekolite **\$284.00**
 44° Spread, 15 lbs. (6.8kg)
2209 6" (152mm) 500/1000W Lekolite **299.00**
 31° Spread, 17 lbs. (7.7kg)
2212 6" (152mm) 500/1000W Lekolite **294.00**
 25° Spread, 16 lbs. (7.3kg)
2213 6" (152mm) 500/1000W Lekolite **373.00**
 25° Spread, with Iris, 17 lbs. (7.7kg)
2216 6" (152mm) 500/1000W Lekolite **284.00**
 17° Spread, 16 lbs. (7.3kg)
2217 6" (152mm) 500/1000W Lekolite **373.00**
 12" x 12" x 24" (305 x 305 x 610mm)
 17° Spread, with Iris, 17 lbs. (7.7kg)
2112 6" (152mm) 500/1000W Lekolite **284.00**
 14° Spread, 15 lbs. (6.8kg)
2111 6" (152mm) 500/1000W Lekolite **363.00**
 14" x 14" x 39" (356 x 356 x 991mm)
 14° Spread, with Iris, 16 lbs. (7.3kg)
1108 Color Frame **4.25**
 for 4-1/2" (115mm) and 6" (152mm)
 Lekolites, 0.2 lbs. (Q. 1kg)
1332 High Hat **16.50**
 for 4-1/2" (115mm) and 6" (152mm)
 Lekolites, 2.0 lbs. (0.9kg)

- 2113** 8" (203mm) 1000W Lekolite **\$440.00**
 12° Spread, 21 lbs. (9.5kg)
2114 8" (203mm) 1000W Lekolite **520.00**
 14" x 15" x 33" (356 x 381 x 838mm)
 12° Spread, with Iris, 21 lbs. (9.5kg)
1110 Color Frame **6.50**
 for 8" (203mm) Lekolite, 0.3 lbs. (0.14kg)
1333 High Hat **16.50**
 for 8" (203mm) Lekolite, 4 lbs. (1.8kg)
2123 10" (254mm) 1000W Lekolite **550.00**
 9° Spread, 25 lbs. (11.3kg)
2124 10" (254mm) 1000W Lekolite **630.00**
 14" x 15" x 37" (356 x 381 x 940mm)
 9° Spread, with Iris, 26 lbs. (11.8kg)

ACCESSORIES

- 1112** Color Frame **\$ 8.50**
 for 10" (254mm) Lekolite, 0.5 lbs. (0.2kg)
1336 High Hat **22.00**
 for 10" (254mm) Lekolite, 5 lbs. (2.3kg)
1342 Pattern Holder **10.00**
 0.1 lb. (0.05kg)
1352 Set of 6 Patterns **27.50**
 0.1 lb. (0.05kg)
1354 Iris Kit **98.00**
 (for customer installation) 0.5 lbs. (0.2kg)

LAMPS

- EHC/EHB** 500W, 200 hrs., 3200°K †
EHD 500W, 2000 hrs., 3000°K †
EHF 750W, 300 hrs., 3200°K †
EHG 750W, 2000 hrs., 3000°K †
FEL 1000W, 300 hrs., 3200°K †
FKR 650W, 300 hrs., 3100°K (220/240V) †
CP77 1000W, 300 hrs., 3200°K (220/240V) †

Performance Data

Catalog Number	Distance	Footcandles (Lux)	1/10 Peak Diameter	Lamp
2204	20' (6m)	206 (2285)	16.2' (4.8m)	FEL
2209	30' (9m)	165 (1870)	16.5' (4.9m)	FEL
2212/13	40' (12m)	169 (1880)	17.6' (5.3m)	FEL
2216/17	50' (15m)	124 (1395)	14.9' (4.5m)	FEL
2112/11	60' (18m)	84 (935)	14.4' (4.3m)	FEL
2113/14	80' (24m)	91 (1010)	14.7' (4.4m)	FEL
2123/24	100' (30m)	88 (975)	16' (4.8m)	FEL

RETROFIT KITS

- (For old diecast Lekolites)**
2000 1000W Kit **\$176.00**
 for 6" x 9" (152 x 229mm) and 6" x 12" (152 x 305mm),
 includes complete rear-end assembly and front barrel.
 11 lbs. (5kg)
2016 1000W Kit **176.00**
 for 6" x 16" (152 x 406mm), includes complete rear-
 end and front barrel. 11 lbs. (5kg)
2750 500/750W Kit **135.00**
 for all 6" (152mm) units, includes complete rear-end
 assembly, 6 lbs. (2.7kg)

NOTES

- Fixtures are provided with 3' (.9m) leads, connectors and C-clamp for hanging unless otherwise specified
- To specify grounded connector type, add suffix to catalog number:
 GP — Three Pin
 GTL — Twistlock
 GR — Parallel Blade U-Ground
 HGP — Harj-lock Pin Connector
- Lamps and color frames not included unless otherwise noted
- Lamps listed are 3200°K unless otherwise noted. Lamps and fixtures are 120 volt unless otherwise noted
- For international applications, designate 100, 120, 220 or 240 volt operation
- † Contact Strand Century for current lamp prices

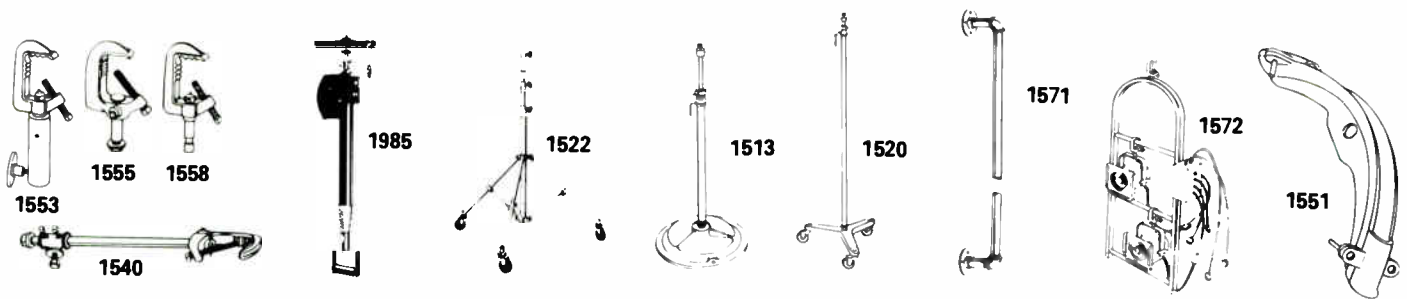
Prices and Specifications Subject to Change Without Notice.

VL-105

STRAND CENTURY, INC.

MOUNTING EQUIPMENT/STANDS

P.O. Box 9004
 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741



GRIP AND MOUNTING EQUIPMENT

1500	Safety Cable for fixtures up to 100 lb. (45kg)	..... \$ 8.75
1502	Scenery Guard 18" (457mm) diameter, 2 lb. (0.9kg)	.. 66.00
1504	Pipe Stiffener, 6 lb. (2.7kg)	..... 77.00
1509	Bambino Adaptor for 5/8" (16mm) stud or 1-1/8" (29mm) spigot for conversion to MP type units	..... 11.00
1540	15" (381mm) Sidearm with 2" (51mm) C-clamp and sliding tee. 5 lb. (2.3kg)	..... 54.00
1543	Clamp Hanger with swing joint. 5 lb. (2.3kg)	..... 55.00
1550	Cable Clamp, 3 lb. (1.4kg)	..... 25.00
1551	Support Cradle for 1-3/4" (45mm) cable. 14 lb. (6.4kg)	..... 80.00
1552	Kellem's Grip, specify cable size when ordering	..... 61.00
1553	Pipe C-Clamp Adaptor, 1-1/8" (29mm) spigot	..... 50.00
1555	2" (51mm) C-Clamp with stud. 2 lb. (0.9kg)	..... 10.00
1558	Standard Pipe C-Clamp, 5/8" (16mm) stud. 3 lb. (1.4kg)	..... 33.00
1559	Standard Double Pipe C-Clamp, 5 lb. (2.3kg)	..... 16.50
1580	Clancy Sure-Clamp, 3 lb. (1.4kg)	..... 35.00
1963	Gaffer Grip, 5/8" (16mm) stud. 0.9 lb. (0.4kg)	..... 30.00
1964	Heavy Duty Gaffer Grip, supports up to 25 lb. (11.4kg) 2 lb. (0.9kg)	..... 65.00
1965	Gaffer Grip (small) with 5/8" (16mm) socket	..... 33.00
1966	Gaffer Grip (large) with 5/8" (16mm) socket	..... 75.00

BASES

1560	Table Stand with 5/8" (16mm) stud. 4 lb. (1.8kg)	.. \$ 27.50
1561	3" (76mm) Diameter Base, 1 lb. (0.45kg)	..... 27.50
1562	6" (152mm) Diameter Base, 3 lb. (1.4kg)	..... 33.00

TORMENTORS AND LADDERS

1570	1-1/2" (38mm) Tormentor Boom, 20' (6.1m) long, 6" (152mm) base and tie-off 65 lb. (29.5kg)	..... \$230.00
1571	1-1/2" (38mm) Tormentor Pipe, 12" (3.7m) long, wall mounted, 44 lb. (20kg)	..... 155.00
1572	Three-Rung Ladder with four 18" (457mm) 20A pigtails and two 12" (3.7m) 20A feed cables. 60 lb. (27.2kg)	..... 675.00
1573	Three-Rung Ladder, same as 1572, unwired. 50 lb. (22.7kg)	..... 355.00

STANDS

1513	4'-7" (1.2m-2.1m) Stand with 14" (356mm) diameter. 20 lb. (9.1kg) base	..... 105.00
1514	5'-8" (1.5m-2.4m) Stand with 18" (457mm) diameter. 25 lb. (11.3kg) base	..... 140.00
1519	Ianiro "Trojan" Folding Stand for lanebeam 2000	... 115.00
1520	3'-5" (0.9m-1.5m) Stand, castered 30 lb. (13.6kg) legs	..... 190.00
1521	5'-8" (1.5m-2.4m) Stand, castered 40 lb. (18.1kg) legs	..... 190.00
1522	Strand Century Stand, heavy duty aluminum castered, extends from 4' (1.22m) to 8'6" (2.6m) 18.5 lb. (8.4kg)	..... 313.00
1529	Ianiro Stand for 4500MP Pulsar	..... 60.00

1530	Strand Century Small Kit Stand, aluminum, folds to 21" (533mm) extends to 8'6" (2.6m), 5/8" (16mm) stud. 2.3 lb. (1.04kg)	..... 65.00
1531	Wind-up Stand, extends to 8'6" (2.6m)	..... 435.00
1535	Strand Century Regular Kit Stand, aluminum, folds to 30" (762mm), extends to 8'6" (2.6m), 5/8" (16mm) stud. 2.9 lb. (1.3kg)	..... 75.00
1826	Combo-Reflector Lamp Stand, 25 lb. (11.3kg)	..... 505.00
1831	Combo Adaptor Wheels (set of 3) 9 lb. (4.1kg)	..... 245.00

OPERATING POLES

1941	Operating Pole, 6' (1.8m) 2.1 lb. (0.95kg)	..... \$ 85.00
1942	Operating Pole, 9'3" (2.8m). 2.8 lb. (1.3kg)	..... 90.00
1943	Operating Pole, 12'7" (3.8m) 3.5 lb. (1.6kg)	..... 96.00
1944	Operating Pole, 15'10" (4.8m) 4.2 lb. (1.9kg)	..... 106.00

LITE LIFTS AND HANGERS

1980	Pantograph Lite Lift, supports 12 lb. (5.4kg), extends 10' (3m) 13.5 lb. (6.1kg)	..... \$415.00
1981	Pantograph Lite Lift, supports 25 lb. (11.3kg), extends 10' (3m) 13.5 lb. (6.1kg)	..... 425.00
1983	Pantograph Lite Lift, supports 35 lb. (15.9kg), extends 10' (3m). 15.5 lb. (7kg)	..... 510.00
1984	Telescopic Hanger, 10-20 lb. (4.5-9.1kg) extends 12'3" (3.7m) 16.5 lb. (7.5kg)	..... 310.00
1985	Telescopic Hanger, 10-20 lb. (4.5-9.1kg), extends 7'4" (2.2m) 12.5 lb. (5.7kg)	..... 270.00
1986	Telescopic Hanger, 20-40 lb. (9.1-18.1kg), extends 12'3" (3.7m) 14.5 lb. (6.6kg)	..... 365.00
1987	Telescopic Hanger, 20-40 lb. (9.1-18.1kg), extends 7'4" (2.2m) 15 lb. (6.8kg)	..... 310.00

EXTENSION CABLES

6410	10' (3m) 3-Wire Grounded Pin Connectors 20 amp, 2.6 lb. (1.2kg)	..... \$ 50.00
6411	10' (3m) 3-Wire Grounded Twistlock Connectors 20 amp, 2.6 lb. (1.2kg)	..... 55.00

CASES

1970	Carrying Case for Century Kit V (1055), Kit VI (1056), Kit VII (1057)	..... \$165.00
1971	Carrying Case for Century Kit I (1051), Kit III (1053), Kit IV (1054)	..... 160.00
1974	Carrying Case for Century Kit XI (1060)	..... 175.00
3363	Fixture Case for 575W HMI Head, 25 lb. (11.3kg)	... 415.00
3366	Ballast Case for 575W HMI Ballast, 34 lb. (15.4kg)	... 640.00
3573	Fixture Case for 1200W HMI Ballast, 39 lb. (17.7kg)	.. 725.00
3683	Fixture Case for 2500W HMI Head, 43 lb. (19.5kg)	... 670.00
3686	Ballast Case, castered for 2500W HMI Ballast. 45 lb. (20.4kg)	..... 775.00
3786	Ballast Case, castered for 4000W HMI Ballast, 52 lb. (23.6kg) 800.00
3793	Fixture Case for 4000W HMI Head, 49 lb. (22.2kg)	... 780.00

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 Rancho Dominguez, CA 90224
 (213) 637-7500 Telex 664741



MINI LIGHT PALETTE



MANTRIX 2S



MANTRIX MEMORY

MINI LIGHT PALETTE

An advance in mid-range console design.

FEATURES

- 2-9" high resolution CRT displays with all operational information
- Proportional patch for assigning dimmers and their levels to channels
- 7 overlapping pile-on submasters, 3 inhibitive submasters
- Executes up to 3-part cues
- 3 crossfaders, 1 of which is split
- 200 control channels for up to 384 dimmers
- Special effects package
- Electronic back-up
- Disk for library storage
- Interfaces to any dimmer
- Diagnostics Program

OPTIONS

- Designer's Remote Console
- Remote Control Unit
- Printer
- Remote Monitor
- Full System back-up
- Mantrix™ Manual Console
- Non Dim and Auxiliary Controls

Call for Price

MANTRIX MEMORY

An exciting new control system—Mantrix Memory or Mantrix 2S plus a powerful, easy-to-use memory module.

FEATURES

- Memory may be included initially or added-in later
- Presets may be recorded from the keyboard or from manual potentiometers
- Split handle crossfader with LED display for timed or manual fades
- Level/Rate Control Wheel
- Preset linking and cue insert capability
- LCD display of channel, playback, patch and submaster information
- Solid state cartridge for library storage

Call for Price

MANTRIX™ 2S WITH MEMORY

(All prices include 25 ft. control cable)

8181	12 Channel	\$ 9,000.00
	33-1/2" (85.1cm) 1-Tier Console	
8182	24 Channel	9,700.00
	45-1/2" (115.6cm) 1-Tier Console	
8183	24 Channel w/video module	10,300.00
	45-1/2" (115.6cm) 1-Tier Console	
8184	36 Channel	10,500.00
	45-1/2" (115.6cm) 1-Tier Console	
8186	36 Channel w/video module	11,600.00
	45-1/2" (115.6cm) 2-Tier Console	
8187	48 Channel w/video module	12,300.00
	45-1/2" (115.6cm) 2-Tier Console	
8188	60 Channel w/video module	13,100.00
	45-1/2" (115.6cm) 2-Tier Console	
8189	72 Channel w/video module	13,500.00
	45-1/2" (115.6cm) 2-Tier Console	

MANTRIX 2S

Up to 56 overlapping submasters at the flip of a switch. Designed specifically for the faster paced lighting of television and live performance.

SINGLE TIER CONSOLES

8110	12 Channels	\$2,300.00
8111	12 Channels w/Patch	3,500.00
8112	24 Channels	3,000.00
8113	24 Channels w/Patch	4,200.00
8114	36 Channels w/Patch	4,900.00
8115	48 Channels w/Patch	5,600.00

DOUBLE TIER CONSOLES

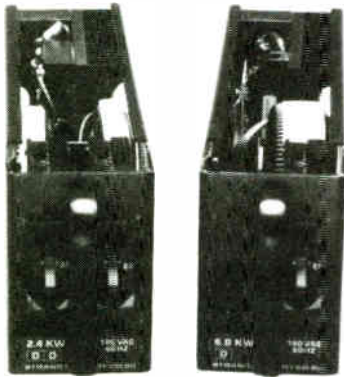
8116	36 Channels w/Patch	\$5,500.00
8117	48 Channels w/Patch	6,200.00
8118	60 Channels w/Patch	7,000.00
8119	72 Channels w/Patch	7,500.00
8120	84 Channels w/Patch	8,000.00

OPTIONAL EQUIPMENT

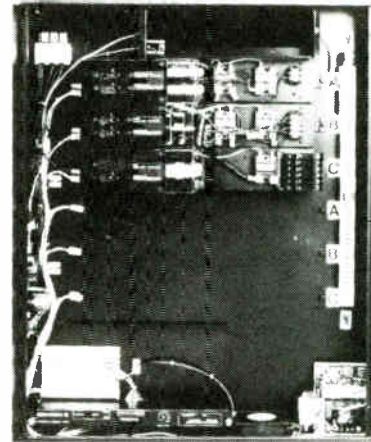
FOR MANTRIX/CD80 PACKS

3-22900-	Remote Console Receptacle Station	\$ 120.00
8021/01,	Vinyl Cover (for single tier console 03, 05)	105.00
8021/07,	Vinyl Cover (for double tier console 09, 11)	121.00
8017	Stand, 72" (1.8m)	998.00
8018	Stand, 72" (1.8m) w/return	1,155.00
8019	Castered Stand, 36" (91.4cm wide)	975.00
8020	Castered Stand, 48" (121.9cm wide)	1,050.00
8022	Light Accessory (for stand only)	237.00
8030	Dimmer Control Extension cable 25' (7.6m)	95.00
8031	Dimmer Control Extension cable 50' (15m)	147.00
8032	Dimmer Control Extension cable 100' (30m)	205.00
8033	"Daisy Chain" (Control jumper cable) 18" (45.7cm)	53.00
8034	"Daisy Chain" (Control jumper cable) 72" (1.8m)	61.00
8174	Trouping Case (to 8200, 8201, 8110, 8111)	350.00
8175	Trouping Case (for 8202, 8203, 8112, 8113)	465.00
8176	Trouping Case (for 8204, 8205, 8114, 8115)	550.00
8177	Trouping Case (for 8206, 8207, 8116, 8117)	595.00
8178	Trouping Case (for 8208, 8209, 8210)	699.00
8179	Trouping Case (for CD80 packs)	730.00

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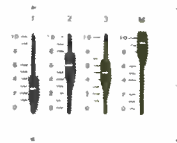
**CD80
 DIMMER BANK
 MODULES**



DIMMER CABINET (Interior View)



CD80 PACK



**SLIDER CONTROL
 STATION**



**PROGRAMMABLE
 MASTER STATION**

CD80 PACKS

Designed for Portable and Wall Mounted Use

Features:

- Compact design: 12-2.4kw, 6-6kw or 6-12kw dimmers in a 23-1/2"W x 20-1/2"D x 8-1/2"H (59.7 x 52.1 x 21.6cm) package
- Toroidal Chokes
- Terminal block phase changer in 2.4 and 6kw Packs
- All electronics on a single, easily accessible card
- Failure indicators for power, overtemp and over voltage
- Multiplexed control wiring and "daisy-chained" connections for expandability
- Available for 220 or 240 volt operation

8124	12-2.4kw Dimmers with 24-Grounded Twistlock Outputs (20 amp)	\$4060.00
8125	12-2.4kw Dimmers with 24-Grounded Pin Connector Outputs (20 amp)	4060.00
8126	12-2.4kw Dimmers with 24-Parallel Blade U Ground Outputs (20 amp)	4060.00
8127	12-2.4kw Dimmers with Terminal Strip for Hard-Wiring	4060.00
8066	6-6kw Dimmers with 6-Grounded Twistlock Outputs (50 amp)	4700.00
8067	6-6kw Dimmers with 6-Grounded Pin Connector Outputs (50 amp)	4700.00
8068	6-6kw Dimmers with Terminal Strip for Hard-Wiring	4700.00
8063	6-12kw Dimmers, 1-100A GP Receptacle per dimmer, camlock plugs	5600.00
8064	6-12kw Dimmers, Hard-Wired	5400.00

ENVIRON® 2

The Environ 2 Architectural Dimming System features modular, off-the-shelf components which can be combined into a custom configuration for any installation.

A variety of control stations includes slider and pushbutton controls, preset capabilities and a Master Station with a number of programmable functions. A wide variety of sizes and types of dimmers is available.

CD80 DIMMER BANKS And MODULES

Compact, High Density Dimmer Banks with Dual 2.4kw, Single 6kw or 12kw Dimmer Modules. Designed for all Theatrical and Television Applications.

Dimmer Racks

Features:

- Extremely shallow - only 17-3/4" (.45m) deep
- Up to 96 plug-in 2.4kw dimmers in 24-1/2" (6.2m) width
- Ideal for dimmer per circuit applications
- Equipped with quiet fans to maintain proper operating temperatures
- Designed to reduce installation costs
- Full length guides and self aligning dimmer connectors for positive dimmer module alignment

Dimmer Modules

Features:

- Heavy gauge aluminum chassis
- Heavy duty, self aligning power and control plug
- Toroidal Chokes
- Plug-in non dim modules available
- 220 and 240V dimmers and nondims available



**BALLANTYNE OF OMAHA
STRONG INT'L**

1712 Jackson Street
Omaha, NE 68102
(402) 342-4444

Xenon Trouper-Follow Spotlight

- "Cold" metal reflector • Six color boomerang with geletin color filters • Ultra-Violet filter available • Horizontal masking control • Nichrome steel iris • Spot focus adjusting knob • Dimming control • Controls for adjusting spotlight height, vertical and horizontal movement • 700 watt Xenon bulb • Warranted for 1500 hours • Operating time — continuous • Color temperature 5700° Kelvin • Maximum downward tilt 45° • Maximum upward tilt 25° • Horizontal sweep 360° • Gross shipping weight approx. 540 lbs.

48050 \$6640.00

Xenon Super Trouper — Follow Spotlight

- "Cold" metal reflector • Six color boomerang with geletin color filters • Ultra-violet filter available • Horizontal masking control • Nichrome steel iris • Spot focus adjusting knob • Dimming control • Controls for adjusting spotlight height, vertical and horizontal movement • 1600 watt Xenon bulb (65 Amp.) • Operating time — continuous • Color temperature 5900° Kelvin • Maximum downward tilt 45° • Maximum upward tilt 25° • Horizontal sweep 360° • Gross shipping weight approx. 700 lbs.

83050 \$8495.00

Xenon Gladiator II — Follow Spotlight

- "Cold" metal reflector • Six color boomerang with geletin color filters • Ultra-violet filter • Horizontal masking control • Nichrome steel iris • Spot focus adjusting knob • Dimming control • Controls for adjusting spotlight height, vertical and horizontal movement • 2500 watt Xenon bulb (90 amp) • Operating time — continuous • Color temperature (Approx.) 5600° Kelvin • Maximum downward tilt 45° • Maximum upward tilt 25° • Horizontal sweep 360° • Gross weight 930 lbs.

47050 \$11,995.00

47061

Xenon Gladiator II (complete with 208/230V, 60 Hz, 3 ph. Power Supply and 3000W, Xenon bulb) **\$14,720.00**

Trouperette III — Quartz-Halogen

- Quartz-Halogen lamp — 1000 watt, 250 hour life • Draws only 8.5 to 9.5 Amperes • Exclusive single lever controlled two element variable focal length lens system • Horizontal masking control with 45 ¼ angle adjustment • Nichrome heavy duty iris • Simple to operate built-in six color boomerang • Quick relamp design • 115 volt AC operation... equipped with 25 ft. 3 wire cable • Maximum downward tilt 36° • Maximum upward tilt 32° • Horizontal sweep 360° • Gross weight 90 lbs.

45003 \$1290.00

575 Metal Halide

- "Cold" metal reflector • Six color boomerang with geletin color filters • Horizontal masking control • Nichrome steel iris • Spot focus adjusting knob • Dimming control • Controls for adjusting spotlight • Height, vertical and horizontal movement • 575 watt metal halide bulb • Life expectancy—750 hrs. • Operating time—continuous • Color temperature 5600° Kelvin • Maximum downward tilt 45° • Maximum upward tilt 30° • Horizontal sweep 360° • Gross shipping wgt approx. 266 lbs.

41000 \$4430.00

Trouperette, Trouperette II, Trouperette III Accessories

45103	Bulb, Trouperette, 1000 Watt - 50 Hr.	30.00
45230	Bulb, Trouperette II, 600 watt-75 hr.	15.60
45243	Bulb, Trouperette II, 650 watt-25 hr.	19.25
45246	Bulb, Trouperette III, 1000 watt-250 hr.	55.00

Xenon Bulbs - Contact factory for prices
 65258 1600 watt for Type 83050 Super Trouper
 65247 1000 Watt for Type 83051 Super Trouper
 65356 700 Watt for Type 48050 Trouper
 65274 2500 Watt for Type 47050 Gladiator II
 81390 3000 Watt for Type 47051 Gladiator III
Strong 575 Replacement Bulbs
 41102 575 Watt metal Halide Bulb **390.00**



SYLVANIA/GTE PRODUCTS CORP. STUDIO/THEATRE/TELEVISION

Lighting Center
Danvers, MA 01923
(617) 777-1900

Professional Sun Gun Movie Light Lamps

EKT	\$33.64
FAV	37.68
FBT	41.06
FBV	44.64
FBW	48.53

**Miniature Tungsten Halogen
2-Pin Base Lamps**

BHC/DYS/DYV	\$22.98
DVY	28.30
DYH	27.55
EKD	30.32
FBD/FBG	32.45

**Minican Base Single Ended
Tungsten Halogen Lamps**

EHT (250Q/CL)	\$32.06
EHV (325Q/CL)	33.97

**Moqui Prefocus Lamps for
Follow-Spotlights**

DTA	\$98.32
-----	---------

Two Pin Tungsten Halogen Lamps

EHC/EHB (500Q/5CL)	\$55.01
EHD (500QCL/TP)	55.01
EHF (750Q/4CL)	60.83
EHG (750Q/CL/TP)	60.83
FCV FRST	68.22
FEL (Q1000/4CL)	56.54
FEP	63.71

**Double Ended Tungsten
Halogen Lamps 5 5/8" MOL**

DWT (1000T6Q)	\$ 86.34
FER (Q1000/4CL)	66.38
FEX	117.64
FEY (Q2000T8/4CL)	111.53

**Double Ended Tungsten
Halogen Lamps 6 9/16" MOL**

FDB	\$63.60
FFT (Q1000T3/1CL)	58.70
FFW (2000T4Q/4CL)	70.60

**Double Ended Tungsten
Halogen Lamps 4 3/8" MOL**

DYA	\$48.51
-----	---------

**Double Ended Tungsten
Halogen Lamps 3 3/4" MOL**

DXN	\$42.66
DXW	41.28
FBY	44.36
FBZ	43.49
FCB	26.81

**Moqui Bipost Lamps with 5" LCL
for Fresnel Lens Spotlights**

BWA (Q2000/4CL/BP)	\$130.58
CXZ	119.52
CYV	93.73
CYX (Q2000T10/4CL)	128.92
DPY (Q5000T20/4CL)	564.50

**Intermediate Wattage Double Ended
Tungsten Halogen Lamps 3 1/8" MOL**

DWY	\$30.11
DXX	27.13
EHP (300T4Q/CL)	41.94
FAD	23.72
FBX	31.06
FCA	28.32
FDA	34.25

**Universal T-3 Double Ended Tungsten
Halogen 4 11/16" MOL**

EHM (300T2 1/2 Q/CL)	\$48.11
EHZ (300T2 1/2 Q)	54.26
EJG (750T3Q/4CL)	43.33
FCL (500T3Q/CL/U)	25.99
FCM (1000T3Q/4CL)	33.79
FCZ (500T3Q)	38.85
FDZ (500T3Q/4CL)	33.79
FDN/FRST (Q500T 3/4)	32.59
FHM/FRST (Q1000T 3/4)	37.50

Par Reflector Lamps

DWE	\$41.69
DXK	44.64
FAY	63.40
FCX	39.34
FFN (1000PAR64Q/VNSP/1)	82.56
FFP (1000PAR64Q/NSP/2)	82.56
FFR (1000PAR64Q/MFL/5)	82.56
FFS (1000PAR64Q/WFL/6)	82.56

R Type Reflector Lamps and Movie Lights

BAH	\$ 3.94
BBA	2.87
BCA	3.40
BEP	8.72
BFA	13.51
DAN	10.51
DWC	5.64
DWD	9.34
DXC	10.53
DXH (R-32)	9.91
DXR/DXS (No. 4)	16.28
DXT (No. B-4)	21.55
EAL	13.40
EBR	12.13
EBV (No. 2)	3.19
EBW (No. B-2)	4.36
ECT	3.62
FAE	12.74

Screw Base Lamps for Scoop Fixtures

DSE (1000T20)	\$54.70
DSF (1500T20)	63.63

Screw Base Spotlight Lamps

BWF (Q2000/4CL)	\$141.37
BWG (Q2000/4)	149.36

**High Wattage Lamps for Fresnel Lens
Spotlights and Sky Pans**

DTY (10MQ/4CL)	\$1094.55
----------------	-----------

**Low Wattage Lamps for
Miniature Spotlights**

BEJ	\$14.15
BVR	8.72
CAW/CAX	7.13
CBJ/CBC	12.87
CBX/CBS	12.55
CCM/CHD	16.70
CEM	9.26
CEW/CFC	12.98
CHK	9.17
CLS/CLG	13.40
CLX/CMB	14.68
CMV/CMT	21.06
FEV	30.17

**Medium Bipost Lamps 4" LCL for
Ellipsoidal Spotlights**

BSC (750T5)	\$84.74
BSD (750T5)	79.72
DZD	57.81
EFX	74.86

**Medium Prefocus Lamps with 3 1/2" LCL
for Ellipsoidal Spotlights**

DEB (500T12/8)	\$52.30
DNS (5000T12/9)	50.93
DNT (750T12/9)	53.66
DNV (1MT12/2)	56.48
EGC/EGD (Q500/5CL/P)	60.83
EGE (Q500CL/P)	60.83
EGF (Q750/4CL/P)	68.22
EGG (Q750/CL/P)	68.22
EGJ (Q1000/4CL/P)	71.62
EGK/FRST (Q1000/4P)	74.01

**Medium Prefocus Lamps with 2 3/16"
LCL for Fresnel Lens Spotlights**

BFK/BFL (750T20/SP)	\$36.17
DGH	40.98
DMX	25.32
DNW (500T20/64)	55.01
DRB/DRC	31.81
DRS	27.23
BTL (500T20/64)	47.22
BTM	47.22
BTN (750T20/SP)	47.00
BTP	47.64
BTR (1MT20P/SP)	53.48
EEX	41.81

**Medium Bipost Lamps with 2 1/2" LCL
for Fresnel Lens Spotlights**

EGN	\$57.48
EGR	74.57
EGT	81.21

**Moqui Prefocus Lamps with 3 15/16"
LCL for Fresnel Lens Spotlights**

BVT (1M/G40/23)	\$73.70
BVV	73.70
BVW (2MG48/5)	91.26
CWZ (1500G40/21)	112.27

ULTIMATE SUPPORT SYSTEMS, INC.

P.O. Box 470
Fort Collins, CO 80522-4700
(303) 493-4488 Telex 4991589 ULTIMATE SUPPT

LIGHTING STAND



TS-33, CB-48, CB-24, VE-24 LIGHTING STAND COMPONENTS

The on-stage professional utilizes the latest technologies to visually create the atmosphere he desires. Through the use of dimmers, barn doors, and control modules, the lighting engineer tries to transform a drab set into an exciting arena. However, due to the lack of achievements in lighting stands, these effects are limited by large, heavy tarnished steel bars which sit ominously on an otherwise aesthetic stage. Ultimate Support Systems has changed this by the introduction of aluminum stands; deep etched and clear anodized, to add to, instead of take away from the desired effect.

In addition to being extremely attractive, Ultimate Support Systems are lightweight. Through the use of aluminum alloy tubing, the entire stand as shown weighs only 12 pounds (5.45 kg). This feature reduces shipping costs as well as physical wear and tear.

Other features include: large, convenient handknobs and easy-to-use fittings; your choice of bolt and wingnut type crossbar, or heavy walled crossbars for clamp type lights.

But there's more... The Ultimate Lighting Stand is built to last. Fittings are constructed of glass reinforced polycarbonate; one of the toughest plastics available. Ultimate Support Systems' attention to details help to insure that this stand can handle years of on-the-road abuse.

The TS-33 Tripod forms the base for this versatile system and comes with a nylon tote bag. The Tripod's excellent stability enables the lights to be extended over 11' (3.35 m) when used in conjunction with the vertical extension.

Ultimate Support Systems gives you the choice... as to how you want to build up your own stand. The modular design allows you to add on the additional parts as you require.

TS-33 \$120.00
TS-33A \$135.00

Add on's to the TS-33 Tripod include:

- (A) CB-48 4' Crossbar (1.22 m), with bolts and wingnuts. Capacity: 8 lights. Two bolts are also provided for attaching power expanders, dimmer packs, etc. Weight: 1-1/2 pounds (.68 kg). **\$40.00**
- (B) CB-24 2' Crossbar (.61 m), with bolts and wingnuts. Comes in pairs. Capacity: 4 lights/pr. Weight: 1-1/2 pounds (.68 kg). **\$40.00**
- (C) HB-48 4' Heavy Crossbar (1.22 m). Heavy walled tubing for clamp type fixtures. Weight: 2-3/4 pounds (1.25 kg). **\$36.00**

- (D) HB-24 2' Heavy Crossbar (.61 m). Heavy walled tubing for clamp type fixtures. Comes in pairs. Weight: 3 pounds (1.36 kg). **\$36.00**
- (E) VE-24 2' Vertical Extension (.61 m). Extending the TS-33 Tripod up to 11 feet (3.35 m). Weight: 1 pound (.45 kg). **\$20.00**
- (F) EXP-550 Expander Bracket for power expanders, dimmer packs, etc. Weight: 1/2 pound (.23 kg). **\$18.00**
- (G) ABG-100 Accessory Bag. Designed to hold up to 2 complete sets of components. **\$25.00**

After the performance, the eleven foot lighting stand compacts to fit into two small tote bags for easy transportation to the next gig.

SPECIFICATIONS

- Height: 5'0" to 11'2" (1.52 to 3.40 m)
- Max. Base Diameter: 62" (1.57 m)
- Load Capacity: 100 lbs. (45.36 kg)
- Weight (as shown): 12 lbs. (5.45 kg)
- Set up time: 3 minutes

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U

Ultimate Support Systems, Inc. **VE-97**

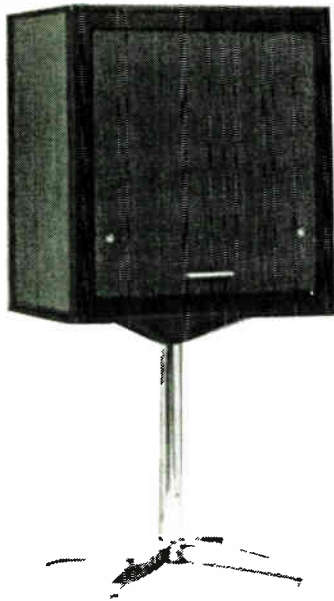
V

Viking Cases **VE-98**

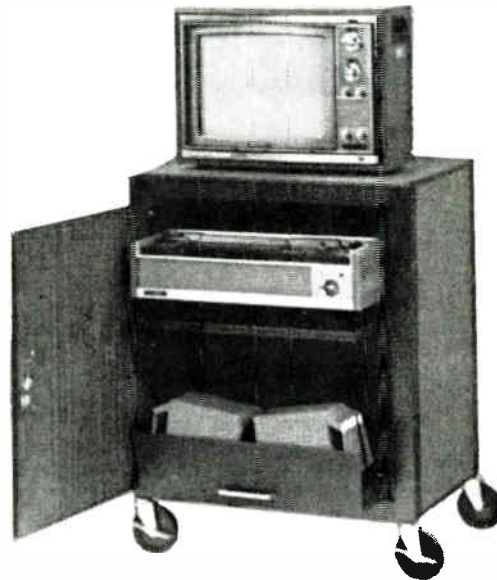
W

Wheelit, Inc. **VE-99-104**
 H. Wilson Co. **VE-105-108**
 The Winsted Corp. **VE-109-127**
 Index **VE-128**

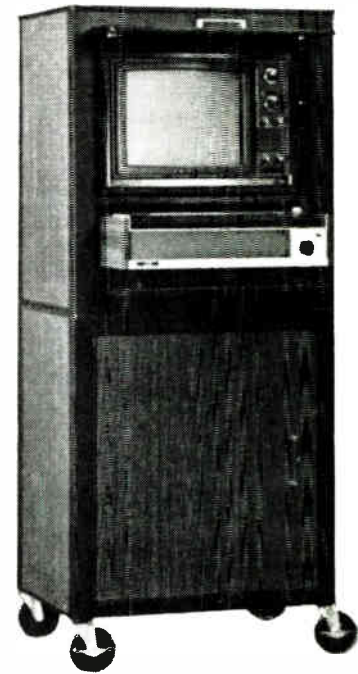
1101 E. Central
P.O. Box 2178
Wichita, KS 67201
(316) 263-4231



Model MVC-1, shown with accessory PT.



Model MVC-2, shown with accessory ROS and TS.



Model MVC-3, shown with accessory ROS.

MVC-1, MVC-2, and MVC-3 MODULAR VIDEO CABINETS

The MVC-1, 2, and 3 accept most popular monitors and playback equipment, providing complete access to both front and back of the electronics.

The MVC Series offers versatility, security, mobility, and attractive storage for video systems. Each module incorporates a welded steel frame for strength, handsome walnut pattern side panels, doors and top, one adjustable shelf, built-in ventilation and accommodations for hook-up wiring. Each system has an assortment of accessories.

SPECIFICATIONS MVC-1, MVC-2 and MVC-3

Dimensions: Each module overall, 31" wide x 33" high x 23" deep. Inside dimensions, 29-1/2" wide x 30-1/2" high x 20-1/2" deep. (Deduct 2-1/2" from inside height for flip-up door.) Casters add 6" to overall height.

Construction: Welded steel frame using 16-gauge uprights and 20-gauge top and bottom. Side panels of walnut grained pattern with plastic overlay on 3/8" particle board. All doors walnut grained pattern overlay on 1/2" particle board with T-molded edges, hinges full-length piano type. Master keyed locks on all doors. Pilaster brackets in each module for 1/2" increment adjustments of shelf. Adjustable steel shelf in each module. Two-inch wiring access holes with plastic grommets supplied in each shelf. Caster sockets arc welded into bottom of each module. Top panel 1/2" walnut grain pattern with T-molded edges.

Castors: 5", ball bearing swivel, two with locking toe brakes. (Standard on models MVC-2 and MVC-3.)

MVC-1: (Illustrated on accessory Pedestal Table) This module includes one swing-up locking door and a fully adjustable shelf. Wiring access holes are provided in the bottom of the cabinet and in the adjustable shelf within the cabinet. The MVC-1 Module can be stacked or positioned on the Pedestal Table accessory. Arc welded caster sockets are provided so that casters may be added if desired. **Shpg. Wt. 103 lbs.**

MVC-1 \$369.25

MVC-2: Identical in size to the MVC-1. It is equipped with two conventional piano-hinged doors, both locking. Wiring access holes are provided both in the bottom and in the adjustable shelf. Heavy-duty 5" casters, two with locking toe brakes are included. **Shpg. Wt. 108 lbs.**

MVC-2 \$385.25

MVC-3: Four locking doors insure easy and immediate access to the back of the video equipment as well as the front. Adjustments can be made without removing the equipment from the cabinet. The front monitor door swings up and slides back into the top of the cabinet leaving a glare shield extending over the monitor screen. Access provisions have been made for equipment hook-up. **Shpg. Wt. 211 lbs.**

MVC-3 \$718.25

ACCESSORIES

ROS Roll Out Shelf: Designed to position at any height within the cabinet and to give easy access to the video recorder/playback, this convenience accessory can be used with either the MVC-1, MVC-2 or MVC-3. The 80-lb. load capacity shelf insures safety for the equipment. **Shpg. Wt. 13 lbs.**

ROS Roll Out Shelf \$58.25

ES Extra Shelf: The adjustable steel shelf will add over four square feet of shelving to the module. **Shpg. Wt. 9 lbs.**

ES Extra Shelf \$25.00

TS Tape Storage Drawer: Provides storage for 32-3/4" video tape cassettes. Designed to position at any height within the cabinet. **Shpg. Wt. 19 lbs.**

TS Tape Storage Drawer \$79.00

PT Pedestal Table: Accommodates the MVC-1 at a height of 30" above the floor. The walnut top mounted on a stylish chrome support will enhance any training room. **Shpg. Wt. 35 lbs.**

PT Pedestal Table \$131.50

A Electrical Assembly: Dual electrical outlets which will mount in the top or bottom, left or right of the MVC-1, MVC-2 or MVC-3. 20 feet of 16/3 stranded wire with molded plug. **Shpg. Wt. 2 lbs.**

A Electrical Assembly \$21.00

ADVANCE PRODUCTS CO., INC.

1101 E. Central
P.O. Box 2178
Wichita, KS 67201
(316) 263-4231

VIDEO CABINETS/ TABLES



MVC-5
shown with accessory RROS.



MVC-6
shown with accessory RROS.



Model VT-52C

Model VT-27C

Model VT-38C

MVC-4, MVC-5 and MVC-6 MODULAR VIDEO CABINETS

The MVC 4, 5, and 6 accommodate the larger video equipment. They provide 30% more locking space than the MVC-1, 2, and 3 Series.

SPECIFICATIONS MVC-4, MVC-5 and MVC-6

Dimensions: Each module overall, 36" wide x 38-1/2" high x 27" deep. Casters add 6" to overall height. Door openings, 30" wide x 26-3/4" high. Inside, 33-1/2" wide x 29-1/4" high x 24-1/2" deep.

Construction: Welded steel frame using 16-gauge uprights and 20-gauge top and bottom. Side panels of walnut grained pattern with plastic overlay on 3/8" particle board. All doors, walnut-grained pattern overlay on 1/2" particle board with T-molded edges. Double hinged, double doors front and rear each with 270° sweep. Hinges full length piano type. Master keyed locks on all doors. Pilaster brackets in each module for 1/2" increment adjustments of shelf. One adjustable steel shelf in each module. Equipped with grommets wiring access holes in cabinets and shelves. Top panel 1/2" walnut grain pattern with T-molded edges.

Casters: 5" ball bearing swivel, two with locking toe brakes. (Standard on models MVC-5 and MVC-6).

MVC-4: Consists of the top module of the MVC-6. Use as a table top cabinet. Arc welded caster sockets are provided so that casters may be added if desired. **Shpg. Wt. 120 lbs.**

MVC-4 \$398.50

MVC-5: Same as MVC-4 plus it includes heavy-duty 5" casters, two with locking toe brakes. **Shpg. Wt. 127 lbs.**

MVC-5 \$430.25

MVC-6: Locking doors insure easy and immediate access to the back of the video equipment as well as the front. Access provisions have been made for hook-up. The spacious system offers 27-1/2 cubic feet of locking storage. The top and bottom modules are individually lockable adding convenience and versatility to the system. **Shpg. Wt. 247 lbs.**

MVC-6 \$822.25

ACCESSORIES

RROS Roll Out Shelf: Positions at any height within the cabinets, giving easy access to the video recorder/playback. **Shpg. Wt. 22 lbs.**

RROS Roll Out Shelf \$68.25

EES Extra Shelf: The adjustable steel shelf will add 4.8 square feet of shelving to the cabinets. **Shpg. Wt. 11 lbs.**

EES Extra Shelf \$28.25

TTS Tape Storage Drawer: Provides storage for video tape. Designed to position at any height within the cabinets. **Shpg. Wt. 20 lbs.**

TTS Tape Storage \$88.25

A Electrical Assembly: Dual electrical outlets, 20 feet of 16/3 stranded wire with molded plug. **Shpg. Wt. 2 lbs.**

Television equipment and materials not included.

A Electrical Assembly \$21.00

VT SERIES — VIDEO TABLES

Fully hinged, steel-backed double-locking doors protect tapes and accessories. Each cabinet has 5.75 cubic feet of storage space with an adjustable shelf within the cabinet.

The top of the cabinet on the VT-27C is a convenient working height of 27" for video recorders and playback units.

The VT-38C offers a monitor shelf 38" above the floor, providing excellent monitor positioning for individual or small group viewing. Small playback units are positioned on the second shelf.

The television receiver or monitor is 52" high on the top shelf of the VT-52C model for excellent group viewing.

Heavy, ribbed rubber pads on top of each unit reduce noise and provide a non-skid surface. The welded steel tables have charcoal brown enamel finish with walnut wood panels and a sculptured satin chrome locking handle. Two keys furnished.

VT-27C 27-1/2"H, 18" x 30" shelf size, 65 lbs. shpg. wt. . . . \$228.00

VT-38C 38"H, 18" x 30" shelf size, 75 lbs. shpg. wt. \$244.00

VT-52C 52"H, 18" x 30" shelf size, 80 lbs. shpg. wt. \$253.00

ACCESSORIES

VCS Electrical Assembly: 4 power outlets, grounding type, 20 ft. cord, 3-wire, 1250W. **Shpg. Wt. 4 lbs.** \$26.50

VTS Tape Storage Rack: Holds twelve 8" dia. 1/2" video tapes. 1/4" zinc plated steel wire rack with handles and 4 rubber feet.

Shpg. Wt. 3 lbs. \$18.00

AV-552 Safety Belt: Webbed belt for securing the monitor to the table. 10 ft. long, 600 lb. test. **Shpg. Wt. 1 lb.** \$17.00

RUGGED UTILITY TABLE

This rugged utility table with a 300 lb. load capacity especially suited for computer and micro-film reader applications. Spacious walnut pattern wood top with protective T-molding around edges. The all-welded steel frame is finished with baked on charcoal brown enamel. Equipped with decorative casters as standard.

DP-27 27"H, 20" x 36" shelf size, 47 lbs. shpg. wt. \$115.00

OPTIONAL:

GLIDES: Add suffix "G" to model number. Reduce weight by 3 lbs., height by 2". Deduct \$5.00 from price.

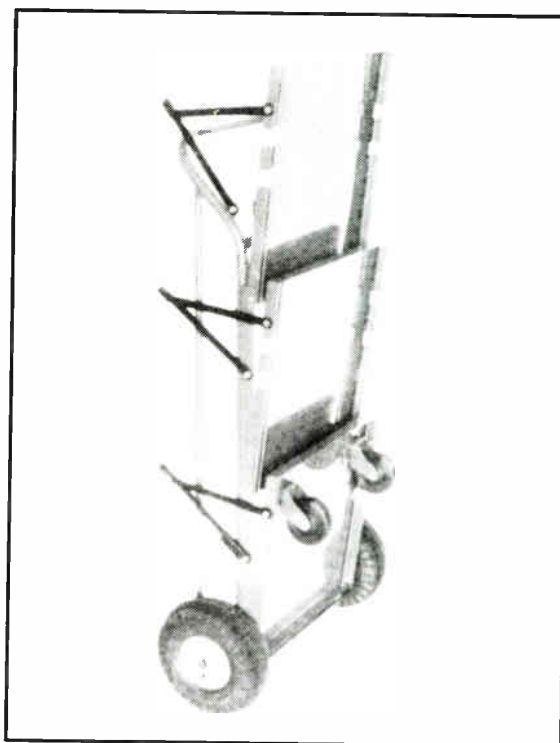
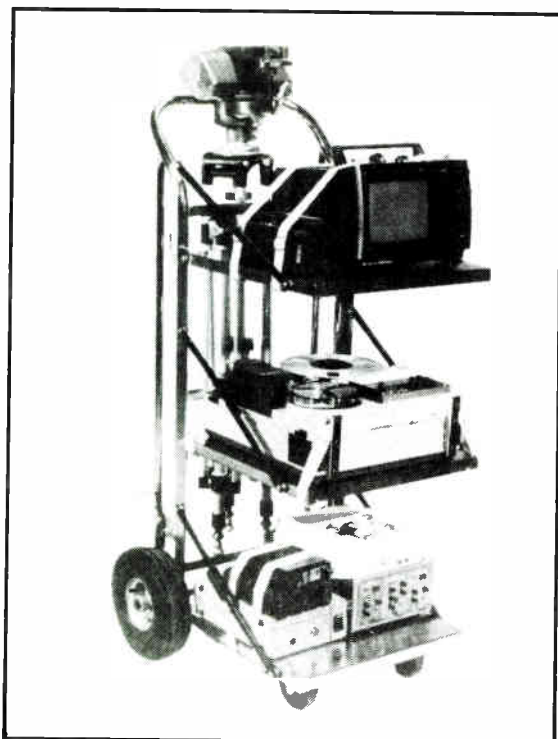
4" CASTERS: Add suffix "-4" to model number. Add 2 lbs. to weight, 2" to height. Add \$5.00 to price.

5" CASTERS: Add suffix "-5" to model number. Add 4 lbs. to weight, 3" to height. Add \$10.00 to price.

AMERICAN TRANSPORT PRODUCTS

CARTS

1622 N. Gower Street
Hollywood, CA 90028
(213) 469-8251



VFC-100 FOLDING VIDEO CART

Professionals know the convenience of having a high quality, versatile, electronic equipment cart. Available now is the VFC-100, a smooth rolling, all metal constructed vehicle designed to carry the necessary video equipment required for quality field, news gathering, and broadcast production.

Features

- Folds to a mere eleven inches for your storage convenience
- Three heavy duty, independently folding, equipment trays
- Three heavy duty cable hooks
- Heavy duty tripod/cable hook
- 300 lbs. load capacity
- 1" 16 gauge steel tubing frame
- Heavy duty, all terrain, 10" locking pneumatic wheels, or 10" x 1.75" semi-pneumatic wheels (model VFC-50)
- Two, 4", locking, swivel casters
- 2-1/4" ground clearance
- High quality chrome plated finish, or industrial grey enamel (model VFC-121 and VFC-50)



VFC-121



VFC-50

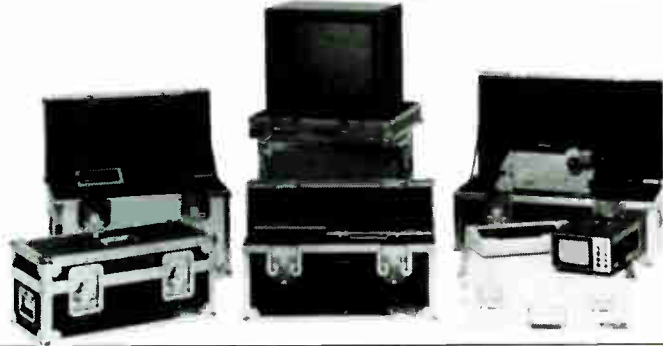
Model No	Description	Finish	Height	Wheel Base	Wheels	Tray Dimensions	Weight	List Price
VFC-100	Folding Video Cart	Chrome	48"	25"	10" Pneumatic	17 3/4" x 18"	60 lbs.	\$360.00
VFC-121	Folding Video Cart	Painted	48"	25"	10" Pneumatic	17 3/4" x 18"	60 lbs.	\$310.00
VFC-50	Folding Video Cart	Painted	48"	22"	10" x 1.75" semi	17 3/4" x 18"	58 lbs.	\$290.00

Transit Cases from ANVIL

ANVIL® A.T.A. Cases offer the ultimate in protection. They conform to the Air Transport Association specification 300, Category 1 standards for reusable shipping containers. ANVIL® A.T.A. Cases must withstand the rigors of more than 100 round-trip transittings, on both surface vehicles and aircraft, to qualify for this rating.

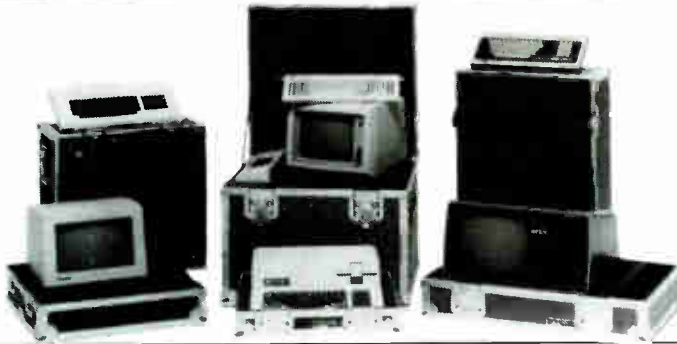
In addition to custom-designed models for individual requirements, ANVIL® maintains a design library containing literally thousands of stock Case models which can be shipped as is, or modified to meet your requirements, and shipped without delay.

Case interiors are custom-designed to provide maximum shock absorption and vibration resistance. Soft, resilient unicellular polyfoam is sculptured to fit around your equipment like a glove. Quality control is assured through numerous inspections during and at the conclusion of the manufacturing process.



A.T.A. VIDEO CASES

We can build a strong Case around any broadcast, industrial or educational video product on the market. Just give us the model number of your camera, recorder, monitor or any other component or combination—and we'll give you a Case that will make sure your video components are ready to get the shot when you are, every time!



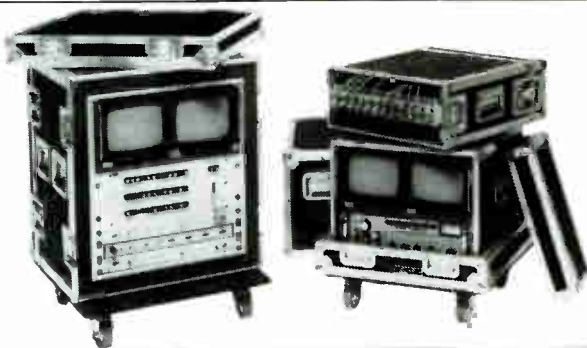
ANVIL® A.T.A. COMPUTER CASES

Now you can ship individual computer components, or entire mini or micro computer systems, anywhere in the world without the slightest bit of worry. Our new A.T.A. Computer Case catalog contains models for hundreds of different components and system combinations. And mixing components from different hardware manufacturers is as easy as giving us the brand names and model numbers. We'll recommend the Case or Cases required to provide the highest degree of protection possible. And we can custom-design your Cases to provide room for software and peripherals, too.



A.T.A. AUDIO-VISUAL CASES

Want your A/V shows to come off without a hitch, time after time? Pack your gear in ANVIL® Cases—and relax! Our catalog includes models for motion, slide, strip and overhead projectors, as well as multi-image devices and dissolve units. And we've got your sound system covered too! FORGE II® carrying Cases are now available for selected film-based items.



ANVIL® E.I.A. RACKMOUNT CASES

Standard 19 inch rackmount components can be safely and easily moved to your location—shoot ready! ANVIL® offers several variations on the rackmount design: front and rear removable lids with or without shock isolation option, pull-over-lid design (case within a case design), or the popular mixer/rack arrangement providing rackmount space horizontally opposed to standard vertical rack space. Whichever way you go, ANVIL® has the rack case to make for the fastest set-up and strike.

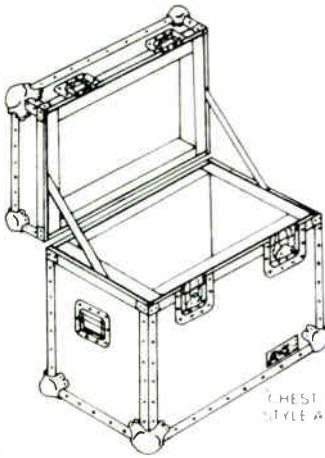
**ANVIL CASES, INC., 4128 Temple City Blvd. • Rosemead, CA 91770
(818) 575-8614 • TWX: 910-587-4935**

Prices and Specifications Subject to Change Without Notice.

VE-5



1111 N. GORDON STREET
HOLLYWOOD, CA 90038
(213) 466-6181



A.T.A. —

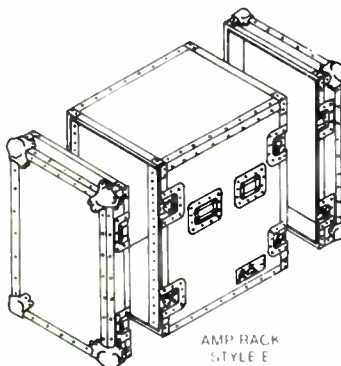
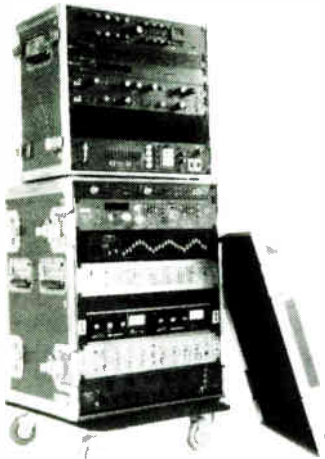
Our A.T.A. Spec. 300, Category 1 Cases are constructed using the finest materials available. To form the actual shell, we start with high grade 1/4" plywood, laminated with tough ABS plastic, fiberglass, or aluminum. Aluminum edging is secured into place using machine driven steel rivets. Heavy duty recessed twist-latches and recessed spring loaded handles are used on all A.T.A. Cases. Other features include heavy gauge steel ball corners and edge clamps. The interior is lined with 1" polyester foam to custom-fit the equipment and provide protective shock absorption. Definitely a must for excessive truck or air travel.

LITE FLITE —

Designed for the around town user, LITE FLITE Cases are made with high grade 1/8" plywood laminated with ABS, fiberglass, or aluminum. Aluminum edging is secured to panels using machine driven steel rivet. High quality exterior latches and handles are used on LITE FLITE Cases. As in the A.T.A. Case, the interior is 1" polyester foam lining provided for shock protection.

CUSTOM CASES —

Our especially trained staff of case designers are available by telephone between 9:00 and 5:00 and in person to answer any questions in regards to design or specific case requirements. Their expertise is invaluable in designing for, and fulfilling your particular case needs. Contact our salespersons or our design staff at (213) 466-6181.



COLORS —

ABS Exterior —

Black, Blue, Red, White, Grey, Green,
Sky Blue, Orange, Beige, Pink

FIBERGLASS — (Available at 10% additional charge)

Black, Blue, Orange, Red, Yellow,
White, Olive, Grey

CARPET COVERING —

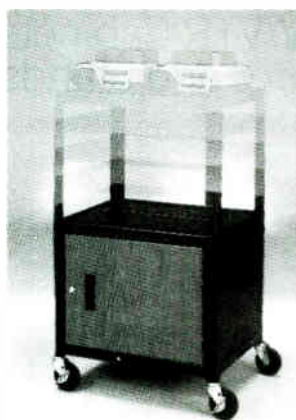
ALUMINUM — (Available at 10% additional charge)



9715 Soreng Ave.
Schiller Park, IL 60176
(312) 678-2545

A Complete Line of Quality Products From America's Largest Manufacturers of Communications Support Equipment

Versatility and ruggedness are just two of the valuable qualities built into every Bretford adjustable table. Each meets the application of the day with multiple height adjustments. Traditionally designed with all steel construction and die-cast shelves to offer solid support and years of dependable service. Each features the Quiet-Glide caster system, exclusive arc-welded caster sockets for maximum stability and heavy-duty 4" casters (2 with locking brakes) for smooth, noiseless transport of loads up to 460 pounds. One ribbed rubber mat for top shelf supplied with each unit. Optional Electrical Assembly with 2 outlets, 20 ft. grounded cord available.



CA2642

◀ The CA2642 Adjustable Cabinet with 26", 30", 34", 38" and 42" height adjustments. High impact Black, baked enamel finish. Lockable Walnut vinyl-clad steel door with piano hinge. Includes 2 keys. Ships UPS, assembled. *Weight:* 55 pounds. *Dimensions:* 24" W x 26 to 42" H x 18" D \$190.00

CA2642E Adjustable Cabinet, with Electrical Assembly. *Weight:* 57½ pounds \$214.50

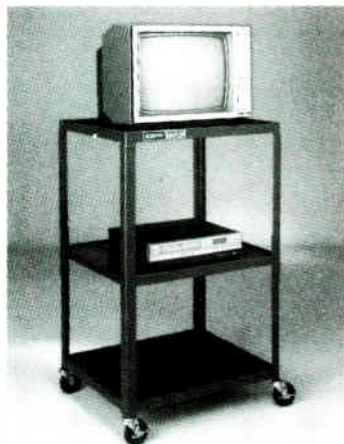
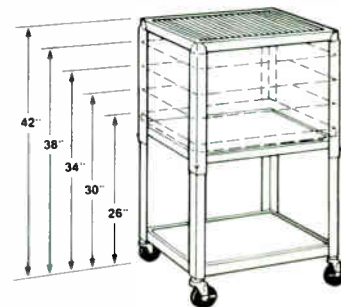


A2642E

The A2642 Universal Projection Table adjusts to 5 heights: 26" 30", 34", 38" and 42" high by simply removing and resetting four bolts. Slate Gray. Ships UPS, assembled. *Weight:* 42 pounds. *Dimensions:* 24" W x 26 to 42" H x 18" D \$105.00

A2642E Adjustable Table with Electrical Assembly. *Weight:* 44½ pounds \$129.50

Adjustable Cabinets and Tables



TVA3654

The TVA3654 Adjustable TV Table adjusts from 36" to 54" at two inch increments—ten different height adjustments in all. Double-welded top shelf. Slate Gray. Ships assembled. *Weight:* 50 pounds. *Dimensions:* 28" W x 36 to 54" H x 24" D, 17½" H from Bottom to Middle shelf \$165.00

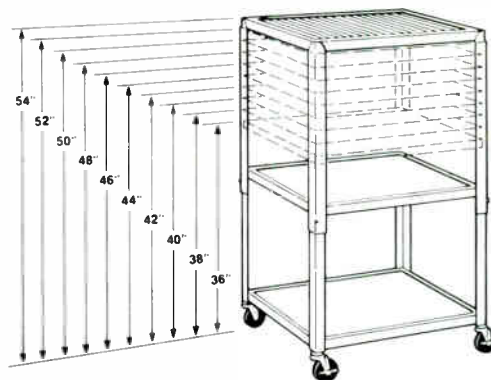
TVA3654E Adjustable TV Table, with Electrical Assembly. *Weight:* 52 pounds \$189.50



TVCA3654

The TVCA3654 Adjustable TV Cabinet adjusts from 36" to 54" at two inch increments. Black, baked enamel finish. Double welded top shelf. Lockable Walnut vinyl-clad steel door with piano hinge. Includes 2 keys. Ships assembled. *Weight:* 66 pounds. *Dimensions:* 28" W x 36 to 54" H x 24" D. *Cabinet Dimensions:* 25" W x 17½" H x 21" D \$281.00

TVCA3654E Adjustable TV Cabinet, with Electrical Assembly. *Weight:* 68 pounds \$305.50



Accessories

(See page 1 for complete description of accessories).

5" Caster replacing 4" Caster	\$10.00
E-Unit, Electrical Assembly 2 outlets.	\$24.50
ES-Unit Electrical Assembly 3 outlets	\$32.00
ES-Unit replacing E-Unit.	\$ 7.50
TVS Slant Bar for TVA3654 and TVCA3654.	\$10.00
RM1824, Rubber Mats for 24" x 18" tops	\$ 5.50
RM2428, Rubber Mats for 28" x 24" tops	\$ 8.00

For stability, mobility, and economy, you can't beat Bretford's TV and VTR Cabinets and Stands. Choose from a diverse selection of functional designs for small and large group applications. All feature heavy gauge steel construction and Black, mar-resistant finish with Walnut highlights.

The VTRC54E TV/VTR Cabinet Stand with glare-free, slanted top shelf. Includes 4" casters (2 locking), and 2 keys for lock. *Weight:* 82 pounds. *Dimensions:* Outside-28" W x 54" H x 24" D, Top Shelf-28" W x 17" D, Top to Middle Shelf-24", Cabinet-25" W x 17" H x 21" D. Ships assembled\$300.50

The MPVC54E TV/VTR Cabinet Stand with electrical assembly and lockable cabinet storage. Designed for large groups, its built-in Slant Bar tilts TV forward to eliminate glare from overhead lights. Includes chrome legs with 4" ball casters (2 brakes), and 2 keys for lock. *Weight:* 88 pounds. *Dimensions:* Outside-30" W x 54" H x 20" D, Top to Middle Shelf-26", Cabinet-28" W x 17" H x 18" D. Ships UPS, disassembled\$300.50

Accessories

- 4" Caster replacing 2" caster (VTR20, VTRC30, and MPVC40 only)\$13.00
- 5" Caster replacing 2" caster (VTR20, VTRC30, and MPVC40 only).\$23.00
- 5" Caster replacing 4" caster (MPVC54, VTRC54, C42).\$10.00
- E-Unit Electrical Assembly 2 outlet, 20-foot grounded cord\$24.50
- ES-Unit Electrical Assembly 3 outlet, 20-foot grounded cord\$32.00
- ES-Unit replacing E-Unit.\$ 7.50
- SB-Safety Belt Black\$22.50
- RM2030 Rubber Mat Black for 30"x20" tops ...\$ 7.50
- RM1824 Rubber Mat Black for 24"x18" tops ...\$ 5.50
- RM2428 Rubber Mat Black for 28"x24" tops ...\$ 8.00



VTRC54E



MPVC54E



TV/VTR Cabinets and Stands



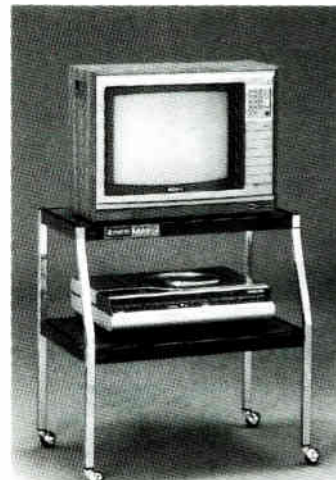
VTRC30E



MPVC40

The VTRC30E TV/VTR Cabinet with electrical assembly and lockable storage cabinet. Recessed top shelf for easy access to VCR on middle shelf. Includes chrome legs, 2" ball casters, and 2 keys for lock. *Weight:* 66½ pounds. *Dimensions:* Outside-30" W x 32" H x 20" D, Top Shelf-30" W x 16" D, Top to Middle Shelf-13", Cabinet-28" W x 10" H x 18" D. Ships UPS, disassembled\$279.50

The MPVC40E TV/VTR Cabinet Stand with two-door locking cabinet and electrical assembly. Designed for small to large groups. Recessed top shelf for easy access to VCR on middle shelf. Includes chrome legs, 2" ball casters, and 2 keys for lock. *Weight:* 83 pounds. *Dimensions:* Outside-30" W x 40" H x 20" D, Top Shelf-30" W x 16" D, Top to Middle Shelf-13". Cabinet-28" W x 17" H x 18" D. Ships UPS, disassembled\$301.50



VTR20E

The VTR20 TV/VTR Stand with recessed top shelf for easy access to VTR on middle shelf. Chrome legs with 2" ball casters. *Weight:* 34 pounds. *Dimensions:* Outside-30" W x 32" H x 20" D, Top Shelf-30" W x 16" D, Top to Middle Shelf-13". Ships UPS, disassembled\$ 94.00

The VTR20E TV/VTR Stand with electrical assembly. *Weight:* 36½ pounds. Ships UPS, disassembled\$118.50



C42E

The C42E TV/VTR Cabinet Stand with electrical assembly and lockable cabinet with Walnut finished, vinyl-clad steel door. Includes 4" casters (2 locking) and 2 keys for lock. *Weight:* 56 pounds. *Dimensions:* Outside-24" W x 42" H x 18" D, Top to Middle Shelf-14", Cabinet-23" W x 17" H x 17" D. Ships assembled.\$214.50

Bretford kept you in mind when designing these TV and VTR tables. They're mobile, large, and sturdy enough for every application. Constructed of heavy gauge steel with a Slate finish. Top shelf is "Double Welded" for maximum security. Bretford's unique electrical welding process allows features like smooth rounded edges, and die pressed shelves. Quiet-Glide caster system. Arc-welded caster sockets. Slant-top models allow glare free TV viewing. One ribbed rubber mat for top shelf. Ships assembled. E models include electrical unit with 2 outlets and 20 ft. grounded extension cord.



Traditional TV and VTR Tables

- The T54 Traditional TV/VTR Table with 3 shelves. *Weight:* 59 pounds. *Dimensions:* Outside-28" W x 24" D, Top to Middle Shelf-23", Middle to Bottom Shelf-20" \$161.00
- The T54E Traditional TV/VTR Table with electrical assembly. *Weight:* 61½ pounds \$185.50
- The TS54 Traditional TV/VTR Table with glare-free top slant shelf. *Weight:* 59 pounds \$168.00



TS54E

- The TS54E Traditional TV/VTR Table with electrical assembly. *Weight:* 61½ pounds \$192.50
- The T48 Traditional TV/VTR Table with 3 shelves. *Weight:* 57 pounds. *Dimensions:* Outside-28" W x 48" H x 24" D, Top to Middle Shelf-17", Middle to Bottom shelf-20" \$153.00
- The T48E Traditional TV/VTR Table with electrical assembly. *Weight:* 59½ pounds \$177.50
- The TS48 Traditional TV/VTR Table with glare-free top slant shelf. *Weight:* 55 pounds \$161.00
- The TS48E Traditional TV/VTR Table with electrical assembly. *Weight:* 57½ pounds \$185.50
- The T42 Traditional TV/VTR Table with 3 shelves. *Weight:* 54 pounds. *Dimensions:* Outside-28" W x 42" H x 24" D, Top to Middle Shelf-14", Middle to Bottom Shelf-17" \$150.00
- The T42E Traditional TV/VTR Table with electrical assembly. *Weight:* 56½ pounds \$174.50

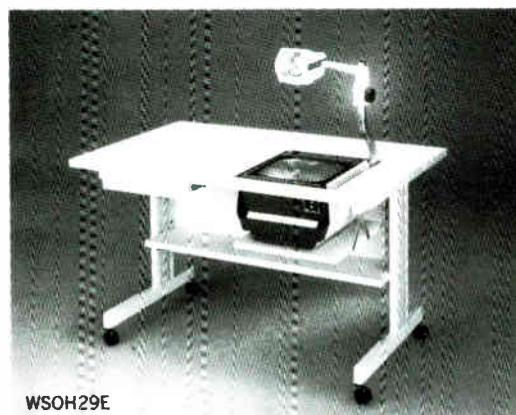
Accessories

- 5" Caster replacing 4" Caster \$10.00
- E-Unit Electrical Assembly 2 outlets, 20 ft. grounded cord \$24.50
- ES-Unit Electrical Assembly 3 outlets, 20 ft. grounded cord \$32.00
- ES-Unit replacing E-Unit \$ 7.50

Overhead Projector Tables

Whether your overhead projector application requires you to stand-up or sit-down, Bretford has the projector stand to meet your needs. And, our newest line additions guarantee that no matter what size projector you have, we've got the stand to fit it.

From the standard application tables (AOH2741 and AOH2741E) to the top of the line Executive Model (WSOH29E)-All feature adjustable projector height and will enhance the use of any overhead projector on the market. E-models feature an Electrical Unit with 2 outlets, 20 ft. extension cord, and built-in cord winder.



WSOH29E

- ◀ The WSOH29E Executive Overhead Projector Work Station is a functional and elegant work station. This top of the line unit features an adjustable projector well (6" to 10" in 1" increments), convenient accessory drawer, a roomy 10 sq. ft. work surface, full width accessory shelf, and 2" twin-wheel casters. Putty Beige with Oak laminates. Includes electrical assembly. Ships disassembled. *Weight:* 112 pounds. *Dimensions:* 48" W x 29" H x 30" D, Projector Opening-15½" W x 16½" D \$360.00



AOH2741

- The AOH2741 Adjustable Overhead Projector Table works well for stand-up or sit-down applications. Work surface adjusts from 27" H to 41" H in 2" increments, and platform adjusts from 6" to 10" in 1" increments. Features heavy gauge welded steel construction, smooth rounded edges, die pressed shelves. "Quiet-Glide" caster system, 4" casters (2 with locking brake) and arch welded caster sockets. Finished in Black with Walnut vinyl writing surface. *Weight:* 73 pounds. Ships assembled. *Dimensions:* 37" W x 27 to 41" H x 22½" D, Projector Opening-15½" W x 18½" D \$183.50
- The AOH2741E Overhead Projector Table with Electrical Unit. *Weight:* 75 pounds \$208.00



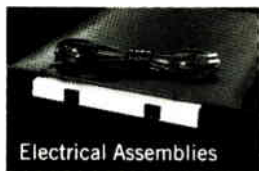
- A. AOH2741 at full height for standing applications
- B. AOH2741 at lowest position for sit-down applications.

Accessories



Casters

Replacement or substitute casters are available for most mobile stands, tables, cabinets, or trucks. Included are 1) Rigid Caster Packs for Mobile Utility Trucks; 2) 5" Caster Packs for easy rolling on carpets and rough surfaces, and 3) WS Caster Conversion kits for computer furniture.



Electrical Assemblies

Designed to attach to all Bretford Audio-Visual and Video furniture. Available assemblies include—1) The E Unit (UL approved) with 2 outlets, 20 ft. 3-wire cord and grounded plug; 2) E-S Unit—same as above with 3 outlets instead of two.



Rubber Mats

Ribbed Rubber Mats provide a protective non-slip surface to keep equipment in place on stands, cabinets, and tables. Available in several pre-cut sizes to fit most Bretford Products.



Safety Belt

Super strength Safety Belt holds valuable monitors in place on slant top shelves. It features a nine foot web strap with buckle and is designed for use on TV/VTR Mobile Equipment Tables.



Slant Bars

Two models available. The Model MPS is designed for use with Contemporary Mobile Equipment Tables, and the Model TVS for Adjustable and Traditional TV Tables. Attaches to top shelf and tilts monitor forward to eliminate glare. Slotted design allows you to bolt equipment in place.

Contemporary, functional design gets you right down to business. With features like steel construction, smooth rounded edges, die pressed shelves and "Quiet-Glide" casters, you'll agree these stands give you the most for your money. Square Lock Design allows fast assembly. Finished in Putty Beige with Black legs. Ships UPS, disassembled.

Mini Pack Series

The MP42 Mini Pack with 2 shelves. *Weight:* 30 pounds. Ships UPS. *Dimensions:* Outside-20"W x 42"H x 18"D, Top to Bottom Shelf-21" . . . \$ 94.00

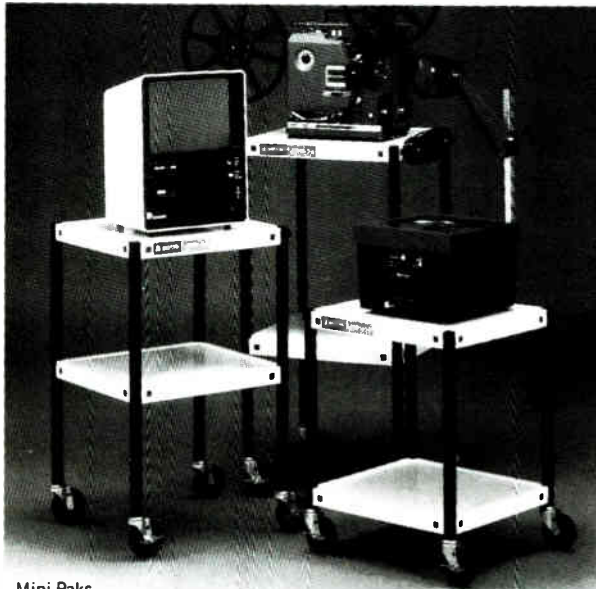
The MP42E Mini Pack with electrical assembly. *Weight:* 32 pounds. Ships UPS . . . \$118.50

The MP34 Mini Pack with 2 shelves. *Weight:* 28 pounds. Ships UPS. *Dimensions:* Outside-20"W x 34"H x 18"D, Top to Bottom Shelf-13" . . . \$ 91.00

The MP34E Mini Pack with electrical assembly. *Weight:* 30 pounds. Ships UPS . . . \$115.50

The MP26 Mini Pack with 2 shelves. *Weight:* 26 pounds. Ships UPS. *Dimensions:* Outside-20"W x 26"H x 18"D, Top to Bottom Shelf-17" . . . \$ 85.00

The MP26E Mini Pack with electrical assembly. *Weight:* 28 pounds. Ships UPS . . . \$109.50



Mini Paks



Contemporary Mobile Equipment Tables



MP30E

The MP30 Contemporary Mobile Equipment Table with 2 shelves. *Weight:* 36 pounds. Ships UPS. *Dimensions:* 30"W x 30"H x 20"D, Top to Bottom Shelf-14" . . . \$117.00

The MP30E Contemporary Mobile Equipment Table with electrical assembly. *Weight:* 38 pounds. Ships UPS . . . \$141.50

Accessories

5" Caster replacing 4" Caster . . . \$10.00

E-Unit Electrical Assembly 2 outlets, 20 ft. grounded cord . . . \$24.50

ES-Unit replacing E-Unit . . . \$ 7.50

ES-Unit Electrical Assembly 3 outlets, 20 ft. grounded cord . . . \$32.00

RM2030 Rubber Mat for 30" x 20" tops. . \$ 7.50

RM1820 Rubber Mat for 20" x 18" tops. . \$ 5.00

SB-Safety Belt Black . . . \$22.50

MPS Slant Bar. . . \$ 8.00



MP48E

The MP48 Contemporary Mobile Equipment Table with three shelves. *Weight:* 49 pounds. Ships UPS. *Dimensions:* Outside-30"W x 48"H x 20"D, Top to Middle Shelf-17", Middle to Bottom Shelf-20" . . . \$132.00

The MP48E Contemporary Mobile Equipment Table with electrical assembly. *Weight:* 51 pounds. Ships UPS . . . \$156.50

The MPS48 Contemporary Mobile Equipment Table with glare-free top slant shelf. *Weight:* 51 pounds. Ships UPS . . . \$140.00

The MPS48E Contemporary Mobile Equipment Table with electrical assembly. *Weight:* 53 pounds. Ships UPS . . . \$164.50



MPS48E

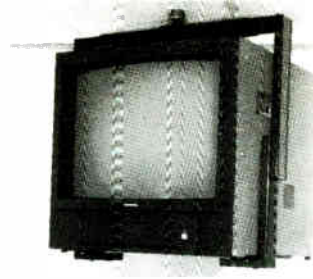
The MP54 Contemporary Mobile Equipment Table with 3 shelves. *Weight:* 52 pounds. Ships UPS. *Dimensions:* Outside-30"W x 48"H x 20"D, Top to Middle Shelf-17", Middle to Bottom Shelf -20" . . . \$138.00

The MP54E Contemporary Mobile Equipment Table with electrical assembly. *Weight:* 54 pounds. Ships UPS . . . \$162.50

The MPS54 Contemporary Mobile Equipment Table with glare free top slant shelf. *Weight:* 54 pounds. Ships UPS . . . \$146.00

The MPS54E Contemporary Mobile Equipment Table with electrical assembly. *Weight:* 56 pounds. Ships UPS. . . \$170.50

Universal TV Wall/Ceiling Mounting Systems



TVM1

◀ The TVM1 Universal Video Mounting Bracket is perfect for every application, from small classrooms to large auditoriums. Installs monitors, receivers on ceiling. Accepts 17" to 26" diagonal screen TVs. Formed steel construction. Black baked enamel finish with Walnut vinyl-clad steel accents. Allows a tilt factor up to 20 degrees. *Weight:* 27 pounds. Ships UPS, disassembled \$150.00



TVM2

▶ The TVM2 Wall Bracket Adaptor allows TVM1 to mount on wall. *Weight:* 10 pounds. Ships UPS, disassembled. \$ 42.50



Video Security Centers

Accessories

- RAS Rolling Accessory Shelf Black (For 40's and 70's) \$57.00
- FAS Fixed Accessory Shelf Black (For 40's and 70's) \$25.00
- RS Rolling Accessory Shelf (VTRC50E only) \$52.00
- FS Fixed Accessory Shelf (VTRC50E only) \$24.00
- E-Unit Electrical Assembly 2 outlet, 20 ft. grounded cord \$24.50
- ES-Unit Electrical Assembly 3 outlet, 20 ft. grounded cord \$32.00
- ES-Unit replacing E-Unit \$ 7.50



VTRC70E

Today, you depend on your video equipment more than ever before. It makes good sense to keep it protected. An attractively designed Video Security Center by Bretford provides mobility, but what's more, it locks up your entire video investment in one beautiful cabinet. Each center features a rolling pull-out shelf for the player/recorder and a monitor shelf. Plus all shelves are adjustable to accept a wide variety of equipment and uses. Cabinets combine heavy gauge steel construction, finished in Black with the warm accent of wooden doors finished in Walnut, mar-resistant laminate. Doors swing easily on full length piano hinges—fold back against cabinet for easy access. Positive lock includes 2 keys. Removable, ventilated back panel. Easy rolling, heavy duty 4" ball bearing casters. Electrical assembly with 2 outlets, 20 ft. grounded cord. Additional shelves available. Ships disassembled.

The VTRC70E Video Security Center with one rolling shelf plus 2 movable shelves. *Weight:* 281 pounds. *Dimensions:* 33" W x 72" H x 24" D. Inside- 31" W x 60" H x 22" D \$931.50



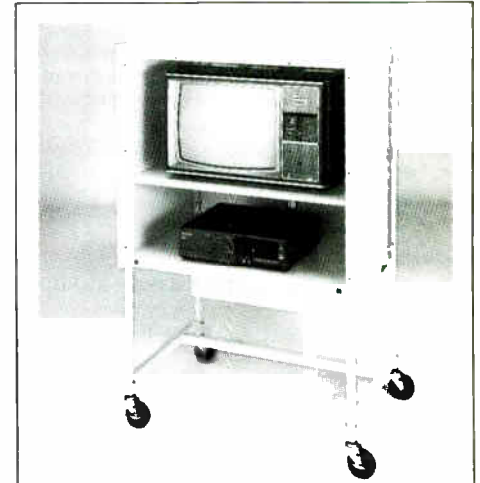
VTRC40E

The VTRC40E Video Security Center with one rolling and one movable shelf. *Weight:* 154 pounds. *Dimensions:* 33" W x 38" H x 24" D, Inside-31" W x 30" H x 22" D. \$528.50



VTRC50E

The VTRC50E Midsize Video Security Center with one rolling shelf and 2 adjustable shelves. *Weight:* 171 pounds. *Dimensions:* 28" W x 55" H x 23" D, Inside-26" W x 30" H x 22" D \$633.50



The VTRC90 Video Security Center is the state-of-the-art in video cabinetry. Features an open leg design, adjustable monitor shelf, cord organizer/modesty panel, 3 outlet electrical assembly with 20 ft. grounded cord. Steel construction with 1" square tubular steel legs. Putty Beige baked enamel finish with oak laminate doors which, when folded back, are held in place against the cabinet. 4" casters (2 with locking brakes). Ships disassembled. *Wt.:* 160 lbs. *Dimensions:* 36" W x 58" H x 25" D, Inside-36" W x 32" H x 24" D, Shelf-36" W x 23" D. \$399.00

BUD INDUSTRIES, INC.

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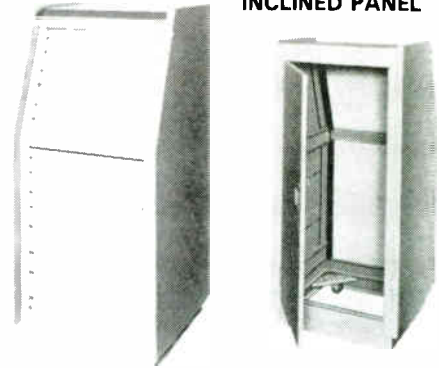
UPRIGHT CABINET RACKS

SERIES 2000 UPRIGHT



Available in either plain or louvered side and rear door; solid top.

SERIES 2000 INCLINED PANEL



SERIES 2000 UPRIGHT CABINET RACKS

Here are electronic enclosures that do more than house equipment. The sheer square line of the Series 2000, its symmetrical styling is the result of experience and perception Bud designers have. All Series 2000 cabinet racks include welded frame and base, sides, top, and rear door.

Design Features

- Anodized aluminum extrusion top trim.
- "U" braces on sides of all welded 14 gauge steel frame for added strength and rigidity.
- Door, 20 gauge steel.
- Sides and top, 18 gauge.
- Front and rear panel mounting rails tapped 10-32 on E.I.A. universal spacing.
- Accommodate 19" panels.
- Caster brackets pierced for RC-7758 casters.
- One inch diameter knockout holes in base.
- Interiors are accessible from front and rear for easy installation of and maintenance of components.
- Readily removable rear door can be mounted right or left.
- Two pairs of fully adjustable mounting rails are included.
- Shipped completely assembled.

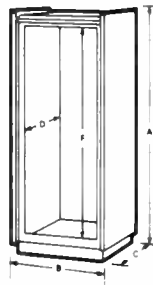
Finishes

Gray textured (GT) or royal blue textured (RB).

INCLINED PANEL CABINET RACKS

Series 2000 Inclined Panel Racks are similar to the upright models in style and construction and can be used in conjunction with them. The front is divided into upright and 20° inclined panel space. Two pairs of fully adjustable mounting rails are in the front upright and sloping panel area, and one pair in the rear.

SERIES 2000 UPRIGHT CABINET RACKS



SERIES 2000 UPRIGHT CABINET RACKS

Catalog No *	Catalog No *	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Panel Space (F)	Weight Lbs
E-2000	E-2016	30 1/4"	24 3/16"	23 3/8"	20 1/2"	21"	119
E-2001	E-2017	40 3/4"	24 3/16"	23 3/8"	20 1/2"	31 1/2"	141
E-2002	E-2018	44 1/4"	24 3/16"	23 3/8"	20 1/2"	35"	149
E-2003	E-2019	51 1/4"	24 3/16"	23 3/8"	20 1/2"	42"	168
E-2004	E-2020	61 3/4"	24 3/16"	23 3/8"	20 1/2"	52 1/2"	195
E-2005	E-2021	70 1/2"	24 3/16"	23 3/8"	20 1/2"	61 1/4"	216
E-2006	E-2022	79 1/4"	24 3/16"	23 3/8"	20 1/2"	70"	233
E-2007	E-2023	88"	24 3/16"	23 3/8"	20 1/2"	78 3/4"	260
E-2008	E-2024	30 1/4"	24 3/16"	27 3/8"	24"	21"	129
E-2009	E-2025	40 3/4"	24 3/16"	27 3/8"	24"	31 1/2"	154
E-2010	E-2026	44 1/4"	24 3/16"	27 3/8"	24"	35"	159
E-2011	E-2027	51 1/4"	24 3/16"	27 3/8"	24"	42"	179
E-2012	E-2028	61 3/4"	24 3/16"	27 3/8"	24"	52 1/2"	215
E-2013	E-2029	70 1/2"	24 3/16"	27 3/8"	24"	61 1/4"	234
E-2014	E-2030	79 1/4"	24 3/16"	27 3/8"	24"	70"	244
E-2015	E-2031	88"	24 3/16"	27 3/8"	24"	78 3/4"	268

* Supplied with plain sides and plain rear door
* Supplied with louvered sides and louvered rear door

SERIES 30-2000 (EXTRA DEEP) UPRIGHT CABINET RACKS

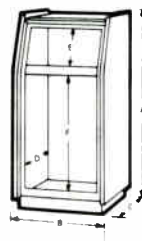
Catalog Number	Outside Height	Outside Width	Outside Depth	Clear Inside Depth	Panel Space	Wgt Lbs
E-30-2000	30 1/4"	24 3/16"	32 3/8"	29 1/4"	21"	150
E-30-2001	40 3/4"	24 3/16"	32 3/8"	29 1/4"	31 1/2"	175
E-30-2002	44 1/4"	24 3/16"	32 3/8"	29 1/4"	35"	180
E-30-2003	51 1/4"	24 3/16"	32 3/8"	29 1/4"	42"	217
E-30-2004	61 3/4"	24 3/16"	32 3/8"	29 1/4"	52 1/2"	248
E-30-2005	70 1/2"	24 3/16"	32 3/8"	29 1/4"	61 1/4"	259
E-30-2006	79 1/4"	24 3/16"	32 3/8"	29 1/4"	70"	303
E-30-2007	88"	24 3/16"	32 3/8"	29 1/4"	78 3/4"	307

SERIES 2000 FRONT DOORS FOR UPRIGHT CABINETS

Catalog No Plain	Catalog No Louvered	Height	Fits Upright Rack With Following Panel Spaces	Wgt Lbs
E-9000	E-9020	23 1/2"	21"	15
E-9001	E-9021	34"	31 1/2"	18
E-9002	E-9022	37 1/2"	35"	19
E-9003	E-9023	44 1/2"	42"	23
E-9004	E-9024	55"	52 1/2"	27
E-9005	E-9025	63 3/4"	61 1/4"	29
E-9006	E-9026	72 1/2"	70"	31
E-9007	E-9027	81 1/4"	78 3/4"	33

Rear door supplied with rack. For replacement rear door, use Series 60 doors

SERIES 2000 INCLINED PANEL CABINET RACKS



SERIES 2000 INCLINED PANEL CABINET RACKS

Catalog No *	Catalog No *	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Inclined Panel Space (E)	Vertical Panel Space (F)	Wgt Lbs
SE-2064	SE-2067	51 1/4"	24 3/16"	23 3/8"	20 1/2"	10 1/2"	29 3/4"	163
SE-2065	SE-2068	51 1/4"	24 3/16"	23 3/8"	20 1/2"	15 3/4"	24 1/2"	161
SE-2066	SE-2069	51 1/4"	24 3/16"	23 3/8"	20 1/2"	17 1/2"	22 3/4"	164

* Supplied with plain sides and plain rear door
* Supplied with louvered sides and louvered rear door

SERIES 30-2000 (EXTRA DEEP) INCLINED PANEL CABINET RACKS

Catalog No	Outside Height	Outside Width	Outside Depth	Clear Inside Depth	Inclined Panel Space	Vertical Panel Space	Wgt Lbs
S-30-2064	51 1/4"	24 3/16"	32 3/8"	29 1/4"	10 1/2"	29 3/4"	223
S-30-2065	51 1/4"	24 3/16"	32 3/8"	29 1/4"	15 3/4"	24 1/2"	223
S-30-2066	51 1/4"	24 3/16"	32 3/8"	29 1/4"	17 1/2"	22 3/4"	223

SERIES 2000 FRONT DOORS FOR INCLINED PANEL CABINET RACKS

Catalog Number Plain	Catalog Number Louvered	Height	Width	Fits Vertical Space of the Inclined Unit	Wgt Lbs
E-9008	E-9028	32 1/4"	21"	29 3/4"	11
E-9009	E-9029	27"	21"	24 1/2"	10 1/2"
E-9010	E-9030	25 1/4"	21"	22 3/4"	9

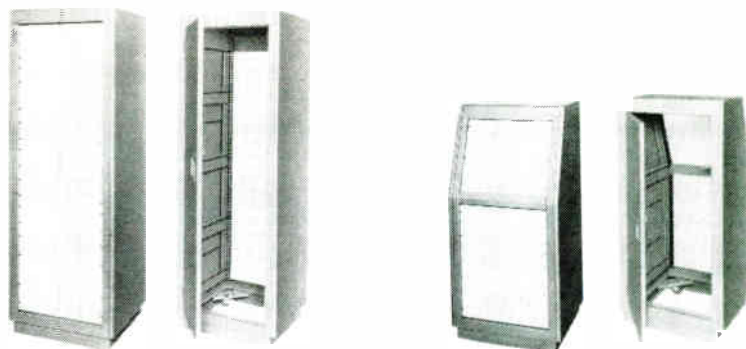
Rear door supplied with rack.

BUD INDUSTRIES, INC.

4605 E. 355th St.
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UPRIGHT CABINET RACKS

Available in either plain or louvered sides and rear door; solid top.



SERIES 60 UPRIGHT CABINET RACKS

These cabinet racks are proof of what Bud designers have striven for and achieved: Quality enclosures that enhance the function, appearance and value of your products. All Series 60 Cabinet Racks include welded frame, sides, top and rear door.

Design Features

- "U" braces on sides of all welded 14 gauge steel frame for durability.
- Door, 20 gauge steel.
- Sides and top, 18 gauge.
- Front and rear panel mounting rails tapped 10-32 on E.I.A. universal spacing.
- Accommodate 19" panels.
- Castor brackets pierced for RC-7758 casters.
- One inch knockout holes in base.
- Interiors are accessible from front and rear for easy installation and maintenance of components.
- One door furnished. May be used on front or rear; mounted to open left or right
- Two pairs of adjustable mounting rails are included.
- Shipped completely assembled.

Finishes

Gray textured (GT) or royal blue textured (RB).

INCLINED PANEL CABINET RACKS

Series 60 Inclined Panel Racks are similar to the upright models in style and construction and can be used in conjunction with them. The front is divided into upright and 20° inclined panel space. Two pairs of fully adjustable mounting rails are in the front upright and sloping panel area, and one pair in the rear.

SERIES 60 UPRIGHT CABINET RACKS



SIDES

Catalog No.		Height	Width	Space	Wgt Lbs
Plain	Louvered				
60-2560	60-2580	26 1/8"	22"	21"	12 1/2
60-2561	60-2581	37 1/8"	22"	31 1/2"	17 1/2
60-2562	60-2582	47 1/8"	22"	42"	21
60-2563	60-2583	58 1/8"	22"	52 1/2"	26 1/4
60-2564	60-2584	67 1/8"	22"	61 1/4"	34
60-2565	60-2585	75 1/8"	22"	70"	34
60-2566	60-2586	84 1/8"	22"	78 3/4"	38
60-2567	60-2587	26 1/8"	25 1/2"	21"	14 1/2
60-2568	60-2588	37 1/8"	25 1/2"	31 1/2"	20
60-2569	60-2589	47 1/8"	25 1/2"	42"	24
60-2570	60-2590	58 1/8"	25 1/2"	52 1/2"	29 1/2
60-2571	60-2591	67 1/8"	25 1/2"	61 1/4"	34 1/2
60-2572	60-2592	75 1/8"	25 1/2"	70"	39
60-2573	60-2593	84 1/8"	25 1/2"	78 3/4"	43 1/2

Sold in pairs only

UPRIGHT CABINET RACKS

Catalog No *	Catalog No *	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Panel Space (F)	Top Opening	Wgt Lbs
60-2300	60-2700	29 3/8"	24 1/8"	22"	20 1/2"	21"	18 1/8" x 17"	112
60-2301	60-2701	40 3/8"	24 1/8"	22"	20 1/2"	31 1/2"	18 1/8" x 17"	137
60-2302	60-2702	50 3/8"	24 1/8"	22"	20 1/2"	42"	18 1/8" x 17"	162
60-2303	60-2703	61 1/8"	24 1/8"	22"	20 1/2"	52 1/2"	18 1/8" x 17"	189
60-2304	60-2704	69 1/8"	24 1/8"	22"	20 1/2"	61 1/4"	18 1/8" x 17"	215
60-2305	60-2705	78 3/8"	24 1/8"	22"	20 1/2"	70"	18 1/8" x 17"	227
60-2306	60-2706	87 3/8"	24 1/8"	22"	20 1/2"	78 3/4"	18 1/8" x 17"	244
60-2307	60-2707	29 3/8"	24 1/8"	25 1/2"	24"	21"	18 1/8" x 20 1/2"	123
60-2308	60-2708	40 3/8"	24 1/8"	25 1/2"	24"	31 1/2"	18 1/8" x 20 1/2"	145
60-2309	60-2709	50 3/8"	24 1/8"	25 1/2"	24"	42"	18 1/8" x 20 1/2"	170
60-2310	60-2710	61 1/8"	24 1/8"	25 1/2"	24"	52 1/2"	18 1/8" x 20 1/2"	202
60-2311	60-2711	69 1/8"	24 1/8"	25 1/2"	24"	61 1/4"	18 1/8" x 20 1/2"	216
60-2312	60-2712	78 3/8"	24 1/8"	25 1/2"	24"	70"	18 1/8" x 20 1/2"	231
60-2313	60-2713	87 3/8"	24 1/8"	25 1/2"	24"	78 3/4"	18 1/8" x 20 1/2"	263

*Supplied with plain sides and plain rear door **Supplied with louvered sides and louvered rear door

SERIES 30 (EXTRA DEEP) UPRIGHT CABINET RACKS

Catalog No	Outside Height	Outside Width	Outside Depth	Clear Inside Depth	Panel Space	Top Opening	Wgt Lbs
30-2300	29 3/8"	24 1/8"	30 3/4"	29 1/4"	21"	18 1/8" x 25 3/4"	154
30-2301	40 3/8"	24 1/8"	30 3/4"	29 1/4"	31 1/2"	18 1/8" x 25 3/4"	174
30-2302	50 3/8"	24 1/8"	30 3/4"	29 1/4"	42"	18 1/8" x 25 3/4"	202
30-2303	61 1/8"	24 1/8"	30 3/4"	29 1/4"	52 1/2"	18 1/8" x 25 3/4"	225
30-2304	69 1/8"	24 1/8"	30 3/4"	29 1/4"	61 1/4"	18 1/8" x 25 3/4"	245
30-2305	78 3/8"	24 1/8"	30 3/4"	29 1/4"	70"	18 1/8" x 25 3/4"	268
30-2306	87 3/8"	24 1/8"	30 3/4"	29 1/4"	78 3/4"	18 1/8" x 25 3/4"	294

FRONT DOORS (Rear door supplied with racks)

Catalog No		Height	Width	Fits Upright Rack With This Panel Space	Wgt Lbs
Plain	Louvered				
60-2340	60-2540	21 1/8"	18 1/8"	21"	8
60-2341	60-2541	31 1/8"	18 1/8"	31 1/2"	11 1/2
60-2342	60-2542	42 1/8"	18 1/8"	42"	15 1/2
60-2343	60-2543	52 1/8"	18 1/8"	52 1/2"	19
60-2344	60-2544	61 1/8"	18 1/8"	61 1/4"	22 1/4
60-2345	60-2545	70 1/8"	18 1/8"	70"	25 1/2
60-2346	60-2546	79 1/8"	18 1/8"	78 3/4"	29

These doors can be used as front doors on Series 60 and Concord cabinet racks. These doors are the same as rear doors supplied on Series 60 Series 2000 and Concord doors. They may be mounted to open left or right.

INCLINED PANEL CABINET RACKS

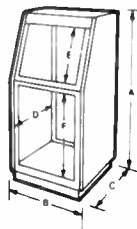
Catalog No *	Catalog No *	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Inclined Panel Space (E)	Vertical Panel Space (F)	Top Opening	Wgt Lbs
60-2330	60-2730	50 1/8"	24 1/8"	22"	20 1/2"	10 1/2"	29 3/8"	11 1/8" x 18 1/8"	155
60-2331	60-2731	50 1/8"	24 1/8"	22"	20 1/2"	15 3/4"	24 1/2"	10" x 18 1/8"	156
60-2332	60-2732	50 1/8"	24 1/8"	22"	20 1/2"	17 1/2"	22 1/2"	9 1/8" x 18 1/8"	154

*Supplied with plain sides and plain rear door **Supplied with louvered sides and louvered rear door

SERIES 30 (EXTRA DEEP) INCLINED PANEL CABINET RACKS

Catalog No	Outside Height	Outside Width	Outside Depth	Clear Inside Depth	Inclined Panel Space	Vertical Panel Space	Top Opening	Wgt Lbs
30-2330	50 1/8"	24 1/8"	30 3/4"	29 1/4"	10 1/2"	29 3/8"	20 3/8" x 18 1/8"	196
30-2331	50 1/8"	24 1/8"	30 3/4"	29 1/4"	15 3/4"	24 1/2"	18 3/4" x 18 1/8"	196
30-2332	50 1/8"	24 1/8"	30 3/4"	29 1/4"	17 1/2"	22 1/2"	18 3/8" x 18 1/8"	196

SERIES 60 INCLINED PANEL CABINET RACKS



SIDES

Catalog No		Height	Width	Fits Cabinet With Vertical Panel Space	Wgt Lbs
Plain	Louvered				
60-2574	60-2594	47 1/8"	22"	29 3/4"	11
60-2575	60-2595	47 1/8"	22"	24 1/2"	9 1/2
60-2576	60-2596	47 1/8"	22"	22 3/4"	9

Specify "L" for left side or "R" for right side, determine when facing front of rack

FRONT DOORS

Catalog No		Height	Width	Fits Cabinet With Vertical Panel Space	Wgt Lbs
Plain	Louvered				
60-2350	60-2550	30 1/8"	18 1/8"	29 3/4"	11
60-2351	60-2551	24 1/8"	18 1/8"	24 1/2"	9 1/2
60-2352	60-2552	23 1/8"	18 1/8"	22 3/4"	9

REAR DOOR (Fits all Inclined Panel Racks) (Supplied)

Catalog No		Height	Width	Wgt Lbs
Plain	Louvered			
60-2342	60-2542	42 1/8"	18 1/8"	15 1/4"

PERFORATED TOPS

Cat No	Width	Depth	Fits Inclined Panel Rack with This Top Opening	Wgt Lbs
60-2372	21 1/8"	11 1/8"	11 1/8" x 18 1/8"	3 1/2
60-2373	21 1/8"	10"	10" x 18 1/8"	3 1/2
60-2374	21 1/8"	9 1/8"	9 1/8" x 18 1/8"	3 1/4

Order Perforated tops, sides and doors to match color of cabinet

Prices and Specifications Subject to Change Without Notice.

VE-13

ADD-A-RACK SYSTEM FOR SERIES 60 AND SERIES 2000 CABINET RACKS

Used to combine two or more enclosures into one integral system.

Design Features: Assembly consists of a welded frame top, bottom and rear door. Aluminum extrusions are included for Series 2000.

Bonus Features: The advantage of using this system is economy. When developing a band of enclosures, costs can be dramatically reduced by using one complete unit and several Add-A-Rack assemblies to obtain the optimum width.

Finishes: Order the same color as the cabinet rack.

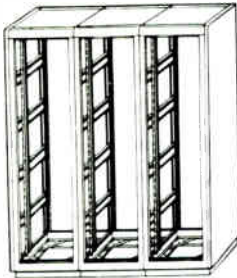
Add-A-Racks For Series 60 Upright Cabinet Racks

Inside Depth 20 1/2"			Inside Depth 24"			Inside Depth 29 1/4"		
Catalog No	Used To Add Same Size Unit To	Weight Lbs	Catalog No	Used To Add Same Size Unit To	Weight Lbs	Catalog No	Used To Add Same Size Unit To	Weight Lbs
60-2500	60-2300	92	60-2900	60-2700		30-2900	30-2300	133
60-2501	60-2301	113	60-2901	60-2701		30-2901	30-2301	155
60-2502	60-2302	115	60-2902	60-2702		30-2902	30-2302	182
60-2503	60-2303	145	60-2903	60-2703		30-2903	30-2303	207
60-2504	60-2305	148	60-2904	60-2704		30-2904	30-2304	230
60-2505	60-2305	152	60-2905	60-2705		30-2905	30-2305	230
60-2506	60-2306	158	60-2906	60-2706		30-2906	30-2306	269
60-2507	60-2307	120	60-2907	60-2707				
60-2508	60-2308	132	60-2908	60-2708				
60-2509	60-2309	138	60-2909	60-2709				
60-2510	60-2310	142	60-2910	60-2710				
60-2511	60-2311	164	60-2911	60-2711				
60-2512	60-2312	168	60-2912	60-2712				
60-2513	60-2313	172	60-2913	60-2713				

Add-A-Racks For Series 60 Sloping Panel Cabinets

Catalog No	Used To Add Same Size Unit To	Weight Lbs
60-2530	60-2330	119
60-2531	60-2331	119
60-2532	60-2332	125
60-2930	60-2730	119
60-2931	60-2731	119
60-2932	60-2732	125
30-2530	30-2330	163
30-2531	30-2331	163
30-2532	30-2332	163
30-2930	30-2730	163
30-2931	30-2731	163
30-2932	30-2732	163

ADD-A-RACK

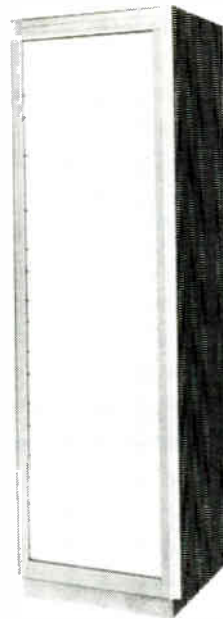


Add-A-Racks For Series 2000 Upright Cabinet Racks

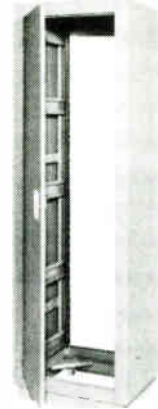
Inside Depth 20 1/2"			Inside Depth 24"			Inside Depth 29 1/4"		
Catalog No	Used To Add Same Size Unit To	Weight Lbs	Catalog No	Used To Add Same Size Unit To	Weight Lbs	Catalog No	Used To Add Same Size Unit To	Weight Lbs
AE-2032	E-2000	90	AE-2048	E-2016		AE-30-2032	E-30-2000	137
AE-2033	E-2001	110	AE-2049	E-2017		AE-30-2033	E-30-2001	160
AE-2034	E-2002	113	AE-2050	E-2018		AE-30-2034	E-30-2002	187
AE-2035	E-2003	115	AE-2051	E-2019		AE-30-2035	E-30-2003	213
AE-2036	E-2004	145	AE-2052	E-2020		AE-30-2036	E-30-2004	238
AE-2037	E-2005	148	AE-2053	E-2021		AE-30-2037	E-30-2005	254
AE-2038	E-2006	152	AE-2054	E-2022		AE-30-2038	E-30-2006	275
AE-2039	E-2007	158	AE-2055	E-2023		AE-30-2039	E-30-2007	296
AE-2040	E-2008	120	AE-2056	E-2024				
AE-2041	E-2009	130	AE-2057	E-2025				
AE-2024	E-2010	135	AE-2058	E-2026				
AE-2043	E-2011	138	AE-2059	E-2027				
AE-2044	E-2012	142	AE-2060	E-2028				
AE-2045	E-2013	164	AE-2061	E-2029				
AE-2046	E-2014	168	AE-2062	E-2030				
AE-2047	E-2015	173	AE-2063	E-2031				

Add-A-Racks For Series 2000 Sloping Panel Cabinets

Catalog No	Used To Add Same Size Unit To	Weight Lbs
ASE-2084	SE-2064	115
ASE-2085	SE-2065	115
ASE-2086	SE-2066	120
ASE-2087	SE-2067	115
ASE-2088	SE-2068	115
ASE-2089	SE-2069	120
AS-30-2084	S-30-2064	190
AS-30-2085	S-30-2065	190
AS-30-2086	S-30-2066	190
ASE-30-2087	S-30-2067	190
ASE-30-2088	S-30-2068	190
ASE-30-2089	S-30-2069	190



CONCORDE SERIES



CONCORDE SERIES UPRIGHT CABINET RACKS

Another choice of cabinet racks from Bud with a personality all their own. One that will add a unique but highly sophisticated appearance to your product. One that appeals to a marketplace looking for new and always better ideas. Concorde Cabinet Racks include welded frame, top, sides and rear door.

Design Features

- "U" braces on 14 gauge steel frame provide assured strength and rigidity.
- Door, 20 gauge steel.
- Sides and top, 18 gauge.
- Front and rear adjustable panel mounting rails, 12 gauge, tapped 10-32 on E.I.A. universal spacing.
- Accommodate 19" panels.
- Caster brackets pierced for RC-7758 casters.
- One inch knockout holes in base.
- Clear anodized aluminum extrusion frames the cabinet. Name plate area has subtle woodgrain inset
- Interiors are accessible from front and rear for easy installation and maintenance of components.
- Shipped completely assembled.

Finishes

Gray textured (GT) or royal blue textured (RB).

Accessories

Concorde Cabinet Racks are available with 24" panel space

UPRIGHT CABINET RACKS

Catalog No	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Panel Space (F)	Top Opening	Wgt Lbs
CR-16200	29 1/8"	24 1/4"	22 1/4"	20 1/2"	21"	18 7/16" x 17"	114
CR-16201	40 1/8"	24 1/16"	22 1/4"	20 1/2"	31 1/2"	18 7/16" x 17"	135
CR-16202	50 1/8"	24 1/16"	22 1/4"	20 1/2"	42"	18 7/16" x 17"	164
CR-16203	61 1/8"	24 1/16"	22 1/4"	20 1/2"	52 1/2"	18 7/16" x 17"	191
CR-16204	69 1/8"	24 1/16"	22 1/4"	20 1/2"	61 1/4"	18 7/16" x 17"	212
CR-16205	78 1/8"	24 1/16"	22 1/4"	20 1/2"	70"	18 7/16" x 17"	229
CR-16206	87 1/8"	24 1/16"	22 1/4"	20 1/2"	78 3/4"	18 7/16" x 17"	246

BUD INDUSTRIES, INC.

4605 E. 355th St.
Willoughby, OH 44094
(216) 946-3200

CABINET RACKS/ PORTABLE CABINETS

CLASSIC II CABINET RACKS

Refined styling, design simplicity. Rigid plastic extruded front trim frames the front - a few reasons why the Classic II sets your product apart from the conventional.

Classic II Cabinet Racks include welded frame, top, bottom, sides, rear door with flush mounted handle and cam lock.

Design Features

- Light weight, yet support heavier than average loads, since "U" braces on frame provide extra strength and support
- Rear door 20 gauge steel. Front door available. Can be mounted to open left or right.
- Side panels - 18 gauge steel
- Top and bottom - 16 gauge steel
- Adjustable front and rear mounting rails 12 gauge, tapped 10-32 on E.I.A. universal spacing
- 19" wide panels fit openings
- Caster brackets pierced for RC-7756 casters

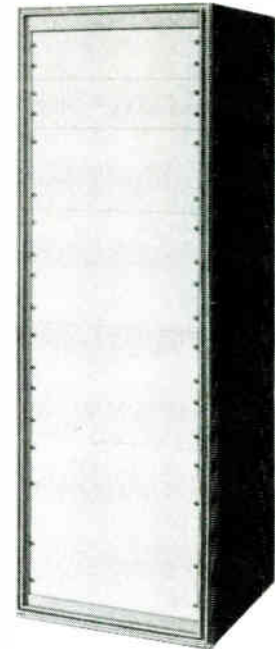
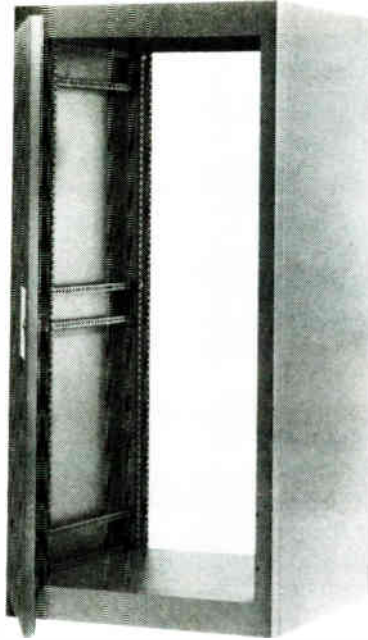
Finishes

Gray textured (GT) or royal blue textured (RB).

Accessories

Classic II Cabinet Racks are available with 24" panel space.

U.S. Patent Number 224229
Canadian Patent Number 34884



CLASSIC II UPRIGHT CABINET RACKS

Catalog No.	Height (A)	Width (B)	Depth (C)	Panel Space (D)	Wgt. Lbs.
AGR-9301	36 ^{13/16} "	22"	22"	31 1/2"	119
AGR-9302	47 ^{5/16} "	22"	22"	42"	138
AGR-9303	57 ^{13/16} "	22"	22"	52 1/2"	154
AGR-9304	66 ^{9/16} "	22"	22"	61 1/4"	172
AGR-9305	75 ^{5/16} "	22"	22"	70"	182
AGR-9306	82 ^{5/16} "	22"	22"	77"	196

(clear inside depth, 21 1/4")

FRONT DOORS

(Rear doors included with rack.)

Catalog No.	Fits Rack	Wgt. Lbs.
AGD-931	AGR-9301	16
AGD-932	AGR-9302	20
AGD-933	AGR-9303	23
AGD-934	AGR-9304	26
AGD-935	AGR-9305	28
AGD-936	AGR-9306	31

(Order door to match color of rack.)

CLASSIC II PORTABLE CABINETS

Whether used independently or as a companion to the Classic II cabinet rack, the design of this distinctive cabinet harmonizes perfectly with the most sophisticated systems. While it's portable, it is equally effective for permanent installations.

Design Features

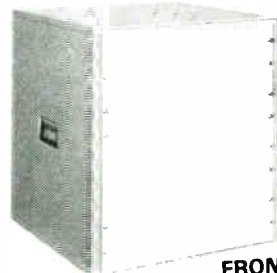
- Top, bottom and side panels .060 aluminum. Frame, 6063T aluminum extrusions
- Accommodate 19" panels
- Doors and panels not included but are available
- 1/8" aluminum alloy doors attach to mounting rails
- Black thermoplastic flush-type latch

Bonus Features

- Recessed brushed chrome handles are attached to two steel flanges extending the length of the cabinet. This added support assures carrying safety.
- Two 16 gauge steel vertically adjustable chassis supports
- Shipped completely assembled

Finishes

Gray textured (GT) or royal blue textured (RB).



FRONT

Top, bottom, side panels .060 aluminum
Frame 6063-T5 aluminum extrusions
Cabinets accommodate standard 19" panels
Recessed handles swing out for portability
Two 16 gauge vertically adjustable chassis supports
Front and rear mounting rails tapped 10-32 W E spacing
Clear inside depth, panel to panel 20 9/16" overall depth, 21 7/16"



CLASSIC II CABINETS

Catalog No.	Height (A)	Panel Space (B)	Wgt. Lbs.
AGC-9267	7 1/8"	5 1/4"	28
AGC-9268	8 13/16"	7"	30
AGC-9269	10 1/8"	8 3/4"	32
AGC-9270	12 1/8"	10 1/2"	33
AGC-9271	14 1/16"	12 1/4"	34
AGC-9272	15 3/16"	14"	35
AGC-9273	17 1/8"	15 3/4"	36
AGC-9274	19 1/8"	17 1/2"	37
AGC-9275	21 1/8"	19 1/4"	39
AGC-9276	22 13/16"	21"	40
AGC-9277	24 3/8"	22 3/4"	41
AGC-9278	26 3/8"	24 1/2"	42
AGC-9279	28 7/16"	26 1/4"	43
AGC-9280	29 1/16"	28"	45

(Clear inside depth, 20 9/16" Overall depth, 21 7/16")

CLASSIC II CABINET DOORS

(Fit front or rear.) (No doors supplied)

Catalog No.	Height	Fits Cabinet	Wgt. Lbs.
AGD-367	5 1/4"	AGC 9267	1 3/4
AGD-368	7"	AGC 9268	2
AGD-369	8 3/4"	AGC 9269	2 3/4
AGD-370	10 1/2"	AGC 9270	3
AGD-371	12 1/4"	AGC 9271	3 1/2
AGD-372	14"	AGC 9272	4
AGD-373	15 3/4"	AGC 9273	4 3/4
AGD-374	17 1/2"	AGC 9274	5
AGD-375	19 1/4"	AGC 9275	5 1/2
AGD-376	21"	AGC 9276	6 1/4
AGD-377	22 3/4"	AGC 9277	6 3/4
AGD-378	24 1/2"	AGC 9278	7 1/4
AGD-379	26 1/4"	AGC 9279	7 1/2
AGD-380	28"	AGC 9280	8

Doors available in white textured (WH) only

Prices and Specifications Subject to Change Without Notice.

VE-15

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4605 E. 365th St.
Willoughby, OH 44094
(216) 946-3200

RACKS



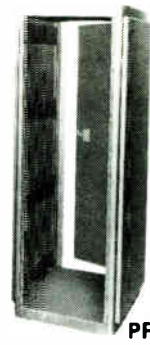
VALURACK



AVS500



DELUXE RELAY RACKS



PRESTIGE RELAY RACKS

VALURACK 30" DEEP VALUE PRICED

This cabinet rack is another of our Designer Series available for off-the-shelf delivery. It offers the distinctive styling that enhances the value of its contents. The front is attractively framed by rigid vinyl trim with black inserts and a name plate.

Design Features

Entire interior is accessible from front to rear for installing or maintaining components. One pair of horizontally adjustable mounting rails, tapped 10-32 on E.I.A. universal spacing attach to horizontal rail supports. The 20 gauge door has cam lock and flush handle, 18 gauge sides and 16 gauge top and bottom. Mounting brackets in base drilled to accommodate Bud RC-7758 casters or RL-7768 levelers.

Bonus Feature

Shipped unassembled in two cartons. Quick, easy, assembly. No special tools required. Hardware included. NSTA approved packaging.

Finish

Royal Blue Textured (RB).

VALURACK CATALOG NO.	RAIL PART NO.
KDR-2852	9451
KDR-2861	9452
KDR-2870	9453
KDR-2877	9306-PMR

Note: One pair of mounting rails is provided and should meet most of your requirements. To order additional pairs of mounting rails, refer to adjacent chart.

Catalog No.	PH Panel Height	A Outside Height	B Outside Width	C Outside Depth	D Clear Inside Depth	E Clear Inside Width	Est Weight (lbs)
KDR-2852	52 1/2"	58 3/16"	22"	32 3/8"	29 1/4"	17 13/16"	155
KDR-2861	61 1/4"	66 15/16"	22"	32 3/8"	29 1/4"	17 15/16"	174
KDR-2870	70"	75 11/16"	22"	32 3/8"	29 1/4"	17 15/16"	193
KDR-2877	77"	82 11/16"	22"	32 3/8"	29 1/4"	17 15/16"	208

AVS500 VTR SYSTEM CABINET

This sturdy, all welded, compact, mobile unit provides a convenient VTR center for a range of AV applications and a housing for electronic devices.

Design Features: Top shelf of upper section houses a monitor or display. Clear dimensions of this are 18" high, 26" wide, 22" deep. Lower shelf designed for tape deck or disc player. Overall 65 1/2" x 30" x 24".

Lower section contains two shelves for cassette storage or other material. Top shelf slides out. Area above each shelf is 12". All steel construction.

Bonus Features: Front doors bifold to provide a 270° opening for maximum view when V.T.R. system is operating. Flush mounted cam locks on all doors assure tamperproof storage and maximum security. Four 2" casters are included.

Delivered assembled: Weight 255 lbs.

Finish: Black textured.

RELAY RACKS DELUXE RELAY RACKS

Versatile, economical enclosures house a wide range of electronic equipment and control system.

Design Features: Well-ventilated racks take 19" panels. Rear door has two black thermoplastic catches. If casters are required, specify RC-7756. Top, bottom, sides and rear door, 16 gauge steel. **Shipped knocked down.**

Bonus Features: Contoured front vertical members include 7/64" panel mounting supports drilled and tapped 10-32 on E.I.A. universal spacing.

Finishes: Royal blue textured (RB) and Luster Gray (LG).

DELUXE RELAY RACKS

Catalog No.	Panel Space	Height	Width	Depth	Weight
CR-1774	36 3/4" x 19"	42 1/16"	22"	17 7/8"	78 lbs.
CR-1771	42" x 19"	47 5/16"	22"	17 7/8"	85 lbs.
CR-1772	61 1/4" x 19"	66 9/16"	22"	17 7/8"	111 lbs.
CR-1780	70" x 19"	75 5/16"	22"	17 7/8"	121 lbs.
CR-1773	77" x 19"	82 5/16"	22"	17 7/8"	130 lbs.
CR-2074	36 3/4" x 19"	42 1/16"	22"	22 1/8"	91 lbs.
CR-2071	42" x 19"	47 5/16"	22"	22 1/8"	101 lbs.
CR-2072	61 1/4" x 19"	66 9/16"	22"	22 1/8"	130 lbs.
CR-2075	70" x 19"	75 5/16"	22"	22 1/8"	142 lbs.
CR-2073	77" x 19"	82 5/16"	22"	22 1/8"	151 lbs.

PRESTIGE RELAY RACKS

Design Features: Units consist of framework, top, bottom, two ball-covered sides and ball-cornered door. Standard 19" panels installed on any side of framework. Top, bottom, 16 gauge. Door and sides 18 gauge steel. Take RC-7756 casters. **Shipped knocked down.**

Bonus Features: Easy to assemble. Front and rear panel mounting rails are tapped 10-32 on E.I.A. universal spacing. Front rails only are fully adjustable. Flush mounted handle and cam lock.

Finish: Luster Gray (LG).

Will accommodate standard 19" panels

PRESTIGE RELAY RACKS

Catalog No.	Panel Space	Height	Overall Weight
CR-2280	61 1/4"	66 9/16"	147 lbs.
CR-2281	66 1/2"	71 13/16"	153 lbs.
CR-2282	77"	82 5/16"	170 lbs.

Inside clearance 21 1/2" x 21 7/8"
Overall depth with door 23 1/8"
Overall width without side panels 22"
Overall width with side panels 24 1/8"

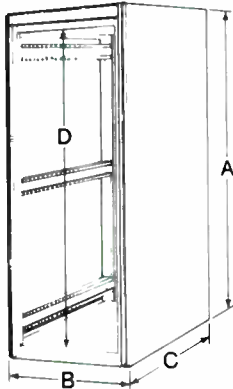
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Willoughby, OH 44094
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SHIELD-A-RACK UPRIGHT CABINET RACKS

Designed to meet FCC emission control requirements. Provides optimum flexibility of component design. Shield-A-Rack offers contemporary styling and rugged construction.

Design Features

- Decorative rigid vinyl trim with woodgrain inserts.
- Doors have locking handles for greater security.
- Two pairs of 12 gauge adjustable mounting rails tapped 10-32 on EIA universal spacing.
- Frame - 16 gauge steel; doors - 18 gauge. 19" panels, fit front and rear openings.
- Shipped completely assembled.

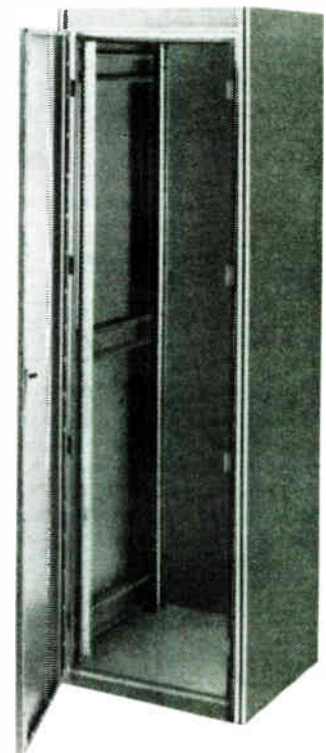
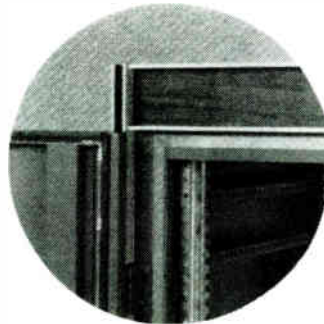
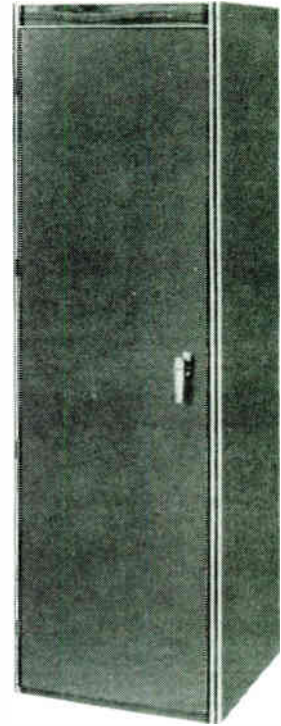
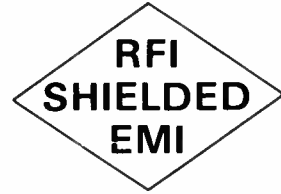


Bonus Features

- Most effective shielding method assures an average EMI/RFI shielding of 55 dB, up to a maximum of over 70 dB, through a frequency range from 30 to 1,000 MHz.
- Doors have wire mesh gasketing to provide best shielding. Gasket is attached with clips for easier repair or replacement.
- Heavy duty hinges and multipoint latching mechanisms on door allow uniform pressure on door gasketing for greater shielding effectiveness.

Finishes

Royal blue textured (RB) and Gray textured (GT).



CATALOG NO.	HEIGHT (A)	WIDTH (B)	DEPTH (C)	PANEL SPACE (D)	WEIGHT LBS.
SAR-16301	37 ¹⁵ / ₁₆ "	24"	22"	31 ¹ / ₂ "	156
SAR-16302	48 ⁷ / ₁₆ "	24"	22"	42"	184
SAR-16303	58 ¹⁵ / ₁₆ "	24"	22"	52 ¹ / ₂ "	209
SAR-16304	76 ¹¹ / ₁₆ "	24"	22"	61 ¹ / ₄ "	228
SAR-16305	76 ⁷ / ₁₆ "	24"	22"	70"	244
SAR-16306	83 ⁷ / ₁₆ "	24"	22"	77"	257

BUD INDUSTRIES, INC.

4605 E. 355th St.
Willoughby, OH 44094
(216) 946-3200

RACKS

OPEN RELAY RACKS

Ideal for installations where easy access to components is a top priority. Each built for years of solid, trouble-free service, as well as obvious ease of service where frequent attention is desired (i.e. telephone switching systems, etc.).

RR-1263 SERIES

Design Features: Exceptionally strong structure made up of chassis-type base and supporting angles. Uprights, $\frac{3}{4}$ " steel channels, 3" deep; top plate, $1\frac{1}{8}$ " x $3\frac{1}{8}$ ". Rails tapped 10-32 on E.I.A. universal spacing. Base is $19\frac{3}{4}$ " x 22" and drilled for RC-7756 casters. Shipped knocked down.

Finish: Luster Gray (LG) and Black Textured (BT).

Catalog No.	Panel Space	Height	Weight
RR-1263	$31\frac{1}{2}$ " x 19"	$35\frac{5}{8}$ "	36 lbs.
RR-1363	$36\frac{3}{4}$ " x 19"	$40\frac{7}{8}$ "	37 lbs.
RR-1264	$66\frac{1}{2}$ " x 19"	$70\frac{5}{8}$ "	46 lbs.
RR-1364	$71\frac{3}{4}$ " x 19"	$75\frac{7}{8}$ "	47 lbs.
RR-1366	77" x 19"	$81\frac{1}{8}$ "	49 lbs.

RR-1265 TYPE

Design Features: Heavy-duty rack usually bolted to floor. Base, two $\frac{1}{4}$ " steel angles, $3\frac{1}{2}$ " x $4\frac{7}{8}$ " x $20\frac{3}{8}$ ", cross bars, $\frac{1}{8}$ " x $2\frac{3}{32}$ " x $1\frac{9}{16}$ " steel angles. (Uprights, 3 " x $1\frac{9}{32}$ "). Panel mounting holes drilled and tapped 12-24. Base is $20\frac{3}{8}$ " x $12\frac{3}{4}$ ". Shipped knocked down.

Finish: Black Textured (BT).

Catalog No.	Panel Space	Height	Weight
RR-1265	$66\frac{1}{2}$ " x 19"	$72\frac{1}{4}$ "	64 lbs.

RR-1367 SERIES

Design Features: Extra-sturdy racks made of 14 gauge steel. Eight-inch deep welded "U" member and triangular bracket hold uprights to base (12 GA.). Panel mounting rails tapped 10-32 on E.I.A. universal spacing. Chassis type base, $20\frac{7}{8}$ " x 26", drilled for RC-7756 casters. Racks may be bolted together in Add-A-Rack fashion. Shipped knocked down.

Finish: Luster Gray (LG) and Black Textured (BT).

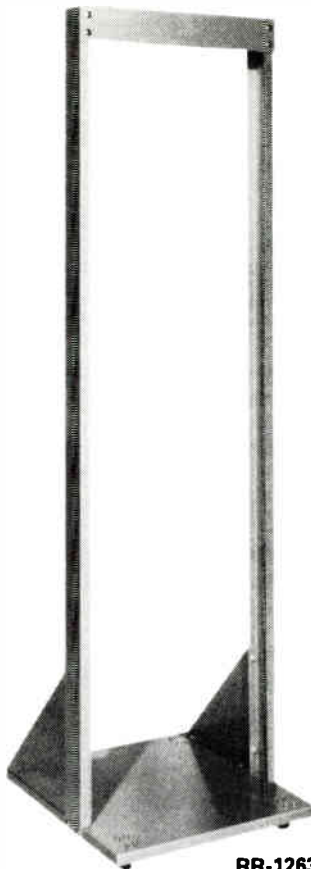
Catalog No.	Panel Space	Height	Base Width	Weight
RR-1367	$61\frac{1}{4}$ " x 19"	$64\frac{5}{8}$ "	$20\frac{7}{8}$ "	74 lbs.
RR-1368	70" x 19"	$73\frac{3}{8}$ "	$20\frac{7}{8}$ "	77 lbs.
RR-1369	77" x 19"	$80\frac{3}{8}$ "	$20\frac{7}{8}$ "	81 lbs.

TABLE TOP RELAY RACK

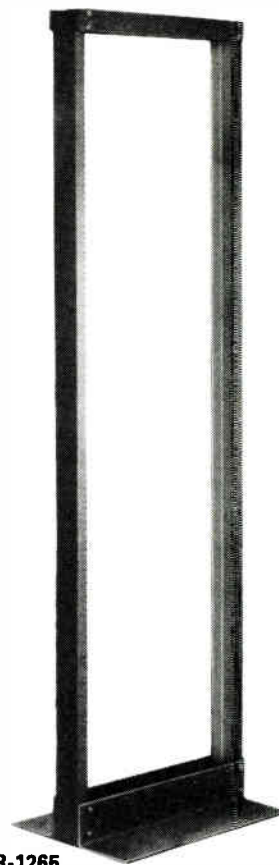
Design Features: Chassis-type base holds heavy components for table mounting applications. Supporting angles provide strength, rigidity. Panel mounting rails tapped 10-32 on E.I.A. universal spacing. Standard 19" panel fits flush with front. Base, $20\frac{3}{8}$ " x 12". Shipped knocked down.

Finish: Luster Gray (LG) and Black Textured (BT).

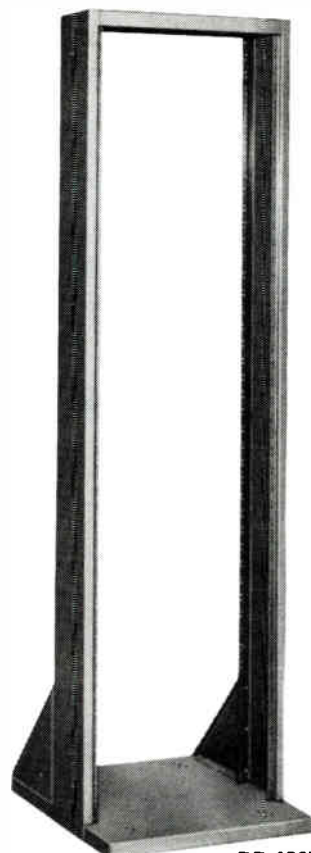
Catalog No.	Panel Space	Height	Weight
RR-1248	21"	24"	$14\frac{1}{4}$ lbs.
RR-1249	28"	31"	$16\frac{3}{4}$ lbs.



RR-1263



RR-1265



RR-1367

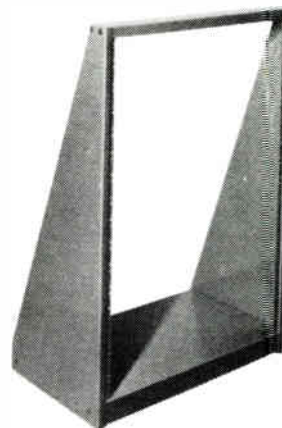


Table Top

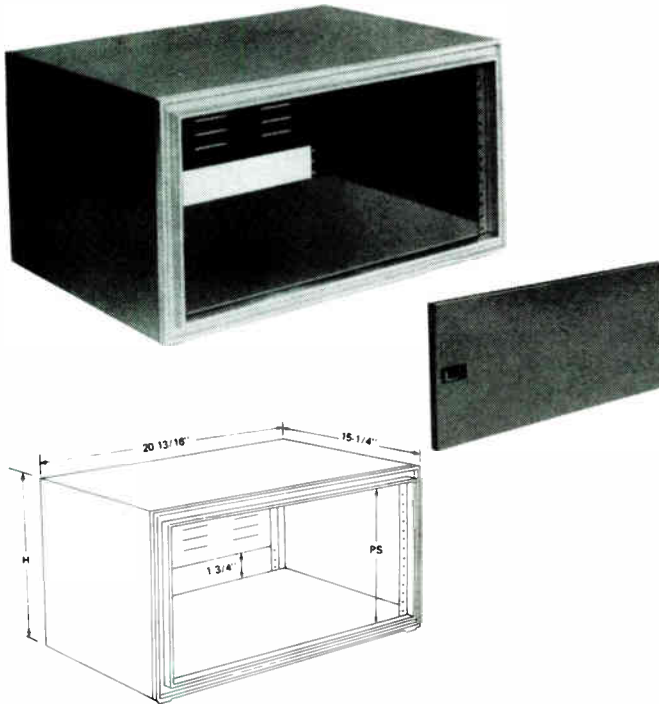
THE STYLIST HEAVY-LOAD-BEARING CABINETS

Decorative rigid vinyl trim with woodgrain insert frames the front of this cleanly designed cabinet. Square corners enhance the unit's contemporary styling and, in turn, enhance the appearance and marketability of your product.

Design Features: 16 gauge steel. Rear fitted with louvered panel; 1 3/4"-high opening for cable access. Front and rear openings accept 19" panels or Stylist doors. Self-adhesive feet furnished.

Bonus Features: Full-width box flanges at top and bottom eliminate tilt and sway even when unit is loaded to its full 500-pound capacity. Cold-rolled steel structure is self supporting, no internal framework. Bustle-type door allows placement of panel behind door for meters, knobs, etc.

Finishes: Royal blue textured (RB) or gray textured (GT).



THE STYLIST

Catalog No.	Overall Height	Panel Space	Wgt. Lbs.
S-1639	7 1/16"	5 1/4"	23
S-1640	8 13/16"	7"	24
S-1641	10 9/16"	8 3/4"	26
S-1642	12 5/16"	10 1/2"	28
S-1643	14 1/16"	12 1/4"	30
S-1644	15 13/16"	14"	32
S-1645	17 9/16"	15 3/8"	34

(Overall width, 20 13/16"; overall depth, 15 1/4"; clear inside depth, 14 3/16")

DOORS

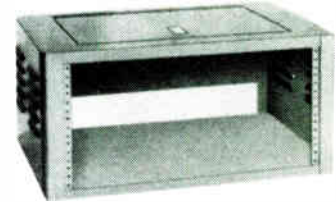
Catalog No.	Height	Fits Wgt. Lbs.	Cabinet
SD-539	5 1/4"	3 1/2"	S-1639
SD-540	7"	4 3/4"	S-1640
SD-541	8 3/4"	5 1/2"	S-1641
SD-542	10 1/2"	6 1/4"	S-1642
SD-543	12 1/4"	7"	S-1643
SD-544	14"	7 3/4"	S-1644
SD-545	15 3/4"	8 1/2"	S-1645

Order door to match color of cabinet.

CABINET RACKS

DELUXE

Design Features: All-welded 16 gauge steel construction. Front uprights are contoured. Ten sizes. All models have hinged top with sliding flush latch. Top cover clearance, 10 21/32" x 15 1/2". 19" wide panel space. Mounting rails tapped 10-32 on E.I.A. universal spacing. Finish: Luster Gray (LG).



DELUXE CABINET RACKS

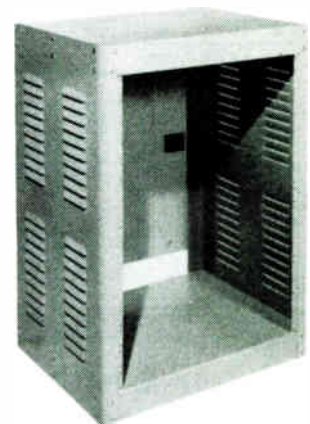
Catalog No.	Overall Height	Panel Space	Wgt. Lbs.
CR-1726	8 13/16"	7"	23
CR-1741	10 9/16"	8 3/4"	25
CR-1740	12 5/16"	10 1/2"	27
CR-1742	14 1/16"	12 1/4"	28
CR-1739	15 13/16"	14"	30
CR-1743*	19 1/8"	17 1/2"	34
CR-1727*	22 13/16"	21"	38
CR-1744*	28 1/8"	26 1/4"	42
CR-1728*	33 1/8"	31 1/2"	47
CR-1745*	36 13/16"	35"	50

Clear Inside Depth, 14 3/16". *These sizes have rear doors.

HEAVY-DUTY

Design Features: Solidly-built, all-steel. Panel mounting rails are part of sides for easier assembly. Mounting rails tapped 10-32 on E.I.A. universal spacing. Hinged rear door has flush catch. Take 19" panels. Racks may be joined, utilizing Bud's Add-A-Rack method. Shipped knocked down.

Finish: Luster Gray (LG).



HEAVY-DUTY CABINET RACKS

Catalog No.	Overall Height	Panel Space	Wgt. Lbs.
CR-1736	24 1/2"	19 1/4"	49
CR-1737	31 1/2"	26 1/4"	57
CR-1738	40 1/4"	35"	69

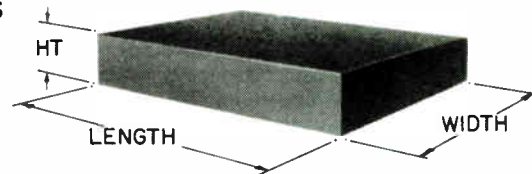
Clear inside depth, 16 1/16".

ALUMINUM CHASSIS

From Bud, the widest selection of aluminum chassis in the industry: 63 sizes. Each is welded at stress points for assured, maximum strength and rigidity. Sides folded in at bottom for additional support. Bottom plate easily attached. Natural finish.

CHASSIS BOTTOM PLATES

Fits all chassis sizes. Used to protect wiring or components, or as dust covers on underside of chassis.

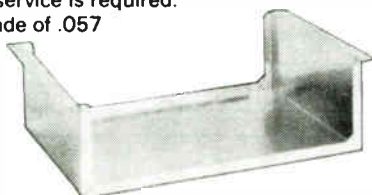


ALUMINUM CHASSIS

Catalog No	Width	Length	Height	Gauge	Weight
AC-1401	2½"	4½"	1"	.040	⅛ lb.
AC-1402	3½"	4½"	1"	.040	⅛ lb.
AC-1403	3½"	5½"	1"	.040	⅛ lb.
AC-1404	4"	5"	2"	.040	¼ lb.
AC-1405	4"	6"	1½"	.040	¼ lb.
AC-430	4"	6"	3"	.040	⅓ lb.
AC-431	4"	6"	2"	.040	¼ lb.
AC-1406	4"	8"	2"	.040	¼ lb.
AC-432	4"	17"	3"	.050	1 lb.
AC-1407	4½"	8"	1½"	.040	¼ lb.
AC-402	5"	7"	2"	.040	⅓ lb.
AC-429	5"	7"	3"	.040	½ lb.
AC-1408	5"	9"	1½"	.040	⅓ lb.
AC-1409	5"	9½"	1½"	.040	⅓ lb.
AC-403	5"	9½"	2"	.040	½ lb.
AC-401	5"	9½"	2½"	.040	½ lb.
AC-421	5"	9½"	3"	.040	⅝ lb.
AC-404	5"	10"	3"	.040	⅝ lb.
AC-422	5"	13"	3"	.040	¾ lb.
AC-1410	5"	13½"	2½"	.040	¾ lb.
AC-1411	5½"	5½"	1"	.040	⅓ lb.
AC-1412	5½"	9½"	1½"	.040	⅓ lb.
AC-1413	6"	8"	2"	.040	⅓ lb.
AC-1414	6"	14"	3"	.050	1⅙ lbs.
AC-433	6"	17"	3"	.050	1¼ lbs.
AC-405	7"	7"	2"	.040	½ lb.
AC-406	7"	9"	2"	.040	½ lb.
AC-407	7"	11"	2"	.040	⅝ lb.
AC-408	7"	12"	3"	.040	⅞ lb.
AC-409	7"	13"	2"	.040	¾ lb.
AC-1415	7"	15"	2"	.050	1 lb.
AC-411	7"	15"	3"	.050	1¼ lbs.

ALUMINUM PANEL CHASSIS

Fasten to mounting rail in racks. Can be used as a vertical chassis where depth is limited or where front service is required. Panel depth 5 ⅜". Made of .057 aluminum alloy. Natural finish.



PANEL CHASSIS

Catalog No	Height	Weight
CB-1370	1¾"	¾ lb.
CB-1371	3½"	1¼ lbs.
CB-1372	5¼"	1½ lbs.
CB-1373	7"	2 lbs.
CB-1374	8¾"	2¼ lbs.
CB-1375	10½"	2¾ lbs.
CB-1376	12¼"	3 lbs.
CB-1377	14"	3¼ lbs.

CHASSIS BOTTOM PLATES

Aluminum Natural Finish Catalog No	Fits Chassis Width	Fits Chassis Length	Wgt in Ozs
BPA-1501	2½"	4½"	1
BPA-1502	3½"	4½"	1
BPA-1503	3½"	5½"	2
BPA-1504	4"	5"	2
BPA-1505	4"	6"	2
BPA-1506	4"	8"	2
BPA-1532	4"	17"	4
BPA-1507	4½"	8"	3
BPA-1589	5"	7"	2
BPA-1508	5"	9"	3
BPA-1590	5"	9½"	2
BPA-1591	5"	10"	4
BPA-1509	5"	13"	4
BPA-1510	5"	13½"	4
BPA-1511	5½"	5½"	2
BPA-1512	5½"	9½"	3
BPA-1513	6"	8"	3
BPA-1514	6"	14"	5
BPA-1515	6"	17"	6
BPA-1592	7"	7"	3
BPA-1593	7"	9"	4
BPA-1594	7"	11"	4
BPA-1595	7"	12"	5
BPA-1596	7"	13"	8
BPA-1516	7"	15"	8
BPA-1517	7"	17"	8
BPA-1518	8"	10"	4
BPA-1519	8"	12"	6
BPA-1520	8"	17"	8
BPA-1521	8½"	15"	8
BPA-1522	9"	15"	8
BPA-1523	10"	12"	8
BPA-1524	10"	14"	8
BPA-1597	10"	17"	10
BPA-1525	10"	23"	14
BPA-1526	11"	17"	12
BPA-1527	12"	12"	10
BPA-1528	12"	17"	12
BPA-1598	13"	17"	14
BPA-1529	14"	17"	15
BPA-1530	15"	17"	16
BPA-1531	17"	17"	17

BUD INDUSTRIES, INC.

4605 E. 355th St.
Willoughby, OH 44094
(216) 946-3200

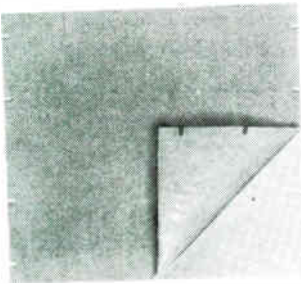
ACCESSORIES

STANDARD PANELS

For All Cabinets, Cabinet Racks, Relay Racks
And Small Enclosures, Where Applicable.

"SURFACE SHIELD" PANELS

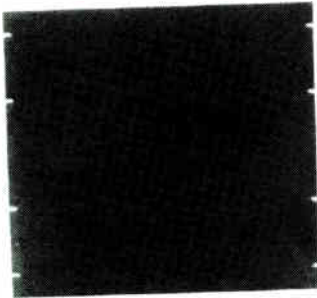
Mill finish aluminum alloy panels. White, pressure-sensitive paper on one side protects and provides surface for laying out drilling or punching position. Available in 1/8" and 3/16" thickness; 19" width.



SFA-1831-1842
SFA-3161-3172

STEEL, STANDARD ALUMINUM AND HARD ALUMINUM PANELS

Available in 11 gauge steel; 1/8" and 3/16" aluminum alloy. Steel, standard and hard aluminum (2024-T3) panels come in 19" widths. Standard 1/8" aluminum panels also available in 24" width.



PA and PS SERIES

Finishes:
White textured (WH), and Luster Gray (LG).

11 GA. STEEL		
Catalog No.	Height	Weight
PS-1250	1 3/4"	1 1/4 lbs.
PS-1251	3 1/2"	2 1/4 lbs.
PS-1252	5 1/4"	3 1/4 lbs.
PS-1253	7"	4 1/2 lbs.
PS-1254	8 3/4"	6 lbs.
PS-1255	10 1/2"	7 lbs.
PS-1256	12 1/4"	8 1/4 lbs.
PS-1257	14"	9 1/2 lbs.
PS-1258	15 3/4"	10 3/4 lbs.
PS-1259	17 1/2"	11 3/4 lbs.
PS-1260	19 1/4"	13 lbs.
PS-1261	21"	14 1/4 lbs.

SURFACE SHIELD 19-INCH ALUMINUM PANELS (3003-H14)

1/8" PANELS

Catalog No.	Height	Weight
SFA-1831	1 3/4"	3/8 lb.
SFA-1832	3 1/2"	3/4 lb.
SFA-1833	5 1/4"	1 1/8 lbs.
SFA-1834	7"	1 3/4 lbs.
SFA-1835	8 3/4"	2 lbs.
SFA-1836	10 1/2"	2 1/2 lbs.
SFA-1837	12 1/4"	2 3/4 lbs.
SFA-1838	14"	3 1/4 lbs.
SFA-1839	15 3/4"	3 5/8 lbs.
SFA-1840	17 1/2"	4 lbs.
SFA-1841	19 1/4"	4 1/4 lbs.
SFA-1842	21"	5 lbs.

3/16" PANELS

Catalog No.	Height	Weight
SFA-3161	1 3/4"	3/4 lb.
SFA-3162	3 1/2"	1 1/4 lbs.
SFA-3163	5 1/4"	1 3/4 lbs.
SFA-3164	7"	2 1/2 lbs.
SFA-3165	8 3/4"	3 lbs.
SFA-3166	10 1/2"	3 3/4 lbs.
SFA-3167	12 1/4"	4 1/2 lbs.
SFA-3168	14"	5 lbs.
SFA-3169	15 3/4"	5 3/4 lbs.
SFA-3170	17 1/2"	6 1/4 lbs.
SFA-3171	19 1/4"	7 lbs.
SFA-3172	21"	7 1/4 lbs.

2024-T-3 ALUMINUM 19" PANELS 1/8" THICK

Catalog No.	Height	Weight
PA-1131	1 3/4"	3/8 lb.
PA-1132	3 1/2"	3/4 lb.
PA-1133	5 1/4"	1 1/8 lbs.
PA-1134	7"	1 3/4 lbs.
PA-1135	8 3/4"	2 lbs.
PA-1136	10 1/2"	2 1/2 lbs.
PA-1137	12 1/4"	2 3/4 lbs.
PA-1138	14"	3 1/4 lbs.
PA-1139	15 3/4"	3 5/8 lbs.
PA-1140	17 1/2"	4 lbs.
PA-1141	19 1/4"	4 1/4 lbs.
PA-1142	21"	5 lbs.

ALUMINUM 24" PANELS 1/8" THICK (3003-H14)

Catalog No.	Height	Weight
PA-2401	1 3/4"	1/2 lb.
PA-2402	3 1/2"	1 lb.
PA-2403	5 1/4"	1 1/2 lbs.
PA-2404	7"	2 1/4 lbs.
PA-2405	8 3/4"	2 1/2 lbs.
PA-2406	10 1/2"	3 lbs.
PA-2407	12 1/4"	3 1/4 lbs.
PA-2408	14"	3 1/2 lbs.
PA-2409	15 3/4"	4 lbs.
PA-2410	17 1/2"	4 3/4 lbs.
PA-2411	19 1/4"	5 1/4 lbs.
PA-2412	21"	5 1/2 lbs.

19-INCH PANELS

1/8" ALUMINUM (3003-H14)

Catalog No.	Height	Weight
PA-1101	1 3/4"	3/8 lb.
PA-1102	3 1/2"	3/4 lb.
PA-1103	5 1/4"	1 1/8 lbs.
PA-1104	7"	1 3/4 lbs.
PA-1105	8 3/4"	2 lbs.
PA-1106	10 1/2"	2 1/2 lbs.
PA-1107	12 1/4"	2 3/4 lbs.
PA-1108	14"	3 lbs.
PA-1109	15 3/4"	3 1/4 lbs.
PA-1110	17 1/2"	3 5/8 lbs.
PA-1111	19 1/4"	4 1/4 lbs.
PA-1112	21"	5 lbs.

3/16" ALUMINUM (3003-H14)

Catalog No.	Height	Weight
PA-3101	1 3/4"	3/4 lb.
PA-3102	3 1/2"	1 1/4 lbs.
PA-3103	5 1/4"	1 3/4 lbs.
PA-3104	7"	2 1/2 lbs.
PA-3105	8 3/4"	3 lbs.
PA-3106	10 1/2"	3 3/4 lbs.
PA-3107	12 1/4"	4 1/2 lbs.
PA-3108	14"	5 lbs.
PA-3109	15 3/4"	5 3/4 lbs.
PA-3110	17 1/2"	6 1/4 lbs.
PA-3111	19 1/4"	7 lbs.
PA-3112	21"	7 1/4 lbs.

Prices and Specifications Subject to Change Without Notice.

VE-21

4605 E. 355th St.
Willoughby, OH 44094
(216) 946-3200

ACCESSORIES

For Series 2000, Series 60, Valurack, Concorde Series Upright Cabinet Racks.

The following key will indicate the cabinet rack on which the accessories shown on these pages may be used: Valurack (A), Classic II (B), Series 2000 (C), Series 60 (D), Concorde (E). Match the key letter under the accessory with the proper cabinet rack designation.

POWER OUTLET STRIPS



Power outlet strips can be used in cabinets, on walls or along work or test benches. Silver gray housings; no loose wires can come into contact with conductor wires. Strips snap into adjustable mounting clips. Grounding type 15 amp., 125 volt receptacles. 15 amp thermal-type circuit breaker with reset. Models 6 and 66 have 14 gauge 3 wire power cord, others have 12 gauge solid conductor. Both have 6 ft. cords. All components U.L. approved.

A-B-C-D-E

Catalog No.	Number of Outlets	Length	Weight
POS-4	4	17 1/2"	2 lbs.
POS-6	6	12 1/4"	1 3/4 lbs.
POS-66*	6	12 1/4"	1 3/4 lbs.
POS-7	7	48"	3 1/2 lbs.
POS-9	9	60"	4 1/4 lbs.
POS-11	11	72"	4 3/4 lbs.

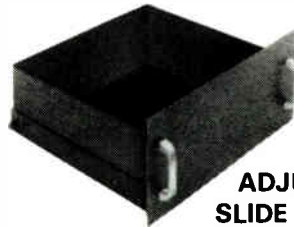
*Surge Suppressed

SURGE SUPPRESSOR



A-B-C-D-E

Provides protection to data or word processing equipment and other sensitive electrical equipment from sudden "spikes" or high energy voltage. Prevents equipment damage, lost or distorted data. Clamps transient impulses in 10 Nanoseconds. Maximum "spike" current 2000 amps. 15 amp thermal type, circuit breaker with reset. 14 gauge, 3 wire, 6 foot power cord, all components U.L. approved.



ADJUSTABLE SLIDE DRAWER

Fit cabinets with 19" panel space. Adjustable slides. Support heavy loads even when fully extended. Silver anodized handles.

Panel Finishes

White textured (WH) and Luster Gray (LG)

H-9355 Handle only for drawer.

A-B-C-D-E

Cat. No.	Size Inside	Panel Height	Wght.
D-1721	16 3/4" x 6 3/4" x 16 1/16"	8 3/4"	23 lbs.
60-2368	16 9/16" x 6 5/16" x 19 3/16"	8 3/4"	24 lbs.

DESK TOP DRAWER



Front panel height, 3 1/2". Hinged drawer top has Formica® bonded to aluminum. Front panel latch locks and releases drawer and top. Mount to "U" braces in cabinet.

Panel Finishes: White textured (WH) and Luster Gray (LG).

A-B-C-D-E

Cat. No.	Size inside	Wgt.
60-2363	16 9/16" x 3 x 14 7/8"	23 lbs.

SLIDING DESK TOP

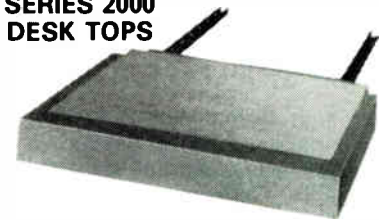
Requires only 1 3/4" panel space and 15 1/8" x 17 5/8" inside. Working area, 11" x 17 5/8". Supports 50 lbs. Formica® surface. Mounts to uprights in Series 60 without brackets. Ball-bearing slide mechanism.

Panel Finishes: White textured (WH) and Luster Gray (LG). Top surface is antique white.

A-B-C-D-E

Cat No	Surface Area			Wgt.
	Width	Depth	Panel	
60-2361	17 5/8"	15 1/8"	19" x 1 3/4"	11 lbs.

SERIES 2000 DESK TOPS



Supports 200 pounds. Easy to install: Just bolt pre-slotted, full-length support channels to cabinet rack's mounting rails.

Finishes: Gray textured (GT) and Royal blue textured (RB).

Catalog No	Fits Series 2000	Supporting Channel	Wgt. Lbs.
DT-2960	With 23 7/8" depth	21 1/4"	21
DT-2962	With 27 3/8" depth	24 3/4"	21

SERIES 60 DESK TOPS



Supports 200 pounds. Easy to install: Just bolt pre-slotted, full-length support channels to cabinet rack's mounting rails.

Finishes: Royal blue textured (RB), gray textured (GT).

Cat No	Fits 60 Series	Support Channel	Wgt.
60-2360	With 22" D	21 1/4"	21 lbs.
60-2362	With 25 1/2" D	24 3/4"	21 lbs.



SLIDING DRAWER ASSEMBLY

Aluminum open chassis. Mounting brackets fit on vertical mounting rails. Supports 50 lbs. Slide mechanism attaches to chassis, moves on ball bearings; has 11" travel. Drawer cannot be removed accidentally. Chassis size 16 3/4" x 14" x 3" with 1/2" flange top and bottom. Separate drawer plate fastens to top or bottom.

Finish: Chassis and drawer plate finished in Luster Gray (LG).

A-B-C-D-E

Cat No	Description	Size	Wgt.
SD-1717	Sliding Drawer Assembly	16 3/4" x 14"	6 lbs.
TP-1718	Drawer Plate	16 3/4" x 14"	1 1/2 lbs.

4605 E. 355th St.
Willoughby, OH 44094
(216) 946-3200

PLEXIGLASS DOORS

Fits Series 60, Series 2000, and Concorde Racks.

1/8" smoke gray plexiglass.

Frame is 1^{31/32}" x 1/8" anodized aluminum extrusion with longitudinal grooves for enhanced appearance.

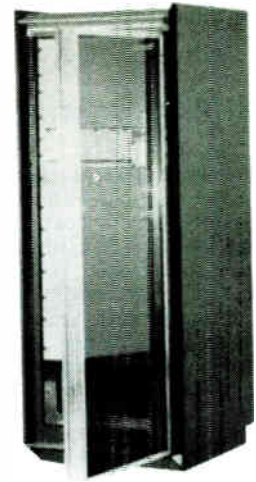
Door is magnetically held in closed position. Easily installed or removed through use of spring pin hinges.

Inner surface of door is at least 1/2" from front of panel.

Door clears panel space when opened 90° or more.

Installation hardware furnished.

Catalog Number	Upright Rack Vertical Panel Space	Weight Lbs.
V-9060-A	21"	11
V-9061-A	31 1/2"	16
V-9062-A	35"	17
V-9063-A	42"	19
V-9064-A	52 1/2"	20
V-9065-A	61 1/4"	23
V-9066-A	70"	24
V-9067-A	78 3/4"	31
Catalog Number	Inclined Vertical Panel Space	
V-9068-A	29 3/4"	12
V-9069-A	24 1/2"	13
V-9070-A	22 3/4"	12



SHELF ASSEMBLY

Fits Deluxe and Prestige Relay Racks. Useful as a desk or work space. Can't fall or tilt. Will support any reasonable weight. May be attached over panel or direct to panel or direct to panel mounting rails.

Triangular mounting brackets slip into channel welded to shelf bottom. Overall height 7 1/8". Hardware furnished.

Finishes: Gray texture (GT) and Royal Blue textured (RB).

Cat. No.	Depth	Width	Wgt.
SA-1719	16"	22"	13 1/4 lbs.
SA-1720	20"	22"	15 1/4 lbs.



RACK SHELVES

Heavy gauge steel; 1" flange adds rigidity; accommodate heavy loads. Designed to rest on supporting angles.

Finish: Black

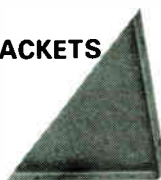
Catalog No.	Width	Depth	Wgt.
CB-1976	19"	15"	6 lbs.
CB-1977	19"	12"	5 lbs.

TRIANGULAR MOUNTING BRACKETS

Heavy gauge steel; 3/4" flanges support chassis. Sold in pairs.

Finish: Black

Catalog No.	Height	Depth	Wgt.
MB-1266	5"	5"	1/2 lbs.
MB-1267	7"	7"	1 lbs.
MB-1268	9"	9"	1 1/2 lbs.



TURRETS

Any of the three faces may be attached to rails of Series 60 upright racks, or placed on any horizontal surface to obtain ideal viewing angle. Takes standard 19" panels.

Finishes: Royal blue textured (RB) and Gray textured (GT).

Cat. No.	Width	Depth	Height	Sloping Panel Space	Bottom Panel Space	Rear Panel Space	Wgt. Lbs.
60-2364	22 1/8"	17 1/8"	12 3/16"	17 1/2"	14"	8 3/4"	17
60-2365	22 1/8"	14 3/8"	10 3/16"	12 1/4"	10 1/2"	7"	14
60-2366	22 1/8"	20 3/16"	14 3/8"	21"	17 1/2"	10 1/2"	20



SHELVES

Supports 200 lbs. One piece 16 gauge steel; flanged front and rear provide added support. Attach to front and back vertical panel mounting rails in cabinets.

Panel Finishes: White textured (WH) and Luster Gray (LG).

A-B-C-D-E

Cat. No.	Width	Depth	Wgt.
60-2380	17 7/8"	19 1/4"	8 lbs.
60-2381	17 7/8"	22 3/4"	8 lbs.

CHASSIS MOUNTING BRACKETS

Supports and/or permits chassis to be mounted flush against panel. Steel construction. MB-450 and MB-451 designed for 4" high chassis. Sold in pairs.



Finish: Black

Catalog No.	Height	Depth	Weight
MB-458	6 1/2"	8"	1 1/4 lbs.
MB-448	6 1/2"	10"	1 3/4 lbs.
MB-459	6 1/2"	11"	2 lbs.
MB-449	6 1/2"	12"	2 lbs.
MB-460	6 1/2"	13"	2 1/2 lbs.
MB-450	8 1/2"	10"	2 1/4 lbs.
MB-451	8 1/2"	13"	3 lbs.



ANTI-TILT LEGS

Prevents tipping of cabinets when top section is over balanced. Made of 1" x 2" rectangular tubing. Finished in Gray Textured (GT) or Royal Blue Textured (RB). Specify color to match that of cabinet. Equipped with stem levelers. Easily fastened to base of cabinet. Legs project 12" from front of cabinet when attached. Hardware furnished.

C-D-E

Catalog No.	Fits Cabinet with Outside Depth of	Wght. Pr.
ATL-6601	22"	6 lbs.
ATL-6602	25 1/2"	7 lbs.
ATL-6603	30 3/4"	8 1/2 lbs.

CALZONE CASE CO.

225 Black Rock Ave.
Bridgeport, CT 06605
(800) 243-5152

CASES

STANDARD FEATURES OF CASES

- A.T.A. Style
- Patented double angle construction
- Unique metal to wood to metal riveting
- Hi-density polyester foam
- Heavy grade formica laminate: 1/4" in black, blue, white, red, green, gray, orange or yellow. 1/2" in black, blue, gray (optional aluminum)
- Steel reinforced webbed lid stays (where applicable)
- 1/2" Plywood casterboards on cases with wheels
- Full length piano hinge (where applicable)
- Rust Resistant sessions hardware featuring recessed, spring loaded catches and handles, stacking or ball corners, and heavy duty corner braces
- Custom extruded, deep grooved aluminum valance
- 1/4" or 1/2" furniture grade plywood...no knots
- Combo cases for multiple units, accessories, etc.
- Large variety of rubber or steel casters
- Extra compartments and trays
- 1/4" Plywood laminate with double angle and valance
- Extra handles
- Shock mounting
- Security locks

Camera Cases

Construction workers wear goggles to protect their eyes...CALZONE CASE supplies protection for the delicate "eyes" of your video system...the camera. CALZONE surpasses case industry standards. We construct our products using the same space age materials and technology that developed the units we protect. Advanced FORMICA covers our choice, furniture grade plywood, making a tough laminate that far exceeds plastics or fibers. At CALZONE we innovate, not imitate.

Audio Cases

Tape recorders, audio mixers, turntables, whatever, CALZONE has a case already designed for most audio equipment. Custom cases are also available at no extra charge. For a professional audio production, choose the case designed and built by professionals...CALZONE.

Projector Cases

From the simplest 8mm projector to the most complicated multi-slide set-up, CALZONE has a case designed to suit every need. We utilize every spare inch of space to give the user as many applications as possible. Projector cases have compartments for reels, cables, etc., and can be custom ordered to hold more than one unit.

Monitor Cases

A.V. presentations are only as good as the monitor they are viewed on, and at CALZONE our aim is to get the unit there in operating condition. We construct our A.T.A. style cases by incorporating our patented double angle aluminum. This metal to wood to metal principle insures a permanent, bonded case for years of trouble free transport. Our custom extruded aluminum valance insures an easy closing fit that keeps your monitor in shape and the elements outside. All this, including our precision cut foam, gets the job done.

VTR Cases

With mobile A.V. showcases being a major sales tool for advertising companies and corporate presentations, a need has always existed for high quality travel cases for such delicate equipment. These cases must not only withstand abuse from airlines and truckers, but also be available to meet seemingly impossible deadlines. CALZONE CAN DELIVER.

Rackmount Cases

Most equipment used today that is made rack mountable is made that way for a reason. Equipment made to fit into racks should not be piled onto one another or lined up on the tops of speakers or other equipment. Whether they be power amps, equalizers, cross-overs or effects, you need to protect the delicate equipment that makes up your sound.

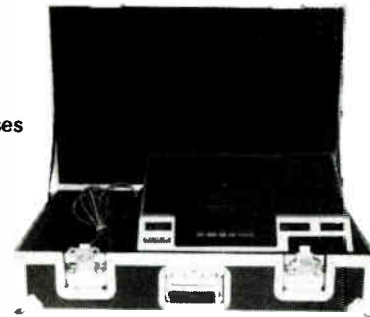
Convoy Cases

Ideal protection for around-town and ground transport of small and medium-sized instruments. 1/4" thick ABS plastic, 1/2" charcoal poly-ether foam lined, heavy duty, spring-loaded handles.

Camera Cases



VTR Cases



Projector Cases



Audio Cases



PRO-LINE II SERIES®

Styled after the Calzone A.T.A. approved Escort case, PRO-LINE II offers durable and attractive road case protection, yet, is priced more within the budgets of today's musician and club performer.

PRO-LINE II is made of the same 1/4" luan mahogany plywood as our A.T.A. line and is laminated to an exterior covering of rigid, vinyl tollene.

All PRO-LINE II cases are constructed with Calzones patented double-angle, spring-loaded handles, small, recessed Sessions catches and custom-designed steel corners. High density poly-ether foam lines the interior. PRO-LINE II cases are available for most instruments and equipment as well as selected rack mount sizes.

* PRO-LINE II is a registered trademark of the Calzone Case Company.

CASES, INC.

1745 W. 134th St.
Gardena, CA 90249
(213) 770-4444

CASES

ENDURA CARRYING CASES

Space-Age molded 'SMC' Fiberglass comes available with adjustable foam inserts, with foam inserts especially die cut to your specifications.

- E-2000-1 4" Depth Foam Filled, 9 lbs. \$114.50
 - E-2000-2 6" Depth Foam Filled, 11 lbs. 119.50
 - E-2000-3 8" Depth Foam Filled, 12 lbs. 129.50
 - E-2000-22 6" Depth Pre-Cut or Cubed Foam, 11 lbs. 139.50
 - E-2000-33 8" Depth Pre-Cut or Cubed Foam, 12 lbs. 149.50
- Foam Replacements Available



CUSTOM
DIE CUT FOAM INSERT

PORTABLE RACK MOUNTABLE EQUIPMENT CASES

FEATURES:

- Attractive for studio use and rugged enough for field operations
- Scuff and scratch resistant
- All hardware is recessed on cases with two or more rack spaces
- Front and rear lids are removable for complete access to your equipment
- Rack channel is drilled and tapped for 10/32 screw
- Depth including the (2) 2 1/4" removable lids is 22" I.D. or more by special order
- Height available from 2 to 44 spaces (3.5" to 77")
- Depth is optional, can be ordered deeper or narrower
- Rack channel on rear optional
- 2 1/2" or 3" casters optional
- Logo or stenciling optional
- Available in blue - black - white - yellow
- Certified A.T.A. construction



VID-PRO TRAVEL CASES



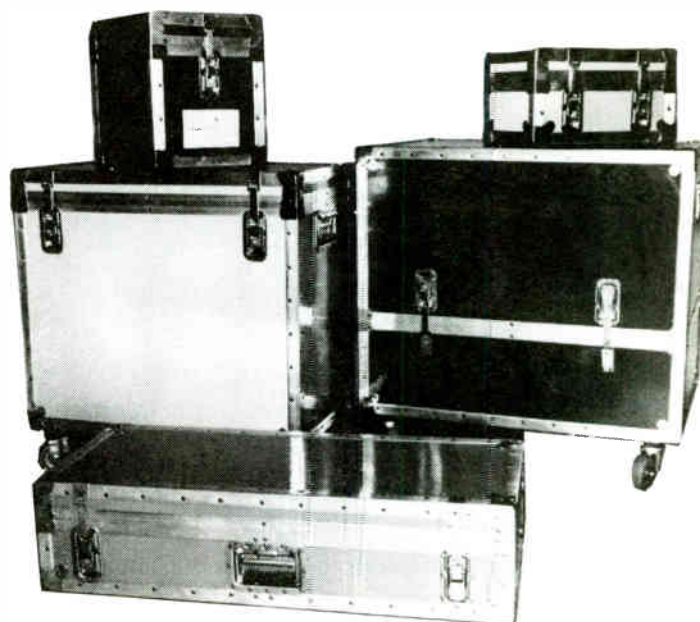
Model ABS-500

FEATURES:

- Special ribbed design for maximum strength
- Molded from thick high-impact plastic
- Has two positive cam action locks
- Strong and attractive - padded carrying handle
- Full length continuous piano hinge
- Strong, precisely radiused valance (aluminum trim between the lid and body)
- Standard color - Black - Custom colors available for volume use
- Usable foam to foam (cavity) dimensions 19L x 15 1/4 W x 6W (in)
- Commercial high density shock absorbing foam lines the case
- Case size I.D. - (wall to wall) 23L x 28 1/4 W x 8H (in)
- Custom interiors available, contact factory with your spec requirements

ABS-500 \$99.00

TRAVEL CASES AVAILABLE FOR ALL AUDIO, PHOTO AND VIDEO EQUIPMENT



EXCALIBUR CASES

FOR DELICATE EQUIPMENT

The skilled craftsmen at Excalibur are familiar with late model Arri and other fine cameras. They are experienced at fitting camera cases with lining designed for maximum shock isolation and years of service.

Write or call Excalibur for more information.



FOR "ALL KINDS OF STUFF"

The AKS Case — the professional way to organize and pack all kinds of stuff — — — that

- you always need at your fingertips
- won't fit easily into other cases...

**THE AKS CASE.
YOU WON'T KNOW
HOW YOU SURVIVED
WITHOUT IT.**



FOR RACKMOUNT AND SHOCKMOUNT



**EASY TO ORDER
STANDARD SIZES
FOR YOUR EQUIPMENT
ALL MODELS
FOR EVERY APPLICATION
FAST DELIVERY
PERSONAL SERVICE
TOUGH, PROFESSIONAL**

Excalibur's Rack — The professional way to transport all your 19" rackmounted gear for easy access and operation.

Rack cases are configured for 19" panels with rack-mount ears and 18" rackable depth (without lids). These top-of-the-line cases are available in either fiberglass or ABS.

Colors: choose blue, grey, black, white, red, green, orange or yellow.

**CALL FOR CURRENT PRICELISTS.
GREAT IDEAS... EXCALIBUR CASES.**

EXCALIBUR INDUSTRIES

12427 Foothill Blvd., Lake View Terrace, CA 91342
818/899-2547



A/V & Video Cases

Fiberbilt has designed and engineered a wide range of A/V and Video, shipping and carrying cases specifically for hundreds of commonly used pieces of equipment.

Padded Adjustable Cases

Quick, easy, do-it-yourself partitioning methods to fit your particular needs for carrying or shipping cases.

Padded Partitions

A patented system of thickly padded partitions interlock with each other and with the padded sidewalls of the case by means of the tongue-and-groove principle. Slots spaced 1" apart in the padding of the partitions and sidewalls provide for any compartment arrangement to cushion your equipment perfectly with shock absorbing foam padding. The partitions can be rearranged or added to at any time and the case is fully insulated against heat, cold and dust.

Diced Foam

Diced foam full depth padding "picks out" to provide any shape or size cavity for the ultimate in equipment protection.

An ingenious and very practical new Adapt-A-Case concept lets you "pick out" the contour areas you need from the one-inch thick layers of grid pattern, partially-cut-through foam. The Adapt-A-Case way to provide snug-fit protection for the most delicate equipment.

Sales Aid Cases

Fiberbilt's design and manufacturing expertise can help you achieve the perfect case to display and protect your product so that it remains in tip top condition.

Our stock cases are designed to display specific products to maximum advantage. Our individually designed cases can do the same job for your product no matter what it is.

Just send us your samples, and we will submit a sketch or layout without charge. Cost estimates also submitted on any quantity — whether a single case or thousands. Whatever the product, we have the experience to custom design a case to your exact specifications.

Protective Carrying Cases

Your product, no matter how delicate, is protected by these strong, attractive, and lightweight carrying cases.

Our stock styles can be obtained with either specially die-cut foam inserts and partitions, or with our patented adjustable partitions.

Special cases in any style or size can be manufactured and customized to your specific needs . . . economically, even in small quantities.

Protective Shipping Cases

Your product is protected when shipped by land, sea, or air in one of Fiberbilt's many distinctive and protective shipping cases...rugged, durable, lightweight.

Pick your exterior: Aluminum, Polyplex, or Fiberglass bonded to plywood — to give a lightweight, yet tremendously rigid and durable shell. Or, for lower weight and cost, choose a high density polyethylene case. No matter which you select, you've got a rugged exterior designed for heavy cameras, TV monitors and other delicate equipment that you want to travel safely.

Inside choose special padding, contoured foam, partitions or trays, designed by our engineers to cushion your equipment to take the roughest knocks.

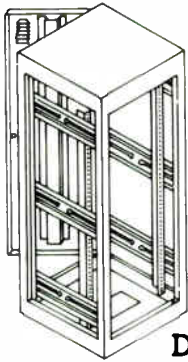
Rack and Shock Mount Cases

Shipping trunks for rack mount electronics, with 2" deep removable covers front and back. A 2" thick layer of shock-absorbing foam between the inner shell and the outer shipping case protects valuable electronic rack units.

Computer Hardware Cases

Fiberbilt manufactures a complete line of cases for shipping and carrying computer equipment. Call for details on a case for your particular piece of equipment.

19" Modular Racks



DR

DR SERIES

★ Sturdy welded construction of 16 Ga. CRS

DR-HD SERIES

★ Extra-sturdy 11 Ga. CRS welded construction

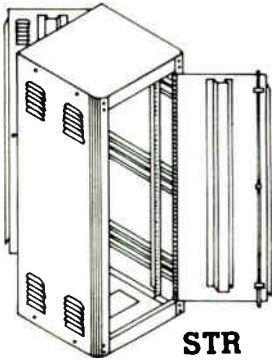
OPTIONAL SIDE PANELS—Removable for Multiple Bolt-Together assemblies

PANEL MOUNTING—Adjustable 11 Ga. angles tapped for 10-32 screws on standard E.I.A. spacing

CABLE OPENING—Provided in bottom panel (5" x 16")

REAR DOOR—Included with lock and handle

COLOR—Your choice of 20 standard baked enamel colors



STR

MODEL NO.		DIMENSIONS			
NO.	PRICE	HEIGHT	PANEL SPACE	WIDTH	DEPTH
DR-3675-19-18	\$ 409.60	42-7/8"	36-7/8"	22-1/8"	18-1/8"
DR-3675-19-22	460.80				22"
DR-4200-19-18	422.40	48-1/8"	42-1/8"		18-1/8"
DR-4200-19-22	473.60				22"
DR-6125-19-18	499.20	67-3/8"	61-3/8"		18-1/8"
DR-6125-19-22	601.60				22"
DR-7000-19-18	537.60	76-1/8"	70-1/8"	18-1/8"	
DR-7000-19-22	640.00			22"	
DR-7700-19-18	563.20	83-1/8"	77-1/8"	18-1/8"	
DR-7700-19-22	691.20			22"	
DR-HD-3675-19	896.00	41-3/8"	36-7/8"	23-5/8"	24"
DR-HD-4200-19	921.60	46-5/8"	42-1/8"		
DR-HD-6125-19	972.80	65-7/8"	61-3/8"		
DR-HD-7000-19	998.40	74-5/8"	70-1/8"		
DR-HD-7700-19	1036.80	81-5/8"	77-1/8"		

19" Transmitter Racks

STR SERIES

★ K.D. or Assembled only

WTE SERIES

★ Welded construction only

MATERIAL—16 Ga. CRS with 11 Ga. bottom panel on STR series and 14 Ga. bottom on WTE series

PANEL MOUNTING ANGLES—ADJUSTABLE

STR—16 Ga. punched with 3/32" holes

WTE—11 Ga. drilled and tapped for 10/32"

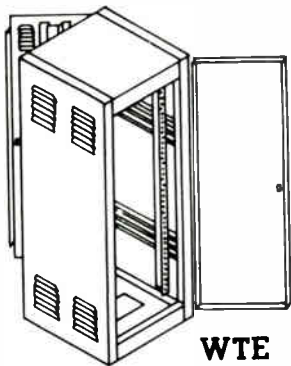
LOUVERS—Inside for WTE series

Outside for STR series

DOORS—Front and rear included with locks.

COLOR—Your choice of 20 standard baked enamel colors

Assembly Charge is \$25.00 Per Unit



WTE

STR ASSEMBLED or K.D.	MODEL NO.			DIMENSIONS			
	PRICE	WTE WELDED	PRICE	HEIGHT	PANEL SPACE	WIDTH	DEPTH
STR-3675	\$499.20	WTE-3675	\$537.60	42"	36-7/8"	STR 22-15/16"	18-1/2"
STR-4200	537.60	WTE-4200	576.00	47-1/4"	42-1/8"		
STR-6125	627.20	WTE-6125	678.40	66-1/2"	61-3/8"		
STR-7000	678.40	WTE-7000	716.80	75-1/4"	70-1/8"	WTE 22-1/8"	
STR-7700	716.80	WTE-7700	755.20	82-1/4"	77-1/8"		

19" Cabinet Relay Racks (Economy Series)

SCR SERIES

★ K.D. or Assembled

WRE SERIES

★ Welded only

MATERIAL—16 Ga. CRS

PANEL MOUNTING ANGLES—FIXED

SCR—16 Ga. punched with 9/32" holes

WRE—11 Ga. drilled and tapped for 10/32"

LOUVERS—WRE series have inside louvers

SCR series have outside louvers

REAR DOOR—Included with lock

COLOR—Your choice of 20 standard baked enamel colors

Assembly Charge is \$25.00 Per Unit



MODEL NO.				DIMENSIONS			
SCR ASSEMBLED or K.D.	PRICE	WRE WELDED	PRICE	HEIGHT	PANEL SPACE	WIDTH	DEPTH
SCR-3675	\$307.20	WRE-3675	\$332.80	41-1/8"	36-7/8"	22-3/8"	18-1/2"
SCR-4200	320.00	WRE-4200	345.60	46-3/8"	42-1/8"		
SCR-6125	371.20	WRE-6125	396.80	65-5/8"	61-3/8"		
SCR-7000	422.40	WRE-7000	448.00	74-3/8"	70-1/8"		
SCR-7700	448.00	WRE-7700	460.80	81-3/8"	77-1/8"		

19" Channel Racks

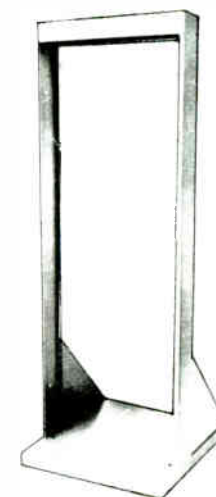
RR SERIES

★ K.D. or Assembled

MATERIAL—16 Ga. CRS base with 11 Ga. bottom CRS channels

PANEL MOUNTING—11 Ga. channels tapped for 10-32 screws on standard E.I.A. spacings

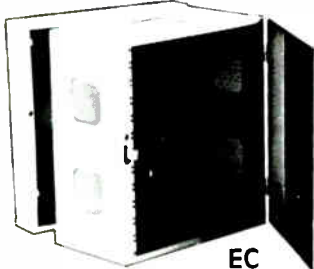
COLOR—Your choice of 20 standard baked enamel colors



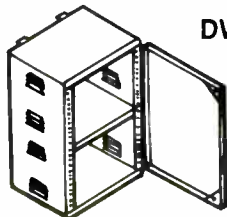
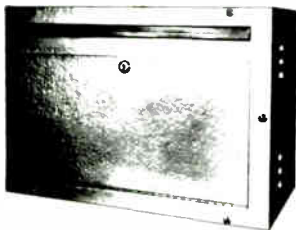
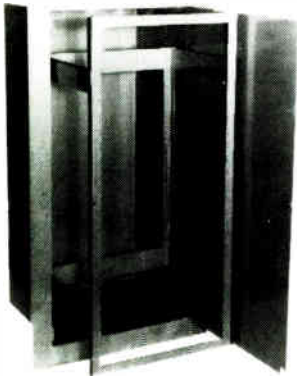
MODEL NO.		DIMENSIONS			
RR ASSEMBLED or K.D.	PRICE	HEIGHT	PANEL SPACE	WIDTH	DEPTH
RR-156	\$204.80	61-3/16"	56-1/8"	19-5/16"	20"
RR-163	217.60	68-3/16"	63-1/8"		
RR-170	230.40	75-3/16"	70-1/8"		
RR-177	243.20	82-3/16"	77-1/8"		
RR-184	256.00	89-3/16"	84-1/8"		



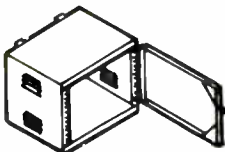
193



EC



DW-3116



DW-1616

19" Swingout Wall Cabinets 193 Series and EC Series

MATERIAL—16 Ga. CRS

PANEL MOUNTING—Angles tapped for 10-32 screws on 193 series and punched for 9/32" holes on EC series—standard E.I.A. spacing

FRONT DOOR—Included with lock. Models also available without front doors.

KNOCKOUTS—Eight (8) 7/8" dia. knockouts in top and bottom of back section of 193 series and (3) 7/8" dia. knockouts on EC series

BRACING—11 Ga. reinforcing angles available when components exceed 250 lbs. (optional)

OPTIONAL SERIES—193E (six sizes) features slip joint hinges

Model No.	Price	Dimensions			Depth of Sections		
		Height	Panel Space	Width	Center	Rear	Front
193 A	\$256.00	18 1/2"	15 1/2"	20"	11	4 1/2"	1 1/2"
193-B	409.60	31 1/2"	28 1/2"				
193 C	601.60	45 1/2"	42 1/2"				
193-D	716.80	64 1/2"	61 1/2"				
EC-1750	281.60	19"	17"	20"	11	4 1/2"	2"
EC-2100	307.20	22"	21"				
EC 2625	332.80	27"	26"				

19" Pull-Out Cabinet Series HTB

MATERIAL—16 Ga. CRS cabinet with 11 Ga. CRS door frame

PANEL MOUNTING—Angles tapped for 10-32 screws on standard E.I.A. spacing

RACK—Completely removable and mounted on (4) nylon ball bearing slides

KNOCKOUTS—Four (4) 7/8" dia. knockouts in top and bottom

FRONT DOOR—Standard with locking handle and 3" frame

COLOR— your choice of 20 standard baked enamel colors

Model No.	Price	Dimensions			
		Height	Panel Space	Box Width	Box Depth
HTB 2800	\$527.36	31 1/2"	30 1/2"	21 1/2"	18 1/2"
HTB 4200	616.96	45 1/2"	44 1/2"		

19" Fold-Out Cabinet Series STB

MATERIAL—16 Ga. CRS cabinet with 11 Ga. CRS door and frame

PANEL MOUNTING—Adjustable angles punched with 9/32" holes on standard E.I.A. spacing. Supported in slotted brackets, adjustable 9 1/2" front to rear

DOOR—Standard 10 1/2" x 20" with flush lock

VENTILATION—Side louvers and grill above door

CABINET MOUNTS—Surface type with adjustable angles

COLOR— your choice of 20 standard baked enamel colors

Model No.	Price	Dimensions			Vertical Panel Space
		Height	Width	Depth	
STB 1200	\$202.24	16	23"	12"	14 1/8"
STB 1500	207.36			15"	
STB 1800	220.16			18"	

19" Deluxe Wall Cabinet Series DW

MATERIAL—16 Ga. CRS

FLANGES—Front flanges punched with 9/32" holes on standard E.I.A. spacing

SHELF—Senior Model (DW-3116) has welded center shelf

FRONT DOOR—Features locking handle and tamper-proof inside hinges

MOUNTING—Back panel has two wall hanging channels

KNOCKOUTS—Four (4) 7/8" knockouts provided along bottom of back panel

COLOR— your choice of 20 standard baked enamel colors

Model No.	Price	Dimensions				
		Depth	Height	Panel Space	Width	Shelf
DW-3116	\$261.12	16"	31"	29"	21"	Yes
DW-1616	179.20	16"	16"	14"	21"	No

19" Desk Cabinet Series DCE

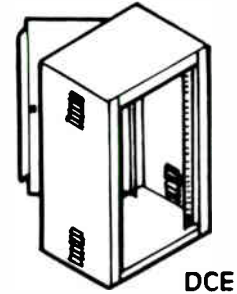
MATERIAL—16 Ga. CRS

PANEL MOUNTING—DC—Punched with 9/32" holes
DCE—Drilled and tapped for 10/32"

REAR DOOR—Standard on DCE series

COLOR—your choice of 20 standard baked enamel colors

Model	Price	Dimensions			
		Height	Panel Space	Width	Depth
DCE 700	\$128.00	9"	7"	22"	15"
DCE-875	138.24	10"	8"		
DCE 1050	145.92	12"	10"		
DCE 1225	158.72	14"	12"		
DCE 1400	166.40	16"	14"		
DCE 1750	184.32	19"	17"		
DCE 2100	192.00	23"	21"		
DCE 2450	209.92	26"	24"		
DCE 2625	217.60	28"	26"		
DCE 3150	243.20	33"	31"		
DCE 3500	261.12	37"	35"		



DCE

19" Turrets Series ERBT

MATERIAL—18 Ga. CRS

SLOPE—10° internal

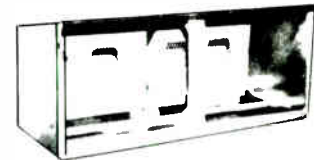
REAR PANELS—Removable for easy access to components

KNOCKOUTS—Four (4) 1/8" knockouts provided in rear of each panel space

PANEL MOUNTING—Flanges recessed 1/8" at top and punched with 5/32" diameter holes on standard E.I.A. spacing

COLOR—your choice of 20 standard baked enamel colors

Style	Model No.	Price	Dimensions				
			Height Front	Height Back	Depth	Panel Space	Width
Single	ERBT 200	\$220.16	15 1/8"	12 1/8"	16 1/2"	12 1/8"	19 1/8"
	ERBT 200-1	238.08	17 1/8"	14 1/8"		14 1/8"	
	ERBT 200-2	217.60	13 1/8"	11 1/8"		10 1/8"	
Double	ERBT 201	353.28	15 1/8"	12 1/8"	16 1/2"	12 1/8"	39 1/8"
	ERBT 201-1	381.44	17 1/8"	14 1/8"		14 1/8"	
	ERBT 201-2	348.16	13 1/8"	11 1/8"		10 1/8"	
Triple	ERBT 202	496.64	15 1/8"	12 1/8"	16 1/2"	12 1/8"	59 1/8"
	ERBT 202-1	506.88	17 1/8"	14 1/8"		14 1/8"	
	ERBT 202-2	494.08	13 1/8"	11 1/8"		10 1/8"	



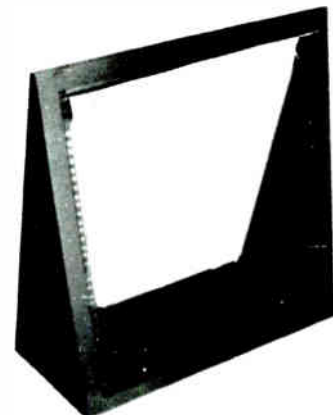
19" Table-Top Rack Series TR

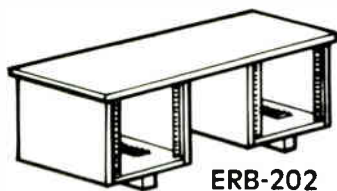
MATERIAL—16 Ga. CRS, completely welded construction

PANEL MOUNTING—Flanges punched for 10-32 screws on standard E.I.A. spacing

COLOR—your choice of 20 standard baked enamel colors

Model No.	Price	Dimensions			
		Height	Panel Space	Width	Depth
TR-121	\$115.20	24"	21 1/8"	22"	12"
TR-128	128.00	31"	28 1/8"		





ERB-202

TRIPLE PEDESTAL

Model ERB-202

\$1175.05

DOUBLE PEDESTAL

Model ERB-201

\$880.64

SINGLE PEDESTAL

Model ERB-200

\$611.84

MATERIAL—18 Ga. CRS of welded construction

PANEL MOUNTING—Flanges recessed $\frac{9}{16}$ " and punched with $\frac{5}{32}$ " holes on standard E.I.A. spacing

BACK PANEL—Removable with two rows of 6" louvers

KNOCKOUTS—Five (5) $\frac{7}{8}$ " knockouts provided in each pedestal

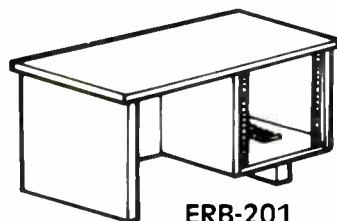
KNEE PANEL—Provided between each pedestal

LEVELERS—Four leg levelers provided

TOP SURFACE—Available in four standard, attractive finishes with stainless steel edge trim

LOUVERS—Two rows of 6" louvers in back and bottom panels

COLOR—Your choice of 20 standard baked enamel colors



ERB-201



ERB-200

Model No.	Dimensions			
	Height	Writing Width	Surface Depth	Panel Space
ERB-202	29 $\frac{1}{8}$ "	70"	30"	21 $\frac{1}{8}$ "
ERB-201		53"		
ERB-200		26"		

Standard Features:

- Panel Mounting Hardware is supplied with all units.
- All units will be painted Grey Hammertone unless specified.
- Units marked K.D. will be shipped Knockdown unless specified.
- Pie, Wedges and Riser sections available upon request.
- Special paint colors and two-tones are available as optional extra.
- All writing surfaces will be finished in walnut unless specified.

19" Modular Cabinet Consoles

MATERIAL—14 Ga. CRS frame and base with 11 Ga. CRS mounting angles and 16 Ga. CRS rear door and front panel

PANEL MOUNTING—Angles tapped for 10-32 screws on standard E.I.A. spacing

SLOPE—Upper panel space on 30° slope

CASTERS—2 $\frac{1}{2}$ " diameter with load capacity of 200 lbs. each

REAR DOOR—Provided with center support channel, four groups of six 6" louvers, spring hinge and two point chrome flush lock

TOP PANEL—Made of perforated metal

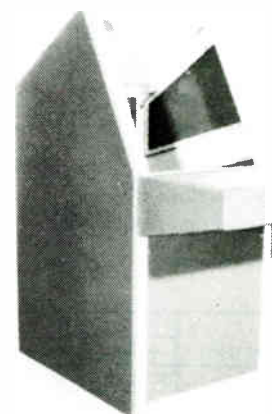
WRITING SURFACE—Included; available in four standard finishes

COLOR—Your choice of 20 standard baked enamel colors

Price \$916.99

Model No.	Dimensions			Writing Surface	
	Depth	Height	Width	Size	Height
CR-1004	30"	50 $\frac{1}{8}$ "	22 $\frac{1}{8}$ "	15" x 22 $\frac{1}{2}$ "	30"

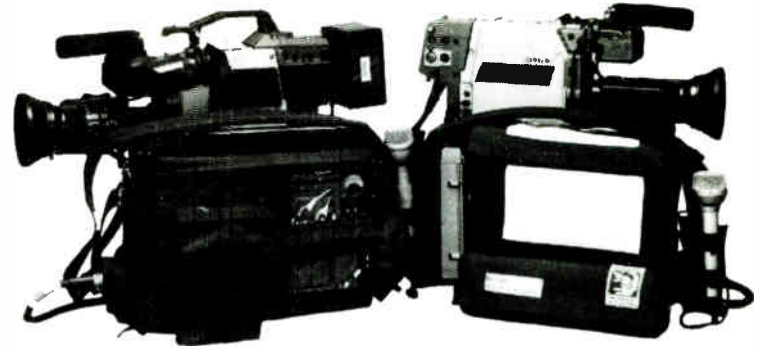
DSP92 \$165.10/pr. Detachable side panels (optional).



KANGAROO VIDEO PRODUCTS, INC.

10845 Wheatlands Ave. "C"
Santee, CA 92071-2856
(619) 562-9696

CARRYING CASES



KVP-1A and KVP-1B

Specially designed for the Sony BVV-1 (with the VA -1 or VA-1V adapters), the **KVP-1's** are constructed of durable DuPont Cordura nylon, long-lasting Evazote closed-cell foam, nickel-plated steel hardware, dependable Velcro closures, and sturdy YKK zippers, the **KVP-1A** and **KVP-1B** allow for easy portability of the recorder and its accessories.

The **KVP-1's** feature hooded openings for easy access to cable ports, convenient openings for attaching external batteries and wireless microphones, and a large pocket for extra batteries and tapes. Also standard are built-in white balance panels, convenient hand and shoulder straps, and a front pocket.

However you decide to use your Betacam, the **KVP-1's** give you the versatility you need.

Kangaroo Super-Tough™

The **Kangaroo Super-Tough** is the first camera case that lets you specify the size, to insure a snug fit for maximum protection for your camera or cam-corder.

The top-loading **Super-Tough** features our exclusive Tri-Fast zipper that lets you open the case three-ways: to either side or all at once. The triple-hemmed, U-shaped aluminum frame, combined with our shock-absorbing Evazote closed-cell foam padding, provides the ultimate in protection without the bulk of a hard case. Zippered inner pockets on both sides hold extra batteries, tripod plate, tapes, headset — all the accessories right at your fingertips. Convenient stand-up hand straps let you grab the case with one hand, while the padded shoulder strap provides comfort over distances.

The **Super-Tough** can be ordered to any length, height, and width, to provide custom-sized protection at a non-custom price.



Kangaroo Raincover

The first functional raincover designed to completely enclose the camera (Sony BVW-3, BVP-3) from harsh weather, while enabling the user to change tapes, batteries, etc. without having to remove the cover. The unique zipper system allows opening and closing around any point, while the clear vinyl panel allows all meters and lights to be easily visible. The camera can also be mounted on a tripod, and is designed with a built in pouch to accommodate the Anton/Bauer battery. There's even a flap on top allowing the unidirectional microphone to be exposed and protected.

Rain, dust or whatever your environment, you can be sure the Kangaroo Raincover will meet the challenge. (Other models available 1st quarter, 1985)

KVP-20

The **KVP-20**, specially designed for the Sony BVW-20, provides the same efficient organization and convenience that goes into all of our Kangaroo Packs. Constructed of the same durable materials that go into all our products, the **KVP-20** features a hooded opening for easy access to cable ports, built-in white balance panel, and a convenient BP-90 battery pocket. Also standard are an ample front pocket and convenient side pocket for carrying tapes.

The **KVP-20** is the ideal addition to complete any Betacam system.



KANGAROO VIDEO PRODUCTS, INC.

10845 Wheatlands Ave. "C"
Santee, CA 92071-2856
(619) 562-9696

CARRYING CASES

Kangaroo Semi-Tough™

The original side-loading camera case, the **Kangaroo Semi-Tough** is ideal for airline travel, or those limited space situations where having your camera with you is a must. The **Semi-Tough** features a rigid frame of tough aircraft aluminum completely surrounding the camera, while a convenient detachable pocket holds batteries, tapes, and cables. The **Semi-Tough** comes complete with hand strap and heavy-duty padded shoulder strap for over-the-shoulder carrying.

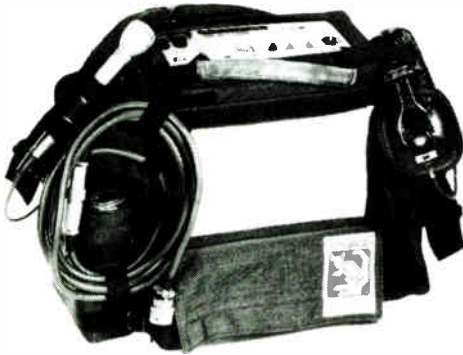
The **Semi-Tough** will fit the Ikegami HL-79 series, Sony BVP 300 series, Hitachi FP-10 w/battery, FP-21, FP-22, SK-81, SK-91 and similarly sized color video cameras, complete with the most common 2X extender lens systems.



Kangaroo Nagra Pack

The **Kangaroo Nagra Pack**, designed for Nagra recorders with 5" or 7" tops, provides the same basic convenience and protection that has gone into all of our video packs. The **Nagra Pack** features detachable pockets to hold tapes, batteries, wireless microphone, cables, while the front pocket holds four 7-inch tapes or eight 5-inch tapes. A convenient back flap provides quick access to batteries, while the clear rain flap allows use of controls while still providing protection from inclement weather. There's even a front sleeve to hold a clapboard.

The **Kangaroo Nagra Pack** gives Nagra users the secure, lightweight convenience needed for field recording.



Kangaroo Video Pack

The **Kangaroo Video Pack** provides efficient organization and convenient access for all the gear you need to carry. Designed by a news photographer to meet the rugged demands of ENG field use, the original **Kangaroo Video Pack** was the first recorder bag to provide straps and pockets to hold tapes, batteries, cables, microphones — everything you need to get the job done. Even white-balancing is easy with the built-in white-balance panels. Compact enough for one-man operation, versatile enough for two-man crews, with the **Kangaroo Video Pack** you can pick up and go, knowing that you have everything you need for a simple interview or an all-day SWAT operation.



Kangaroo Gripper™ Strap

The **Kangaroo Gripper Strap** is a heavy-duty shoulder strap that won't slide off nylon parkas, ski jackets, or other slippery material. Padded with our durable Evazote closed-cell foam, the **Gripper Strap's** unique three-way action gives you important shock-absorbing capability to carry even the heaviest equipment more safely and comfortably than ordinary shoulder straps.

The **Gripper Strap** comes with two sliders for easy attachment and adjustable length. It's available in brown, blue, green, orange, and gray. It fits all Kangaroo Video Products carrying cases, and many other bags and cases.

KANGAROO VIDEO PACKS FOR VIDEO TAPE RECORDERS

Model	Fits	Price
KVP 1A	Sony BVV-1 W/VA-1	\$210.00
KVP 1B	Sony BVV-1 W/VA-1V	210.00
KVP 20	Sony BVW-20	189.00
KVP 50	Sony BVU-50	210.00
KVP 100	Sony BVU-100, VO-3800	210.00
KVP 110	Sony BVU-110	210.00
KVP 220	Panasonic AV-220	210.00
KVP 4800	Sony VO-4800	152.00
KVP 4400	JVC CR-4400, Panasonic NV-9400, Hitachi SV-340	210.00
KVP 4400-LU	JVC CR-4400LU, RCA HE-1020, Ampex VPR-4400	210.00
KVP 4700	JVC CR-4700U, JVC-4800, JVC-4900, Panasonic NV-9450	152.00
KVP 6200	JVC BR-6200	120.00
KVP 6800	Sony VO-6800	159.00

KANGAROO CASES AND ACCESSORIES

Model	Fits	Price
Kangaroo Super-Tough Camera Case	Custom-sized aluminum reinforced padded case for carrying video cameras	\$250.00
Kangaroo Semi-Tough Camera Case	Aluminum reinforced padded case for video cameras	225.00
Kangaroo Raincover	Sony BVW-3, BVP-300 Series, Ikegami HL-79A, D, E, Sony DXC-M3A	100.00
Kangaroo Nagra Pack	Nagra recorders	210.00
Kangaroo Gripper Strap	Padded, heavy-duty shoulder strap	25.00
Kangaroo Mixer Pockets	Shure FP31	35.00
BVG-100 Time Code Pocket	Specify pack	36.00

*Available in Blue, Brown, Burgundy, Green and Orange



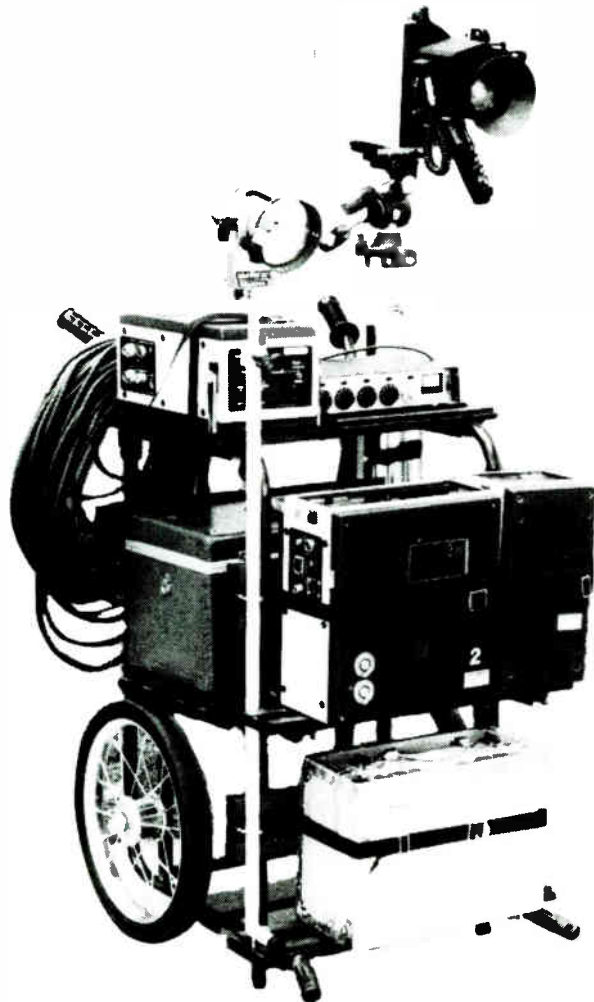
PORTA-BRACE™

K and H Products, Ltd.

P.O. Box 246
Bennington, VT 05257
(802) 442-9118

CARTS/CASES

PORTA-BRACE™ CARTS AND CARRIERS FOR ALL YOUR PORTABLE EQUIPMENT



PORTA-BRACE™ GRIP

The Grip is a versatile, heavy-duty cart for studio or field use. It is compact enough to be loaded into a station wagon or van, yet it will hold an extraordinary amount of equipment in a variety of arrangements. Adjustable shelves can be positioned to accommodate a wide range of video systems. Equipment can be secured with a unique strapping system.

Sturdy 16" spoked wheels are mounted on an adjustable axle that can be positioned to balance the loaded cart. An extra set of handles is provided in front, to allow two-person lifting. The Grip comes complete with padded shelves, strapping system, and shock cords. The width of the Grip, between the vertical bars, has been increased to 19½" to provide more carrying space to accommodate standard modular stack-mounted components. Accessories below increase its versatility. Overall size is approximately 27"W x 28"L x 40"H. Weight is 60 lbs.

GRIP ACCESSORIES

Large Utility Case will hold any number of items—tapes, mikes, clamps, cables, etc. Main compartment is 5½"x 11"x 13". Two side pockets are 3"x 4½"x 12". Front pockets is 2"x 9½"x 11½". The case attaches between handles or between wheels.

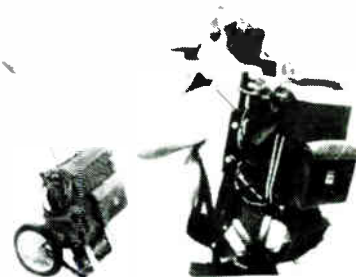
Utility Case is a two-compartment, nylon zippered case designed to hang in the space between wheels or between handles.

Tripod Quiver holds a tripod snugly, with or without camera attached. The tripod can be quickly removed or left in place for shooting. Two sizes—for large or small tripods.

Light Stand telescopes, can be raised to 8 ft., ½" top stud.

Grip & Accessories		
Mod. No.	Description	List
G1/PN; G1		\$502-529.00
G2/PN; G2	Extra Capacity/Pneumatic	
	Wheels	523-555.00
GL	Light Stand	63.00
G-QL	Quiver/Large Tripod	59.00
G-QS	Quiver/Small Tripod	59.00
G-LCA	Large Utility Case	100.00

Prices and Specifications Subject to Change Without Notice.



PORTA-BRACE™ BACKFRAME-WHEELBASE SYSTEM

This highly versatile system allows equipment to be carried in either of two comfortable and convenient ways—on the back, or on wheels. The backframe is the original Porta-Brace™ Backpack Carrier, which distributes the weight of recorder and accessories comfortably between shoulders and hips. The recorder is protected in a fitted Porta-Brace™ case that mounts quickly and securely on the frame. The loaded backframe can then be snapped onto the wheelbase, creating a compact, easily maneuvered cart.

The backframe can also be equipped with a Porta-Brace™ camera arm, which supports camera at eye level where it can be swung into shooting position—or out of the way, freeing hands and face.

T-Frame	\$154.00
Wheelbase	\$76.00
See other page for specific recorder case	
CA-L Pouch fits under recorder on frame	\$39.00
Camera Arm available, inquire on correct size and style for your camera	\$52.00



CAMERA CASE FOR SINGLE-TUBE CAMERAS

Each case contains a thick layer of polyester foam, die cut to fit your camera model—fully assembled, with lens, viewfinder, handle, etc., all in place and ready to use. Velcroed straps hold the camera securely couched in this foam cavity. The bottom of the case is protected by hardboard, topped by a layer of rigid foam. The light, tough outer shell is made of two layers of cordura nylon, around a layer of polyethylene foam padding. The case opens, quickly and fully, with a single heavy-duty zipper around three sides.

Quick-Draw Specials:

Model #	Cameras Carried	Price
CC-8VKC	Hitachi VKC-800/850/870	\$119.00
CC-100	JVC S-100U/S-62U	119.00
CC-71	JVC G-71	119.00
CC-S9U	JVC GX-S9U	119.00
CC-800	Panasonic PK-750/800/900	119.00
CC-801	Panasonic PK-751/755/801/805	119.00
CC-802	Panasonic PK-802/956/756	119.00
CC-3100	Panasonic WV-3100	119.00
CC-3160	Panasonic WV-3110/3150/3160	119.00
CC-3230	Panasonic WV-3230	119.00
CC-004	Panasonic WV-3200	119.00
CC-3400	Panasonic WV-3400	119.00
CC-004	RCA CC-004/006/6X/6AF/12X	119.00
CC-007	RCA CC-007/010/011	119.00
CC-015	RCA CC-015	119.00



PORTA-BRACE™

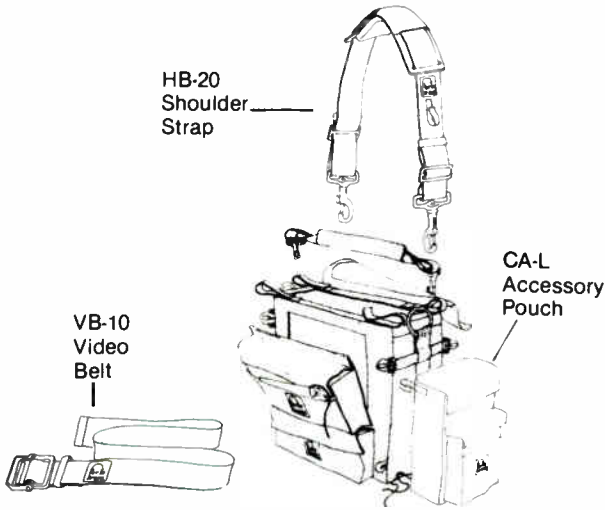
K and H Products, Ltd.
 P. O. Box 246
 Bennington, VT 05257
 (802) 442-9118

CASES TO MEET EVERY PROFESSIONAL PORTABLE VIDEO NEED

RECORDER CASES

Porta-Brace™ cases are made for most portable video recorders. All are designed to provide custom-fitted protection in the field while allowing immediate access to controls, connections, and batteries through weather-protected openings.

The cases are constructed of two layers of sturdy urethane-coated Cordura nylon sandwiched around a polyethylene foam core. Zipper closes case around recorder. Access openings are protected by velcroed flaps; cable connections are protected by velcroed rain boot. All cases have sewn-on accessory front pockets and velcroed cable-organizer straps. A white balance is sewn into cover, also a separate white balance card is provided for use away from recorder. All are equipped for attachment of optional accessory pouches as well.



Recorder Cases Available for the Following:

Sony	JVC	Panasonic
BVU-50	CR-4400U	NV-9400
BVU-100	CR-4400LU	NV-9450
BVU-110	CR-4700U	NV-8420
VO-3800	CR-4900U	
VO-4800	BR-6200U	
VO-6800		

Prices: \$124.00 to approximately \$200.00
 Depending upon options ordered

Heavy-Duty Shoulder Strap

HB-20 fits all cases \$25.00

Video Belt

VB-10 fits all cases \$15.00

Accessory Pouch

CA-L fits all 3/4" cases \$39.00

CAMERA CASES FOR 3-TUBE CAMERAS



The Quick-Draw Professional Case is for everyday use (when your shipping case is just too bulky to get around). The top-loading, quick-draw case allows you to have it ready to use, with battery attached, in an instant.

Cases rest solidly in trunk or back seat of car. Description: steel-reinforced hardboard

core with 3/4" foam padding covered with Cordura nylon inside and out, aluminum viewfinder guard, interior and exterior pockets, shoulder strap, and leather handle.

Specify Camera Model \$270.00

RAIN COVERS

Specify Camera Model \$ 97.00

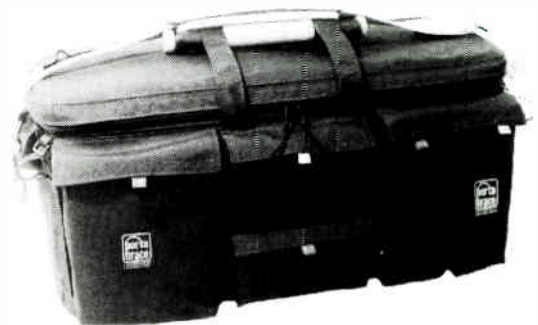
PRODUCTION CASES

Designed for video and film work, this line of general-purpose cases will carry all accessories needed in the field. They take the place of gym bags, cardboard boxes, or milk cartons which traditionally have been used. A large array of accessories can be carried in see-through compartments, movable partitions, and many pockets. Used in combination with Porta-Brace™ recorder cases and camera cases, all needed field equipment can be carried and protected. Constructed on metal frames with hardboard and foam walls, these Cordura™ nylon cases won't sag or collapse under heavy loads.

PRODUCTION CASES

Mod. No.	Description	List
PC-1	Rigid Nylon Case with steel frame and hardboard core 9 x 16 x 16.	\$268.00
PC-2	Rigid Nylon Case with aluminum frame and hardboard core 8-3/4 x 12-3/4 x 21-1/2	298.00
PC-3	Rigid Nylon Case with aluminum frame and hardboard core 8-3/4 x 12-3/4 x 27-1/2	325.00
LCA	Soft Case with foam core (not illustrated) main compartment 5-1/2 x 11 x 13, side pockets 2-1/2 x 5-1/2 x 10-1/2, front pocket 2 x 9 x 12. Includes Heavy-duty Shoulder Strap ..	118.00

Prices and Specifications Subject to Change Without Notice.



KIWI

DIVISION OF NORTHERN MERCANTILE, INC.

6721 NW 36th Avenue
Miami, FL 33147
(305) 835-8228 (800) 327-7524



TRIPOD BAGS

Made of the same fine materials as KIWI camera bags, the TP-21 and TP-22 are designed to protect and store your tripods, lighting umbrellas, or light stands. And because they are available in two different sizes, you can choose the one that best suits your equipment. Both bags can be comfortably carried by their attached, padded handles.



SMALL CAMERA BAG

The EP-2 is a small, lightweight pouch designed especially to protect your 35mm automatic rangefinder camera or portable radio. The attached belt loops allow you to secure it to your side for hands-free accessibility.

Model	Description	Size	Wt.	Price
EP-2	Extra Pocket Belt Bag	8x5	5 oz.	\$12.95
TP21	Tripod Bag - Regular (Smoke Only)	31-1/2x8-1/2	15 oz.	34.95
TP22	Tripod Bag - Large (Smoke Only)	39-3/4x11	1 lb. 6 oz.	44.95



COLORS: SMOKE GREY — BLACK — BLUE
(Colors may be substituted, unless no substitution is specified)

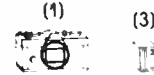
CAMERA BAGS & ACCESSORIES



ZOOM HOLSTER

Designed for fast action photography, the Zoom Holster holds and provides quick access to any 35mm SLR with winder and zoom lens attached. It can be secured to your waist through its webbed belt loops, or carried by the CB-9's removable shoulder strap. The top is hinged with VELCRO for easy opening. The Zoom Holster assures you that you'll have your camera available whenever you need it.

HOLDS THESE
4 ITEMS...



Model	Description	Size	Wt.	Price
CB9	Zoom Holster	8x6x11	8 oz.	\$29.95

TRAVEL GEAR

Model	Description	Size	Wt.	Price
*FB95	Expandable Flight Bag	21x9x11	1-1/2 lbs.	\$44.95
FK-2	"Hang-Up" Travel Kit	12x20	5 oz.	19.95
*AC30	Attache Case	16-1/2x3-1/4 x12-1/2	1-1/4 lbs.	44.95
*GB80	4-Suit Hanging Garment Bag (smoke only)	26x8x44	3 lbs.	99.95

VIDEO CAMERA & VIDEO COMBINATION BAGS

Model	Description	Size	Wt.	Price
VCR35	Mini Video Camera Bag (No Blue)	•	•	•
VCR65	Camcorder/Kodavision Bag (No Blue)	15x9x10	1 lb. 12 oz.	\$ 69.95
VCR50	Small Video Camera Bag	13x10x10	2 lbs. 6 oz.	84.95
VCR77	Combination Video Camera/Recorder Bag (No Blue)	•	•	•
VCR200	Large Video Camera Bag	17x10x12	3-3/4 lbs.	109.95

"CUSTOM-FIT" VIDEO RECORDER BAGS

Model	Description	Size	Wt.	Price
VR1175	Panasonic, Etc. VTR Bag	9-1/2x3 x10-1/2	1 lb. 12 oz.	\$109.95
VR1250	RCA/Hitachi VTR Bag	12x5-1/2 x10-1/2	1 lb. 6 oz.	109.95
VR1380	JVC/Zenith VTR Bag	10x5x11	1 lb. 9 oz.	109.95
VT101	Video Transport/Rental Bag (No Blue)	21x5-1/2x16	2-1/2 lbs.	84.95

*New products, prices and specifications not yet available.

Prices and Specifications Subject to Change Without Notice.

VE-37

KLM ASSOCIATES, INC.

5161 River Road, Bldg. 2
Bethesda, MD 20816
(301) 986-7944

TROLLEY/MONITOR STAND

Video System Trolley

(Order Ref. VS/1000 and Platform P27)

The VS/1000 will carry a complete video system (Television receiver/monitor, video recorder and other equipment) as a mobile unit, to give ideal conditions for operating and viewing.

EQUIPMENT ACCOMMODATION

The television receiver locates on the adjustable bearer. This unit will hold cabinets from 400mm (16") to 1000mm (39") wide. Video recorders or other equipment are carried on the platforms which are height adjustable.

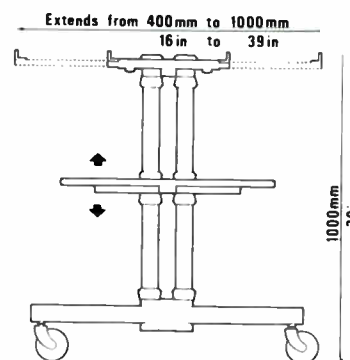
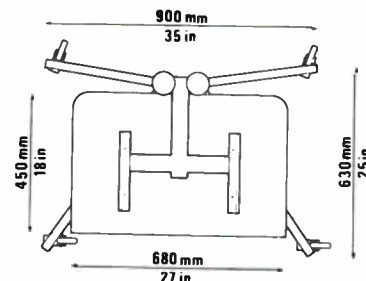
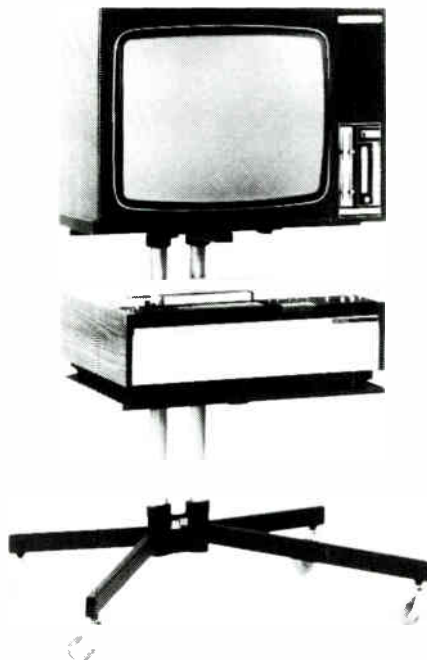
Carrying capacity is sufficient to accommodate equipment of up to 115Kg (250 lbs.) in weight. Maximum width of the trolley is only 630mm (25") enabling it to pass easily through narrow doorways.

Trolleys may be dismantled for storage or transportation whenever required.

HOW TO ORDER

To obtain a complete trolley as illustrated quote:

- 1 x VS/1000 Trolley
- 1 x P27 Platform



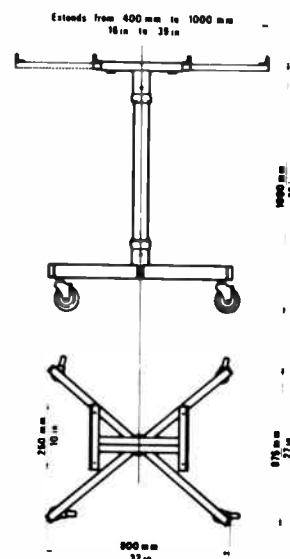
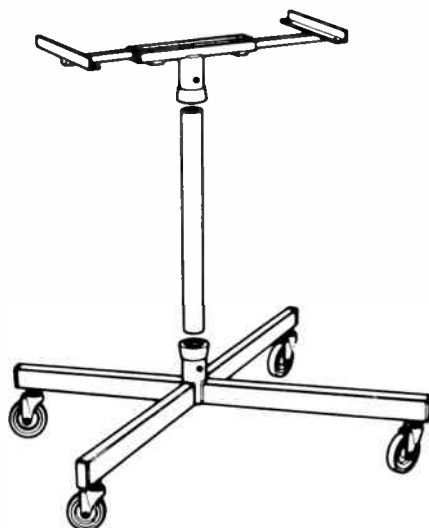
Television Monitor Stand

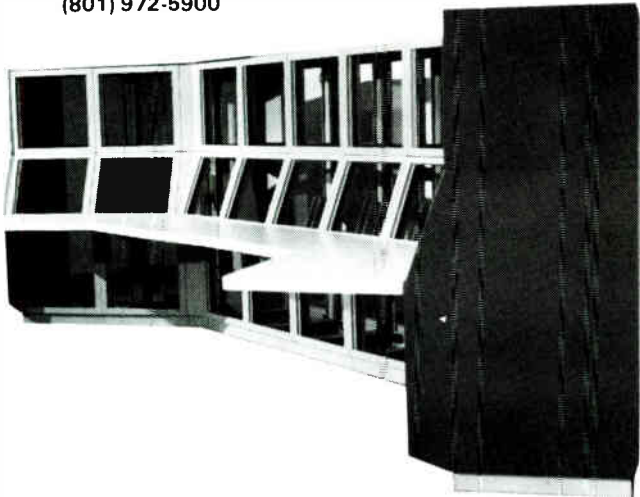
(Order Ref. T/32/EP)

- Robust all steel construction provides an exceptional margin of strength. Safe and stable with equipment of up to 90Kg (200 lbs.) in weight.
- The top unit is infinitely adjustable and will hold all television cabinets from 400mm (16") to 1000mm (39") wide.
- Height adjustment can be made by interchanging the standard 800mm (32") column with other lengths available.

The stand, which consists of base, column and top unit, is simple and quick to assemble, and may easily be dismantled for storage or transportation.

The television firmly locates on the adjustable top unit between the arms which extend and lock in position. The set may be screwed to the mounting if required.





6000 SERIES Control Consoles and Equipment Racks

The 6000 Series electronic equipment consoles and vertical rack frames are specifically designed for use in television studios. All 6000 Series racks provide space for standard 19" rackmount panels. Ample equipment space above the writing surface was a primary consideration in the design of the 6000 Series equipment racks.

The Model 6000 Low Bay Control Console consists of a 43" high rack with a writing arm and a sloped opening above the arm. The sloped opening provides 14" of equipment mounting area. An additional 19.25" of vertical opening is provided below the writing arm. Writing arms are 18" in depth. Arms up to 25" in depth may be ordered.

The Model 6100 High Bay Control Console is similar to a Model 6000 Low Bay Console but with an additional 17.5" of vertical rack opening above the sloped opening. This ensures ample equipment space above the writing surface and within easy reach of the operator. The console is 63.625" high.

The Model 6200 Vertical Equipment Rack provides 71.75" of continuous vertical equipment opening. The total height of the Model 6200 is 78".

Up to four consoles or racks may be bolted together and shipped as one unit. Consoles have a continuous writing arm of the proper width, e.g. a two-bay console will have a continuous arm two bays wide. The writing arm hinges down for shipping. Each section is fastened together with 1/4" bolts.

The 6000 Series consoles and racks can be supplied with standard punched rails for Tinnerman type fasteners, or with optional 10-32 tapped, permanently installed, nut strips.

The outside base dimensions of each rack frame are 22" wide by 25" deep. To accommodate floor mounting, 4 each 1/2" diameter holes are provided within the confines of the base near the corners of each rack.

Each console and rack contains two cable-access ports in the rear of the base. Each access port has a rectangular snap-in plastic grommet with an opening of 1.625" x 3.625".

All rack frames are constructed with 14 gauge or heavier steel. All 6000 Series Racks are supplied as standard with rear doors and end bells. The rear doors and end bells are constructed of light gauge steel with reinforcing steel structures on the inside.

All 6000 Series equipment is supplied with light gray frames and dark blue end bells and doors. Customer preferred colors are available upon request. All external surfaces are professionally finished using baked-on epoxy or vinyl paint. All inside surfaces are treated or finished sufficiently to prevent corrosion and oxidation. Writing arms are constructed of white formica over pressed wood. They are supported by a rectangular steel frame attached to the console at each end. The support frames are constructed so as to allow ample cutout area in the surface of the writing arm for the mounting of equipment such as special-effects generators, switchers, and keyboards.

Model 6000-1
 Low Bay Control Console—with 14" sloped opening above an 18" writing arm and 19.25" below writing arm. 22"W x 25"D x 43"H.
6000-1 \$1090.00
Tapped Rails 120.00

Model 6000-2
 Same as above, two bays wide, continuous writing arm.
6000-2 \$2005.00
Tapped Rails 235.00

Model 6000-3
 Same as above, three bays wide, continuous writing arm.
6000-3 \$2920.00
Tapped Rails 350.00

Model 6100-1
 High Bay Control Console—with 14" sloped opening above an 18" writing arm. 17.50" vertical opening above sloped opening 19.25" below arm. 22"W x 25"D x 63.625"H.
6100-1 \$1470.00
Tapped Rails 180.00

Model 6100-2
 Same as above, two bays wide, continuous writing arm.
6100-2 \$2670.00
Tapped Rails 360.00

Model 6100-3
 Same as above, three bays wide, continuous writing arm.
6100-3 \$3860.00
Tapped Rails 535.00

Model 6100-4
 Same as above, four bays wide, continuous writing arm.
6100-4 \$5285.00
Tapped Rails 715.00

Model 6200-1
 Vertical Equipment Rack—with 71.75" vertical opening 22"W x 25"D x 78"H.
6200-1 \$945.00
Tapped Rails 225.00

Model 6200-2
 Same as above, two bays wide.
6200-2 \$1710.00
Tapped Rails 450.00

Model 6200-3
 Same as above, three bays wide.
6200-3 \$2475.00
Tapped Rails 675.00

Model CW40
 45° Corner Wedge—for low bay.
CW40 \$1080.00

Model CW 41
 45° Corner Wedge—for high bay.
CW41 \$1325.00

For optional writing arm depths:
 Writing arm up to 25" deep, 1 bay. \$ 30.00
 Writing arm up to 25" deep, 2 bay. 60.00
 Writing arm up to 25" deep, 3 bay. 94.00
 Writing arm up to 25" deep, 4 bay. 119.00
 (Specify depth 19" to 25")

NOTE: All control consoles and equipment racks include side panels, perforated top panels, rear doors, cable tie down bars, and cable entry ports.

LUXOR CORPORATION

P.O. Box 830
2245 Delany Road
Waukegan, IL 60085-0830
(312) 244-1800 TWX 910-2350980

All models include 3-outlet
15 ft. power cord!

VIDEO STANDS

TVS Video Stands

For group viewing of 21" monitors with VHS, Beta or 3/4" recorders. Cabinet models feature a locking 27 1/2" w x 16" h x 19" d compartment for your video tapes and accessories. Rubber grommets pass-through in middle shelf. A 3-outlet, 3 wire, UL listed power assembly and 15' cord is included with every TVS. 30" w x 16" d top shelf is recessed for easy access to recorder on middle shelf. For extra safety, non-skid, self-adhering strips are included for top surface. Ship knocked-down to save freight. Assembly required.



Recoil power cord option. UL listed. 2-outlet. 3-wire 15 foot heavy-duty cord. Extends to desired length and locks. RE-15, in lieu of standard power cord. Add \$17.00 to cabinet price. \$28.50 when ordering separately.



Middle shelf on cabinet models has a rubber shielded wire pass-through.

[A] TVS-34 Includes power cord. 34" h x 30" w x 20" d with 2" furniture casters. **TVS-34** \$172.

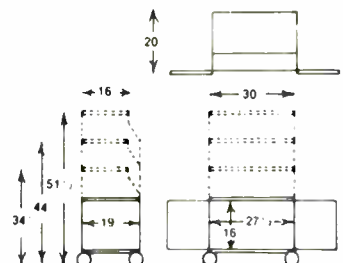
[B] TVS-44 Includes power cord. 44" h x 30" w x 20" d with 2" furniture casters. **TVS-44** \$193.

[C] TVS-54 Includes power cord. 51 1/2" h x 30" w x 20" d with 4" casters. **TVS-54** \$193.

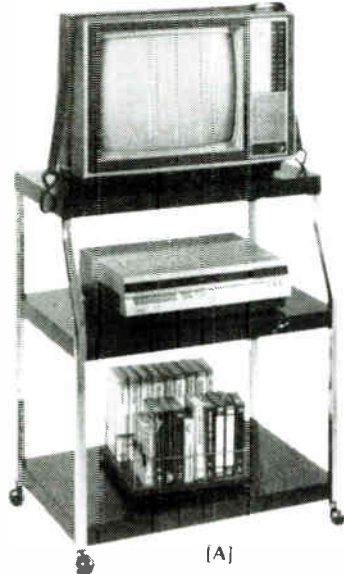
[D] TVS-34C Includes power cord. 34" h x 30" w x 20" d with locking cabinet and 2" furniture casters. **TVS-34C** \$287.

[E] TVS-44C Includes power cord. 44" h x 30" w x 20" d with locking cabinet and 2" furniture casters. **TVS-44C** \$308.

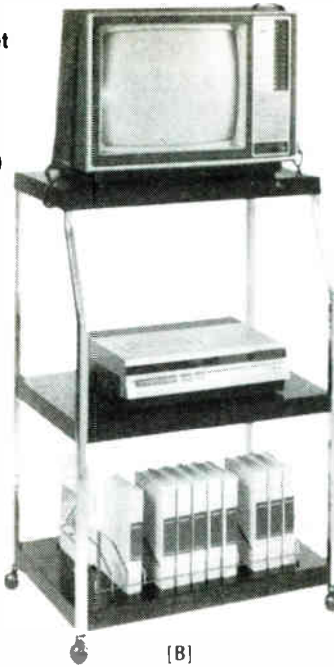
[F] TVS-54C Includes power cord. 51 1/2" h x 30" w x 20" d with locking cabinet and 4" casters. **TVS-54C** \$308.



*Heights with standard 2" casters



[A]



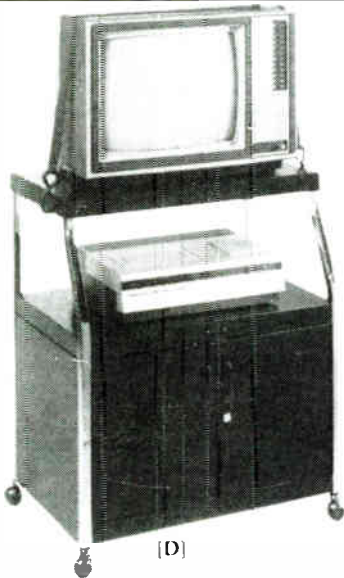
[B]



[C]

ADDITIONAL SHELF A fourth shelf for use on any TVS Cabinet model. Fits between the bottom shelf and the standard middle shelf.
TVS-S \$21.50

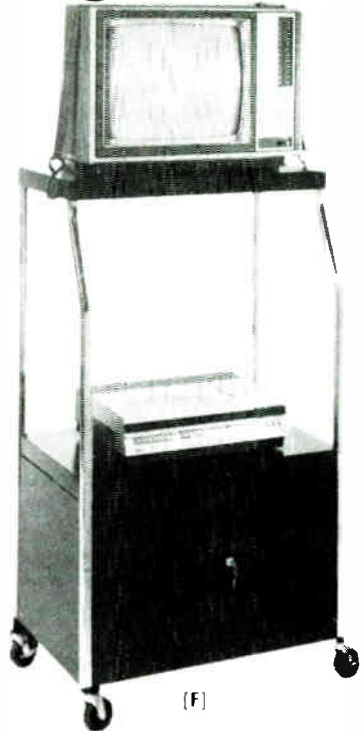
Patent pending



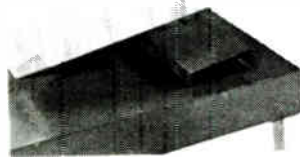
[D]



[E]

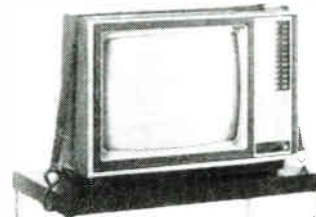


[F]



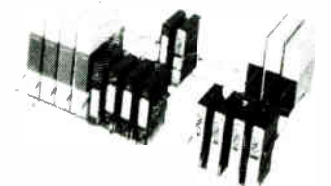
SLANT BAR tilts TV monitor forward to reduce glare. Mounts through existing holes in top shelf of TVS models. Slot in bar enables anchoring TV monitor to bar.

BAR-8 \$9.50



LUXOR SAFETY BELT for securing monitors. Nylon strap 8 x 1" with two vinyl coated "S" hooks designed to work with any open cart.

LSB \$17.



VIDEO TAPE ORGANIZER Chrome with rubber feet. Holds 28 1/2" or 3/4" video cassettes. 26 1/4" w x 16" d x 4 1/4" h. 10 lbs.

VTO-28 \$17.

LUXOR CORPORATION

P.O. Box 830
2245 Delany Road
Waukegan, IL 60085-0830
(312) 244-1800 TWX 910-2350980

CONSOLES

Prestige Series Video Consoles

Preferred by most Industrial, Library, Educational, Medical and Office Buyers.

Strength and durability of these one-piece welded consoles are unmatched. All models ship fully assembled. Locking wood doors provide

security for valuable video equipment and tapes. Compartments are louvered for ventilation. Designed for most 19" monitors and 1/2" or 3/4"

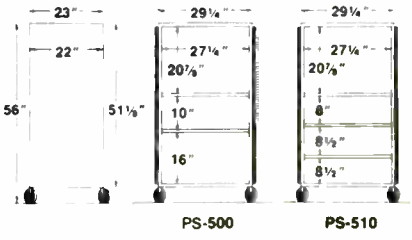
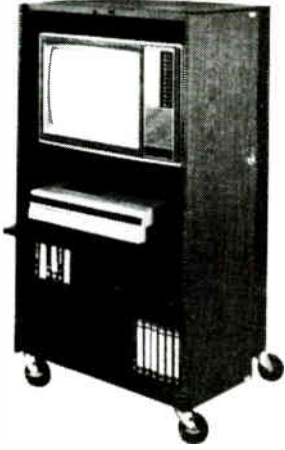
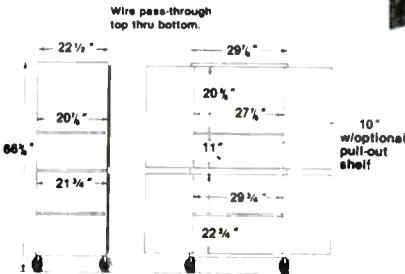
recorders. Heavy-duty 4" casters, two with brakes provide high mobility. Wire pass through channels between all shelves.

PS-762 70" CONSOLE

PS-762 70" VIDEO CONSOLE Our best seller. Locking rear door for easy access to input/output jacks and power cords. 169 lbs. #PS-762 ...\$870.00

PULL-OUT SHELF OPTION (as shown) This shelf reduces recorder compartment height to 10". 15 lbs. #PSS\$58.50

ACCESSORY PUSH/PULL HANDLE #SSH\$39.50



Studio Series



80" VIDEO EDITING CENTER

Secures your 25" receiver and up to four recorders. Shelves glide out for easy access. 34" w x 77" h x 22" d. Compartments are 31 7/8" w x 25" d. Receiver shelf 21 3/4" h. Top compartment base shelf is 9 5/8" h. Includes 2 power cords. Locking doors. Shipped in 2 sections.

#SS-780, with two 15" shelves in bottom compartment, 340 lbs. #1055.00

#SS-800, with three 9 5/8" shelves in bottom compartment, 350 lbs.,

\$1209.00

SS SERIES ACCESSORIES

SST WALNUT LAMINATE TOP
SST..... \$52.
SSH PUSH/PULL HANDLES
SSH..... \$39.50



40" 3-SHELF VIDEO EDITING CENTER

Designed to accommodate as many as three 1/2" or 3/4" video recorders. Shelves glide out for easy access. Cabinet is 34" w x 40" h x 26" d. Compartments are 31 7/8" w x 25" d with 9 5/8" between shelves. Includes a 3-outlet, 3-wire 15 foot power cord. Locking doors. 175 lbs.

#SS-403\$700.00

40" VIDEO CENTER Accommodates most 25" receivers. Bottom shelf holds 1/2" or 3/4" video recorders and glides out for easy access. Cabinet is 34" w x 40" h x 26" d. Compartments are 31 7/8" w x 25" d with 9 5/8" between bottom and middle shelf and 21 3/4" between middle shelf and top. Includes a 3-outlet, 3-wire 15' power cord. Locking doors. 164 lbs. #SS-402\$573.00

Executive



45" WOOD DOOR CONSOLE Provides security with locking doors and mobility. Designed for applications where high mobility is not required. 29 3/4" w x 21 1/4" d x 50" h. Monitor compartment is 27 1/8" w x 20" d x 22" h. Recorder compartment is 27 1/8" w x 20" d x 9 7/8" h with roll-out shelf. Storage compartment is 27 1/8" w x 20" d x 9" h. Four inch, ball bearing casters, two with brakes. Includes UL listed 15' power cord. 142 lbs. Assembly required. #ES-45W

\$515.00

#ES-45WC, with 2" chrome ball casters\$515.00

Prices and Specifications Subject to Change Without Notice.

VE-41

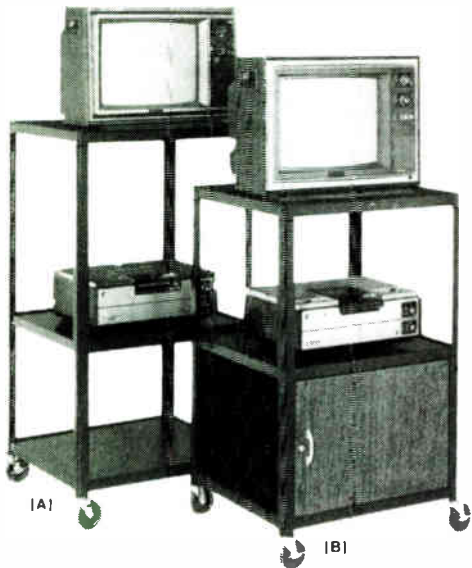
LUXOR CORPORATION

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2245 Delany Road
Waukegan, IL 60085-0830
(312) 244-1800 TWX 910-2350980

TV TABLES/VIDEO CENTERS

TV Tables

All models include 3-outlet 15 ft. cord!

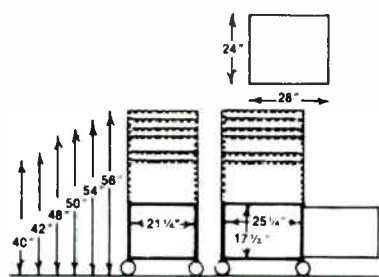
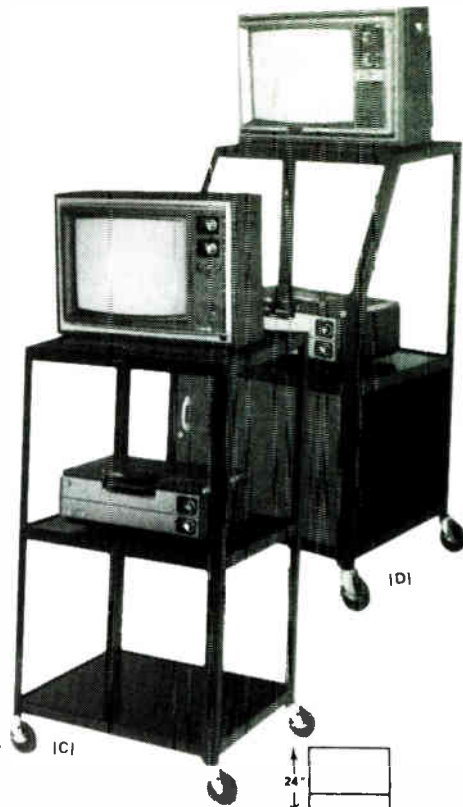


[A] ATV-56 — ADJUSTABLE-HEIGHT TV TABLE. Adjusts to six heights of 56", 54", 50", 48", 42", and 40". Wt. 65 lbs. ATV-56 \$244.00

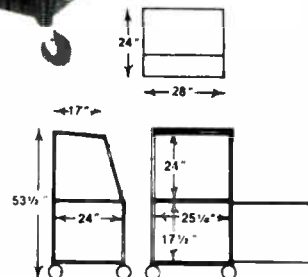
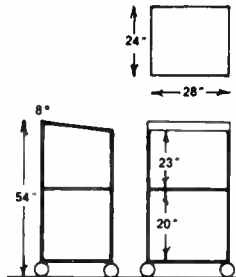
[B] ATV-56C — ADJUSTABLE-HEIGHT TV TABLE WITH LOCKING CABINET. Door has walnut woodgrain doors with black side and back panels. Adjustable to heights of 56", 54", 50", 48", 42", and 40". Wt. 84 lbs. ATV-56C \$318.00

[C] TVR-54 — FIXED HEIGHT TV TABLE. Top shelf tilted forward eight degrees to reduce glare. Wt. 68 lbs. TVR-54 \$194.00

[D] TVR-54C — FIXED HEIGHT TV TABLE WITH LOCKING CABINET. Top shelf tilted forward eight degrees to reduce glare. Walnut woodgrain doors with black side and back panels. Wt. 75 lbs. TVR-54C \$306.00

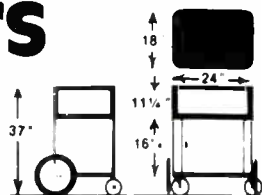


Monitors and recorders not included.

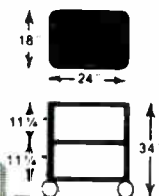


Video Production Centers

Ships U.P.S.!



All models include power cord!



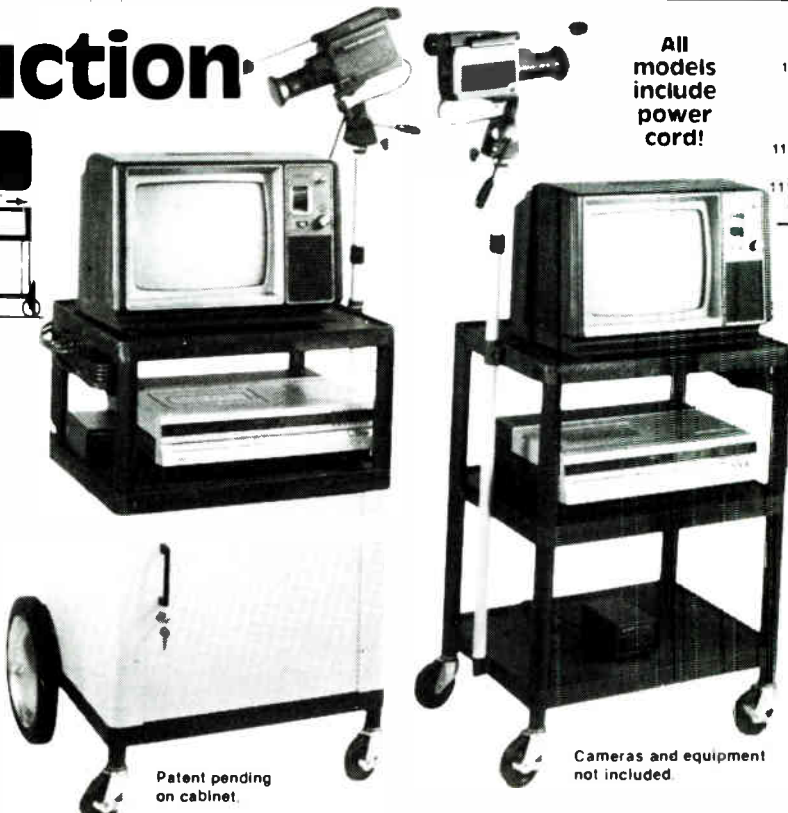
ENDURA CABINETIZED VIDEO PRODUCTION CENTER 37" h x 18" d x 24" w. Accommodates Beta or VHS video recorders. Features air loaded Mono Pod LMP-74 camera mount with spring-loaded pan head. Big 18" x 24" top surface is a ready stage for close-ups. Locking steel cabinet safely stores your valuable equipment and accessories. Simple assembly required. Shown with big wheels which provide smoother, easier movement over carpeting and rough surfaces. Three outlet, 15-foot power cord included.

VPC-37 \$334.
VPC-37B with two 12" big wheels on one end \$361.

ENDURA VIDEO PRODUCTION CENTER 34" h x 18" d x 24" w. Accommodates Beta or VHS video cassette recorders. Features Mono Pod LMP-74 camera mount with spring-loaded pan head. Big 18" x 24" top surface is a ready stage for close-ups. Simple assembly required. Three outlet, 15-foot power cord included.

VP-34 \$250.
VP-34B with two 12" big wheels on one end \$276.

VE-42



Patent pending on cabinet.

Cameras and equipment not included

Prices and Specifications Subject to Change Without Notice.

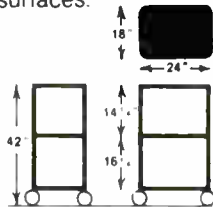
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 (312) 244-1800 TWX 910-2350980

Fixed-Height AV / Utility Tables

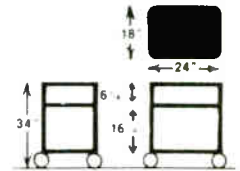
All models include electric power cord!

Light, strong and attractive, Luxor Endura is the perfect answer for economical, highly mobile equipment transport. Endura tables are made of a structural ABS so strong, that we guarantee it — indefinitely. All models are also available with 12" big wheels on one end for easier mobility over carpeting and rough surfaces.

(A) 42" HIGH ENDURA MOBILE TABLE 42"h x 24"w x 18"d. 14 1/4" top to center shelf; 16 1/4" center to lower shelf. 4" anti-shimmy casters, two with brakes.
 LE-42 \$112.
 LEB-42 with 12" big wheels on one end \$138.



Luxor Endura Tables are covered by a **LIFETIME WARRANTY!**



(B) 34" HIGH ENDURA MOBILE TABLE 34"h x 24"w x 18"d. 6 1/4" top to center shelf; 16 1/4" center to lower shelf. 4" anti-shimmy casters, two with brakes.
 LE-34 \$109.
 LEB-34 with 12" big wheels on one end \$135.

(C) 26" HIGH ENDURA MOBILE TABLE (not pictured) 26"h x 24"w x 18"d. 16 1/4" between upper and lower shelf. 4" anti-shimmy casters, two with brakes.
 LE-26 \$91.
 LEB-26 with 12" big wheels on one end \$117.

(D) 42" HIGH ENDURA CABINETIZED MOBILE TABLE 42"h x 24"w x 18"d. One cabinet with locking door. 4" anti-shimmy casters, two with brakes. LE-42-C \$197.
 LEB-42-C with 12" big wheels on one end \$223.

(E) 34" HIGH ENDURA CABINETIZED MOBILE TABLE 34"h x 24"w x 18"d. One cabinet with locking door. 4" anti-shimmy casters, two with brakes. LE-34-C \$193.
 LEB-34-C with 12" big wheels on one end \$220.

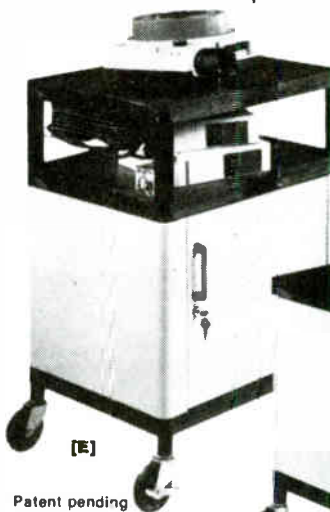
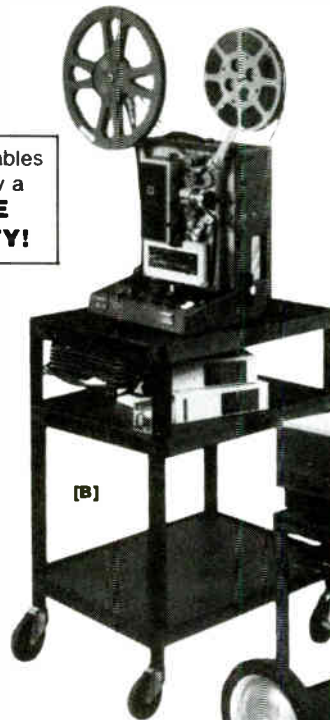
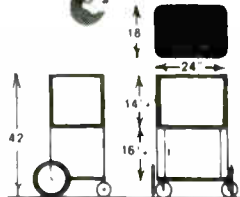
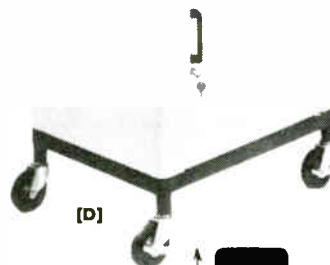
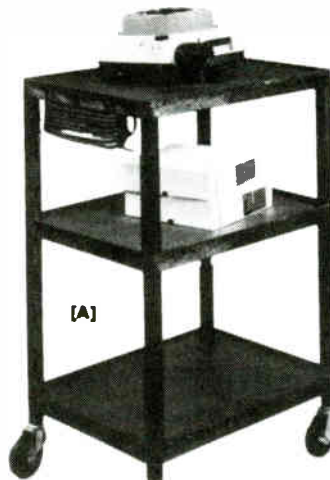
(F) 26" HIGH ENDURA CABINETIZED MOBILE TABLE 26"h x 24"w x 18"d. Locking cabinet door. 4" anti-shimmy casters, two with brakes. LE-26-C \$175.
 LEB-26-C with 12" big wheels on one end \$202.



Every Luxor AV Table is equipped with a three-outlet and three-wire power assembly having a 15' cord. UL listed.



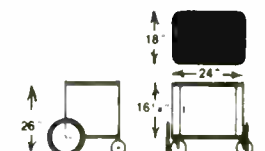
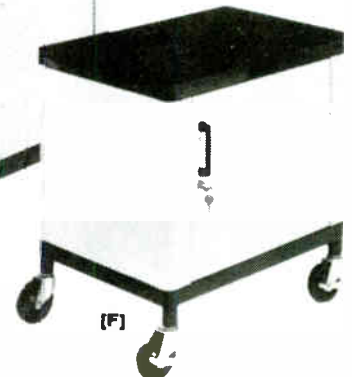
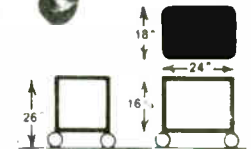
VIDEO TAPE ORGANIZER Chrome with rubber feet. Holds twenty 1/2" or 3/4" video cassettes. 20 1/2" w x 16" d x 4 1/4" h. 10 lbs.
 VTO-20 \$17.



Patent pending on cabinet.



Shown with the big wheel option.



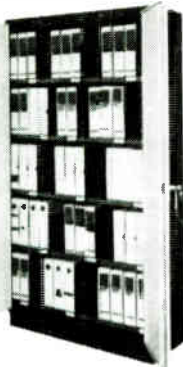
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LUXOR CORPORATION

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2245 Delany Road
Waukegan, IL 60085-0830
(312) 244-1800 TWX 910-2350980

STORAGE AND SECURITY CABINETS

Large Capacity Storage



All units complete with lock & keys



SLIDE CAROUSELS file on shelves in sections. 13 carousels per shelf. Shelves are 35 $\frac{1}{16}$ " w x 13 $\frac{3}{16}$ " d. Three dividers per shelf. 37" w x 14 $\frac{1}{2}$ " d x 67" h. Putty. **5-shelf cabinet**. 11" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 215 lbs. #67-ST-5.....\$748.

5" & 7" REEL AUDIO TAPE CABINET. File up to 50 reels per shelf in groups. Shelves are 35" w x 10" d. Three dividers per shelf. If filing only 5" tapes consider the 4-shelf model. 36" w x 11" d x 35" h. Putty. **3-shelf cabinet**. 9" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 101 lbs. #35-AT-3.....\$350. **4-shelf cabinet**. 8 $\frac{1}{2}$ " between shelves or adjust shelves in $\frac{1}{2}$ " increments. 110 lbs. #35-AT-4.....\$393.

DISC RECORD ALBUMS OR MOUNTED ON PROJECTOR TRANSPARENCIES filed in groups with 250 albums or 400 OH transparencies per shelf. Three dividers per shelf. 37" w x 14 $\frac{1}{2}$ " d x 67" h. Putty. **4-shelf cabinet**. 14" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 140 lbs. #67-RT-4.....\$674.



FILE UNJACKETED DISC RECORDS OR UNMOUNTED OH TRANSPARENCIES in indexed swing-out envelopes. 300 envelopes per shelf file up to 300 disc records or 1200 transparencies per shelf. 37" w x 14 $\frac{1}{2}$ " d x 67" h. Putty. **4-shelf cabinet**. 14" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 240 lbs. #67-RT-4E.....\$1098.

8mm MICROFILM CARTRIDGE CABINET Holds up to 35 reels per shelf. Three dividers per shelf. 37" w x 14 $\frac{1}{2}$ " d x 67" h. Putty. **9-shelf cabinet**. 5 $\frac{1}{2}$ " between shelves or adjust shelves in $\frac{1}{2}$ " increments. 275 lbs. #67-FC-9.....\$992.

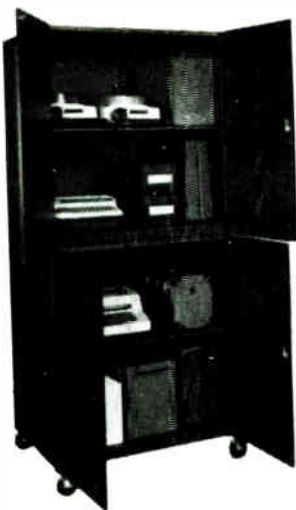
8mm MICROFILM CARTRIDGE CABINET. File up to 35 cartridges per shelf in indexed adjustable sections. Shelves are 35" w x 11" d x 35" h. Putty. **5-shelf cabinet**. 5" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 119 lbs. #35-FC-5.....\$435.

16mm FILM CABINET from 400' through 1600' file individually in chrome plated steel rack. 24 reels per shelf. Putty.

4-shelf cabinet. 14" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 200 lbs. #67-16-4.....\$636. **5-shelf cabinet**. 11" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 2*5 lbs. #67-16-5.....\$695. **6-shelf cabinet**. 9" between shelves or adjust shelves in $\frac{1}{2}$ " increments. 230 lbs. #67-16-6.....\$758. **7-shelf cabinet**. 7 $\frac{1}{2}$ " between shelves or adjust shelves in $\frac{1}{2}$ " increments. 245 lbs. #67-16-7.....\$817.

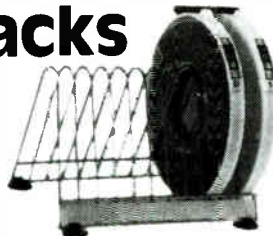


Security



SC-77 — 80" STEEL & WOOD CABINET Heavy-duty welded steel construction and wood doors with walnut laminate. Two modules are lock-stacked together. Cabinet is 34" w x 80" h x 25" d. Compartments are 31 $\frac{1}{2}$ " w x 24" d with 15 $\frac{1}{2}$ " between shelves. Heavy-duty 4" ball bearing casters. Two with brakes. Wt. 194 lbs. SC-77.....\$923. SSH Set of Push/Pull Handles.....\$38. VE-44

Media Racks



For 16mm reels specify 1-3/16" spacing. For most computer tape reels specify 1-7/8" spacing For Super 8 film and audio tapes specify 7/8" spacing.

12" WIDE REEL RACK available in three sizes of rack spacing 1 $\frac{7}{8}$ " wide spacing for 6 reels. 1 $\frac{3}{16}$ " spacing for 9 reels, or $\frac{7}{8}$ " wide spacing for 11 reels 12" w x 9" h x 7 $\frac{3}{4}$ " d. Specify rack spacing R-12.....\$21.

25" WIDE REEL RACK available in three sizes of rack spacing 1 $\frac{7}{8}$ " wide spacing for 12 reels. 1 $\frac{3}{16}$ " spacing for 18 reels, or $\frac{7}{8}$ " wide spacing for 23 reels 25" w x 9" h x 7 $\frac{3}{4}$ " d. Specify rack spacing R-25.....\$28.

34" LONG REEL RACK available in three sizes of rack spacing 1 $\frac{7}{8}$ " wide spacing for 15 reels. 1 $\frac{3}{16}$ " spacing for 25 reels, or $\frac{7}{8}$ " wide spacing for 32 reels 34" w x 9" h x 7 $\frac{3}{4}$ " d. Specify rack spacing R-34.....\$31.

Large Capacity Video Storage



VIDEO TAPE SECURITY CABINET File like books on shelves. Capacity is about 30 videocassettes per shelf depending on cassette dimension. Shelves are 35" w x 10" d. Cabinet is 36" w x 11" d x 35" h. Charcoal with putty color doors.

(A) **2-shelf cabinet**. 14" between shelves or adjust shelves in $\frac{1}{2}$ " increments. Wt. 92 lbs. 35-VT2.....\$303. (B) **3-shelf cabinet**. 9" between shelves or adjust shelves in $\frac{1}{2}$ " increments. Wt. 101 lbs. 35-VT3.....\$345.

35-VTS Extra shelf with 3 dividers. 9 lbs. 35-VTS.....\$42.50



VIDEO TAPE SECURITY STORAGE File videocassettes and video tape reels like books on a shelf. Holds about 30 videocassettes per shelf depending on cassette dimensions. Shelves are 35 $\frac{1}{16}$ " w x 13 $\frac{3}{16}$ " d. Cabinet is 37" w x 14 $\frac{1}{2}$ " d x 67" h. Charcoal with putty color doors.

(A) **4-shelf cabinet** 14" between shelves or adjust shelves in $\frac{1}{2}$ " increments. For 12" d a. reels. Wt. 200 lbs. 67-VT4.....\$684.

(B) **5-shelf cabinet** 11" between shelves or adjust shelves in $\frac{1}{2}$ " increments. Wt. 215 lbs. 67-VT5.....\$742.

(C) **6-shelf cabinet** 9" between shelves or adjust in $\frac{1}{2}$ " increments. 230 lbs. 67-VT6.....\$801.

(D) **7-shelf cabinet** 7" between shelves or adjust in $\frac{1}{2}$ " increments 245 lbs 67-VT7.....\$870.

Prices and Specifications Subject to Change Without Notice.

LUXOR CORPORATION

P.O. Box 830
2245 Delany Road
Waukegan, IL 60085-0830
(312) 244-1800 TWX 910-2350980

MEDIA STORAGE



FOR 5" DEEP DRAWER MODULES. File 36 Beta or 30 VHS in slip cases per 19 1/2" drawer; 81 Beta or 70 VHS in slip cases per 39" drawer.
Order code.....#12

FOR 7 1/2" DEEP & 7 1/2" DEEP DRAWER MODULES. File 22 1/2" video tapes in padded cases per 19 1/2" drawer; 60 per 39" drawer. Files 14 to 16 3/4" video tapes in each 19 1/2" drawer - padded cases, slip cases or small (3M type) cartridges; 33 to 44 3/4" video tapes per 39" drawer.
Order code.....#14

Video Tape Storage



Lock up valuable tapes in modular, lock-stacking, cabinets and expand your storage system as your video library grows. Specify color: Gold, Blue, Tangerine, Putty or Walnut.



SINGLE 5" DRAWER MODULE with drawer lock and keys. File 36 Beta or 30 VHS video tapes in slip cases. 19 1/2" w x 17 1/2" d x 6" h. Wt. 30 lbs.
#19-15-12..... \$165.



SINGLE 7 1/2" DRAWER MODULE with drawer lock and keys. File 22 1/2" video tapes of 16 3/4" video tapes. 19 1/2" w x 17 1/2" d x 9" h. Wt. 30 lbs.
#19-17-14..... \$186.



DOUBLE 5" DRAWER MODULE with drawer lock and keys. File 144 Beta or 120 VHS video tapes in slip cases. 39" w x 17 1/2" d x 11 1/4" h. Wt. 82 lbs.
#39-25-12..... \$477.



SINGLE 7 1/2" DRAWER MODULE with drawer lock and keys. File 44 1/2" video tapes or 32 3/4" video tapes. 39" w x 17 1/2" d x 8 3/4" h. Wt. 65 lbs.
#39-17-14..... \$313.



DOUBLE 5" DRAWER MODULE with drawer lock and keys. File 72 Beta or 60 VHS video tapes in slip cases. 19 1/2" w x 17 1/2" d x 11 1/4" h. Wt. 48 lbs.
#19-25-12..... \$234.



ACCESSORY TOP. Walnut woodgrain laminate. 19 1/2" w x 17 1/2" d x 1/2" h. Wt. 11 lbs.
#19-T.....\$26.50



ACCESSORY TOP. Walnut woodgrain laminate. 39" w x 17 1/2" d x 1/2" h. Wt. 20 lbs.
#39-T..... \$42.50

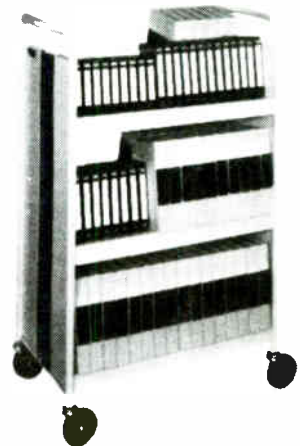


RECESSED BASE. 17 1/2" w x 15 1/2" d x 3" h. Wt. 15 lbs. Without casters.
#19-RB..... \$43.
With casters
#19-RB-C..... \$51.



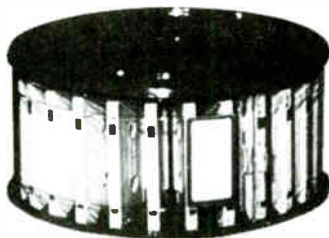
RECESSED BASE. 36" w x 15 1/2" d x 3" h; with 2" casters 5-1/2" h. Charcoal. Wt. 25 lbs.
#39-RB, w/o casters.....\$59.
#39-RB-C, with casters.....\$67.

Video Tape Transports

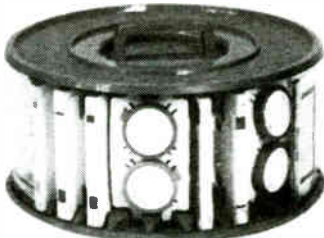


VT-300—VIDEO TAPE TRANSPORT with three double-slant shelves. Holds up to 132 Beta or VHS video cassettes or 96 3/4" cassettes. 28" w x 17" d x 46" h. Assembly required. Wt. 71 lbs. Putty color with woodgrain accent.
VT-300..... \$232.
With 12" big wheels. Wt. 85 lbs
VTB-300..... \$258.

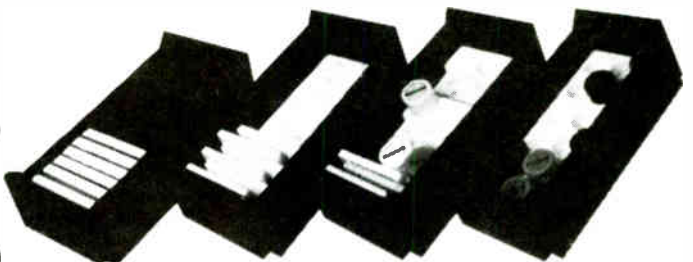
Media-Safe Filers



FOR FILING CASSETTES. Up to 25 cassettes, individual compartments. Specify gold, blue or tangerine.
1-pak. Wt. 6 lbs.
CC-3..... \$48.00
6-pak. Wt. 13 lbs.
CC-6..... \$96.00
12-pak. Wt. 25 lbs.
CC-12..... \$192.00



FOR FILING CASSETTE/FILMSTRIP SETS. Up to 12 sets. Specify gold, blue or tangerine.
1-pak. Wt. 2 lbs.
CC-FS-1..... \$17.00
6-pak. Wt. 13 lbs.
CC-FS-6..... \$102.00
12-pak. Wt. 25 lbs.
CC-FS-12..... \$204.00



FILING CASSETTES IN BOXES. Files up to 15 cassettes using a sliding follower. 3-pack. Wt. 10 lbs. Specify gold, blue or tangerine.
SF-C-3..... \$48.00
FILING CASSETTES WITHOUT BOXES. Files up to 18 cassettes in slots. 3-pack. Wt. 10 lbs. Specify gold, blue or tangerine.
SF-CB-3..... \$48.00

FILING FILMSTRIP/CASSETTE SETS. Files up to 9 filmstrips with accompanying cassettes in individual compartments. 3-pack. Wt. 10 lbs. Specify gold, blue or tangerine.
SF-FC-3..... \$48.00
FILING FILMSTRIPS. Files up to 18 containers in individual compartments. 3-pack. Wt. 10 lbs. Specify gold, blue or tangerine.
SF-F-3..... \$48.00

Prices and Specifications Subject to Change Without Notice.

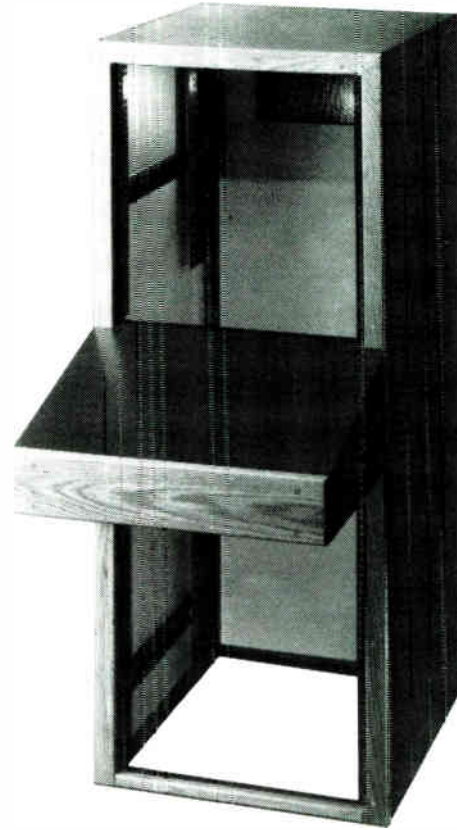
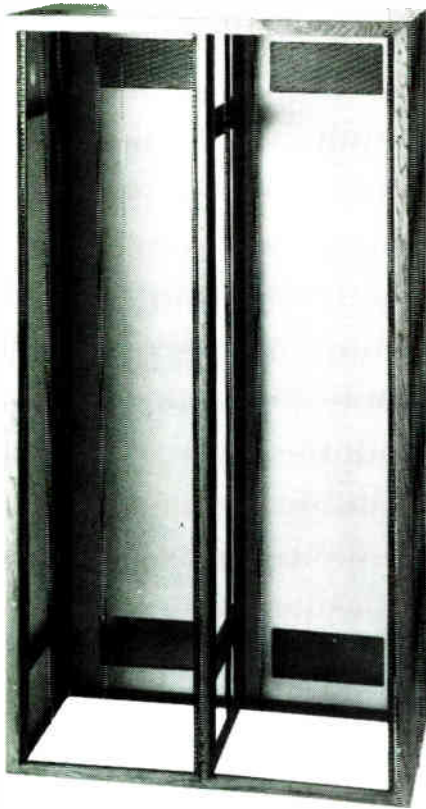
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MORTON
SYSTEM FURNISHINGS

23641 Ridge Route Dr. • Laguna Hills, CA 92653 • (714) 859-6016

SERIES 100 VERTICAL RACK SYSTEM



SERIES 100 Vertical Rack System

The Series 100 Vertical Rack System is designed to house 19" rack mounted equipment up to 24" in depth. Rack openings are 19-3/16" with 17-25/32" clearance between rails to handle slightly oversized equipment which does not adhere to the EIA RS-310-C rack standard. All rack rails are manufactured from heavy duty 10 gauge steel and are fully drilled and tapped for 10-32 screws eliminating the need for captive nuts and clips. Decorative black rack screws and protective washers are also available.

The Series 100 is based on our rugged 16 gauge tubular steel framework covered in a tough polyester resin-based substrate and finished in durable plastic laminate. All front and rear edges are trimmed in solid hand-selected oiled oak or walnut giving the look and feel of fine hand-crafted furniture with a contemporary styling.

Removable rear doors with top and bottom black anodized ventila-

tion screens are optionally available. Rear rack rails are also available for cabinets that will house large pieces of equipment which require rear support or rack slides. These rack rails are the same high-quality black anodized tapped steel rails that are used in the standard rack cabinets. The addition of rear rack rails also includes our adjustable mounting system so the depth of the rear rails can be easily changed.

Optional flat or sloped counter assembly may be added to these rack systems at the time of order. Counter is covered in matching plastic laminate with solid oak or walnut trim and has 14" of rack space per bay. The flat counter consumes 2 rack spaces in vertical height while the sloped counter requires 4 rack spaces. The standard knee clearance for either countertop is 25-9/16". 24-1/2" of rack space is available below the counter of each bay. Counters must be installed at the factory and can be retrofitted to existing vertical racks at an additional charge.

Consult factory for details regarding special configurations, pricing and delivery.

COUNTER ASSEMBLY

	1 BAY	2 BAY	3 BAY	4 BAY
Flat Counter	\$ 238.00	\$ 311.00	\$ 385.00	\$ 458.00
Sloped Counter	298.00	390.00	482.00	573.00

Series 100 Vertical Rack System

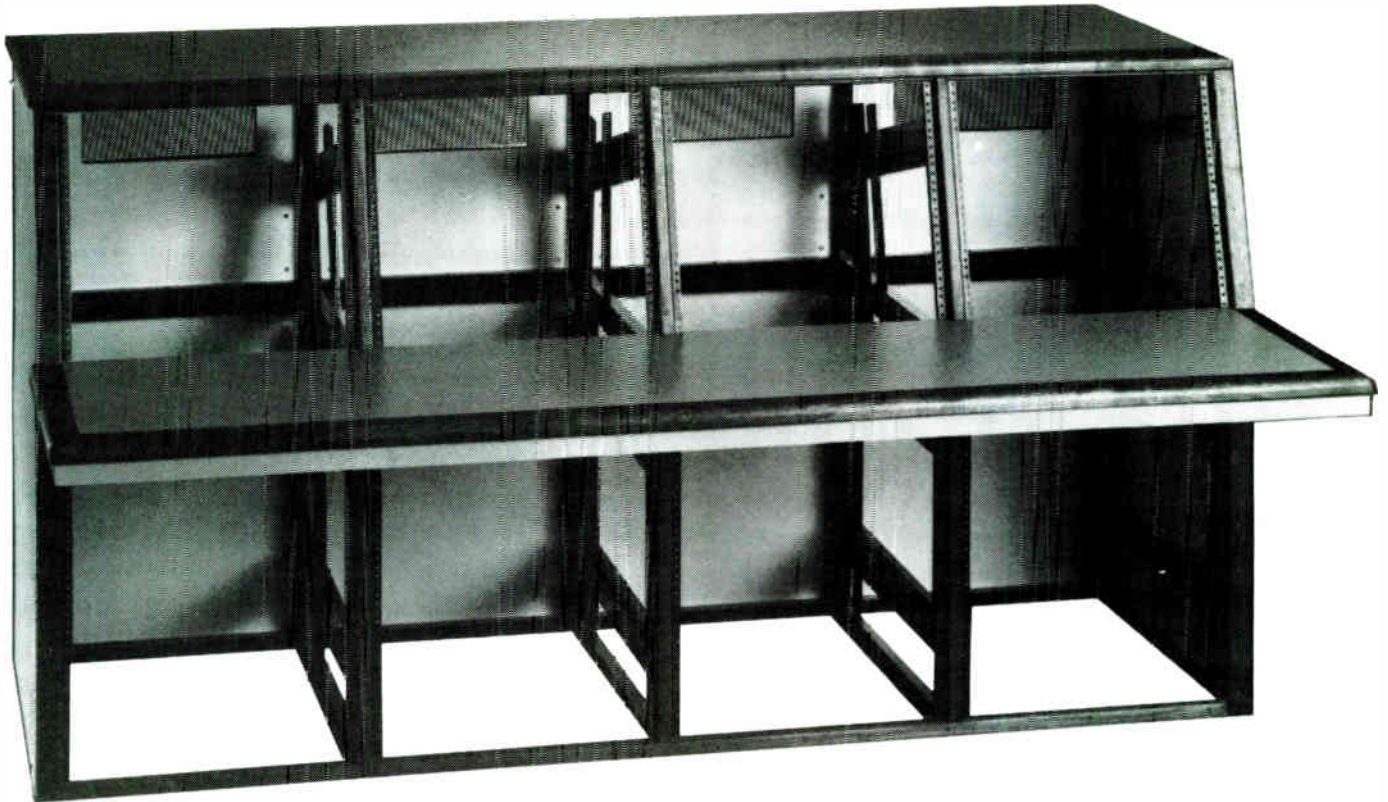
SIZE RACK SPACES	1 BAY	2 BAY	3 BAY	4 BAY	REAR RACK PER BAY	REAR DOOR PER BAY
4 Spaces (7.00")	\$280.00	\$ 448.00	\$ 616.00	\$ 784.00	\$ 63.50	\$ 36.00
8 Spaces (14.00")	319.00	510.00	701.00	892.00	72.25	42.50
12 Spaces (21.00")	358.00	573.00	788.00	1003.00	81.00	49.00
16 Spaces (28.00")	397.00	635.00	873.00	1111.00	89.75	55.50
20 Spaces (35.00")	436.00	698.00	960.00	1222.00	98.50	61.75
24 Spaces (42.00")	475.00	760.00	1045.00	1330.00	107.25	68.00
28 Spaces (49.00")	514.00	822.00	1130.00	1438.00	116.00	74.50
32 Spaces (56.00")	553.00	885.00	1217.00	1549.00	124.75	81.00
36 Spaces (63.00")	592.00	947.00	1302.00	1667.00	133.50	87.25
40 Spaces (70.00")	631.00	1010.00	1389.00	1788.00	142.25	93.50
44 Spaces (77.00")	670.00	1072.00	1474.00	1876.00	151.00	100.00
Bolt-on Caster Base	190.00	240.00	290.00	340.00		



MORTON
SYSTEM FURNISHINGS

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SERIES 500 PRODUCTION CONSOLE SYSTEM



SERIES 500 Production Console System

The Series 500 Production Console Systems are ergonomically designed for user comfort and are suitable for most editing and production requirements. Flat console countertop is 19-1/2" deep and 28-3/16" above the floor for comfortable desk height seating. The Series 500 features 14" of rack space (8 rack units) per bay above countertop and can house equipment up to 24" deep. Rack openings are 19-3/16" with 17-25/32" clearance between rails to handle slightly oversized equipment which does not adhere to the EIA RS-310-C rack standard. All rack rails are manufactured from heavy duty 10 gauge steel and are fully drilled and tapped for 10-32 screws eliminating the need for captive nuts and clips. Decorative black rack screws and protective washers are also available.

The Series 500 is based on our rugged 16 gauge tubular steel framework covered in a tough polyester resin-based substrate and finished

in durable hand-selected oiled oak or walnut giving the look and feel of fine hand-crafted furniture with a contemporary styling.

Removable rear doors with top and bottom black anodized ventilation screens are optionally available. Rear rack rails are standard for consoles that will house large pieces of equipment which require rear support or rack slides. These rack rails are the same high-quality black anodized tapped steel rails that are used for front mounted equipment. The rear rack rails also feature our adjustable mounting system so the depth of the rear rails can be easily changed.

Up to 24-1/2" of rack space (14 rack units) is optionally available below countertop to house switcher power supplies, etc. Adjustable rear rack rails are optional for rack space below countertop.

Custom consoles can be manufactured to almost any desired size and configuration. Consult factory for details regarding special configurations, pricing and delivery.

Series 500 Production Console System

NUMBER OF BAYS	STANDARD UNIT	RACK SPACE BELOW COUNTER	REAR RAILS BELOW COUNTER	COUNTER RACK SPACE	REMOVABLE REAR DOORS
1	\$1085.00	\$140.00	\$ 85.50	\$110.00	\$100.00
2	1530.00	224.00	171.00	220.00	200.00
3	1975.00	308.00	256.50	330.00	300.00
4	2420.00	392.00	342.00	440.00	400.00
5	2865.00	476.00	427.50	550.00	500.00
6	3310.00	560.00	513.00	660.00	600.00

Prices and Specifications Subject to Change Without Notice.

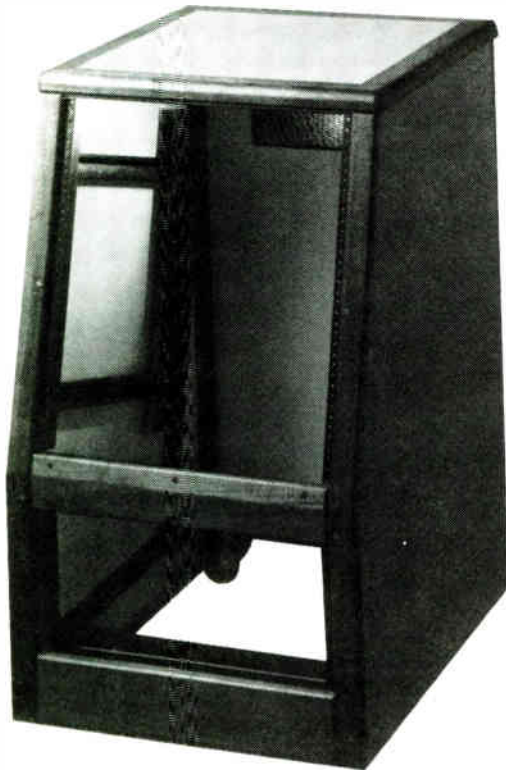
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MORTON
SYSTEM FURNISHINGS

23641 Ridge Route Dr. • Laguna Hills, CA 92653 • (714) 859-6016

SERIES 1000 PORTABLE VCR HOUSING SYSTEM



SERIES 1000 Portable VCR Housing System

The Series 1000 Portable VCR Housing System meets the need for 1/2" and 3/4" VCR editing systems by providing space efficient, aesthetically pleasing mobile cabinetry. The Series 1000 is available in two configurations. The Type A housing system was designed for front loading rack mounted 3/4" VCRs up to 24" deep while the Type B system is oriented to house top loading 1/2" and 3/4" VCRs in a configuration that facilitates easy access during editing sessions. Front surface is sloped back to allow viewing VCR controls and to change cassettes. Each Type B VCR tray is 28" wide by 18" deep and is mounted on velvet-glide slides rated at 100 pounds per tray. The Series 1000 comes complete with four heavy duty casters for mobility and rear cabling access.

Rack openings for the Type A System are 19-3/16" with 17-25/32" clearance between rails to handle slightly oversized equipment which does not adhere to the EIA RS-310-C rack standard. All rack rails are

manufactured from heavy duty 10 gauge steel and are fully drilled and tapped for 10-32 screws eliminating the need for captive nuts and clips. Decorative black rack screws and protective washers are also available.

The Series 1000 is based on our rugged 16 gauge tubular steel framework covered in a tough polyester resin-based substrate and finished in durable plastic laminate. All front and rear edges are trimmed in solid hand selected oiled oak or walnut, giving the look and feel of fine hand-crafted furniture with a contemporary styling.

Removable rear door with black anodized ventilation screen is optionally available. The Type A system also features rear rack rails to secure rack slides common to most rack mounted VCRs. Rear rails also include our adjustable mounting system so the depth of the rails can be easily changed.

Consult factory for details regarding special configurations, pricing and delivery.

SERIES 1000 TYPE A PORTABLE VCR RACK SYSTEM

SIZE RACK SPACES	BASE UNIT	REMOVABLE REAR DOOR
6 Spaces (10.50")	\$ 680.00	\$ 80.00
12 Spaces (21.00")	740.00	89.00
18 Spaces (31.50")	800.00	98.00

SERIES 1000 TYPE B PORTABLE VCR TRAY SYSTEM

NUMBER OF TRAYS	BASE UNIT	REMOVABLE REAR DOOR
1	\$ 770.00	\$ 92.00
2	830.00	102.00
3	890.00	112.00



MORTON
SYSTEM FURNISHINGS

23641 Ridge Route Dr. • Laguna Hills, CA 92653 • (714) 859-6016

SERIES 1100 VERTICAL DUPLICATION SYSTEM



SERIES 1100 Vertical Duplication System

The Series 1100 Vertical Duplication System fulfills the need for space efficient aesthetically pleasing duplication racks. The Series 1100 features sliding trays 19" wide and 16" deep, mounted on 14" velvet-glide slides rated to carry 100 pounds per tray. The standard vertical spacing between trays is 10-1/2 inches.

Standard 19" rack space is optionally available to house time base correctors, monitors, etc. in the same duplication rack. Rear rack rails are also available for rack-furnished systems that will house large pieces of equipment which require rear support or rack slides. The addition of rear rack rails also includes our adjustable mounting system so the depth of the rear rails can be easily changed. Rack openings are 19-3/16" with 17-25/32" clearance between rails to

handle slightly oversized equipment which does not adhere to the EIA RS-310-C rack standard. All rack rails are manufactured from heavy duty 10 gauge steel and are fully drilled and tapped for 10-32 screws eliminating the need for captive nuts and clips. Decorative black rack screws and protective washers are also available.

The Series 1100 is based on our rugged 16 gauge tubular steel framework covered in a tough polyester resin-based substrate and finished in durable plastic laminate. All front and rear edges are trimmed in solid hand-selected oiled oak or walnut giving the look and feel of fine hand-crafted furniture with a contemporary styling.

Optional removable rear doors with top and bottom black anodized ventilation screens are also available.

Consult factory for details regarding special configurations, pricing and delivery.

Series 1100 Vertical Duplication System

# OF SLIDING VCR TRAYS PER BAY	1 BAY	2 BAY	3 BAY	4 BAY	REMOVABLE REAR DOOR PER BAY
1	\$420.00	\$ 714.00	\$1008.00	\$1302.00	\$ 60.00
2	525.00	893.00	1261.00	1629.00	68.00
3	630.00	1071.00	1512.00	1953.00	76.00
4	735.00	1250.00	1765.00	2280.00	84.00
5	840.00	1428.00	2016.00	2604.00	92.00
6	945.00	1607.00	2269.00	2931.00	100.00

OPTIONAL RACK SPACE

SIZE RACK SPACES	1 BAY	2 BAY	3 BAY	4 BAY	REAR RACK PER BAY
4 Spaces (7.00")	\$134.00	\$214.00	\$294.00	\$374.00	\$63.50
6 Spaces (10.50")	153.50	246.00	338.50	431.00	68.00
8 Spaces (14.00")	173.00	277.00	381.00	485.00	72.25
10 Spaces (17.50")	192.50	308.00	423.50	539.00	76.50
12 Spaces (21.00")	212.00	339.00	466.00	593.00	81.00

Prices and Specifications Subject to Change Without Notice.



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SYSTEM FURNISHINGS

23641 Ridge Route Dr. • Laguna Hills, CA 92653 • (714) 859-6016

SERIES 1200 PORTABLE EDITING SYSTEM



SERIES 1200 Portable Editing System

The Series 1200 Portable Editing System is designed to meet the needs of off-line editing system users who have a limited amount of floorspace available. The Series 1200 is a complete, self-contained cabinet system available in three types. Type A has two 19" wide sliding trays to house 1/2" top loading and front loading VCRs. Type B has two 28" wide sliding trays for larger top loading 3/4" VCRs while Type C has 24-1/2" of vertical rack space for rack mounted front loading machines. All three versions feature heavy duty rubber casters and dual-level work surfaces.

The Series 1200 is based on our rugged 16 gauge tubular steel frame-

work covered in a tough polyester resin-based substrate and finished in durable plastic laminate. All front and rear edges are trimmed in solid hand-selected oiled oak or walnut giving the look and feel of fine hand-crafted furniture with a contemporary styling.

Available options include either an 18" deep flat monitor shelf or 20" deep three-bay monitor rack. Both options are fully adjustable in height and are easily attached with four bolts. The monitor rack option features adjustable rear rack rails to support monitor slides and is available in several rack sizes.

Consult factory for details regarding special configurations, pricing and delivery.

SERIES 1200 PORTABLE EDITING SYSTEM

TYPE	DESCRIPTION	BASE UNIT
A	19" Wide Sliding Trays	\$ 1155.00
B	28" Wide Sliding Trays	1291.00
C	24-1/2" Vertical Rack Space	1155.00

ADJUSTABLE MONITOR SHELF

18" Deep Monitor Shelf	\$ 195.00
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ADJUSTABLE THREE BAY MONITOR RACK

SIZE RACK SPACES	THREE-BAY ASSEMBLY
4 Spaces (7.00")	\$ 758.00
6 Spaces (10.50")	801.00
8 Spaces (14.00")	843.00
10 Spaces (17.50")	886.00
12 Spaces (21.00")	928.00

PACKTRONICS

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Dexter, MI 48130
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VIDEO PACS

PSI CUSTOM FIT RECORDER CASES

Custom fit video recorder cases for popular size video recorder decks. Durable construction with shoulder strap and pocket large enough to hold most spare batteries and accessories. Available in gray only.

CAT #		LIST	
VR10GN	Panasonic Style 10-1/2" x 8-3/4" x 3"	\$79.95	(1036 x 95)
VR20GN	RCA/Hitachi Universal 10-1/2" x 9-3/4" x 3-3/4"	79.95	(2036 x 95)



RECORDER CASE

PSI VIDEO CAMERA CASE

The VC25 is designed for all small cameras. Features removable center divider, with two extra dividers. Large padded outside pocket holds cables, tapes, batteries and other accessories. Available in gray nylon.

VC25GN	Small Cam. Case	LIST \$69.95	(2531 x 95)
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VIDEO CAMERA CASE

PSI CAMCORDER CASE

The VC35 is designed to fit Betamovie, JVC Camcorders, and other medium size camera systems. Has fully adjustable center and side dividers, complete with a large padded outside pouch for cables, tapes, batteries and other accessories. Available in gray nylon.

VC35GN	Med. Cam. Case	\$79.95	(3536 x 95)
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CAMCORDER CASE

PSI VIDEO COMBINATION CASE

The VC45 is a combination camera and recorder carrying case. This case will hold not only a camera and recorder, but also a host of other accessories. Removable center and side dividers, with a large outside padded pouch.

VC45GN	Combocase	LIST \$89.95	(4539 x 95)
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VIDEO COMBINATION CASE

PEERLESS SALES CO.

1950 Hawthorne Ave.
Melrose Park, IL 60160
(312) 865-8870

SCHOOLS, HOSPITAL & SERVICE CARTS SECURITY FASTENERS

EDUCATIONAL TELEVISION CARTS



1530-000



1519-000



1528-000



1517-000



1524-000



1513-000



1540-000

Peerless has 3 distinct styles of ETV carts available. Each of the 3 styles is available with either a metal top or an adjustable tilt, ventilated and insulated top shelf. All ETV carts are 50" high and feature flared leg design for maximum safety and stability. All styles are also now available with heavy duty solid stem 4" casters that bolt in place. All units shipped knocked down.

Style A carts feature three shelves. Capacity 25" color TV with two VCR's, or 200 lbs. total

Style B carts feature two shelves with lower cross braces. Capacity 25" color receiver with VCR, or 200 lbs. total

Style C carts feature two shelves. Capacity 19" color or 23" B/W monitor with VCR, or 150 lbs. total.

STOCK

1517-000 Style B Cart w/solid stem casters and metal top shelf **\$117.75ea.**

1524-000 Style C Cart w/solid stem casters and adjustable tilt top **124.25ea.**

1513-000 Style C Cart w/solid stem casters and metal top shelf **105.25ea.**

1540-000 Jumbo size cart with 8" diameter pneumatic wheels. Has 3-16 gauge steel shelves. All joints MIG welded. Height 54" capacity 300 lbs. Has flared profile designed for maximum stability **345.00ea.**

STOCK #

1530-000 Style A Cart w/solid stem casters and adjustable tilt top. **\$149.50ea.**

1519-000 Style A Cart w/solid stem casters and metal top shelf **137.25ea.**

1528-000 Style B Cart w/solid stem casters and adjustable tilt top **136.50ea.**

EDUCATION TELEVISION CART ACCESSORIES



1550-000

1550-000 3 Wire Heavy Duty 15 foot Extension Cord with 2 grounded receptacles mounted in a metal box that attaches easily to the metal shelf on any Peerless ETV Cart, except 1540 **\$28.00ea.**



1553-000

1503-100 8" Diameter Swivel Caster with jumbo pneumatic tire **45.00ea.**

1503-200 8" Diameter Rigid Caster with jumbo pneumatic tire **40.00ea.**



1503-100

1553-000 Electrical Outlet Box for jumbo cart. 3 wire heavy duty 15' extension cord with 4 grounded receptacles mounted in a metal box that attaches easily to shelf **\$27.00ea.**



1555-000

1555-000 Black Web Safety Belt for jumbo cart **10.00ea.**

HOSPITAL CART

1719-000 Overbed Style Hospital Cart for 19" color or B/W TV. Cart can be positioned so set is conveniently suspended over the bed **\$ 95.00ea.**

SERVICE CART

5066-000 All Welded Steel Cart with ladder attached. Ideal for installing, removing and servicing TV's in schools, hospitals, hotels and motels. Complete with locking storage cabinet **425.00ea.**



1719-000



5066-000

SECURITY FASTENERS



TRI-SLOT HEAD



BUTTON HEAD



1350



1352



1360



Tamper Proof Screws help prevent theft and pilferage which might occur when using conventional screws. All screws supplied bright zinc plate finish. Standard package on all sizes is 100 pieces. Service charge of \$2.50 on all broken packages. Tri-slot head screws are available from stock in the following sizes.

1302-010 1/2" Long, #10 type AB sheet metal screw **10.60/c**
1303-010 3/4" Long, #10 type AB sheet metal screw **11.25/c**
1304-010 1" Long, #10 type AB sheet metal screw **12.15/c**
1306-010 1 1/2" Long, #10 type AB sheet metal screw **16.35/c**
1307-010 1 3/4" Long, #10 type AB sheet metal screw **16.90/c**
1313-510 7/8" Long, #10-32 machine screw **15.45/c**

Use the following tools for installing and removing the above T/P Screws.

1350-010 1/4" Hex Bit. Use with power driver, or 1360 Hand Adaptor **6.00ea.**

1360-010 Hand adapter use with Hex Bit for installing moderate quantities **10.00ea.**

BUTTON HEAD SCREW SECURITY KIT

1330-500 Button Head Screw Security Kit, contains 1 each tool for #6, #8, #10 machine screws, 100 pcs. #6-32 x 1/2", 50 pcs. #6-32 x 1", sheet metal screws 50 pcs. each #6 x 5/8", 3/4", 1", #8 x 5/8", 3/4", 1", #10 x 1/2", 3/4" **90.00ea.**

Latest improvement in Tamper Proof Screws. "Button Head" screws appear to be round and are generally mistaken for rivet heads, yet can be easily installed and removed with special tool because the head is actually slightly out of round.

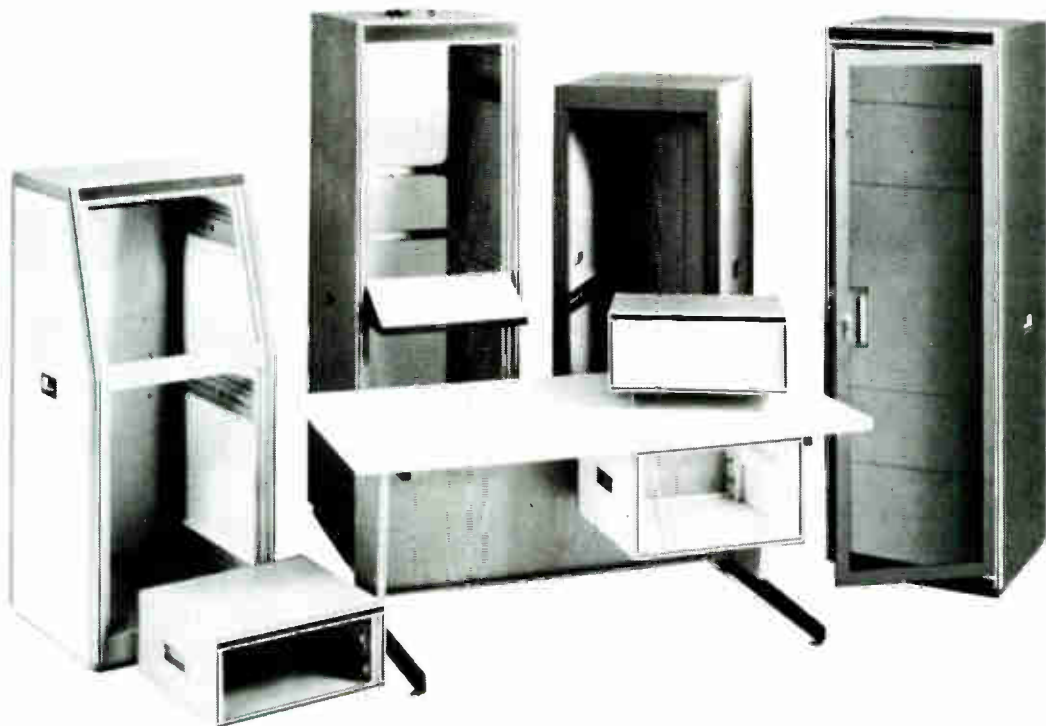
1322-006 1/2" Long, #6 type AB sheet metal screw **7.65/c**
1322-506 5/8" Long, #6 type AB sheet metal screw **8.30/c**
1323-006 3/4" Long, #6 type AB sheet metal screw **9.10/c**
1324-006 1" Long, #6 type AB sheet metal screw **10.50/c**
1322-508 5/8" Long, #8 type AB sheet metal screw **13.10/c**
1323-008 3/4" Long, #8 type AB sheet metal screw **13.35/c**
1324-008 1" Long, #8 type AB sheet metal screw **15.75/c**
1322-010 1/2" Long, #10 type AB sheet metal screw **16.00/c**
1323-010 3/4" Long, #10 type AB sheet metal screw **19.00/c**
1324-010 1" Long, #10 type AB sheet metal screw **21.65/c**
1328-010 1 1/2" Long, #10 type AB sheet metal screw **28.00/c**
1332-006 1/2" Long, #6-32 machine screw **6.30/c**
1334-006 1" Long, #6-32 machine screw **8.80/c**
1332-010 1/2" Long, 10-32 machine screw **12.90/c**
1333-010 3/4" Long, 10-32 machine screw **15.50/c**
1334-010 1" Long, 10-32 machine screw **18.00/c**

Tool for above "Button Head" Fasteners has 1/4" Hex. Use with power driver or 1360 Hand Adaptor.

1352-006 Button Head Tool for #6 screws **20.00ea.**
1352-008 Button Head Tool for #8 screws **20.00ea.**
1352-010 Button Head Tool for #10 screws **20.00ea.**

VE-52 **Prices and Specifications Subject to Change Without Notice.**

CABINETS CONSOLES CASES



Standard Models in many sizes
Modifications for special needs
Custom Built for complete specials
Facilities from sheet metal to finishing

Quick Series: Various sizes and models of
racks and cases stocked for immediate delivery.

Accessories: panels, fans, blowers, slides, shelves,
drawers, outlet strips, chassis, hardware, etc.

Premier equals quality, good delivery and low prices.

write for complete catalog and prices



PREMIER METAL PRODUCTS COMPANY

381 CANAL PLACE, BRONX, NEW YORK 10451 (212) 993-9200

16641 ORANGE WAY, FONTANA, CA. 92335 (714) 829-3089

QUEST™ /PACKTRONICS

DISTRIBUTED EXCLUSIVELY BY PSI

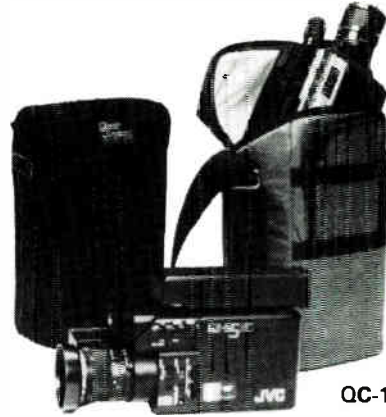
7200 Huron River Drive
Dexter, MI 48130
(313) 426-4646

VIDEO PACS

QC-1 SMALL VIDEO CAMERA CARRIER

Designed for video cameras up to 12" x 6-1/4" x 4". Built to give the ultimate protection with close-cell foam and rugged Cordura. The unit may be "docked" or attached onto the side of any Quest recorder case or carried on the shoulder.

	LIST		BLACK	GRAY	NAVY
QC-1	\$43.95	(5521 x 95)	5560	5561	5562



QC-1

QUEST VZ-SERIES

The Quest VZ-Series bags are designed to carry a video camera and accessories. The VZ-M is a small camera and accessory bag. Holds cables, batteries, and tapes in front pocket. The VZ-C is a video camera bag for Camcorders. Beta Movie and other medium size video cameras. Both models feature repositionable dividers, exterior pocket, adjustable padded shoulder strap, and easy grip carry handles. VZ-M: 7"H x 10-1/2"L x 7"D VZ-C: 9-1/4"H x 14-1/4"L x 7"D.

	LIST		GRAY	NAVY	BROWN	BLACK
VZ-M	\$69.95	(5534 x 95)	5525	5526	5527	5528
VZ-C	99.95	(5549 x 95)	5549	5550	5551	5552



QUEST VZ-SERIES

QUEST COMBINATION BAG — Fast Access Cable Port

One of Quest's latest developments, designed to accommodate both a video recorder and video camera. Adjustable interior compartments separate camera, recorder and accessories. Quick-release "Bonnie-Fasteners" to carry tripod. Double carrying handle on top with shoulder strap "Smart-Belt" is integrated for waist-belt carrying. Protective port for cable outlet. Features the "Fast Access" cable port on the side.

	LIST		GRAY	NAVY	BLACK
Video Combo Bag	\$129.95	(5567 x 95)	5586	5587	5585



QUEST COMBINATION BAG

QUEST VIDEO RECORDER PACKS

Unparalleled protection for delicate electronics with the Quest Video Recorder Packs. Custom fit bags feature exterior pouch for accessories, protective port for cables, super-tough XYY zippers and the unique Quest dual strap system.

VZ-U: 10-1/2"H x 9-3/4"W x 3-3/4"D

VZ-P: 10-1/2"H x 8-3/4"W x 3-3/4"D

VZ-J: 10"H x 11"W x 5"D

	LIST		GRAY	NAVY	BROWN	BLACK
VZ-U (RCA/Hitachi)	\$99.95	(5550 x 95)	5541	5542	5543	5544
VZ-P (Panasonic)	99.95	(5550 x 95)	5545	5546	5547	5548
VZ-J (JVC)	99.95	(5550 x 95)	5534	5535		5533



QUEST VIDEO RECORDER PACKS

QUEST™ /PACKTRONICS

DISTRIBUTED EXCLUSIVELY BY PSI

7200 Huron River Drive
Dexter, MI 48130
(313) 426-4646

VIDEO PACS/ ACCESSORIES



QUEST DUFFEL BAG

QUEST DUFFEL BAG

Perfect for on-location shooting, or anytime you need to carry large and numerous items. The Quest Duffel Bag is a cavernous 28-1/2'L x 14-1/2'W x 11'D, and carries light stands, tripods and other accessories with ease. Made of super-touch Cordura. Zippered end pockets.

	LIST		NAVY	BLACK
Duffel Bag	\$159.95	(5779 x 95)	5731	5730



VCR RENTAL CASE

VCR RENTAL CASE

The Quest VCR Rental Case is made with tough, weather-proofed Cordura nylon, with layers of thick padding underneath. This pack holds even the largest table-top Beta or VHS VCR's portable VCR's with AC adaptor or tuner, or disc players. 21-1/2'L x 17-1/2'W x 8-1/2'D.

	LIST		NAVY	BLACK
VCR Rental	\$89.95	(5545 x 00)	5529	5530



QUEST PORTABLE
TYPEWRITER/COMPUTER
CASE

QUEST PORTABLE TYPEWRITER/COMPUTER CASE

Custom fit cases for popular personal typewriters and small portable computers. Fits the Brother Personal Typewriters and Canon Typestar Typewriter, TRS-100 and Epson portable computers. Exterior material from super-touch Cordura nylon, with foam padding for "shock" protection. Convenient carrying handles.

	LIST		BLACK	BURGUNDY
Brother Personal	\$25.95	(8B12 x 95)	5698B	5699B
Canon Typestar		(8C12 x 95)	5698C	5699C

QUEST ATTACHE CASE

Soft sided designer attache for the stylish professional. Spacious interior features pockets for hand-held computers, pens, etc. Zipped side-pocket for papers and top-loading compartment for those last minute items.

	LIST		BROWN
Attache	\$99.95	(5752 x 95)	5711



QUEST ATTACHE CASE

27740 Hopkins Ave.
Valencia, CA 91355
(805) 257-4447



Camera cable access



Change cassette and record



Adjustable back straps

VCR BAG

It's in the bag! A tough bag designed especially to protect your video recorder and give you easy access.

The bag is custom designed in three styles to give a custom fit to most major brands of VCRs and accessories. Engineered so you can change cassettes and record without the VCR ever leaving the bag. There are separate compartments for an extra cassette, stick battery and cable storage. Use as a "backpack" or with the shoulder strap for hands-off portability.

Ballistic Nylon (the same fabric used in bullet-proof vests) is stitched and double stitched to create a handsome, almost indestructible bag that is water resistant and cleans easily. Durable closed cell foam padding (its extra density providing extra protection) surrounds the VCR on all sides. Each pocket has a specially designed cap cover that sheds moisture and dirt. Generous Velcro® closures and heavy-duty hardware combine with the functional styling to make storing and handling your VCR a breeze.

A first class bag with first class features offered at a reasonable price, Smith-Victor Fotima VCR bags come in three models. Get the best value—no other VCR bag on the market does the job better.

- Separate compartments for recorder, cassette, stick battery and cables
- Camera cable access
- Change cassette without removing VCR from bag
- Adjustable back straps
- Adjustable removable padded shoulder strap
- Weather resistant cap covers with Velcro® closure strips
- Ballistic Nylon fabric
- Durable, extra dense, closed cell foam padding



- Quick release buckle and heavy-duty zippers with functional oversized pull-tabs on recorder compartment
- Hi-impact plastic feet
- Smith-Victor warranty against defective materials and workmanship
- Available in Brick Red, Silver Grey, Safari Green, Smoke Grey, or Blue with black trim

Model VCR 821

Interior dimensions: 9¾" long, 3¾" wide, 10" high. Fits Panasonic PV 5500 and similar designs by other manufacturers. **\$69.95**

Model VCR 822

Interior dimensions: 10-3/4" long, 4-1/2" wide, 10-1/8" high. Fits RCA VGP 170 and similar designs by other manufacturers. **\$74.95**

Model VCR 823

Interior dimensions: 9" long, 3-3/4" wide, 12-1/8" high. Fits Sony SL 2000 Beta Portable and similar designs by other manufacturers. Utilizes shoulder strap furnished with recorder. **\$64.95**

MODULAR CONSOLE COMPONENTS

SU-511 Basic Single Bay Console

Basic console: 2 side panels with vents (dark grey), 1 back panel with vents and handgrips (black), 1 top panel (light grey), 2 feet (black), 3 structural members, 1 blank panel 3 1/2" x 19" (dark grey), 1 blank panel 10 1/2" x 19" (dark grey) **\$435.00**

SU-512 Single Bay Table

Single Table: 2 slide supports (dark grey), 1 padded front piece, 19" wide, with simulated leather covering (dark brown) **\$130.00**

SU-513 Single Bay Add-On Module

Add-On Module: 1 center panel (light grey), 1 back panel with vents and handgrips (black), 1 top panel (light grey), 1 foot (black), 1 blank panel 3 1/2" x 19" (dark grey), 1 blank panel 10 1/2" x 19" (dark grey) **\$330.00**

SU-514 Single Bay Add-On Table

Add-on-table: 1 center support (dark grey), 1 padded front piece, 19" wide, with simulated leather covering (dark brown) **\$120.00**

SU-515 Twin Bay Table

2 side supports (dark grey), 1 padded front piece 38" wide, with simulated leather covering (dark brown), 38" wide table panel with cut out for RM-440 (light grey), mounting hardware included **\$210.00**

RMM-501 Type 5 Mounting Kit

Hardware kit for mounting Type 5 U-matic units. Kit includes: Pair of 3-section ball bearing steel chassis slides; chassis slide mounting hardware; chassis slide mounting adaptors for non-Sony Consoles; pair of rack handle brackets; filler strip; necessary screws **\$200.00**

RM-502 Panel for RM-500/RM-V5

2 unit mounting panel with cut-out for either RM-500 or RM-V5; screws included **\$40.00**

RMM-503 Mounting Brackets for RM-580

Pair of brackets to rack mount RM-580; screws included **\$35.00**

RMM-504 Panel for RM-440

4 unit mounting panel with cut-out for RM-440; screws included **\$45.00**

RMM-505 Mounting Brackets for RM-550 and RM-V5

Brackets for side-by-side rack mounting of RM-550 and RM-V5 **\$30.00**

RMM-506 Mounting Bracket for SLO-383

5 unit bracket to rack mount SLO-383 **\$140.00**

BLP-501 Unit Blank Panel

1 3/4" x 19" Light grey filler panel with predrilled mounting holes **\$20.00**

BLP-502 2 Unit Blank Panel

3 1/2" x 19" Light grey filler panel with predrilled mounting holes **\$23.00**

BLP-503 3 Unit Blank Panel

5 1/4" x 19" Light grey filler panel with predrilled mounting holes **\$25.00**

BLP-504 1 Unit Padded Panel

1 3/4" x 19" foam padded panel with simulated leather PVC covering and predrilled mounting holes **\$35.00**

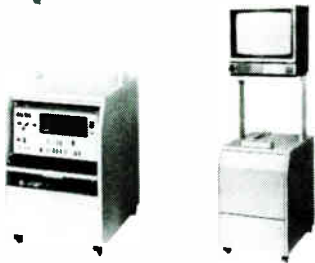
BLP-505 2 Unit Padded Panel

3 1/2" x 19" foam padded panel with simulated leather PVC covering and predrilled mounting holes **\$40.00**

BLP-506 Mounting Conversation Kit

Special hardware to modify standard 5 unit height upper console section to accept 6 unit height equipment **\$40.00**

SU-501



SU-502

SU-511/512/ 513/514



SU-501 VIDEO CONSOLE

A special console ideally suited for use in offices, showrooms or reception areas. The upper section of the unit contains a slide-out equipment shelf with a locking door that disappears into the console when open. The lower section is a roomy, locking drawer that can be used to store tapes or accessories. **\$400.00**

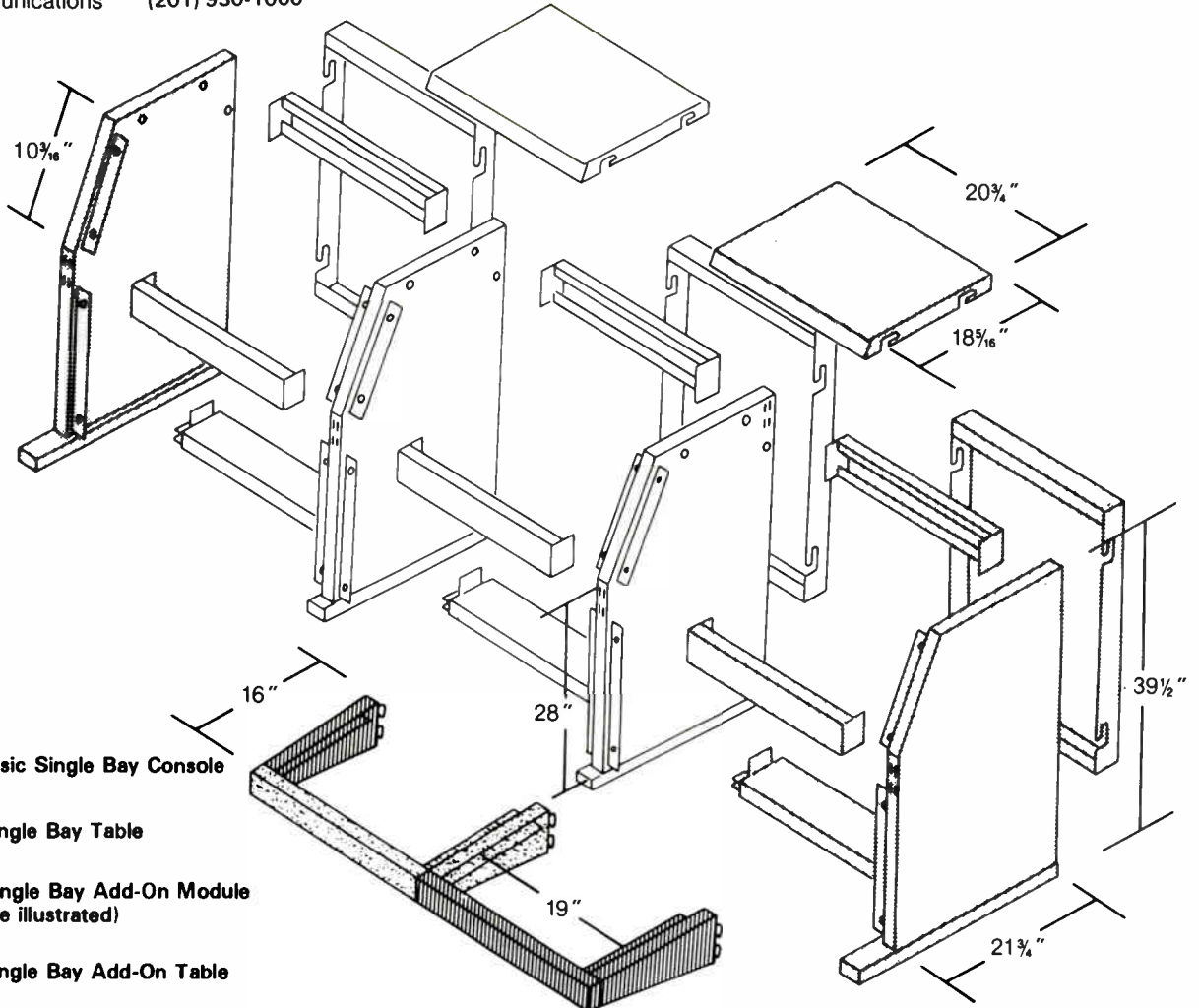
SU-502 VIDEO CONSOLE





A companion unit to the SU-501 console that has exactly the same features plus an elevated pedestal large enough to accommodate up to 19" monitors. **\$500.00**







SU-511/512/513/514



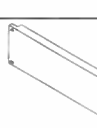



An incredibly versatile system of custom designed video consoles for users of Sony Type 5 U-matic and other video equipment. The completely modular EIA standard system can be assembled in countless different configurations to suit individual requirements. It's a K-D (knockdown) design that assembles easily in minutes and can easily be expanded via convenient add-on options.

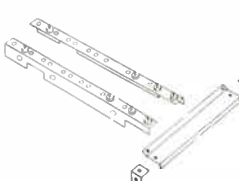
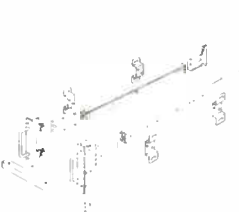
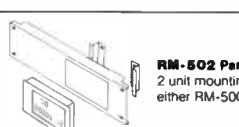
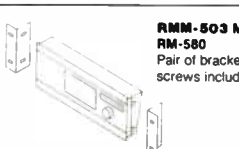
SU-511	\$435.00
SU-512	130.00
SU-513	330.00
SU-514	120.00



-  **SU-511 Basic Single Bay Console**
-  **SU-512 Single Bay Table**
-  **SU-513 Single Bay Add-On Module**
(2 units are illustrated)
-  **SU-514 Single Bay Add-On Table**

	SU-511 Basic Single Bay Console Basic console: 2 side panels with vents (dark grey), 1 back panel with vents and handgrips (black), 1 top panel (light grey), 2 feet (black), 3 structural members, 1 blank panel 3 1/2" x 19" (dark grey), 1 blank panel 10 1/2" x 19" (dark grey)
	SU-512 Single Bay Table Single Table: 2 side supports (dark grey), 1 padded front piece, 19" wide, with simulated leather covering (dark brown)
	SU-513 Single Bay Add-On Module Add-On Module: 1 center panel (light grey), 1 back panel with vents and handgrips (black), 1 top panel (light grey), 1 foot (black), 1 blank panel 3 1/2" x 19" (dark grey), 1 blank panel 10 1/2" x 19" (dark grey)
	SU-514 Single Bay Add-On Table Add-on-table: 1 center support (dark grey), 1 padded front piece, 19" wide, with simulated leather covering (dark brown)
	SU-515 Twin Bay Table 2 side supports (dark grey), 1 padded front piece 38" wide, with simulated leather covering (dark brown), 38" wide table panel with cut out for RM-440 (light grey), mounting hardware included
	RMM-504 Panel for RM-440 4 unit mounting panel with cut-out for RM-440; screws included

	RMM-505 Mounting Crackets for RM-550 & RM-V5 Brackets for side-by-side rack mounting of RM-550 and RM-V5
	BLP-501 1 Unit Blank Panel 1 1/4" x 19" Light grey filler panel with predrilled mounting holes
	BLP-502 2 Unit Blank Panel 3 1/2" x 19" Light grey filler panel with predrilled mounting holes
	BLP-503 3 Unit Blank Panel 5 1/4" x 19" Light grey filler panel with predrilled mounting holes
	BLP-504 1 Unit Padded Panel 1 1/4" x 19" foam padded panel with simulated leather PVC covering and predrilled mounting holes
	BLP-505 2 Unit Padded Panel 3 1/2" x 19" foam padded panel with simulated leather PVC covering and predrilled mounting holes

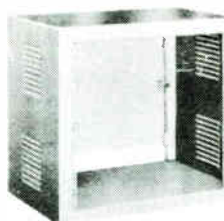
	BLP-506 Mounting Conversion Kit Special hardware to modify standard 5 unit height upper console section to accept 6 unit height equipment
	RMM-501 Type 5 Mounting Kit Hardware kit for mounting Type 5 U-matic units. Kit includes: Pair of 3-section ball bearing steel chassis slides; chassis slide mounting hardware; chassis slide mounting adaptors for non-Sony Consoles; pair of rack handle brackets; filler strip; necessary screws
	RM-502 Panel for RM-500/RM-V5 2 unit mounting panel with cut-out for either RM-500 or RM-V5; screws included
	RMM-503 Mounting Brackets for RM-580 Pair of brackets to rack mount RM-580; screws included

SOUNDOLIER

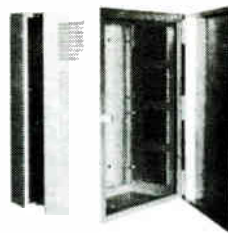
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St. Louis, MO 63126
(314) 962-9870

CABINETS



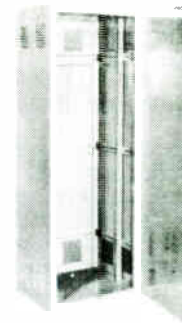
Series 400



Series 300



Series 100



Series 200

Cabinet Relay Racks

SERIES 100 cabinet relay racks are designed for standard 19" (483mm) panels. Constructed of 16 ga. CRS throughout. Rear door lock and low profile handle included. Panel mounting angles are tapped to accept 10-32 pan head screws included. Louvers are internal type for improved ventilation. Iron phosphate coated for rust prevention and paint adhesion. Knockouts located at rear top and bottom. If no color is specified, Soundolier light satin beige will be furnished. Complete list of colors available. Shipped knocked down. Hardware and instructions included.

Options:

Series 110 Front Door — mounted on a ridged continuous hinge. May be ordered with or without cabinet. See specification chart for model numbers.

Series PT Panel Trim — stainless steel trim for covering panel mounting hardware. Complete with fasteners. Specify model PT-36, PT-42, PT-61, PT-70 or PT-77.

Transmitter Racks

SERIES 200 Transmitter Racks are designed to mount standard 19" (483mm) panels. Constructed of 16 ga. CRS throughout. Front and rear door handles and locks provided (locks keyed differently for security). Modern internal louvers for improved ventilation. The 11 ga. panel mounting angles are tapped for 10-32 screws (included) and are adjustable to any distance from front to rear. Panel angles are mounted to three sturdy channel slides on each side. Knockouts are located at rear top and bottom. If no color is specified, Soundolier light satin beige will be furnished. Complete list of colors available. Shipped knocked down. Hardware and instructions included.

Optional Accessories for Series 100 and 200

TMC-10 Television monitor adaptor—Provides 10-5/8" vertical mounting space.

TMC-15 Television monitor adaptor—Provides 15-7/8" vertical mounting space.

Sectional Wall Mounting Cabinets

SERIES 300 Sectional Wall Cabinets are designed for standard 19" (483mm) rack panels. Entire cabinet is constructed of 16 ga. CRS. Back and front sections are one piece construction with angle braces at each corner. All seams and miters are electric welded and ground smooth. Center cabinet is strengthened with 16 ga. braces at each corner. Three larger models have 11 ga. mounting supports on back section. Removable pin hinges for easy assembly and hinges are bolted to cabinet section for greater strength. Knockouts and internal louvers are two Soundolier exclusives. Center section and rear section are secured with locking rods and alignment pins. Front section is complete with cylinder lock. All models have tapped panel mounting rails and 10-32 pan head screws for panel mounting. If no color is specified, Soundolier light satin beige will be furnished. Complete list of colors available. Shipped completely assembled.

Desk Top Cabinet

SERIES 400 desk top cabinets are completely assembled and constructed from 16 ga. CRS throughout. Each unit is equipped with a locking rear door which is mounted on sturdy slip joint hinges. Internal louvers and recessed panel angles give this compact cabinet a "clean look." The panel mounting angles are tapped for 10-32 screws. Designed to mount most Soundolier cabinet accessories. If no color is specified, Soundolier light satin beige will be furnished. Complete list of colors available.

SERIES 100

MODEL NO.	WIDTH	HEIGHT	DEPTH	PANEL SPACE	OPTIONAL FRONT DOOR
100-36	22 $\frac{3}{8}$ " (568mm)	41 $\frac{1}{16}$ " (1043mm)	18 $\frac{1}{2}$ " (470mm)	36 $\frac{1}{16}$ " (938mm)	110-36
100-42	22 $\frac{3}{8}$ " (568mm)	46 $\frac{9}{16}$ " (1176mm)	18 $\frac{1}{2}$ " (470mm)	42 $\frac{3}{16}$ " (1072mm)	110-42
100-61	22 $\frac{3}{8}$ " (568mm)	65 $\frac{9}{16}$ " (1665mm)	18 $\frac{1}{2}$ " (470mm)	61 $\frac{1}{16}$ " (1561mm)	110-61
100-70	22 $\frac{3}{8}$ " (568mm)	74 $\frac{9}{16}$ " (1888mm)	18 $\frac{1}{2}$ " (470mm)	70 $\frac{3}{16}$ " (1783mm)	110-70
100-77	22 $\frac{3}{8}$ " (568mm)	81 $\frac{1}{16}$ " (2065mm)	18 $\frac{1}{2}$ " (470mm)	77 $\frac{3}{16}$ " (1961mm)	110-77

SERIES 200

MODEL NO.	WIDTH	HEIGHT	DEPTH	PANEL SPACE
WA200-36	22 $\frac{3}{8}$ " (568mm)	41 $\frac{1}{16}$ " (1043mm)	18 $\frac{1}{2}$ " (470mm)	36 $\frac{1}{16}$ " (938mm)
WA200-42	22 $\frac{3}{8}$ " (568mm)	46 $\frac{9}{16}$ " (1176mm)	18 $\frac{1}{2}$ " (470mm)	42 $\frac{3}{16}$ " (1072mm)
WA200-61	22 $\frac{3}{8}$ " (568mm)	65 $\frac{9}{16}$ " (1662mm)	18 $\frac{1}{2}$ " (470mm)	61 $\frac{1}{16}$ " (1561mm)
WA200-70	22 $\frac{3}{8}$ " (568mm)	74 $\frac{9}{16}$ " (1888mm)	18 $\frac{1}{2}$ " (470mm)	70 $\frac{3}{16}$ " (1783mm)
WA200-77	22 $\frac{3}{8}$ " (568mm)	81 $\frac{1}{16}$ " (2065mm)	18 $\frac{1}{2}$ " (470mm)	77 $\frac{3}{16}$ " (1961mm)

SERIES 300

MODEL NO.	WIDTH	HEIGHT	REAR SECTION DEPTH	CENTER SECTION DEPTH	FRONT SECTION DEPTH	PANEL SPACE
300-17	20 $\frac{1}{2}$ " (524mm)	20 $\frac{1}{2}$ " (521mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	17 $\frac{1}{16}$ " (446mm)
300-21	20 $\frac{1}{2}$ " (524mm)	24" (610mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	21 $\frac{1}{16}$ " (535mm)
300-26	20 $\frac{1}{2}$ " (524mm)	29 $\frac{1}{4}$ " (743mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	26 $\frac{1}{16}$ " (668mm)
300-28	20 $\frac{1}{2}$ " (524mm)	31" (787mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	28 $\frac{1}{16}$ " (713mm)
300-42	20 $\frac{1}{2}$ " (524mm)	45" (1143mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	42 $\frac{1}{16}$ " (1068mm)
300-61	20 $\frac{1}{2}$ " (524mm)	64 $\frac{1}{4}$ " (1632mm)	4 $\frac{1}{2}$ " (114mm)	11" (279mm)	2" (51mm)	61 $\frac{1}{16}$ " (1557mm)

SERIES 400

MODEL	WIDTH	HEIGHT	DEPTH	PANEL SPACE
400-12	22 $\frac{1}{4}$ " (565mm)	15 $\frac{1}{2}$ " (394mm)	15 $\frac{1}{2}$ " (391mm)	12 $\frac{1}{2}$ " (314mm)
400-17	22 $\frac{1}{4}$ " (565mm)	20 $\frac{3}{4}$ " (527mm)	15 $\frac{1}{2}$ " (391mm)	17 $\frac{1}{2}$ " (448mm)
400-24	22 $\frac{1}{4}$ " (565mm)	27 $\frac{1}{2}$ " (705mm)	15 $\frac{1}{2}$ " (391mm)	24 $\frac{1}{2}$ " (625mm)
400-31	22 $\frac{1}{4}$ " (565mm)	34 $\frac{1}{2}$ " (883mm)	15 $\frac{1}{2}$ " (391mm)	31 $\frac{1}{2}$ " (803mm)

NOTE: ALL PRICES FOB SHIPPING POINT

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CABINETS

Series 500 Multi Racks

SERIES 500 Multi Racks are designed for standard 19" (483mm) rack panels and for maximum flexibility. Multi Racks can be readily joined together and because of its open side construction, wiring is simple and convenient. Each basic rack is supplied with a rear door complete with cylinder lock and low profile handle and slip-jointed hinges. Panel mounting rails are adjustable, manufactured of 11 ga. CRS and tapped for 10-32 screws. Construction of all other parts is 16 ga. CRS. Combination knockouts are located on the top, bottom and rear flanges. To facilitate cable entry, three 2-13/16" (71mm) diameter holes are located toward the rear of the base of the rack.

Multi Racks are shipped welded and assembled. All metal surfaces receive an iron phosphate coating prior to finishing for rust prevention and maximum paint adhesion. If no color is specified, Soundolier light satin beige will be furnished.

(Complete list of colors available)

OPTIONAL ACCESSORIES:

SERIES 510 Front doors are easily field installed with either right or left hand hinging. The basic rack is furnished with a series of small knockouts on each side of the front return. These knockouts are easily removed and will accept the 10-32 self tapping screws furnished with the door. Complete with continuous piano hinge, lock and low profile handle.

SERIES 230 Mounting rails—While each basic rack is supplied with one set of mounting rails, extra sets are available at customer's option.

SERIES 540 Side panels—One pair of side panels is required to close either a single basic rack or multiple racks attached. The side panels install easily by hooking them over internal side channels in the basic rack.

SERIES 502 Multi racks are basically the same as Series 500 multi racks but are 25-1/2" (648mm) deep for extra equipment area.

TMC-10 Television monitor adaptor—Provides 10-5/8" vertical mounting space.

TMC-15 Television monitor adaptor—Provides 15-7/8" vertical mounting space.

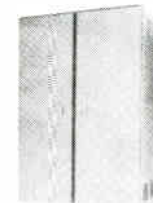
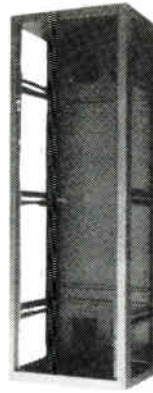
Series WA 100

Cabinet Relay Racks—Welded Construction

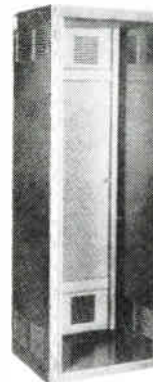
SERIES WA 100 Cabinet relay racks are constructed of 16 ga. CRS and are completely welded for additional strength and neater appearance. The panel mounting angles are tapped for 10-32 screws. The rear door is attached by slip-jointed hinges and includes lock and low profile handle. The entire cabinet receives an iron phosphate coating for rust prevention and excellent paint adhesion. If no color is specified, Soundolier Satin Beige will be furnished. Complete list of colors available.

Series 200 Transmitter Racks

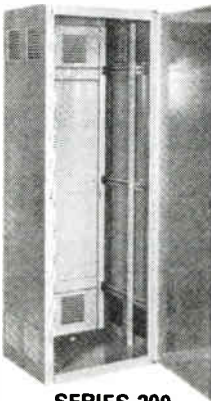
SERIES 200 Transmitter racks are designed to mount standard 19" (483mm) panels. Constructed of 16 ga. CRS throughout. Front and rear door handles and locks provided (locks keyed different for security). Modern internal louvers for improved ventilation. The 11 ga. panel mounting angles are tapped for 10-32 screws (included) and are adjustable to any distance from front to rear. Panel angles are mounted to three sturdy channel slides on each side. Knockouts are located at rear top and bottom. If no color is specified, Soundolier Satin Beige will be furnished. Shipped knocked down. Hardware and instructions included. Complete list of colors available.



SERIES 500



SERIES WA100



SERIES 200

MODEL NO.	DESCRIPTION	WIDTH	HEIGHT	DEPTH	PANEL SPACE
500-61	BASIC RACK*	22 ³ / ₈ " (568mm)	65 ⁹ / ₁₆ " (1665mm)	18 ¹ / ₂ " (470mm)	61 ⁷ / ₁₆ " (1561mm)
502-61	BASIC RACK*	22 ³ / ₈ " (567mm)	65 ⁹ / ₁₆ " (1665mm)	25 ¹ / ₂ " (648mm)	61 ⁷ / ₁₆ " (1561mm)
500-70	BASIC RACK*	22 ³ / ₈ " (568mm)	74 ⁹ / ₁₆ " (1883mm)	18 ¹ / ₂ " (470mm)	70 ⁹ / ₁₆ " (1783mm)
502-70	BASIC RACK*	22 ³ / ₈ " (567mm)	74 ⁹ / ₁₆ " (1883mm)	25 ¹ / ₂ " (648mm)	70 ⁹ / ₁₆ " (1783mm)
500-77	BASIC RACK*	22 ³ / ₈ " (568mm)	81 ¹ / ₈ " (2065mm)	18 ¹ / ₂ " (470mm)	77 ³ / ₁₆ " (1961mm)
502-77	BASIC RACK*	22 ³ / ₈ " (567mm)	81 ¹ / ₈ " (2065mm)	25 ¹ / ₂ " (648mm)	77 ³ / ₁₆ " (1961mm)
510-61 (110-61)	FRONT DOOR	21 ¹ / ₄ " (540mm)	63 ³ / ₄ " (1607mm)	1" (25mm)	—
510-70 (110-70)	FRONT DOOR	21 ¹ / ₄ " (540mm)	72 ¹ / ₄ " (1830mm)	1" (25mm)	—
510-77 (110-77)	FRONT DOOR	21 ¹ / ₄ " (540mm)	79 ¹ / ₈ " (2008mm)	1" (25mm)	—
530-61 (230-61-T)	MTG. RAILS**	—	61 ¹ / ₄ " (1556mm)	—	—
530-70 (230-70-T)	MTG. RAILS**	—	70" (1778mm)	—	—
530-77 (230-77-T)	MTG. RAILS**	—	77" (1956mm)	—	—
540-61	SIDE PANELS	18 ¹ / ₈ " (460mm)	65 ⁹ / ₁₆ " (1662mm)	5/8" (16mm)	—
542-61	SIDE PANELS	25 ¹ / ₈ " (638mm)	65 ⁹ / ₁₆ " (1662mm)	5/8" (16mm)	—
540-70	SIOE PANELS	18 ¹ / ₈ " (460mm)	74 ⁹ / ₁₆ " (1883mm)	5/8" (16mm)	—
542-70	SIDE PANELS	25 ¹ / ₈ " (638mm)	74 ⁹ / ₁₆ " (1883mm)	5/8" (16mm)	—
540-77	SIOE PANELS	18 ¹ / ₈ " (460mm)	81 ¹ / ₈ " (2061mm)	5/8" (16mm)	—
542-77	SIDE PANELS	25 ¹ / ₈ " (638mm)	81 ¹ / ₈ " (2061mm)	5/8" (16mm)	—

*BASIC RACK INCLUDES REAR DOOR AND 1 PAIR TAPPED ADJUSTABLE MOUNTING RAILS

**ADDITIONAL MOUNTING RAILS ARE OPTIONAL

MODEL NO.	WIDTH	HEIGHT	DEPTH	PANEL SPACE
WA100-36	22 ³ / ₈ " (568mm)	41 ¹ / ₈ " (1041mm)	18 ¹ / ₂ " (470mm)	36 ⁹ / ₁₆ " (938mm)
WA100-42	22 ³ / ₈ " (568mm)	46 ⁵ / ₈ " (1176mm)	18 ¹ / ₂ " (470mm)	42 ³ / ₈ " (1072mm)
WA100-61	22 ³ / ₈ " (568mm)	65 ⁹ / ₁₆ " (1665mm)	18 ¹ / ₂ " (470mm)	61 ⁷ / ₁₆ " (1561mm)
WA100-70	22 ³ / ₈ " (568mm)	74 ⁹ / ₁₆ " (1888mm)	18 ¹ / ₂ " (470mm)	70 ⁹ / ₁₆ " (1783mm)
WA100-77	22 ³ / ₈ " (568mm)	81 ¹ / ₈ " (2065mm)	18 ¹ / ₂ " (470mm)	77 ³ / ₁₆ " (1961mm)

MODEL NO.	WIDTH	HEIGHT	DEPTH	PANEL SPACE
200-36	22 ³ / ₈ " (568mm)	41 ¹ / ₈ " (1043mm)	18 ¹ / ₂ " (470mm)	36 ⁹ / ₁₆ " (938mm)
200-42	22 ³ / ₈ " (568mm)	46 ⁵ / ₈ " (1176mm)	18 ¹ / ₂ " (470mm)	42 ³ / ₈ " (1072mm)
200-61	22 ³ / ₈ " (568mm)	65 ⁹ / ₁₆ " (1665mm)	18 ¹ / ₂ " (470mm)	61 ⁷ / ₁₆ " (1561mm)
200-70	22 ³ / ₈ " (568mm)	74 ⁹ / ₁₆ " (1888mm)	18 ¹ / ₂ " (470mm)	70 ⁹ / ₁₆ " (1783mm)
200-77	22 ³ / ₈ " (568mm)	81 ¹ / ₈ " (2065mm)	18 ¹ / ₂ " (470mm)	77 ³ / ₁₆ " (1961mm)

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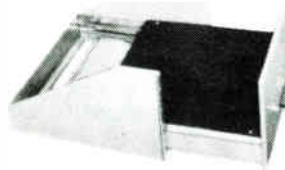
CABINET ACCESSORIES

Phono Drawers

PD Series phono drawers are constructed of 16 gauge CRS and designed to mount in standard 19" (483mm) rack panel space. The chassis is mounted on slides with nylon bearing rollers. The chassis is complete with 1/4" (6mm) thick walnut grain hardboard base. Partial and full drawer extension models are available. Mounting hardware is supplied. Finish is Satin Beige. Other colors are available.

FP Series phono drawers are the same as the PD series but are designed with a flush appearance to complement our select series cabinets. Slide has a tilt-up action for removal of chassis. Two standard colors are offered: Royal Blue (No. 35) or Satin Beige (No. 31). Suffix model number with color number. Other colors are available.

PD/FP SERIES



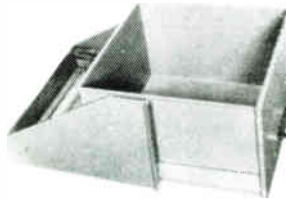
MODEL	PANEL SPACE	DEPTH	DRAWER EXTENSION
PD10-16	10 1/2" (267mm)	16 1/2" (417mm)	12" (305mm)
PD10-16S	10 1/2" (267mm)	16 1/2" (417mm)	16" (406mm)
PD10-16SFP	10 1/2" (267mm)	16 1/2" (417mm)	16" (406mm)
PD10-14	10 1/2" (267mm)	14 1/2" (366mm)	10" (254mm)
PD10-14S	10 1/2" (267mm)	14 1/2" (366mm)	14" (356mm)
PD10-14SFP	10 1/2" (267mm)	14 1/2" (366mm)	14" (356mm)

Storage Drawers

SD Series storage drawers are ideal for tapes, records, microphones and other accessories. Constructed in 16 gauge CRS and designed for standard 19" (483mm) rack panel space. Complete with nylon bearing rollers. Available in a choice of panel space sizes, overall depth and either partial or full drawer extension. Mounting hardware is supplied. Finish is Satin Beige. Other colors are available.

FP Series storage drawers are the same as the SD series but are designed with a flush appearance to complement our select series cabinets. Slide has a tilt-up action for removal of drawer. Two standard colors are offered: Royal Blue (No. 35) or Satin Beige (No. 31). Suffix model number with color number. Other colors are available.

SD/FP SERIES



MODEL	PANEL SPACE	DEPTH	DRAWER EXTENSION
SD7-14	7" (178mm)	14 1/2" (366mm)	10" (254mm)
SD7-14S	7" (178mm)	14 1/2" (366mm)	14" (356mm)
SD7-14SFP	7" (178mm)	14 1/2" (366mm)	14" (356mm)
SD7-16	7" (178mm)	16 1/2" (417mm)	12" (305mm)
SD7-16S	7" (178mm)	16 1/2" (417mm)	16" (406mm)
SD7-16SFP	7" (178mm)	16 1/2" (417mm)	16" (406mm)
SD10-14	10 1/2" (267mm)	14 1/2" (366mm)	10" (254mm)
SD10-14S	10 1/2" (267mm)	14 1/2" (366mm)	14" (356mm)
SD10-14SFP	10 1/2" (267mm)	14 1/2" (366mm)	14" (356mm)
SD10-16	10 1/2" (267mm)	16 1/2" (417mm)	12" (305mm)
SD10-16S	10 1/2" (267mm)	16 1/2" (417mm)	16" (406mm)
SD10-16SFP	10 1/2" (267mm)	16 1/2" (417mm)	16" (406mm)

Blank Panels and Vent Panels

S19 Series panels are constructed of 1/16" (2mm) CRS. Two sides of the panel are formed for rigidity. The panel mount holes are oblong for adjustment and neater appearance. Finish is Satin Beige. Other colors are available.

S219 Series panels are same as S19 and will fit any Soundolier cabinet but they are designed to maintain the flush appearance of select series cabinets. Two standard colors are offered: Royal Blue (No. 35) or Satin Beige (No. 31). Suffix model number with color number. Other colors are available.

A19 Series panels are constructed of 1/8" (3mm) aluminum. Panel mount holes are oblong for adjustment and neater appearance. Panels are painted on one side. Finish is Satin Beige. Other colors are available.

SVP19 Series vent panels are constructed of 22 gauge perforated CRS. Two sides are formed for rigidity. Panel mount holes are oblong for adjustment and neater appearance. Finish is Satin Beige. Other colors are available.

SVP219 Series are same as SVP19 and will fit any Soundolier cabinet but they are designed to maintain the flush appearance of select series cabinets. Two standard colors are offered: Royal Blue (No. 35) or Satin Beige (No. 31). Suffix model number with color number. Other colors are available.

PANELS



PANEL SPACE	S19 SERIES CRS	S219 SERIES CRS	A19 SERIES ALUMINUM	SVP19 SERIES VENT	SVP219 SERIES VENT
1 1/2" (44mm)	S19-1	S219-1	A19-1	SVP19-1	SVP219-1
3 1/2" (89mm)	S19-3	S219-3	A19-3	SVP19-3	SVP219-3
5 1/2" (133mm)	S19-5	S219-5	A19-5	SVP19-5	SVP219-5
7" (178mm)	S19-7	S219-7	A19-7	SVP19-7	SVP219-7
8 1/2" (222mm)	S19-8	S219-8	A19-8	SVP19-8	SVP219-8
10 1/2" (267mm)	S19-10	S219-10	A19-10	SVP19-10	SVP219-10
12 1/2" (311mm)	S19-12	S219-12	A19-12	SVP19-12	SVP219-12
14" (356mm)	S19-14	S219-14	A19-14	—	—
15 1/2" (400mm)	S19-15	S219-15	A19-15	—	—
17 1/2" (445mm)	S19-17	S219-17	A19-17	—	—
19 1/2" (489mm)	S19-19	S219-19	A19-19	—	—
21" (533mm)	S19-21	S219-21	A19-21	—	—
24 1/2" (622mm)	—	S219-24	—	—	—
28" (711mm)	—	S219-28	—	—	—

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AC Power Panels

Model ACR-193 is an AC master power panel for standard 19" (483mm) rack mounting requiring only 3-1/2" (89mm) of vertical panel space. Panel is constructed of 16 gauge CRS and standard color is Soundolier Satin Beige (No. 31). Complete list of colors available. The main switch is a DPST rocker type and switches both sides of the power line. A red jewel, neon pilot lite indicates whether AC power is on or off. Eight outlets are provided, six controlled by main switch and two non-switched outlets. Each outlet is grounded. A 15 amp fuse is provided. Back of panel has a 7/8" (22mm) hole which accepts 1/2" (13mm) conduit fittings.

Model ACK-193 is identical to ACR-193 except a key switch is used for security. Two keys are provided.

Model ACR-293 and **ACK-293** are the same as those above except they have a return on all four sides to maintain flush appearance of Soundolier select series cabinets.

SPECIFICATIONS		
	ACR-193/293	ACK-193/293
PANEL RATING	15 AMPS	15 AMPS
SWITCH RATING	15 AMPS	15 AMPS
OUTLETS SWITCHED	6	6
OUTLETS UNSWITCHED	2	2
PILOT LITE	YES	YES
PANEL SIZE	19" x 3 1/2" (483 x 89mm)	19" x 3 1/2" (483 x 89mm)

5 Channel Monitor Panels

Model MVX-193 monitor panel for standard 19" (483mm) rack mounting requiring only 3-1/2" (89mm) of vertical panel space. Panel is constructed of 16 gauge CRS and standard color is Soundolier Satin Beige (No. 31). Complete list of colors available. Unit can be used with any multi-channel sound system. It provides aural and visual monitoring with the turn of a switch. A double pole, six position switch is wired to supply five program channels with a sixth "off" position. Each channel connects to two screw terminals on the rear of the panel. A 70 volt or 25 volt line may be monitored. A 3" (76mm) speaker is used for aural monitoring connected through a potentiometer for level selection. Potentiometer and channel selector are on a black plate with white nomenclature. Speaker grille is slightly raised. The VU meter has a long life thermoplastic case. The meter movement is a moving coil design and has a type A meter scale.

Model MVX-293 is identical to MVX-193 except it has a return on all four sides to maintain flush appearance of Select Series cabinets and Soundolier Royal Blue (No. 35) is offered as a second standard color.

Model MX-193 is identical to MVX-193 except the VU meter is not provided.

Model MX-293 is identical to MVX-293 except the VU meter is not provided.

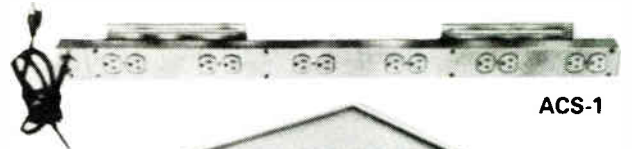
Model MVX-195 is identical to the MVX-193 except a high compliance Soundolier 4" (102mm) FC104 speaker is used for better aural monitoring. A high quality Soundolier HT-82 line transformer is also used. Panel height is 5-1/4" (133mm).

SPECIFICATIONS					
MONITOR PANELS	MVX-193/293	MX-193/293	MVX-195/295	MVX-1910/2910	MX-1910/2910
CHANNELS	5	5	5	5	5
MONITOR VOLUME CONTROL	YES	YES	YES	YES	YES
LOUDSPEAKER SIZE	3"(76mm)	3"(76mm)	4"(102mm)	8"(203mm)	8"(203mm)
VU METER	YES	NO	YES	YES	NO
METER ADJUST	YES	NO	YES	YES	NO
PANEL SIZE	19" x 3 1/2" (483 x 89mm)	19" x 3 1/2" (483 x 89mm)	19" x 5 1/4" (483 x 133mm)	19" x 10 1/2" (483 x 267mm)	19" x 10 1/2" (483 x 267mm)
PANEL MATERIAL	CRS	CRS	CRS	CRS	CRS
TERMINALS	SCREW	SCREW	SCREW	SCREW	SCREW

VE-62

Prices and Specifications Subject to Change Without Notice.

CABINET ACCESSORIES



ACS-1



CT1020



ACR-193



ACK-193

Model ACS-1 is an AC Power Strip assembly designed for Soundolier equipment cabinets. This versatile unit provides six UL listed duplex outlets with grounded UL listed power cord. When used in conjunction with power panels (listed above), a complete AC Power System can be assembled for each cabinet.

Roller Truck

Model CT1020 roller truck is constructed of 16 gauge CRS and is designed for Soundolier's 100, 200, WA100 and WA200 series cabinets only. Finish is Satin Beige. Complete list of colors available. The roller truck is complete with four 3" (76mm) ball bearing casters. Two casters are the rigid type and two are the swivel type. The swivel casters are also the locking type. The total load capacity is 400 lbs (181kg). Dimensions—24-13/16" (630mm) x 21" (533mm).

Model MVX-295 is identical with the MVX-293 except a high compliance Soundolier 4" (102mm) FC104 speaker is used for better aural monitoring. A high quality Soundolier HT-82 line transformer is also used. Panel height is 5-1/4" (133mm).

Model MVX-1910 is identical to MVX-193 except the panel is 10-1/2" (267mm) high and the monitor speaker is an 8" (203mm) unit.

Model MVX-2910 is identical to MVX-293 except the panel is 10-1/2" (267mm) high and the monitor speaker is an 8" (203mm) unit.

Model MX-1910 is identical to MVX-1910 except a VU meter is not provided.

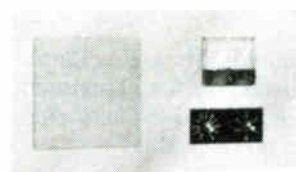
Model MX-2910 is identical to MVX-2910 except a VU meter is not provided.



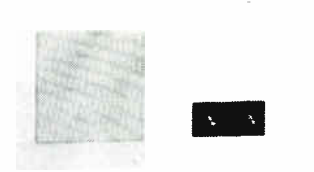
MVX-193



MX-193



MVX-1910



MX-1910

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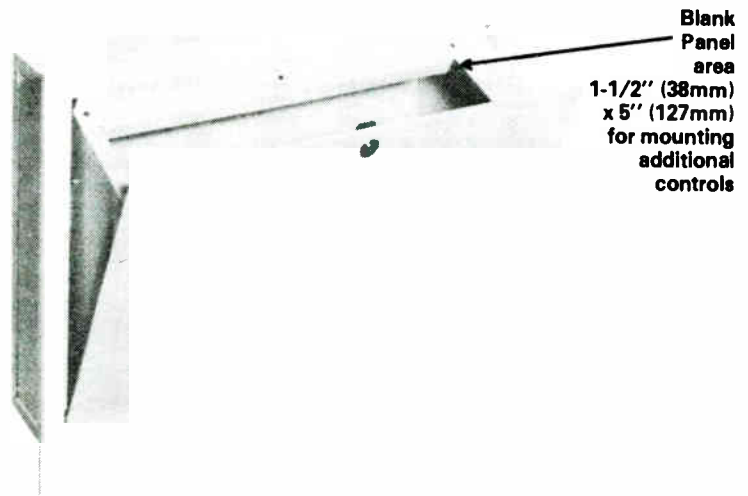
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St. Louis, MO 63126
(314) 962-9870

CABINETS & ACCESSORIES

AWR-3/AWR-5S Series Amplifier Wall Cabinets

AWR-3/AWR-5 Series is designed as an amplifier wall cabinet for standard 19" (483mm) panel mounting space of 3-1/2" (89mm) (5-1/4" or 133mm for AWR-5S) on a tilt-out door/chassis assembly. Mounting holes are EIA standard. On the right side of the chassis is blank panel area 1-1/2" (38mm) x 5" (127mm) 6-3/4" or 171mm for AWR-5S) where additional switches may be mounted.* The front door and the door frame are constructed of 14 gauge CRS. Keylock is flush and comes with two keys. Door is attached to frame with a piano hinge. Door stops are welded on the door frame preventing the door from closing improperly. Backbox is constructed of 16 gauge CRS with 7 knockouts on bottom panel. Tampering is prevented by attaching door frame to backbox internally. Shipped complete, finished inside and out with Soundolier Satin Beige. Other colors are available.

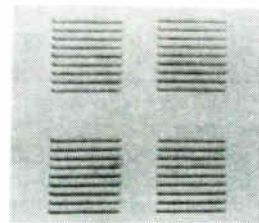


MODEL	TYPE	WIDTH	HEIGHT	DEPTH	PANEL SPACE
AWR-3	RECESSED	22" (559mm)	16 1/8" (408mm)	5 9/16" (141mm)	3 1/2" (89mm)
AWR-3S	SURFACE	24 1/8" (616mm)	18 1/8" (464mm)	5 7/8" (150mm)	3 1/2" (89mm)
AWR-3-4	RECESSED	22" (559mm)	16 1/8" (408mm)	4" (102mm)	3 1/2" (89mm)
AWR-5S	SURFACE	24 1/8" (616mm)	18 1/8" (464mm)	7 3/8" (190mm)	5 1/4" (133mm)

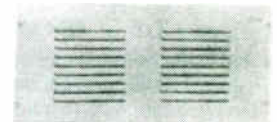
NOTE: AWR-3-4 Does not contain switch panel area

Select Series Louvered Panels

These louvered panels are designed to replace solid panels in select series cabinets. Top panels are available for racks, consoles and turrets. Back panels are available for turrets only, and side panels are available for racks only. Nine internal louvers constitute a set of louvers. There are 2 or 4 sets of louvers per panel, depending on panel size.



S219-15L



S219-8L

Shelf Assembly

Model SH19-7 shelf assembly is constructed of 16 gauge CRS and is easily mounted to the panel mount rails of all standard 19" (483mm) racks. Requires 7" (178mm) of panel space. Ideal for mounting equipment that does not have an attached rack mount panel. Shelf area dimensions — 17-1/2" (445mm) x 14" (356mm) x 7" (178mm) high. Finish is Satin Beige. Other colors are available.

Select Series Casters

CS-8PR Swivel casters must be used with select series racks and consoles which have caster plates ready to mount CS-8PR casters. Each CS-8PR includes 2 swivel casters. An individual rack or console requires 4 casters or two CS-8PRs. Adjoining cabinets require only 2 casters (one CS-8PR) at juncture.

DK19-3 Rack Mounted Writing Surface

A hard board laminated writing or component surface to fit our standard 19" (483mm) 100, 200, WA100 and WA200 series racks. This assembly requires only 3-7/16" (87mm) of vertical panel space. Surface is 17-1/2" (445mm) wide and 12" (305mm) deep. Surface is supported by a heavy gauge CRS bracket. Hardware furnished.

AS100/AS120 Amplifier Shelves

These shelves are designed to support electronic equipment. They are wall mounted by use of keyhole type screw holes. Wiring holes are provided on bottom of shelf for convenient wiring access. Front of shelf has a 3/8" (10mm) retaining lip. Construction is of heavy gauge CRS. Model AS100 is 14-1/4" (362mm) wide x 10-3/32" (256mm) deep. Model AS120 is 20" (508mm) wide x 12-1/2" (318mm) deep.

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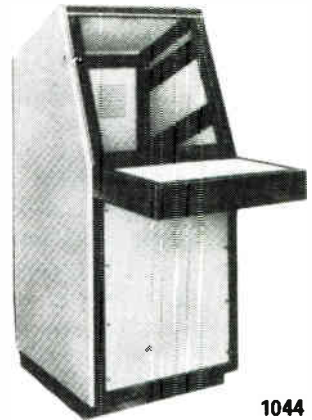
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CONSOLES

Heavy Duty Slope Front Consoles

Select series 1044 Slope Front Console is an example of Soundolier's top quality engineering and modern futuristic design. This unit has a wide variety of applications. The modular design allows for easy installation of assemblies, and the modern color schemes complement any building interior. Basic unit consists of a 16 gauge CRS frame with 11 gauge CRS mounting angles, a louvered full length locking rear door which is easily removed, a removable top and lower front panel and pontoon base. Mounting angles are tapped 10-32 on universal E.I.A. hole spacing and are movable from front to rear. Caster plates are provided. The writing surface may be easily removed for access to standard 19" (483mm) E.I.A. mounting rails.

Plastic laminate writing surface is off-white or teakwood color. Three 7/8" (22mm) knockouts are provided on the rear portion of the writing shelf. The frame, mounting angles, pontoon base and shelf assembly are finished in Soundolier textured flat black baking enamel. Standard colors for tops, sides and doors of this series will be Soundolier Royal Blue (No. 35) or Satin Beige (No. 31). Suffix model number with color number. Complete list of colors available.

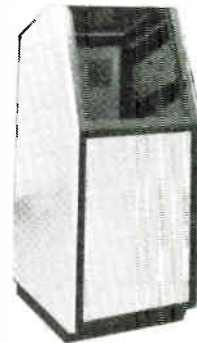


1044

MODEL NO.	DESCRIPTION	VERTICAL PANEL SPACE
1044	Slope Front Console	19-3/8" (492mm) Top Front
1044LS	1044 w/o Writing Surface	24-5/8" (625mm) Bottom Front

Model 1047 Slope Front Console

Model 1047 Slope Front Console is the same basic design as Model 1044, except that it will not mount a writing surface. Modular in design, it can be joined with other 1047 or 1044 consoles, or 1044-45 wedge sections. The basic unit consists of a 16 gauge CRS frame painted textured flat black baking enamel with 11 gauge CRS mounting angles and a louvered full length locking rear door which is easily removed. Additionally, the top and lower front panels and pontoon base are removable. Mounting angles are tapped 10-32 on universal E.I.A. hole spacing and are movable from front to rear. Caster mounting plates are tapped for easy installation of Soundolier CS-8PR casters. Side panels and casters are optional. Color selections include Soundolier Royal Blue (No. 35) or Satin Beige (No. 31). Complete list of colors available. Extruded aluminum side trim and decorative insert panel must be ordered separately.



1047

MODEL NO.	DESCRIPTION	VERTICAL PANEL SPACE
1047		19-3/8" (492mm) Top Front
		28-1/8" (714mm) Bottom Front

Console and Turret 45° Wedge Sections

Model 1044-45 wedge section is for use with 1044 and 1047 Slope Front Consoles. Models 714-45 and 719-45 wedge sections are for use with 700-14 and 700-19 desk turrets respectively. Each wedge section is a complete self supporting unit. They have no front openings or mounting angles. One wedge section used with appropriate consoles or turrets will produce a 45° corner installation. Two adjoining wedge sections will produce a 90° corner installation. The 1044-45 wedge section used with 1044-LS consoles and 144-45 or 144-90 writing surface will produce a 45° or 90° corner writing surface. The basic frame is 16 gauge CRS painted textured flat black baking enamel. The 1044-45 has a pontoon base painted flat black. It has a removable louvered full length locking rear door and top panel. The 714-45 or 719-45 have removable top and back panel. Door, top and back panels are available in Soundolier Royal Blue (No. 35) or Satin Beige (No. 31). Complete list of colors available. The decorative insert panel must be ordered separately.



1044-45

144 Series 45° and 90° Writing Surfaces

144 Series writing surfaces are designed to be used with Soundolier's 1044LS slope front consoles and 1044-45 corner wedge sections. The writing surface frame is constructed of 16 gauge CRS steel with choice of teakwood (TKS) or white (WHS) laminate writing surface. Versions for 45 degree or 90 degree console configurations are available. Six 1/2" (13mm) knockouts are provided on the rear portion of each writing surface. The 16 gauge CRS frame is painted in Soundolier textured flat black baking enamel to match the 1044LS consoles.



TKS144-45



TKS144-90

MODEL NO.	DESCRIPTION
WHS144-45	45 degree writing surface with white laminate writing insert
TKS144-45	Same as above but with teakwood laminate writing insert
WHS144-90	90 degree writing surface with white laminate writing insert
TKS144-90	Same as above but with teakwood laminate writing insert

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BASIC MODULES

INTRODUCTION TO THE STANTRON VIDEO CENTER

BASIC MODULES

On this page — and the following page — we have displayed the **Basic Modules** of our **VIDEO CENTER** modular consoles, modular cabinets, modular racks and monitor bridge desks. These products have been designed — primarily — for **VIDEO CENTER** production and post-production facilities. There is a choice of "in-place," portable or mobile options. Our modular, "add-on," design features allow for maximum flexibility in designing console arrangements for editing, dubbing or production within professional, educational, industrial and communication **VIDEO CENTERS**. With our 30 years

of extensive manufacturing experience, (totally spent within the electronics industry), we have "designed-in" the structural strength and aesthetic features required by our valued customers. All products displayed within this catalog (with the exception of some hardware items) are manufactured within our 60,000 square foot plant, where — during the aforementioned period of thirty years — we have produced thousands of cabinets for television and radio broadcasting facilities, as well as audio-video production facilities.



FLAT DESK
(WITH LEADING EDGE)

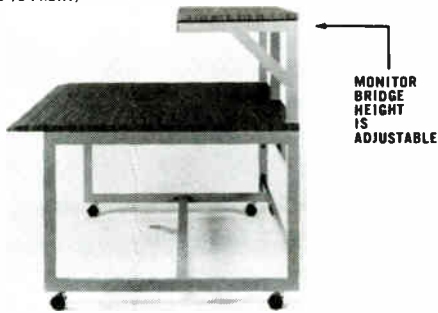
STANDARD and "CUSTOM" SIZES



SLOPING DESK
(WITH PADDED EDGE)

STANDARD and "CUSTOM" SIZES

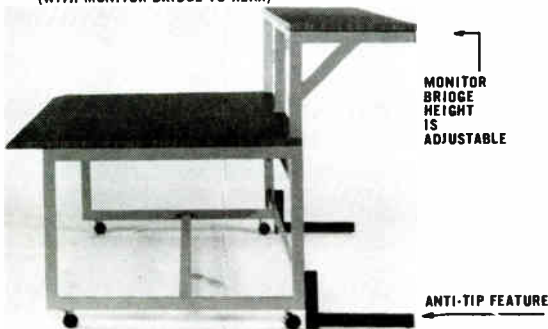
FLAT DESK
(WITH MONITOR BRIDGE TO FRONT)



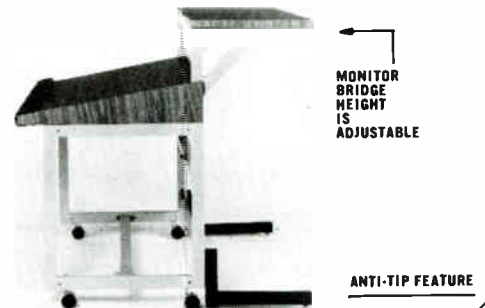
SLOPING DESK
(WITH BRIDGE TO FRONT)



FLAT DESK
(WITH MONITOR BRIDGE TO REAR)



SLOPING DESK
(WITH MONITOR BRIDGE TO REAR)



PATENTS PENDING

PATENTS PENDING

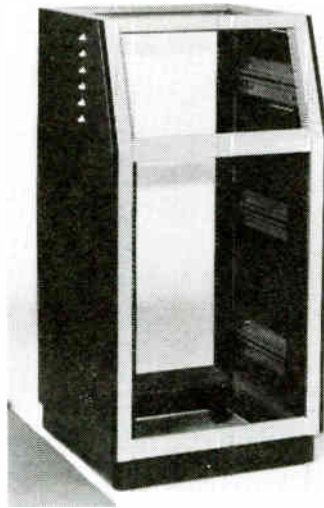
**BASIC
MODULES**

STANTRON
VIDEO CENTER

**BASIC
MODULES**



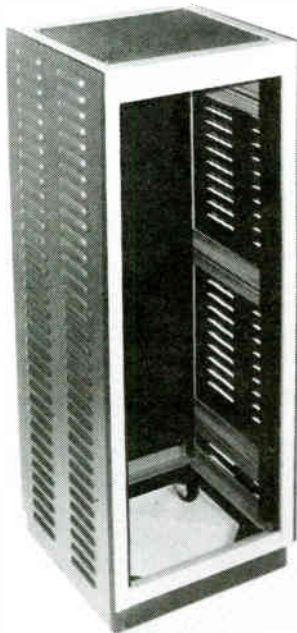
VTR/VCR RACKS
PATENTS PENDING



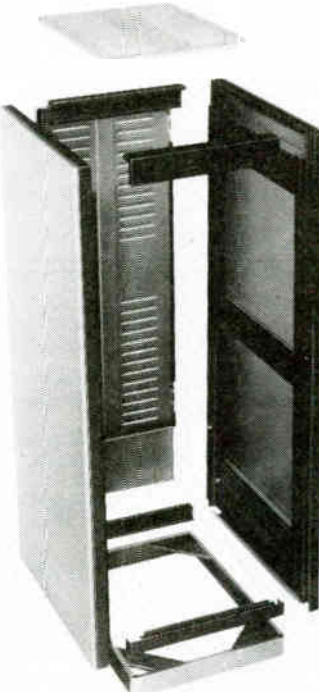
"ALL-WELDED"
SLOPING FRONT
CONSOLE CABINETS



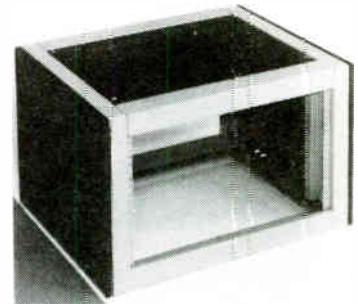
"OUBBING" VIDEO RACK



"ALL-WELDED"
VERTICAL VIDEO CABINET



"KNOCK-DOWN"
VERTICAL VIDEO CABINET
PATENTS PENDING



"ALL-WELDED"
MONITOR/DESK
VIDEO CABINET

FLAT DESK CONSOLES

STANTRON VIDEO CENTER

FLAT DESK CONSOLES



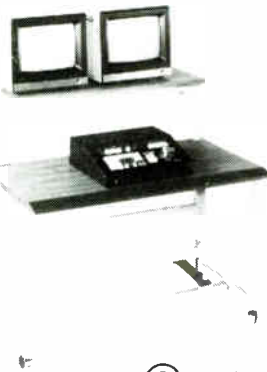
"CUSTOM" SIZES AVAILABLE

PATENTS PENDING

INCHES		mm		CATALOG NUMBER	PRICE	APPROX. WEIGHT	*W/MONITOR BRIDGE	
A	B	A	B				PRICE	APPROX. WEIGHT
30"	45 1/2"	762	1156	VCFD3045.*	\$422.40	88 lb.	\$634.70	138 lb.
30"	67 3/4"	762	1721	VCFD3067.*	\$451.00	117 lb.	\$759.00	192 lb.
42"	45 1/2"	1067	1156	VCFD4245.*	\$462.00	100 lb.	\$674.30	150 lb.
42"	67 3/4"	1067	1721	VCFD4267.*	\$495.00	140 lb.	\$803.00	215 lb.
48"	45 1/2"	1219	1156	VCFD4845.*	\$498.30	116 lb.	\$710.60	166 lb.
48"	67 3/4"	1219	1721	VCFD4867.*	\$517.00	155 lb.	\$825.00	230 lb.

*IF MONITOR BRIDGE IS DESIRED, ADD -MB. I.E. VCFD3045-MB

HEIGHT		WITH	CATALOG NO.	PRICE
INCHES	mm			
31"	800	2" CASTER	VCC2	\$42.46/SET 4
29 1/2"	749	LEVELER	VCH158	\$ 7.81/SET 4



(A) VCAS5000
\$677.60



(C) VCAS5002
\$2055.90



(B) VCAS5001
\$2028.40

- A. Monitor Bridge may be mounted to the rear or front; If Monitor Bridge is mounted to the rear, the "Anti-Tip" extension must be attached to the bottom rear. A pair of "Anti-Tip" extensions are included with each desk.
- B. Monitor Bridge height is adjustable in one inch increments.
- C. Finish: Frames: Tan Textured #VC7T
Accessories: Brown Textured #VC16T
- D. Laminate Top: Pecan pattern.
- E. Positive-latching device on all sliding shelves used in VTR/VCR racks.

NOTE: For "custom-size" desks — per your requirements — contact our sales engineering department.

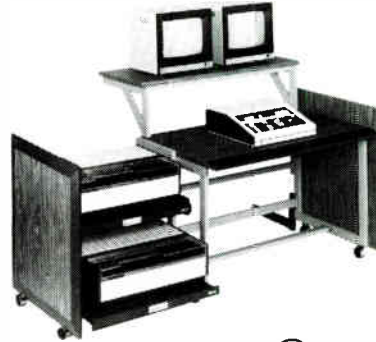
FLAT DESK CONSOLES

STANTRON VIDEO CENTER

FLAT DESK CONSOLES



D VCAS5003
\$1,688.50



E VCAS5004
\$1,664.30



F VCAS5005
\$2,055.90

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VCAS5000 **A** **\$677.60**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1 Set	VCRK2731	RACK
	VCC2	2" CASTERS

APPROXIMATE WEIGHT: 138 lb.

VCAS5001 **B** **\$2,028.40**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1	VCRK5131	RACK
1 Pr.	VCSP30	SIDE PANELS
1 Set	VCC5	5" CASTERS
1 Set	VCC2	2" CASTERS
4	VCSS31-11	SLIDING SHELVES

APPROXIMATE WEIGHT: 331 lb.

VCAS5002 **C** **\$2,055.90**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	CASTERS
2	VCSS31-11	SLIDING SHELVES
1 Pr.	VCSP30	SIDE PANELS
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 334 lb.

VCAS5003 **D** **\$1,688.50**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
2	VCSB240018	SLOPING BASE
2	VCAS241018	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 284 lb.

VCAS5004 **E** **\$1,664.30**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING PANELS
1 Pr.	VCSP30	SIDE PANELS

APPROXIMATE WEIGHT: 270 lb.

VCAS5005 **F** **\$2,055.90**

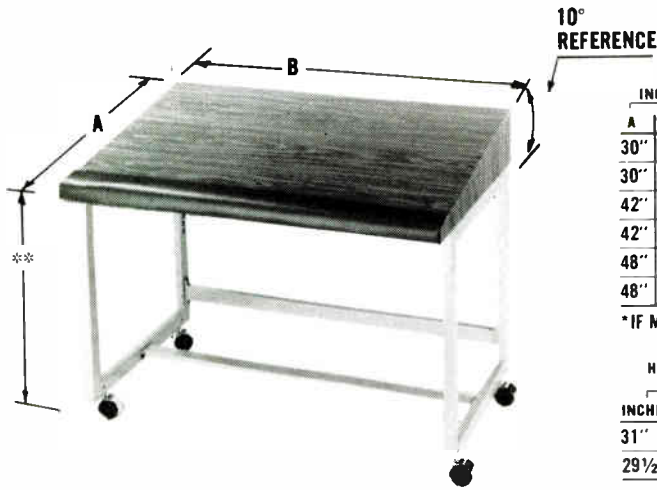
QUANTITY	CATALOG NO.	DESCRIPTION
1	VCFD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
1 Pr.	VCSP30	SIDE PANELS
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 334 lb.

SLOPING DESK CONSOLES

STANTRON VIDEO CENTER

SLOPING DESK CONSOLES



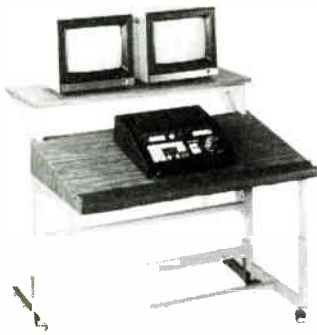
"CUSTOM" SIZES AVAILABLE

PATENTS PENDING

INCHES		mm		CATALOG NUMBER	PRICE	APPROX. WEIGHT	*W/MONITOR BRIDGE	
A	B	A	B				PRICE	APPROX. WEIGHT
30"	45½"	762	1156	VCSD3045-*	\$478.50	88 lb.	\$690.80	138 lb.
30"	67¾"	762	1721	VCSD3067-*	\$519.20	114 lb.	\$827.20	189 lb.
42"	45½"	1067	1156	VCSD4245-*	\$509.30	106 lb.	\$721.60	156 lb.
42"	67¾"	1067	1721	VCSD4267-*	\$552.20	141 lb.	\$860.20	216 lb.
48"	45½"	1219	1156	VCSD4845-*	\$532.40	116 lb.	\$744.70	166 lb.
48"	67¾"	1219	1721	VCSD4867-*	\$576.40	154 lb.	\$884.40	229 lb.

*IF MONITOR BRIDGE IS DESIRED, ADD -MB I.E. VCFD3045-MB

HEIGHT		WITH	CATALOG NO.	PRICE
INCHES	mm			
31"	800	2" CASTER	VCC2	\$42.46 per set of 4
29½"	749	LEVELER	VCH158	7.81 per set of 4



(A) VCAS5006
\$732.60



(B) VCAS5007
\$2084.50



(C) VCAS5008
\$2112.00

- A. Monitor Bridge may be mounted to the rear or front; If Monitor Bridge is mounted to the rear, the "Anti-Tip" extension must be attached to the bottom rear. A pair of "Anti-Tip" extensions are included with each desk.
- B. Monitor Bridge height is adjustable in one inch increments.
- C. Finish: Frames: Tan Textured #VC7T
Accessories: Brown Textured #VC16T
- D. Laminate Top: Pecan pattern.
- E. Positive-latching device on all sliding shelves used in VTR/VCR racks.

NOTE: For "custom-size" desks — per your requirements — contact our sales engineering department.

SLOPING DESK CONSOLES

STANTRON VIDEO CENTER

SLOPING DESK CONSOLES



(D) VCAS5009
\$1744.60



(E) VCAS5010
\$1720.40



(F) VCAS5011
\$1744.60

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(A) VCAS5006 **\$732.60**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1 Set	VCC2	2" CASTERS

APPROXIMATE WEIGHT: 138 lb.

(B) VCAS5007 **\$2084.50**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1	VCRK5131	RACK
1 Set	VCC5	5" CASTERS
4	VCSS31-11	SLIDING SHELVES
1 Pr.	VCSP30	SIDE PANELS
1 Set	VCC2	2" CASTERS

APPROXIMATE WEIGHT: 335 lb.

(C) VCAS5008 **\$2112.00**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
1 Pr.	VCSP30	SIDE PANELS
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 336 lb.

(D) VCAS5009 **\$1744.60**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 284 lb.

(E) VCAS5010 **\$1720.40**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
1 Pr.	VCSP30	SIDE PANELS

APPROXIMATE WEIGHT: 270 lb.

(F) VCAS5011 **\$1744.60**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCSD3045-MB	DESK W/BRIDGE
1	VCRK2731	RACK
2 Set	VCC2	2" CASTERS
2	VCSS31-11	SLIDING SHELVES
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY

APPROXIMATE WEIGHT: 284 lb.

MOBILE VTR/VCR RACKS

STANTRON VIDEO CENTER

MOBILE VTR/VCR RACKS



INCHES		mm		CATALOG NUMBER	PRICE WITHOUT CASTERS	APPROX. WEIGHT
A	B	A	B			
27½"	23"	648	584	VCRK2723	\$231.00	35 lb.
27½"	31"	648	787	VCRK2731	\$234.30	36 lb.
51½"	23"	1308	584	VCRK5123	\$251.90	50 lb.
51½"	31"	1308	787	VCRK5131	\$255.20	51 lb.
63½"	23"	1613	584	VCRK6323	\$260.70	56 lb.
63½"	31"	1613	787	VCRK6331	\$264.00	57 lb.
75½"	23"	1918	584	VCRK7523	\$272.80	65 lb.
75½"	31"	1918	787	VCRK7531	\$276.10	66 lb.

*CASTERS AND LEVELERS AVAILABLE

INCHES		mm		WITH BRAKE	CATALOG NUMBER	PRICE PER SET	APPROX. WEIGHT
DIA.	HGT.	DIA.	HGT.				
2"	2¾"	50.8	69.9	YES	VCC2	\$42.46	4 lb.
4"	4⅝"	101.6	117.5	YES	VCC4	\$37.13	10 lb.
5"	6"	127.0	152.4	YES	VCC5	\$42.90	11 lb.
A SET OF 4 LEVELERS					VCH158	\$ 7.81	½ lb.

NOTE: A SET OF 4 CASTERS WILL HAVE 2 CASTERS WITH BRAKE.



(A) VCAS5012
\$885.50

- A. Included on all VTR/VCR racks is our unique "Anti-Tip" feature. This feature should be used whenever any sliding component is pulled out to the front.
- B. Sliding shelves used with the VCR/VTR racks have a "positive-latching" device. This accessory cannot move forward until the "positive-latch" is depressed.
- C. All accessories may be adjusted vertically in one inch increments.
- D. Choice of casters or levelers

VCAS5012

(A)

\$885.50

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK5131	RACK
1 Set	VCC5	5" CASTERS
3	VCSS31-11	SLIDING SHELVES
1	VCFS31	FIXED SHELF

APPROXIMATE WEIGHT: 152 lb.

MOBILE VTR/VCR RACKS

STANTRON VIDEO CENTER

MOBILE VTR/VCR RACKS



**(A) VCAS5013
\$985.60**

VCAS5013

\$985.60

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK5131	RACK
1 Set	VCC5	5" CASTERS
4	VCSS31-11	SLIDING SHELVES

APPROXIMATE WEIGHT: 149 lb.



**(B) VCAS5014
\$669.90**

VCAS5014

\$669.90

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK6331	RACK
1 Set	VCC5	5" CASTERS
5	VCFS31	FIXED SHELF

APPROXIMATE WEIGHT: 145 lb.

- A. Included on all VTR/VCR racks is our unique "Anti-Tip" feature. This feature should be used whenever any sliding component is pulled out to the front.
- B. Sliding shelves used with the VCR/VTR racks have a "positive-latching" device. This accessory cannot move forward until the "positive-latch" is depressed.
- C. All accessories may be adjusted vertically in one inch increments.
- D. Choice of casters or levelers

The **VIDEO CENTER PRODUCTS** illustrated are representative of what can be designed using the **STANTRON BASIC modules**.

You can design your own console by selecting the **BASIC modules** and accessories that fit your requirements.

FOR ASSISTANCE . . .
FOR PLACING ORDERS . . .
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**MOBILE
VTR/VCR
RACKS**



**MOBILE
VTR/VCR
RACKS**



**(A) VCAS5015
\$980.10**

(A)

VCAS5015 **\$980.10**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK6323	RACK
1 Set	VCC5	5" CASTERS
4	VCSS23-11	SLIDING SHELVES

APPROXIMATE WEIGHT: 129 lb.

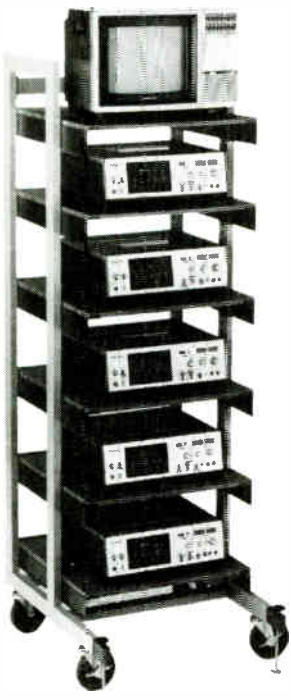
(B)

VCAS5016 **\$719.40**

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK6323	RACK
6	VCFS23	FIXED SHELVES
1 Set	VCC5	5" CASTERS

APPROXIMATE WEIGHT: 135 lb.

- A. Included on all VTR/VCR racks is our unique "Anti-Tip" feature. This feature should be used whenever any sliding component is pulled out to the front.
- B. Sliding shelves used with the VCR/VTR racks have a "positive-latching" device. This accessory cannot move forward until the "positive-latch" is depressed.
- C. All accessories may be adjusted vertically in one inch increments.
- D. Choice of casters or levelers



**(B) VCAS5016
\$719.40**

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MOBILE VTR/VCR RACKS

STANTRON VIDEO CENTER

MOBILE VTR/VCR RACKS



(A) VCAS5017
\$1050.50

VCAS5017

(A)

\$1050.50

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK6323	RACK
4	VSCC23-11	SLIDING SHELVES
1	VCFS23	FIXED SHELF
1 Set	VCC5	5" CASTERS

APPROXIMATE WEIGHT: 165 lb.

VCAS5018

(B)

\$572.00

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCRK5123	RACK
4	VCFS23	FIXED SHELVES
1 Set	VCC5	5" CASTERS

APPROXIMATE WEIGHT: 129 lb.



(B) VCAS5018
\$572.00

- A. Included on all VTR/VCR racks is our unique "Anti-Tip" feature. This feature should be used whenever any sliding component is pulled out to the front.
- B. Sliding shelves used with the VCR/VTR racks have a "positive-latching" device. This accessory cannot move forward until the "positive-latch" is depressed.
- C. All accessories may be adjusted vertically in one inch increments.
- D. Choice of casters or levelers

The **VIDEO CENTER PRODUCTS** illustrated are representative of what can be designed using the **STANTRON BASIC modules**.

You can design your own console by selecting the **BASIC modules** and accessories that fit your requirements.

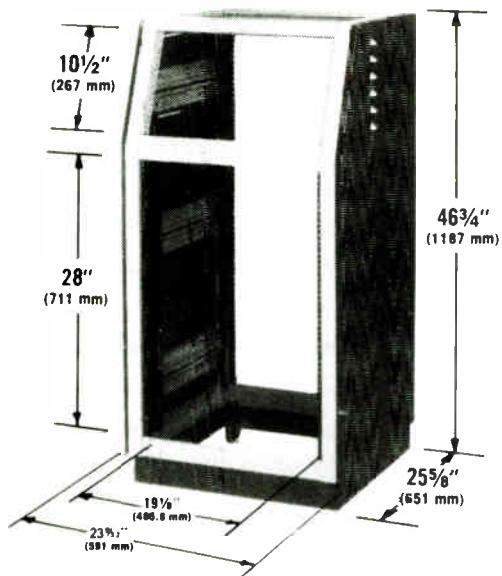
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ALL-WELDED SLOPING FRONT CABINETS

STANTRON VIDEO CENTER

ALL-WELDED SLOPING FRONT CABINETS



ITEM	CATALOG NUMBER	PRICE	WEIGHT APPROX.
CONSOLE	VCSF30025	\$212.40	108 lb.
SIDES	VCSS30025L	\$ 64.25 ea.	29 lb.
REAR PANEL	VCP31L	\$ 23.85	13 lb.
BOTTOM PANEL	VCP21	\$ 16.45	9 lb.
TOP PANEL	VCP17	\$ 14.60	8 lb.

— FINISH: CHOICE OF STANTRON COLORS.

— LAMINATE: PECAN



A VCAS5019
\$2011.90



B VCAS5020
\$2329.80



C VCAS5021
\$2204.40

INFORMATION REGARDING SLOPING FRONT CONSOLES

- A. Material:**
1. Cabinet-corner post: 14 ga. steel
 2. Mouldings and braces: 16 ga. steel
 3. Panel mounting angles: 12 ga. steel
- B. Manufacturing/assembly procedure:**
1. "Butt-welding" and seam welding
 2. Electronically-controlled spot-welding
- C. 19" wide panel space (for standard 19" formed or flat panels) available at front, rear, and top.**
- D. Panel mounting hole spacing: EIA and WE**
- E. Panel mounting holes TAPPED 10-32 thread.**
- F. May be bolted together in any quantity for multiple installation or developing console assemblies.**
- G. Panel mounting angles:**
1. Two pair provided, one pair at front, one pair at rear.
 2. May be positioned to any depth from front to back or back to front by loosening the bolt that holds them to the STANTRON "UNICHANNEL"
- H. Pontoon base features:**
1. Bolted to cabinet bottom.
 2. Will accept casters (catalog VCC3, load capacity 800 lbs. per set of four; casters are recessed. Casters add 1" to height.)
 3. Has provisions for bolting to floor. (By reversing)
- I. Other accessories, such as drawers, work/writing surfaces, etc., are available**

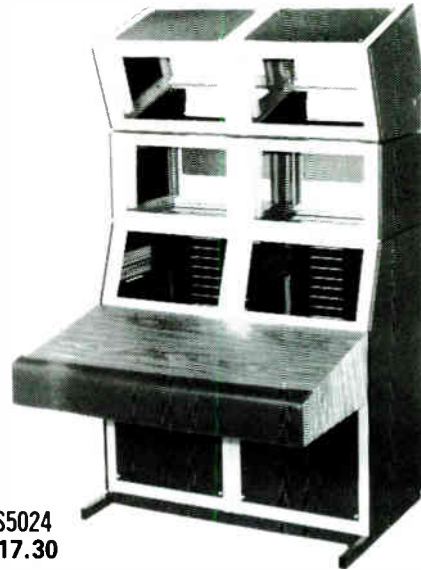
ALL-WELDED SLOPING FRONT CABINETS

STANTRON VIDEO CENTER

ALL-WELDED SLOPING FRONT CABINETS



D VCAS5022
\$1199.00



F VCAS5024
\$1917.30



E VCAS5023
\$1477.30

The Video Center Products illustrated are representative of what can be designed using the Stantron Basic modules.

You can design your own console by selecting the Basic modules and accessories that fit your requirements. A broad selection of accessories are shown and described.

A VCAS5019 \$2011.90

QUANTITY	CATALOG NO.	DESCRIPTION
3	VCSF30025	CABINET
2	VCSS30025	SIDE PANEL LOUVRED
3	VCP31L	REAR PANEL LOUVRED
3	VCP21	BOTTOM PANEL
3	VCP21	FRONT PANEL
1	VCEDF3	EDITOR DESK FLAT
3	VCSB240022	SLOPING BASE
3	VCAS241022	CABINET ASSEMBLY
3 Sets	VCC3	3" CASTER

APPROXIMATE WEIGHT: 709 lb.

B VCAS5020 \$2329.80

QUANTITY	CATALOG NO.	DESCRIPTION
3	VCSF30025	CABINET
2	VCSS30025L	SIDE PANEL LOUVRED
3	VCP31L	REAR PANEL LOUVRED
3	VCP21	BOTTOM PANEL
3	VCP21	FRONT PANEL
1	VCS44	SLOPING DESK
1	VCSWD22	SWITCHER DESK
3	VCSB240022	SLOPING BASE
3	VCAS241022	CABINET ASSEMBLY
3 Sets	VCC3	3" CASTER

APPROXIMATE WEIGHT: 715 lb.

C VCAS5021 \$2204.40

QUANTITY	CATALOG NO.	DESCRIPTION
3	VCSF30025	CABINET
2	VCSS30025L	SIDE PANEL LOUVRED
3	VCP31L	REAR PANEL LOUVRED
3	VCP21	BOTTOM PANEL
3	VCP21	FRONT PANEL
1	VCS44	SLOPING DESK
1	VCSWD22	SWITCHER DESK
3	VCAS241022	CABINET ASSEMBLY
3 Sets	VCC3	3" CASTER

APPROXIMATE WEIGHT: 720 lb.

D VCAS5022 \$1199.00

QUANTITY	CATALOG NO.	DESCRIPTION
2	VCSF30025	CABINET
2	VCSS30025L	SIDE PANEL LOUVRED
2	VCP31L	REAR PANEL LOUVRED
2	VCP21	BOTTOM PANEL
2	VCP21	FRONT PANEL
1	VCEDF2	EDITOR DESK FLAT
2 Sets	VCC3	3" CASTER
1	VCLT2	LAMINATE TOP

APPROXIMATE WEIGHT: 419 lb.

E VCAS5023 \$1477.30

QUANTITY	CATALOG NO.	DESCRIPTION
2	VCSF30025	CABINETS
2	VCSS30025L	SIDE PANEL LOUVRED
2	VCP31L	REAR PANEL LOUVRED
2	VCP21	BOTTOM PANEL
2	VCP21	FRONT PANEL
1	VCEDF2	EDITOR DESK FLAT
2	VCSB240022	SLOPING BASE
2	VCAS241022	CABINET ASSEMBLY
2 Sets	VCC3	3" CASTER

APPROXIMATE WEIGHT: 543 lb.

F VCAS5024 \$1917.30

QUANTITY	CATALOG NO.	DESCRIPTION
2	VCSF30025	CABINETS
2	VCSS30025L	SIDE PANEL LOUVRED
2	VCP31L	REAR PANEL LOUVRED
2	VCP21	BOTTOM PANEL
2	VCP21	FRONT PANEL
1	VCS44	SLOPING DESK
2	VCSB240022	SLOPING BASE
4	VCAS241022	CABINET ASSEMBLY
1	VCAT44	ANTI-TIP BASE

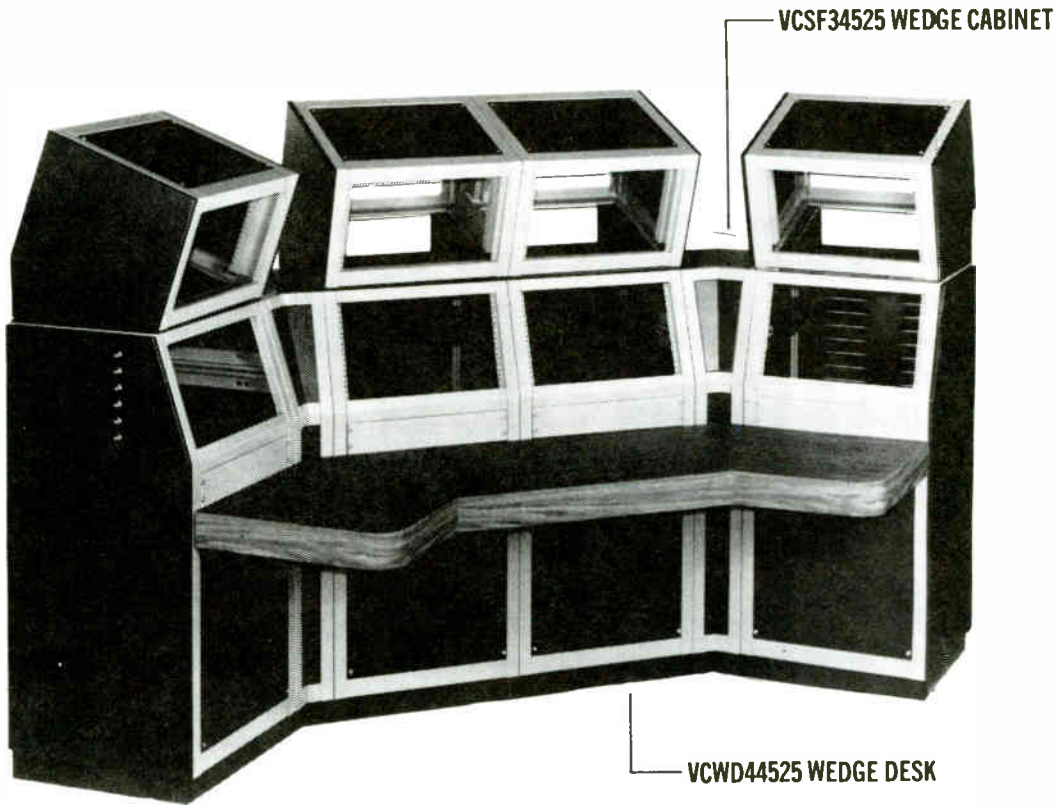
APPROXIMATE WEIGHT: 629 lb.

**WEDGE
ORGAN-STYLE
CONSOLE**

**STANTRON
VIDEO CENTER**

**WEDGE
ORGAN-STYLE
CONSOLE**

WEDGE/ORGAN-STYLE CONSOLES



**VCAS5025
\$3,619.00**

VCAS5025

QUANTITY	CATALOG NO.	DESCRIPTION
4	VCSF30025	CABINET
2	VCSF34525	WEDGE CABINET
2	VCSS30025L	SIDE PANEL LOUVRED
4	VCP31L	REAR PANEL LOUVRED
4	VCP21	BOTTOM PANEL
4	VCP21	FRONT PANEL
4	VCP3	FRONT PANEL
1	VCWD44525	WEDGE DESK
4	VCSB240022	SLOPING BASE
4	VCAS241022	CABINET ASSEMBLY
4 Sets	VCC3	3" CASTER

APPROXIMATE WEIGHT: 1315 lb.

**INFORMATION REGARDING
WEDGE/ORGAN-STYLE CONSOLES**

The above console is only one of many configurations that can be designed, using our Wedge Cabinet — part #VCSF34525 and Sloping Front Cabinet — part #VCSF30025. Please submit your ideas to our sales-engineering department. They will assist you in designing an Organ-style Console that fits your unique requirements.

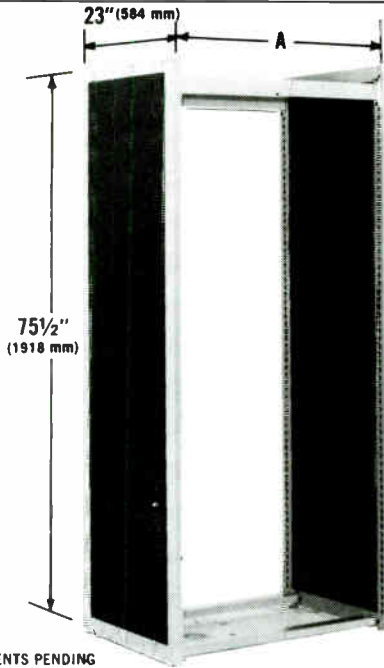
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1/2" and 3/4" DUBBING RACKS

STANTRON VIDEO CENTER

1/2" and 3/4" DUBBING RACKS



PATENTS PENDING

FOR	A	CATALOG NO.	PRICE	APPROX. WEIGHT
*1/2" FORMAT	23"	VCDR23	\$345.40	86 lb.
*3/4" FORMAT	31"	VCDR31	\$348.70	88 lb.
**1/2" FORMAT	23"	VCMDR23	\$238.70	50 lb.
**3/4" FORMAT	31"	VCMDR31	\$244.20	52 lb.

NOTES:

- A. Finish: Tan #VC7T/Brown #VC16T
- *B. Includes two side panels.
- C. Includes four levelers #VCH158
- **D. Racks used for multiple assemblies (sides not included).

IMPORTANT:

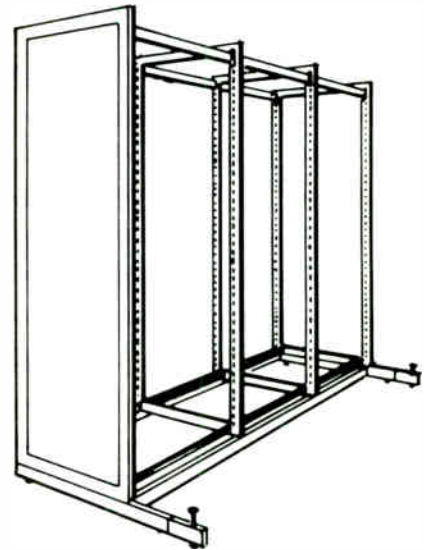
When using any sliding components, the "Anti-Tip" tubular steel base must be ordered.



(A) VCAS5026 \$1,097.80



(B) VCAS5027 \$1,156.10



EXAMPLE OF A MULTIPLE DUBBING RACK ASSEMBLY

(A) VCAS5026 \$1,097.80

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCDR31	DUBBING RACK
1	VCAT31	ANTI-TIP BASE
1	VCFS31	FIXED SHELF
4	VCSS31-2	SLIDING SHELF

APPROXIMATE WEIGHT: 222 lb.

(B) VCAS5027 \$1,156.10

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCDR31	DUBBING RACK
1	VCAT31	ANTI-TIP BASE
5	VCSS31-2	SLIDING SHELF

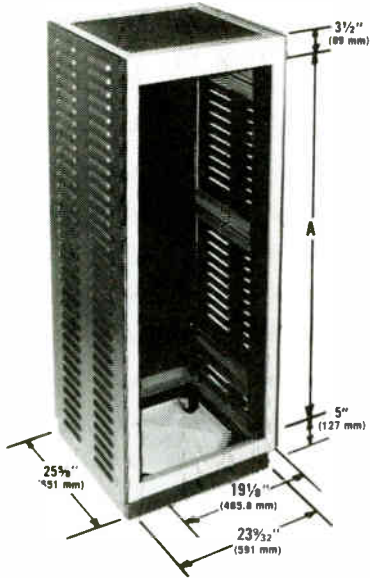
APPROXIMATE WEIGHT: 236 lb.

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ALL-WELDED VERTICAL FRONT CABINETS

STANTRON VIDEO CENTER

ALL-WELDED VERTICAL FRONT CABINETS



QUANTITY OF BAYS WIDE	CATALOG NUMBER	INCHES A	mm A	PRICE	APPROX. WEIGHT
ONE	VCAS21-1	21"	533	\$ 383.90	149 lb.
TWO	VCAS21-2	21"	533	\$ 674.30	252 lb.
THREE	VCAS21-3	21"	533	\$ 964.70	378 lb.
ONE	VCAS28-1	28"	711	\$ 426.80	160 lb.
TWO	VCAS28-2	28"	711	\$ 750.20	280 lb.
THREE	VCAS28-3	28"	711	\$1,072.50	420 lb.
ONE	VCAS35-1	35"	889	\$ 466.40	205 lb.
TWO	VCAS35-2	35"	889	\$ 808.50	358 lb.
THREE	VCAS35-3	35"	889	\$1,150.60	511 lb.
ONE	VCAS43-1	43 3/4"	111	\$ 502.70	205 lb.
TWO	VCAS43-2	43 3/4"	111	\$ 878.90	409 lb.
THREE	VCAS43-3	43 3/4"	111	\$1,254.00	585 lb.
ONE	VCAS52-1	52 1/2"	1334	\$ 531.30	263 lb.
TWO	VCAS52-2	52 1/2"	1334	\$ 921.80	455 lb.
THREE	VCAS52-3	52 1/2"	1334	\$1,311.20	648 lb.
ONE	VCAS61-1	61 1/4"	1556	\$ 587.40	287 lb.
TWO	VCAS61-2	61 1/4"	1556	\$1,015.30	497 lb.
THREE	VCAS61-3	61 1/4"	1556	\$1,443.20	798 lb.
ONE	VCAS70-1	70"	1778	\$ 636.90	322 lb.
TWO	VCAS70-2	70"	1778	\$1,097.80	557 lb.
THREE	VCAS70-3	70"	1778	\$1,557.60	793 lb.
ONE	VCAS78-1	78 3/4"	2000	\$ 677.60	349 lb.
TWO	VCAS78-2	78 3/4"	2000	\$1,160.50	599 lb.
THREE	VCAS78-3	78 3/4"	2000	\$1,643.40	850 lb.

DESCRIPTION:

- A. Each cabinet includes: One cabinet frame. One rear louvred door. One rear connector panel. One top perforated panel. One set of 3" dia. casters.
- B. Each assembly includes one pair of side panels louvred.
- C. Finish: Choice of colors.
- D. Vertical mounting angles front and rear have 10-32 thread tapped holes



A VCAS5028
\$1,008.70



B VCAS5029
\$1,931.60



VCAS5028 **\$1,008.70**

QUANTITY	DESCRIPTION	CATALOG NO.
1	VCAS52-1	CABINET ASSEMBLY
1	VCP21	FRONT VERTICAL PANEL
1	VCSWD22	SWITCHER DESK
1	VCAT22	ANTI-TIP BASE
1 Set	VCC5	5" CASTER

APPROXIMATE WEIGHT: 323 lb.

VCAS5029 **\$1,931.60**

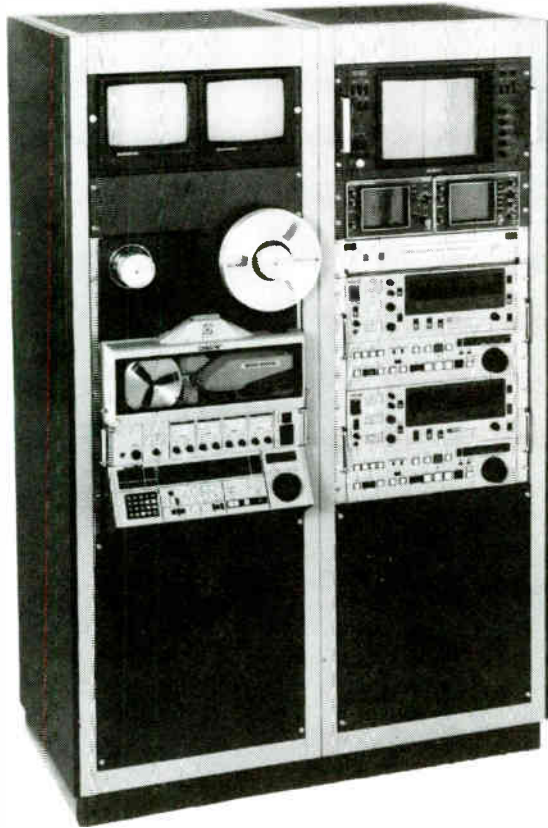
QUANTITY	CATALOG NO.	DESCRIPTION
1	VCAS61-2	CABINET ASSEMBLY
2	VCP21	FRONT VERTICAL PANEL
2	VCP5	FRONT FILLER PANEL
1	VDC21	CABINET
1 Set	VCC3LK	3" CASTER
1	VCP25T	LAMINATE TOP
1	VCP14P	PERFORATED PANEL REAR
1	VCPW19	POWER PANEL
1	VCP12	FRONT VERTICAL PANEL
1	VCP3	FRONT VERTICAL PANEL
1	VCPS19	POWER STRIP
1	VCSD44	SLOPING DESK

APPROXIMATE WEIGHT: 623 lb.

**ALL-WELDED
VERTICAL FRONT
CABINETS**

**STANTRON
VIDEO CENTER**

**ALL-WELDED
VERTICAL FRONT
CABINETS**



**(A) VCAS5030
\$1,060.40**



**(B) VCAS5031
\$1,401.40**

VCAS5031 (B) \$1,401.40

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCAS61-2	CABINET ASSEMBLY
2	VCP21	FRONT VERTICAL PANEL
2	VCP5	FRONT FILLER PANEL
1	VCSD44	SLOPING DESK
2 Sets	VCC3	CASTERS

APPROXIMATE WEIGHT: 520 lb.

VCAS5030 (A) \$1,060.40

QUANTITY	CATALOG NO.	DESCRIPTION
1	VCAS61-2	CABINET ASSEMBLY
2	VCP21	FRONT VERTICAL PANEL
1	VCP5	FRONT VERTICAL PANEL
2 Sets	VCC3	CASTERS

APPROXIMATE WEIGHT: 518 lb.

The VIDEO CENTER PRODUCTS illustrated are representative of what can be designed using the STANTRON BASIC modules.

You can design your own console by selecting the BASIC modules and accessories that fit your requirements.

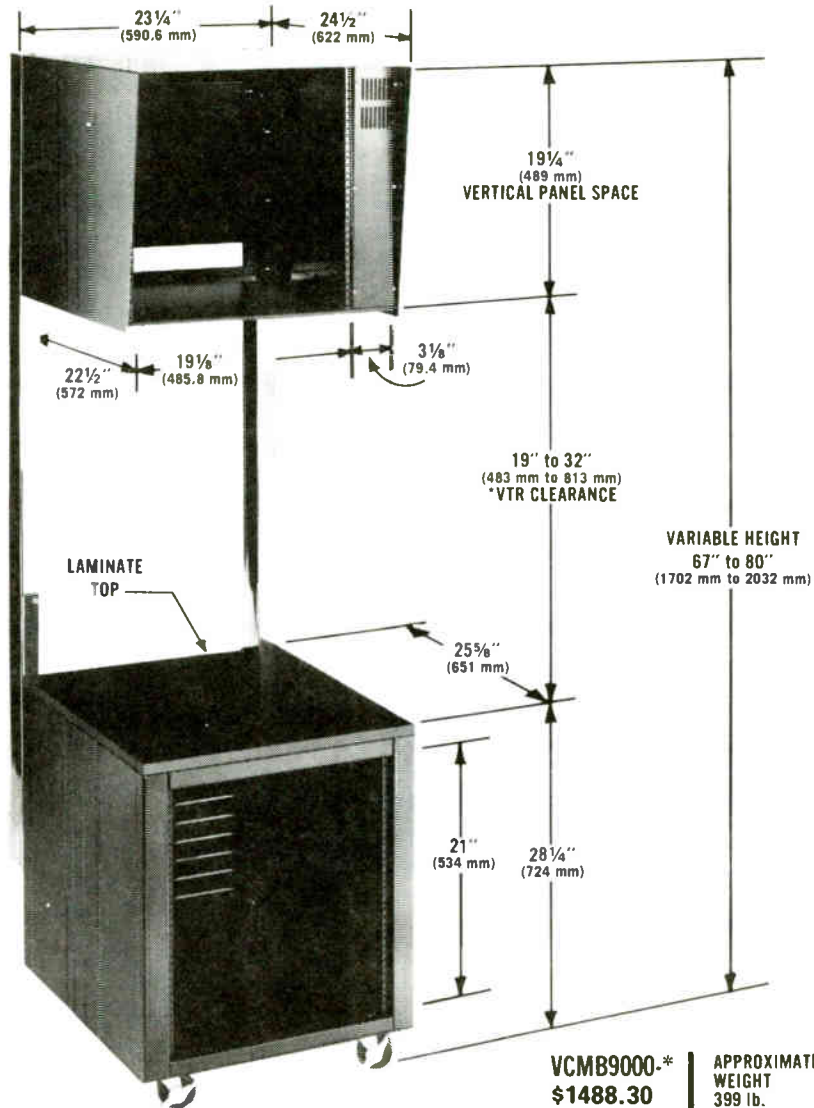
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VTR MONITOR BRIDGE CONSOLES

STANTRON VIDEO CENTER

VTR MONITOR BRIDGE CONSOLES



- **NOTE: TOTAL WIDTH IS 23 1/4" (590.6 mm)**
- The Monitor Bridge is adjustable in height from 19" to 32" (483 mm to 813 mm).
- Base Cabinet panel space: 19 1/8" wide x 21" height (front/rear) (485.8 mm x 534 mm).
- Monitor Bridge Cabinet will accept:
 - A 10 1/2" x 19" (266.7 mm x 482.6 mm) wide panel with a TV monitor.
 - A 5 1/4" x 19" (133.4 mm x 482.6 mm) wide panel with a wave form monitor and a vector scope (side by side).
 - An additional 3 1/2" x 19" (88.9 mm x 482.6 mm) panel for operational equipment.
- A Vertical Accessory Panel 3 1/8" wide x 19 1/4" high (79.4 mm x 488.6 mm) is included. The upper half of this panel has a grille opening for your speaker. The lower half is available for mounting of optional equipment such as microphone jacks, switches, etc.
- Vertical Supports may be used as electrical raceways.

- Base Cabinet and Monitor Bridge Cabinet both have removable rear perforated panels for ventilation and access to equipment. Part #VCP14P. Laminate top for base cabinet is included.
- 3" swivel casters (2 with brake) are included.
- Finish:
 - Vertical supports: Bright chrome
 - Cabinets: Black textured #VC8T
 - Laminate Top: Black

- **NOTE: Finish must be submitted when placing order.**
- * Shipped Assembled: Important! Submit VTR clearance dimensions. Add dimension number to suffix of catalog #. i.e.: VCMB9000-24. This number would allow for a 24" (610 mm) clearance between the Base Cabinet top and bottom of Monitor Bridge Cabinet. If, after receipt of cabinet a different clearance is desired, our adjustability feature may be utilized. If no clearance dimension is submitted with the order, we will ship with a 19" (483 mm) VTR clearance.

**"KNOCK-DOWN"
VERTICAL
CABINETS**



VIDEO CENTER

**"KNOCK-DOWN"
VERTICAL
CABINETS**

These Single Bay, Double Bay and Triple Bay Assemblies are now available on STANTRON's FIVE DAY DELIVERY* program.



• EASY TO ASSEMBLE
• WILL ACCOMMODATE ALL STANTRON ACCESSORIES

• ECONOMICAL

• REDUCES FREIGHT COST SHIPPED FLAT

• AVAILABLE IN

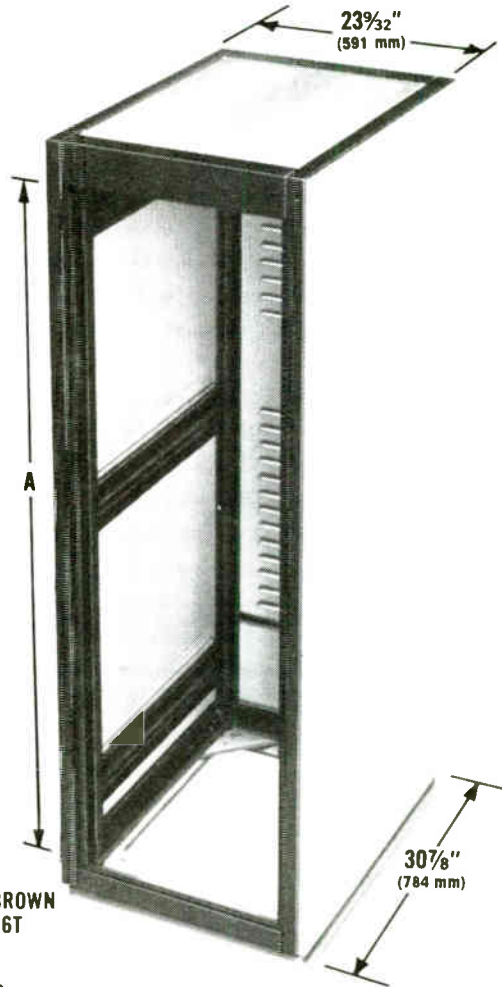
▼
SINGLE BAY ASSEMBLIES
DOUBLE BAY ASSEMBLIES
TRIPLE BAY ASSEMBLIES

• 19 1/8" WIDE PANEL SPACE (485.8 mm)

• FINISH:

Frame — STANTRON = VC16T DARK BROWN
Door & Panels — STANTRON = VC6T

• O.D. HEIGHT: Add 8 1/2" to VPS (215 mm)



*THE FIVE DAY DELIVERY CYCLE STARTS FROM THE DATE OF APPROVED CREDIT AND WRITTEN CONFIRMATION OF THE ORDER.
(The five day cycle does not include Saturday, Sunday or Holidays.)

GENERAL INFORMATION

EACH SINGLE BAY CABINET ASSEMBLY INCLUDES:

- One Cabinet Frame
- One Rear Door Louvred
- One Top Panel Louvred
- One Rear Connector Panel
- Two Side Panels
- Mounting Hardware

EACH DOUBLE BAY CABINET ASSEMBLY INCLUDES:

- Two Cabinet Frames
- Two Rear Doors Louvred
- Two Top Panels Louvred
- Two Rear Connector Panels
- Two Side Panels
- Mounting Hardware

EACH TRIPLE BAY CABINET ASSEMBLY INCLUDES:

- Three Cabinet Frames
- Three Rear Doors Louvred
- Three Top Panels Louvred
- Three Rear Connector Panels
- Two Side Panels
- Mounting Hardware

ORDERING INFORMATION

CATALOG NUMBER	INCHES A	mm A
VCKD21.*	21"	533
VCKD35.*	35"	889
VCKD43.*	43 3/4"	1111
VCKD52.*	52 1/2"	1334
VCKD61.*	61 1/4"	1556
VCKD70.*	70"	1778
VCKD78.*	78 3/4"	2000

*Indicates number of bays wide
Example: VCKD35-1 (Single Bay)

**"KNOCK-DOWN"
VERTICAL
CABINETS**



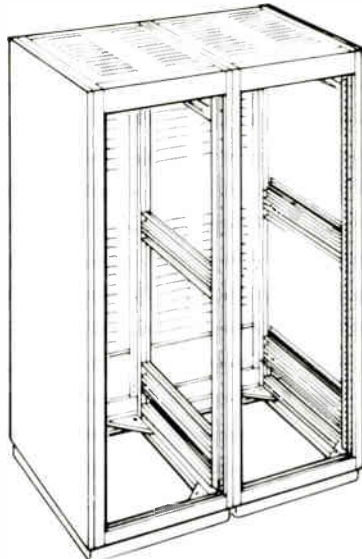
**"KNOCK-DOWN"
VERTICAL
CABINETS**

These Single Bay, Double Bay and Triple Bay Assemblies are now available on STANTRON's FIVE DAY DELIVERY* program.

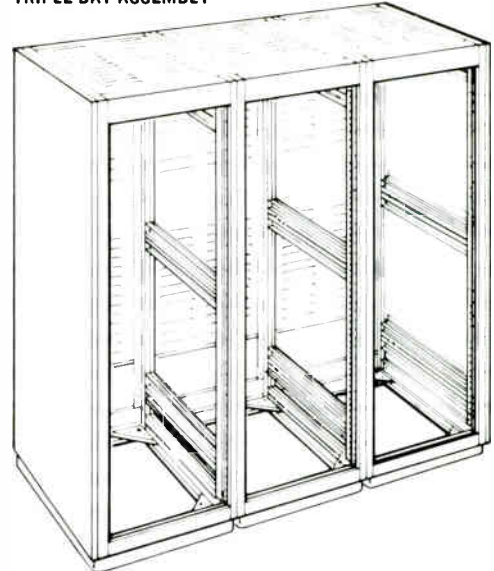
SINGLE BAY ASSEMBLY



DOUBLE BAY ASSEMBLY



TRIPLE BAY ASSEMBLY



*THE FIVE DAY DELIVERY CYCLE STARTS FROM THE DATE OF APPROVED CREDIT AND WRITTEN CONFIRMATION OF THE ORDER.
(The five day cycle does not include Saturday, Sunday or Holidays.)

ASSEMBLY NUMBERS AND PRICES

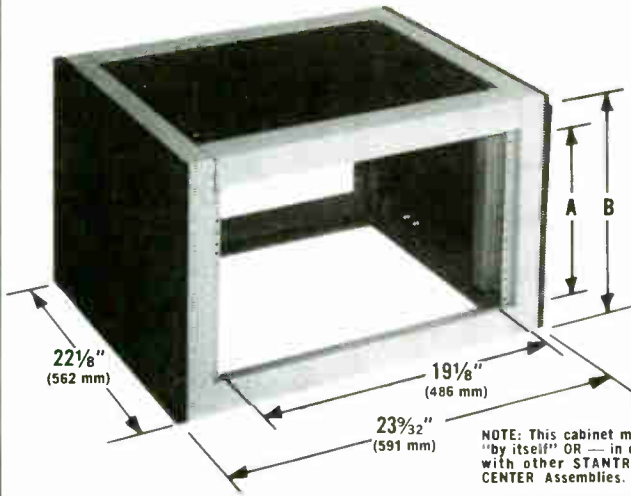
SINGLE BAY ASSEMBLY NUMBER	PRICE	APPROXIMATE SHIPPING WEIGHT
VCKD21-1	\$509.92	184 Lbs.
VCKD35-1	631.15	253 Lb.
VCKD43-1	668.76	285 Lbs.
VCKD52-1	706.53	314 Lbs.
VCKD61-1	772.88	328 Lbs.
VCKD70-1	839.40	383 Lbs.
VCKD78-1	895.77	419 Lbs.

DOUBLE BAY ASSEMBLY NUMBER	PRICE	APPROXIMATE SHIPPING WEIGHT	TRIPLE BAY ASSEMBLY NUMBER	PRICE	APPROXIMATE SHIPPING WEIGHT
VCKD21-2	\$ 888.13	390 Lbs.	VCKD21-3	\$1273.35	434 Lbs.
VCKD35-2	1105.41	470 Lbs.	VCKD35-3	1579.67	739 Lbs.
VCKD43-2	1174.93	496 Lbs.	VCKD43-3	1681.11	757 Lbs.
VCKD52-2	1231.47	550 Lbs.	VCKD52-3	1756.41	781 Lbs.
VCKD61-2	1355.86	604 Lbs.	VCKD61-3	1903.72	853 Lbs.
VCKD70-2	1449.03	672 Lbs.	VCKD70-3	2058.66	956 Lbs.
VCKD78-2	1539.34	726 Lbs.	VCKD78-3	2182.88	1029 Lbs.

ALL-WELDED MONITOR DESK CABINETS

STANTRON VIDEO CENTER

ALL-WELDED MONITOR DESK CABINETS



NOTE: This cabinet may be used "by itself" OR — in conjunction with other STANTRON VIDEO CENTER Assemblies.

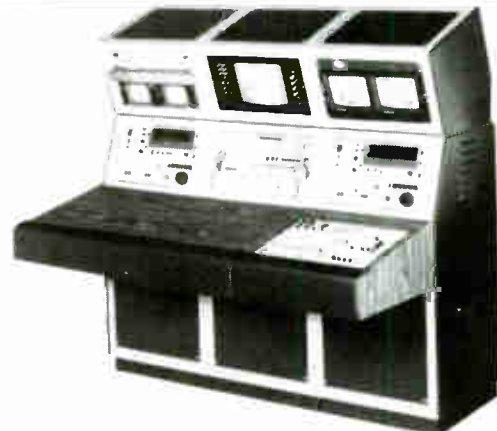
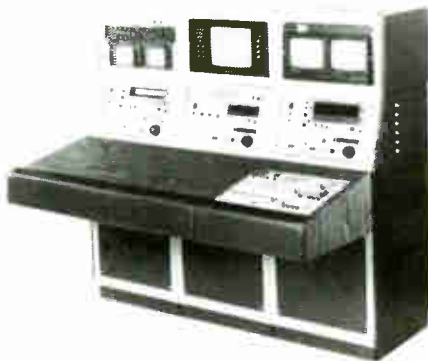
INCHES		mm		CATALOG NUMBER	WITH SIDE PANELS PRICE	*LESS SIDE PANELS PRICE	APPROX. WEIGHT
A	B	A	B				
8 3/4"	12 3/16"	222	313	VCAS240822.*	\$177.10	\$124.30	56 lb.
10 1/2"	14 1/8"	268	357	VCAS241022.*	\$182.60	\$125.40	61 lb.
12 1/4"	15 13/16"	311	402	VCAS241222.*	\$192.50	\$130.90	66 lb.
14"	17 3/8"	356	446	VCAS241422.*	\$199.10	\$135.30	69 lb.
15 3/4"	19 3/8"	400	491	VCAS241522.*	\$204.60	\$137.50	74 lb.
17 1/2"	21 1/8"	445	535	VCAS241722.*	\$211.20	\$140.80	79 lb.

*Less side panels, Add -LS to Suffix. I.E.: VCAS241222-LS

DESCRIPTION

- A. Each cabinet includes: One cabinet frame, One rear perforated panel, One top panel, 2 side panels per assembly.
- B. This is an ALL-WELDED, MODULAR CABINET, sides are removable. When ordering for multiple assemblies, order one cabinet with sides, the other cabinets "less sides." (Suffix "-LS", I.E.: VCAS241222-LS)
- C. Vertical mounting angles front and rear have 10-32 thread tapped holes.

EXAMPLES OF USAGE WITH OTHER ASSEMBLIES



TV/VTR/VCR EDITING CONSOLE

STANTRON VIDEO CENTER

TV/VTR/VCR EDITING CONSOLE



DESCRIPTION

- A mobile MONITOR BRIDGE TV/VTR/VCR Console; can be used for editing purposes . . . etc. . . .
- Monitor Bridge height can be adjusted from floor-level 57" to 69" (147 mm to 1778 mm). A three outlet power strip is included and installed at the rear panel space. Two sliding shelves are supplied. Casters are included.
- Finish: Tan VC7T
- Laminate: Pecan

VC8000-L

\$698.50
(as shown)
Approx. Weight
208 lbs.

VC8000

\$631.40
(w/o Laminate)
Approx. Weight
206 lbs.



TV/VTR/VCR CONSOLE/CABINET

- TV/VTR/VCR Basic cabinet
- Two sliding shelves included
- Casters included
- 3 outlet power strip included
- Laminate top included
- Finish: Tan VC7T
- Laminate: Pecan

VC7000

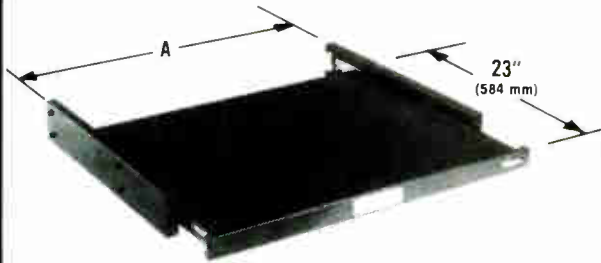
\$460.90
Approx. Weight
275 lbs.



ACCESSORIES

ACCESSORIES

SLIDING SHELF

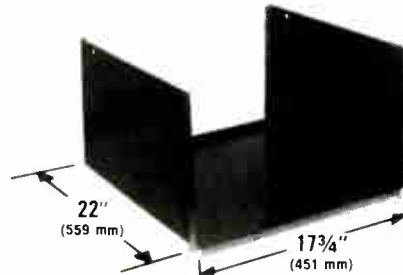


- Positive-latch feature
- Used with VTR/VCR Racks
- Ball bearing slides
- 100 lb. capacity
- Finish Brown =VC16T

A	CATALOG NUMBER	PRICE	APPROX. WEIGHT
For 23" RACK	VCSS23-11	\$169.40	21 lb.
For 31" RACK	VCSS31-11	171.60	24 lb.

SUPPORTING SHELF

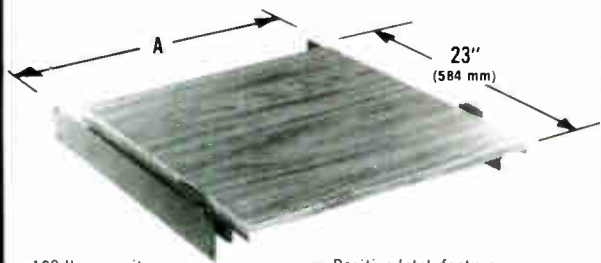
USED ON SLOPING FRONT CONSOLE



- Supports rack mounted and non-rack mounted VTR/VCR in the sloping panel space of the Sloping Front Cabinet

CATALOG NUMBER	PRICE	APPROX. WEIGHT
VCSH30025	\$50.60	14 lb.

SLIDING SHELF

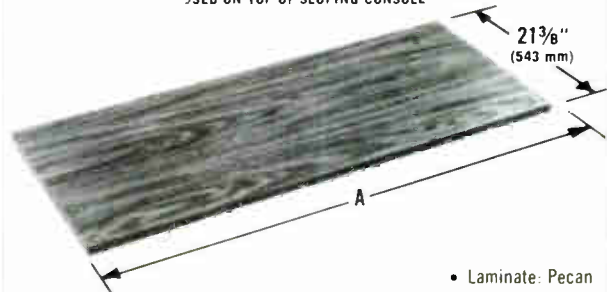


- 100 lb. capacity.
- Finish: Brown =VC16T
- Laminate: Pecan
- Positive-latch feature.
- Used with VTR/VCR Racks.
- Ball Bearing Slides.

A	CATALOG NUMBER	PRICE	APPROX. WEIGHT
For 23" RACK	VCSS23-2	\$139.70	18 lb.
For 31" RACK	VCSS31-2	143.00	20 lb.

LAMINATE TOP

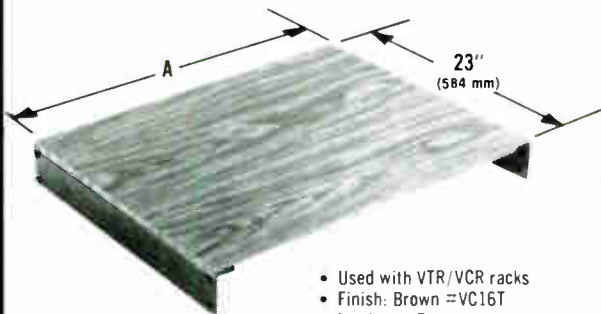
USED ON TOP OF SLOPING CONSOLE



- Laminate: Pecan

A QUANTITY CABINETS	CATALOG NUMBER	PRICE	APPROX. WEIGHT
1	VCLT1	\$ 86.80	15 lb.
2	VCLT2	113.30	30 lb.
3	VCLT3	138.60	45 lb.

FIXED SHELF



- Used with VTR/VCR racks
- Finish: Brown =VC16T
- Laminate: Pecan

A	CATALOG NUMBER	PRICE	APPROX. WEIGHT
For 23" RACK	VCFS23	\$69.30	14 lb.
For 31" RACK	VCFS31	72.60	18 lb.

LEVELERS



- Leveling screw.
- Provides bearing surface on uneven floors.

CATALOG NUMBER	PRICE PER SET
VCH158	\$7.81

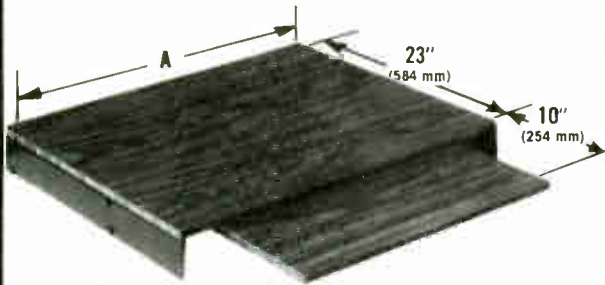


VIDEO CENTER

ACCESSORIES

ACCESSORIES

FIXED SHELF WITH EXTENSION SHELF

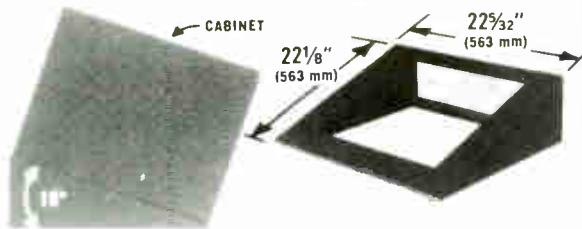


- Used with VTR/VCR racks
- Extension shelf allows for additional work area
- Laminate: Pecan

A	CATALOG NUMBER	PRICE	APPROX. WEIGHT
For 23" RACK	VCX23	\$128.70	16 lb.
For 31" RACK	VCX31	130.90	19 lb.

SLOPING BASE

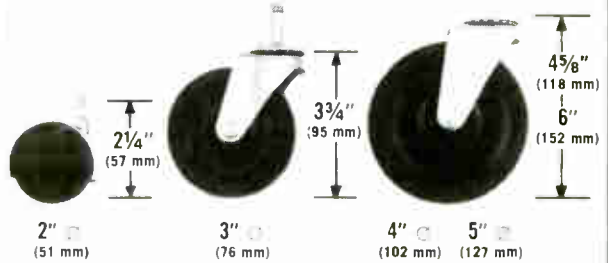
USED WITH VCF2400 CABINET



- Used with Monitor-Desk Cabinet.
- 19° slope allows for better viewing.
- Material: Heavy Ga. Steel
- Attaching hardware included

CATALOG NUMBER	PRICE	APPROX. WEIGHT
VCSB240022	\$41.80	12 lb.

CASTERS



SELECTION CHART

* KEY	ITEM
A	FLAT and SLOPING DESK CONSOLE
B	VTR/VCR RACKS
C	SLOPING FRONT CABINET
D	VERTICAL FRONT CABINET
E	DUBBING RACKS
F	"K-O" CABINETS
G	ANTI-TIP TUBULAR STEEL BASE

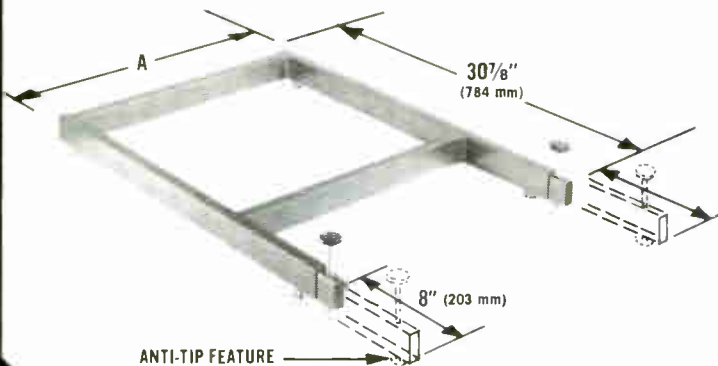
ORDERING CHART

WHEEL DIAMETER	mm	CAPACITY SET of 4	CATALOG NUMBER	* MAY BE USED WITH	WITH BRAKES	PRICE	APPROX. WEIGHT
2"	51 mm	300 lb.	VCC2	A B E G	YES	\$42.46	4 lb.
3"	76 mm	900 lb.	VCC3	C D F	** NO	45.65	8 lb.
4"	102 mm	460 lb.	VCC4	B E G	YES	37.13	10 lb.
5"	127 mm	500 lb.	VCC5	B E G	YES	42.90	11 lb.

** EXCEPTION: VTR Monitor Bridge Cabinet will include 2 casters with brake.

ANTI-TIP TUBULAR STEEL BASE

SUGGESTED USAGE: WHEN USING SLIDING COMPONENTS PULLED OUT TO FRONT



* USED WITH:

- 1 Sloping Front Cabinets
- 2 Dubbing Rack (23" or 31" width)
- 3 Vertical Video Cabinets "All-Welded"
- 4 Vertical Video Cabinets/"K-D"

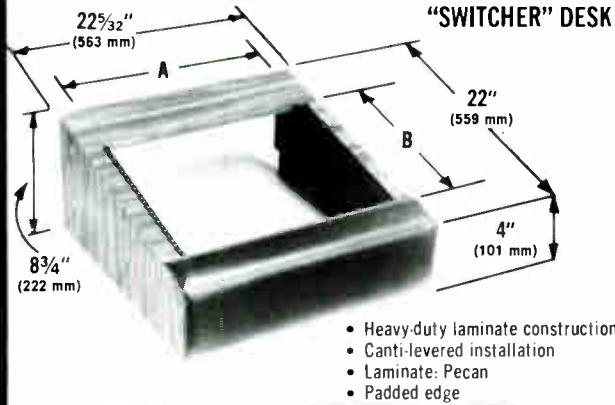
• LEVELERS INCLUDED

• See choice of casters on this page.

INCHES A	mm A	* USED WITH	NUMBER OF BAYS	CATALOG NUMBER	PRICE	APPROX. WEIGHT
22 5/8"	563	1 3 4	ONE	VCAT22	\$145.20	20 lb.
44 1/8"	1126	1 3 4	TWO	VCAT44	151.80	30 lb.
66 1/8"	1688	1 3 4	THREE	VCAT66	155.10	38 lb.
23"	584	2	ONE	VCAT23	145.20	21 lb.
46"	1168	2	TWO	VCAT46	151.80	31 lb.
69"	1753	2	THREE	VCAT69	156.20	39 lb.
31"	787	2	ONE	VCAT31	147.40	24 lb.
62"	1575	2	TWO	VCAT62	155.10	29 lb.
93"	2362	2	THREE	VCAT93	158.40	42 lb.

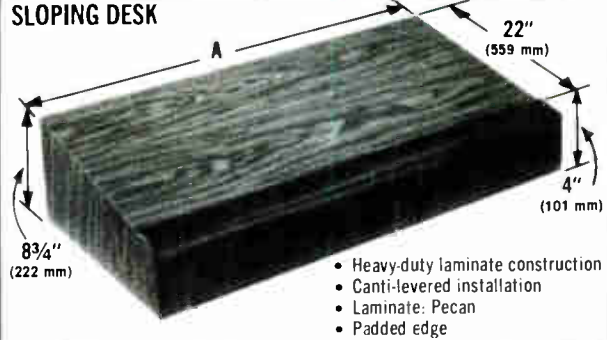
ACCESSORIES

ACCESSORIES



- Heavy-duty laminate construction
- Canti-levered installation
- Laminate: Pecan
- Padded edge

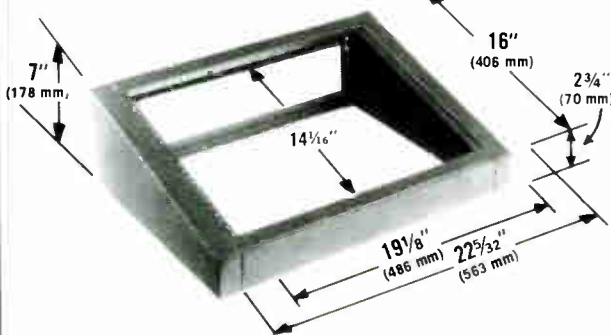
A		B		CATALOG NUMBER	PRICE	APPROX. WEIGHT
INCHES	mm	INCHES	mm			
19 1/8"	486 mm	14 1/16"	357 mm	VCSWD22	\$271.70	18 lb.



- Heavy-duty laminate construction
- Canti-levered installation
- Laminate: Pecan
- Padded edge

NUMBER OF BAYS WIDE	A		CATALOG NUMBER	PRICE	APPROX. WEIGHT
	INCHES	mm			
ONE	22 3/32"	563	VCSD22	\$247.50	18 lb.
TWO	44 3/16"	1126	VCSD44	\$332.20	34 lb.
THREE	66 1/32"	1688	VCSD66	\$402.60	50 lb.

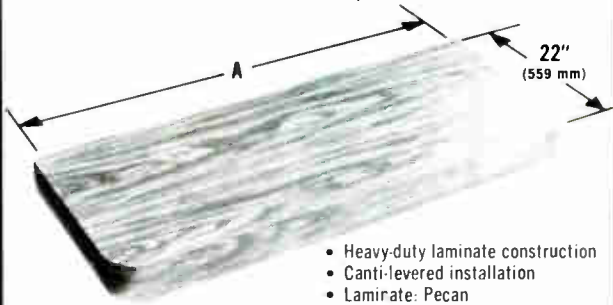
"EDITOR" DESK/SLOPING – or – "SWITCHER" DESK
(May be used for a controller or switcher)



CATALOG NUMBER	PRICE	APPROXIMATE WEIGHT
VCEDS22	\$108.90	13 lb.
*VCEDS22-PE	128.70	13 lb.

*With padded edge

"EDITOR" DESK/FLAT



- Heavy-duty laminate construction
- Canti-levered installation
- Laminate: Pecan

NUMBER OF BAYS WIDE	A		CATALOG NUMBER	PRICE	APPROX. WEIGHT
	INCHES	mm			
ONE	22 3/32"	563	VCEDF-1	\$235.40	61 lb.
TWO	44 3/16"	1126	VCEDF-2	\$255.20	90 lb.
THREE	66 1/32"	1688	VCEDF-3	\$286.00	114 lb.

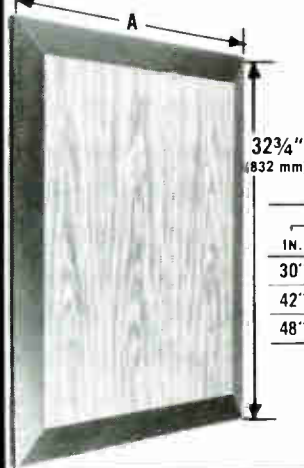
REAR/BACK/MODESTY PANEL



- Removable
- Conceals cords/cables
- Finish: Brown =VC7T

USEO WITH	CATALOG NUMBER	PRICE	APPROX. WEIGHT
VCRK2723	VCRP2723	\$32.56	9 lb.
VCRK2731	VCRP2731	33.44	12 lb.
VCRK5123	VCRP5123	52.14	19 lb.
VCRK5131	VCRP5131	53.02	22 lb.
VCRK6323	VCRP6323	59.84	23 lb.
VCRK6331	VCRP6331	62.70	26 lb.
VCRK7523	VCRP7523	70.07	27 lb.
VCRK7531	VCRP7531	71.83	30 lb.
VCDR23	VCRP23	70.07	27 lb.
VCDR31	VCRP31	71.83	30 lb.
DESK WIDTH: 45 1/2"	VCRP45	39.99	17 lb.
DESK WIDTH: 67 3/4"	VCRP67	50.71	25 lb.

SIDE PANEL FOR DESK ASSEMBLIES



- Laminate design
- Color: Center: Pecan Border: Brown
- Easily assembled

IN.	mm	CATALOG NUMBER	PRICE	APPROX. WEIGHT
30"	762	VCSP30	\$183.70	25 lb.
42"	1067	VCSP42	196.90	35 lb.
48"	1219	VCSP48	207.90	40 lb.

ACCESSORIES

STANTRON VIDEO CENTER

ACCESSORIES

EDITOR – SLIDING WRITING SHELF



VCSS25 or VCSS30

EDITOR – SLIDING WRITING SHELF WITH DRAWER



VCLTD25 or VCLTD30

INFORMATION REGARDING ABOVE ITEMS

- Used with:
 - Sloping front cabinets
 - Vertical front cabinets
 - "K-D" cabinets
 - Recessed flush into cabinets
 - Pulls out on slides
 - Laminate: Pecan

CATALOG NUMBER	MAY BE USED WITH	PRICE	APPROX. WEIGHT
VCSS25	SLOPING AND VERTICAL CABINETS	\$124.81	37 lb.
VCLTD25	SLOPING CABINETS VERTICAL CABINETS	104.98	31 lb.
VCSS30	"K-D" CABINET	136.49	38 lb.
VCLTD30	"K-D" CABINET	116.67	35 lb.

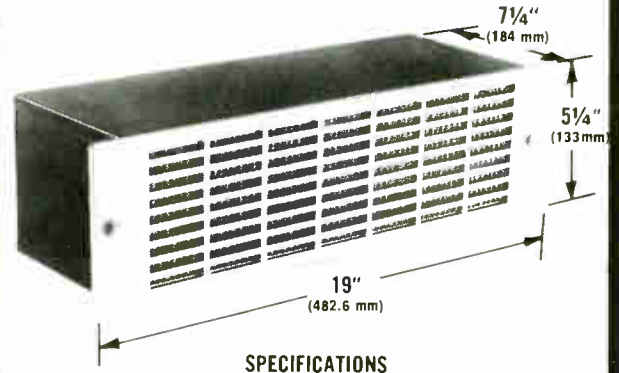
PANEL SCREWS



- 10-32 thread
- Phillips head
- Bright nickel plated
- "Pressed-on" nylon washer protects panel finish

CATALOG NUMBER	USE WITH	LENGTH		PRICE PER 100	APPROX. WEIGHT PER 100
		INCHES	mm		
VCH99	5/8" DEEP FORMED PANEL	1 1/8"	28.6	\$19.47	1/2 lb.
VCH100	1/8" THICK FLAT PANEL	5/8"	15.9	19.14	1/2 lb.

PACKAGED BLOWERS



SPECIFICATIONS

- A. Motors:**
1. Double-shielded precision ball bearing.
 2. Bearings meet Fed. Spec. =FF-B-171A.
 3. Lubricant used has range from -29 C. to +148 C., providing protection exceeding Mil-G-3278 requirements under severe high temperature conditions.
 4. 115 volt, 50, 60 cycle current is standard.
 5. 1.6 AMPS, 122 WATTS.
 6. All standard motors meet specifications =CC-M-636A
 7. MOTOR SPEED: 3050 RPM
- B. Filter:**
1. Permanent
 2. Washable and reusable
 3. Easily removable
- C. Front Grille:**
1. Chrome plated
 2. Easily removed
 3. 19" wide
- D. Blower case painted zinc chromate primer plus grey enamel.**
- E. Rotating parts neoprene shock-mounted and isolated from enclosure.**
- F. Minimum of 36" type SJ 3-wire cord, internally grounded, securely locked to case by strain-relief bushing.**

CATALOG NUMBER	PRICE	APPROXIMATE WEIGHT
VCPB300A	\$293.70	18 lb.

VENTILATION GRILLE



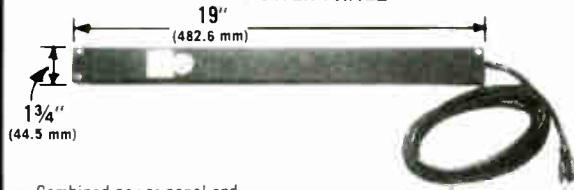
- Used with:
 - Sloping front cabinet
 - Vertical front cabinet
 - "K-D" cabinet
- Material: aluminum extrusion
- Decorative brushed finish
- Filter included

A		CATALOG NUMBER	PRICE	APPROXIMATE WEIGHT
INCHES	mm			
3 1/2"	89	VCVGR3	\$57.70	3 lb.
5 1/4"	133	VCVGR5	64.24	3 1/2 lb.
7"	178	VCVGR7	67.21	4 lb.
8 3/4"	222	VCVGR8	72.77	4 1/2 lb.
10 1/2"	267	VCVGR10	78.87	5 lb.
12 1/4"	311	VCVGR12	85.53	6 lb.

ACCESSORIES

ACCESSORIES

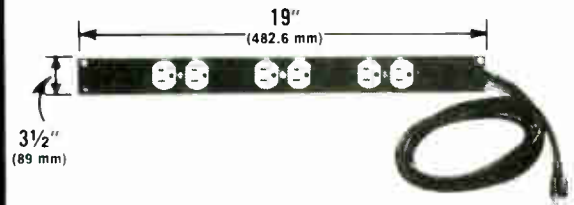
POWER PANEL



- Combined power panel and outlet strip.
- Rack mountable.
- On/off switch.
- 15 amp circuit breaker.
- Rear has duplex outlet.
- 3-wire 15 ft. line cord.
- May be used in conjunction with other power strips.

USE WITH	CATALOG NUMBER	PRICE	APPROX. WEIGHT
19" WIDE PANEL SPACE	VCPW19	\$85.80	3 lb.
23" WIDE RACK	VCPW23	86.35	3 1/2 lb.
31" WIDE RACK	VCPW31	86.90	4 lb.

POWER STRIP



- Rack mountable.
- 6 "U" ground outlets.
- 15' 3-wire line cord.
- 15A, 125VAC, 60 HZ, 1875 watts rated

USE WITH	CATALOG NUMBER	PRICE	APPROX. WEIGHT
19" WIDE PANEL SPACE	VCPS19	\$60.50	3 lb.
23" WIDE RACK	VCPS21	55.50	3 1/2 lb.
31" WIDE RACK	VCPS31	61.60	4 lb.



TOUCH-UP PAINT IN AEROSOL CANS

PRICE:

\$13.20

WEIGHT:

16 OZ. CAN

CATALOG NUMBER	COLOR	CATALOG NUMBER	COLOR
VCTU4	Light blue	VCTU14	Dark grey
VCTU6	Light tan	VCTU15	Medium blue
VCTU7	Medium tan	VCTU16	Dark brown
VCTU8	Black	VCTU17	Fire red
VCTU9	White	VCTU18	Autumn gold
VCTU10	Drange	VCTU19	Bamboo
VCTU11	Medium green	VCTU20	Caramel
VCTU12	Light green	VCTU21	Royal blue
VCTU13	Light grey		

EXHAUST or INTAKE FAN ASSEMBLIES



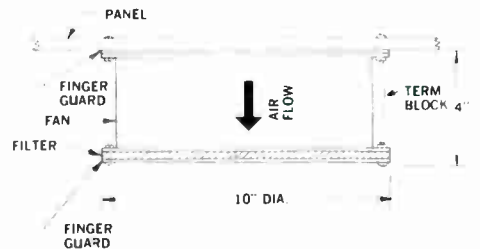
MODEL NO. VCTA530

- STANTRON TUBE AXIAL FAN has been designed for flushing and cooling VIDEO CENTER cabinets. The FAN can be used for both exhaust or intake since air flow direction is established by mounting position.
- Two finger guards, one on each side, are provided with each FAN and unit cost includes installation.
- When ordering, specify VCTA530-EX for exhausting air or VCTA530-IN for intake of air.
- IMPORTANT: When ordering, specify where fan is to be installed. If installed in door, indicate top or bottom.

DIMENSIONAL DATA



NO. VCTA530-EX EXHAUST FAN ASSEMBLY



NO. VCTA530-IN INTAKE FAN ASSEMBLY

CATALOG NUMBER	PRICE	APPROXIMATE WEIGHT
VCTA530-EX	\$160.60	5 lb.
VCTA530-IN	165.00	5 lb.

ACCESSORIES

STANTRON VIDEO CENTER

ACCESSORIES

VIDEO EQUIPMENT SHELF



- Bolts directly to mounting angles
- Support equipment within cabinet
- Finish: Black only

CATALOG NUMBER	MAY BE USED WITH	PRICE	APPROX. WEIGHT
VCES22	MONITOR-DESK CABINET	\$20.90	7 lb.
VCES25	SLOPING/VERTICAL CABINETS	23.10	12 lb.
VCES30	"K-D" CABINET	25.30	15 lb.

VIDEO EQUIPMENT SLIDING SHELF



- Sliding shelf supports equipment within cabinet
- Moves in and out on slides
- Finish: Black only.

CATALOG NUMBER	MAY BE USED WITH	PRICE	APPROX. WEIGHT
VCSL22	MONITOR-DESK CABINET	\$45.52	10 lb.
VCSL25	SLOPING/VERTICAL CABINETS	48.87	16 lb.
VCSL30	"K-D" CABINET	56.11	18 lb.

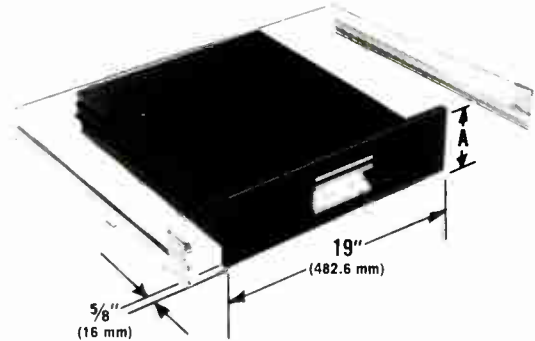
VIDEO EQUIPMENT SUPPORTING ANGLE



- Supports equipment within cabinet
- Bolts directly to mounting angles
- Cad plate finish

CATALOG NUMBER	MAY BE USED WITH	PRICE	APPROX. WEIGHT
VCSA22	MONITOR-DESK CABINET	\$25.30	5 lb.
VCSA25	SLOPING/VERTICAL CABINETS	27.50	6 lb.
VCSA30	"K-D" CABINET	30.80	7 lb.

VIDEO EQUIPMENT STORAGE DRAWER



- Ideal for Storing:
 - Tapes
 - Spare parts
 - Video equipment
 - Instruction manuals
 - Roller bearing slides
 - Attractive flush pull handle
 - Finish: Choice of colors

USE WITH SLOPING FRONT and VERTICAL FRONT CABINETS

CATALOG NUMBER	A		PRICE	APPROX. WEIGHT
	INCHES	mm		
VCED325	3½"	89	\$72.66	20 lb.
VCED525	5¼"	113	76.35	22 lb.
VCED725	7"	179	77.45	23 lb.
VCED825	8¾"	222	78.55	25 lb.
VCED1025	10½"	260	82.96	27 lb.
VCED1225	12½"	311	88.06	28 lb.
VCED1425	14"	356	86.26	30 lb.

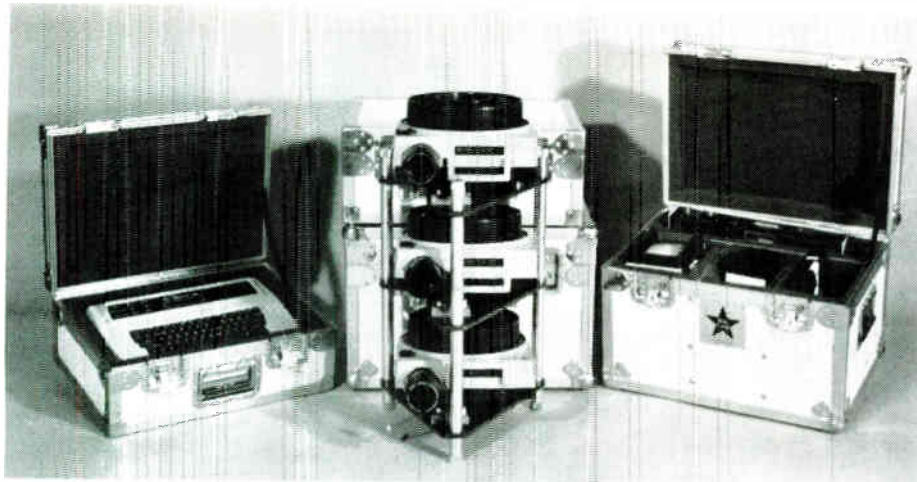
USE WITH "KNOCK-DOWN" CABINETS

CATALOG NUMBER	A		PRICE	APPROX. WEIGHT
	INCHES	mm		
VCED330	3½"	89	\$81.43	21 lb.
VCED530	5¼"	113	85.84	22 lb.
VCED730	7"	179	89.19	24 lb.
VCED830	8¾"	222	88.04	26 lb.
VCED1030	10½"	260	89.14	28 lb.
VCED1230	12¼"	311	87.36	31 lb.
VE01430	14"	356	94.64	33 lb.

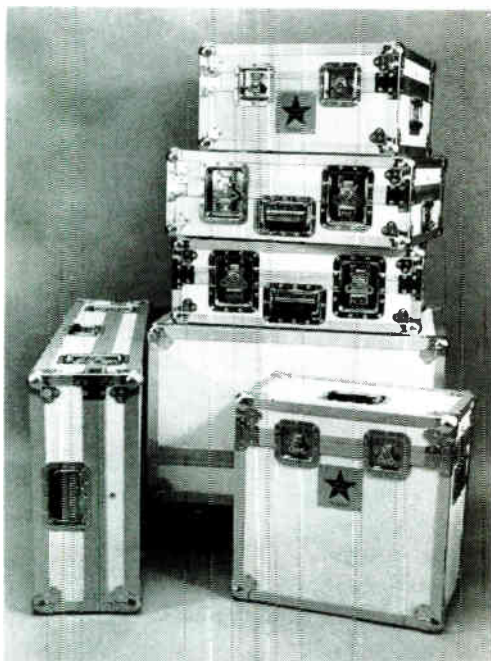
STAR CASE MFG. CO., INC.

648 Superior Ave.
Munster, IN 46321
(219) 922-4440

CASES



If it's Audio, Video, Computer or anything, Star Case has probably built a case for it. Star Case has always had the reputation of making "State of the Art" cases. Our quality exceeds far beyond that of our competitors. Star Case is the only company to offer 3 ATA rated cases, and 3 lightweight carrying case lines.



STANDARD ATA

- Custom fiberglass laminate
- Appropriate foam density
- Custom design and options available
- 8 different colors available
- Custom step-down hardware
- Standard tongue and groove
- Exclusive 8mm construction

TRANSPORT II

- Custom fiberglass laminate
- Appropriate foam density
- Custom design and options available
- Black only
- Exterior mounted hardware
- Standard tongue and groove
- Exclusive 4mm construction

ULTRASTAR

- Custom fiberglass laminate
- Appropriate foam density
- Custom design and options available
- 8 different colors available
- Custom Ultrastar hardware
- Custom large tongue and groove
- Exclusive 14mm construction

Superstar Cases—Same features as above but use 1/4" plywood instead of 1/2".

MOVER II

- Custom fiberglass laminate
- Appropriate foam density
- Custom design and options available
- Black only
- Exterior military straps
- "Shoe-Box" style D case
- Exclusive 4mm construction

TELEPAK SAN DIEGO

8360 Clairemont Mesa Blvd
Suite 102
San Diego, CA 92111
(619) 268-8559

CASES



TELEPAK

Designed and constructed with the user in mind, Telepak offers the field productionist the best in soft, over-the-shoulder protective carrying case.

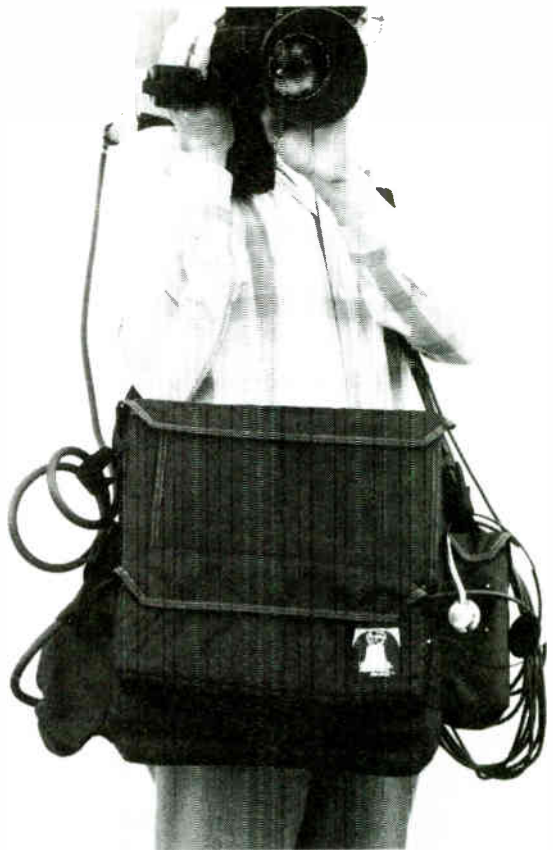
Many User-Friendly Features

- Non-slip shoulder strap pad
- Adjustable shoulder strap
- Velcro secured microphone straps
- Adjustable, quick release hand strap
- Washable white balance flap
- Cable restraint loops for protecting connectors and fittings
- Velcro straps for cable routing and control
- Quick out cinch straps for easy removal of VCR
- Velcro enclosure pockets for carrying production accessories
- Bad weather hood surrounding the VCR panel

Rugged Construction Features

- Shock absorbing, cross-linked polyethylene foam
- Rust-proof slides
- Water repellent, 100% nylon
- Vinyl white card
- Indestructible Tuff Buks
- Web nylon for straps and loops (tensile strength 6,000 lbs.)
- Magic grip, non-slip shoulder pad
- Woven, nylon hook and napped looped Velcro
- Accessory compartments integrally manufactured as part of the case

Telepak™ carrying cases are custom-designed for portable recorders of every major manufacturer. Telepak™ carrying cases are available from video product dealers throughout the U.S.



Feature Products

- T-Scope — Tektronix 1740/50 waveform/vector pak
- T-20 — Sony BVW-20
- T-GAF — Grip and gaffer pak
- T-Mini GAF — Half size gaffer pak
- T-68 — Sony VO6800
- T-GRA — Nagra recorder pak

TENBA, INC.

503 Broadway
New York City, NY 10012
(212) 966-1013

VIDEO BAGS



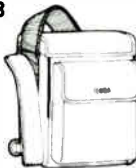



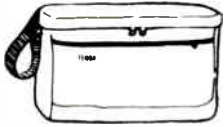
TENBA VIDEO BAGS

TENBA Video Bags are engineered with the same attention to construction and adaptability as the rest of our line. Padded with 1/2" closed cell waterproof foam, they are designed to give the extra protection that sensitive video equipment demands. Video bags are available in black, grey, brown and blue.

Patents D 273534 and D 273533.

Other patents pending.



	DESCRIPTION	US LIST
V212 	11 x 10-1/2 x 4-1/2", expands to 9", weighs 1 lb. 9 oz. Outfit bag holds newest Matsushita built and JVC VCRs with divider for extra battery or microphone or Hitachi built and older Matsushita VCRs. Front pocket expands to hold all smaller cameras and NiCad batteries, microphones or tapes. Flattens to as small as 1" when camera is removed.	\$150.00
V842 	8-1/2 x 10-1/2 x 3-1/4"; weighs 1 lb. 2 oz. Form Fit case for newest generation Matsushita built 4 head VCRs. Front pocket holds spare batteries, tapes or NiCads.	\$115.00
V843 	11 x 10-1/2 x 3-1/2"; weighs 1 lb. 3 oz. Form Fit case for Hitachi built and 2 head Matsushita built VCRs. Front pocket holds spare batteries, tapes or NiCads.	\$115.00
V844 	9 x 10 x 2-3/4"; weighs 1 lb. 3 oz. Form Fit case for the latest JVC 4 head VCRs. Front pocket holds spare batteries, tapes or NiCads.	\$115.00
VB 	15 x 9-1/2 x 5"; weighs 1 lb. 5 oz. Holds the new Sony Beta movie camera.	\$90.00
VM 	13 x 6 x 4-1/2"; weighs 1 lb. 5 oz. Holds the new JVC video movie camera and the new Kodak and Polaroid 8mm movie cameras.	\$90.00
TENBA 10 	16 x 10 x 8", large gadget bag with movable padded dividers. Suitable for microphones, batteries and other accessories. Weighs 2 lbs. 6 oz.	\$90.00



VB VIDEO BAG

Prices and Specifications Subject to Change Without Notice.

VE-95

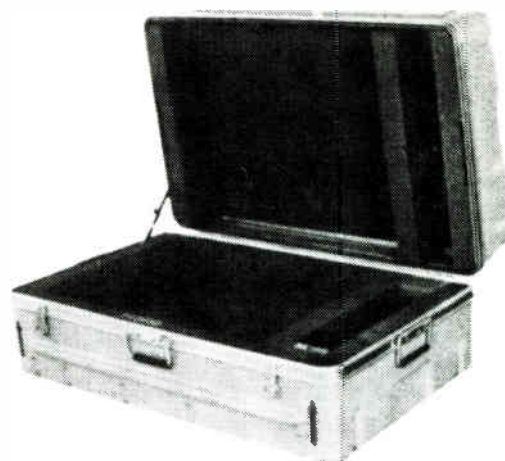
20850 S. Alameda
Long Beach, CA 90810
(213) 603-1976

The ribbed plastic shell of Thermodyne cases is tough-as-steel, yet pliant and super shock-absorbent.

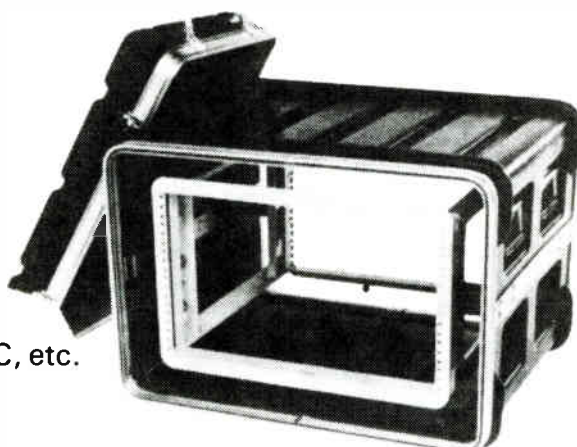
Ribbing permits the case to "concertina" slightly in impact, absorbing kinetic energy.

These cases outlast metal, fiberglass and wood cases and protect contents better. * Even the prices are better.

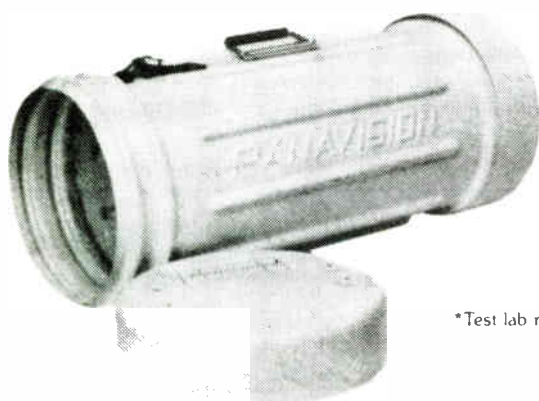
Thermodyne cases meet numerous specs and maintain a watertight seal. Many options available. Over 100,000 Thermodyne cases supplied to USAF, McDonnell Douglas, Texas Instruments, Hitachi, Sony, Hughes, JVC, Canon, ABC-TV, CBS, NBC, etc.



SHOK-STOP CASES
available in 106 sizes
Suitable for
computers/peripherals,
instrumentation, optics, etc.
Sizes up to 82 x 17 x 10



RACK-PACK CASES
for shipping and operating
rack-mount instruments
in the field.



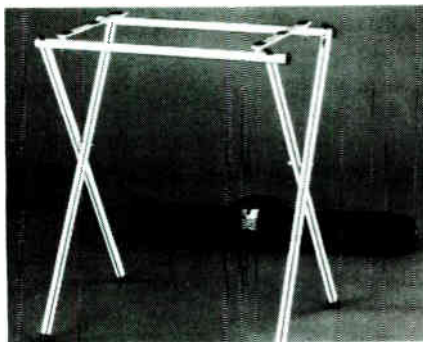
LOW-COST CUSTOM TRANSIT CASES
to meet your particular requirements.

*Test lab reports available on request

ULTIMATE SUPPORT SYSTEMS, INC.

P.O. Box 470
 Fort Collins, CO 80522-4700
 (303) 493-4488 Telex 4991589 ULTIMATE SUPPT

STANDS/TABLES



US-22 UTILITY STAND

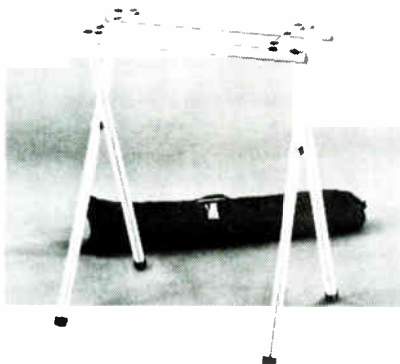
The US-22, smallest of the Ultimate Support Systems' utility stands, weighs 4-1/2 pounds (2.04 kg), securely holds up to 75 pounds (34 kg) of equipment; 1" (2.54 cm) diameter aluminum alloy tubing construction. Features allow the entire stand to fit into a slender 33-1/2" (.85 m) long bag when disassembled. The US-22, when set up, has a height of 30-1/4" (.77 m). The perfect stand for: keyboards, mixing boards, lighting consoles, rack equipment, etc. The two support bars can be placed in any of four positions to accommodate various equipment widths. The aluminum is deep etched and clear anodized to provide a look that complements any product it upholds. The feet are double-capped and skid resistant; all nuts are locking type; rubber pads are included to keep equipment from sliding.

The US-22 is covered by a limited one year warranty. A waterproof nylon tote bag is included for traveling ease.

SPECIFICATIONS

- Height: 30-1/4" (.77 m)
- Tabletop Dimensions: 28-1/4" x 14-1/8" (.72 x .36 m)
- Load Capacity: 75 pounds (34 kg)
- Breakdown Dimensions: 33-3/8" x 4" dia. (.85 x .1 m dia.)
- Weight: 4-1/2 pounds (2.04 kg)
- Set up time: 2 minutes

US-22\$80.00



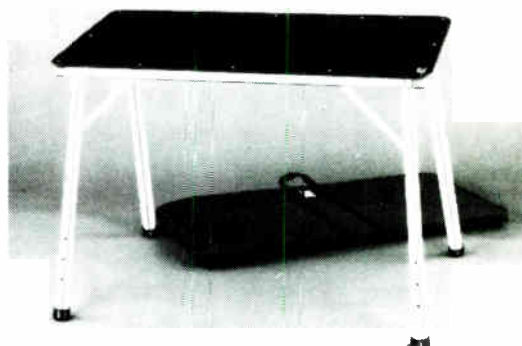
US-44 UTILITY STAND

The US-44 Utility Stand is constructed of 1-1/2" dia. (3.81 cm) aluminum alloy tubing. The products' 6-1/2 pound (2.95 kg) structure securely holds up to 75 pounds (34 kg) of equipment. The tubing goes through a special etching and anodizing process to create a rich matte look to complement any piece of equipment it upholds. The top dimensions are 15-3/4" x 34-1/8" (.40 x .87 m). The two support bars can be placed in any of four positions for various equipment widths. When set up, the US-44's 36" (.91 m) height is perfect for mounting keyboards, lighting consoles, mixing boards, etc. The entire stand disassembles to slip into a slender 40" (1 m) long waterproof nylon tote bag, which is included. Additional features include: double capped skid resistant feet, locking type nuts, and rubber pads to keep equipment from sliding.

SPECIFICATIONS

- Height: 36" (.91 m)
- Tabletop Dimensions: 15-3/4" x 34-1/8" (.40 x .87 m)
- Load Capacity: 75 pounds (34 kg)
- Breakdown Dimensions: 39-1/4" x 5-1/4" dia. (1.00 x .13 m dia.)
- Weight: 6-1/2 pounds (2.95 kg)
- Set up time: 2 minutes

US-44\$105.00



VT-44 VERSA TABLE

The VT-44 is ideal for elevating large synthesizers and keyboards; mixing consoles, lighting controls, and other paraphernalia. The VT-44 is constructed of lightweight aluminum alloy tubing. The deep etch and clear anodize gives the quality appearance that complements any type of equipment that is placed on it. The VT-44 features individually adjusting legs (seven height settings). Coupled with the absence of long braces, this enables the VT-44 to straddle rows of theater seats, sit securely on uneven ground and tilt to adjust to individual preferences. The table top is constructed of 1/8" (3.2 mm) oil tempered hardboard and is covered with heavy black vinyl. The edging is constructed of vinyl clad metal, providing tough protection all around. The table top dimensions are 22" by 44" (.56 x 1.12 m). Height can be adjusted in 2-1/4" (5.8 cm) increments between 20" and 33" (.51 m and .84 m). A brace under the center of the table top gives a solid working surface capable of supporting 250 pounds (113.4 kg) of equipment. Spring buttons and ball-lock pins make setup and breakdown a snap. Double capped skid resistant feet are glued on to stay in place. The VT-44 comes with a tough waterproof nylon tote bag for easy transportation and storage.

SPECIFICATIONS

- Height: 20" - 33" (.51 - .84 m)
- Tabletop Dimensions: 22" x 44" (.56 x 1.12 m)
- Load Capacity: 250 pounds (113.4 kg)
- Breakdown Dimensions: 22" x 44" x 2-1/2" (.56 x 1.12 x .064 m)
- Weight: 15-1/4 pounds (6.9 kg)
- Set up time: 1 minute

VT-44\$210.00

Prices and Specifications Subject to Change Without Notice.

VE-97



COMBO CAMERA/VTR



RACK CASES



VIDEO PROJECTOR WITH CONTROLLER



STACKER

- Reel-to-reel system cases
- Triple stack 35mm projector cases
- Video tape recorder cases
- Video camera cases
- BB rack style cases
- Monitor (TV) cases
- Shock-mounted BB rack style cases
- Projector and screen cases
- Shock mounted broadcast racks

Wherever you look on a Viking case, you'll see superior strength and workmanship. Wood panels laminated with tough, scratch resistant ABS or stucco aluminum are supported by a double edged aluminum extrusion crimped at intervals for a permanent, non-yielding bond; a construction technique far stronger than conventional gluing, stapling or riveting.

Viking's heavy duty valances contribute to long life and a tight fit. And all but the smallest Viking cases are equipped with heavy duty steel recessed hardware including spring loaded handles, twist locks and corners. All Viking hardware is attached with steel rivets and backed with steel washers; your assurance of greater strength and impact resistance.



CARRYLITE CASES

The Carrylite is 25% less expensive and 30% lighter than our ATA case. Carrylite is rugged...built of dependable heavy gauge ABS for exceptional strength yet still a beautiful and versatile way to carry your valuable equipment. Carrylite is adaptable in size for audio/visual, video, computers, and musical instruments.



P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

VIDEO EQUIPMENT CARTS

Model EFP-17 Folding All-Terrain Field Production Cart

The Wheelit EFP-17 folding camera cart is the big brother to ENG-1. EFP-17 is a larger, smoother folding vehicle designed to assemble all of the necessary portable video equipment required for quality field production. It features a separate shelf to support your monitor for playback or viewing as the action happens. The monitor platform is positioned forward to place the recorder controls at the fingertips of the operator. With optional elevator column and head, taping may be accomplished directly from the cart. Large 12 inch inflatable pneumatic wheels dampen vibration and allow basic dolly moves over general terrain. Wheelit EFP-17 folds to 15-1/2 inches and only the camera and monitor need be removed for storage. The equipment board is predrilled in 1 inch increments for quick adjustment.

EFP-17 Specifications

Equipment platform 17" x 29"
Monitor platform 15" x 21" x 41"H
Camera platform* 6" x 17" x 37"H
Folded size 42" x 28" x 15"
Load capacity 175 lbs.
Wheel base 16"
Wheels (inflatable) 12" pneumatic
Casters 5" swivel w/lock
Straps 1 ea. 8', 2 ea. 5'
Shipping Assm. 57 lbs. truck

*NOTE: Camera platform is predrilled for elevator column.

Accessories:

Receptacle and Cord Reel, Elevator Column, Friction Head, or Fluid Head

EFP-17 **\$429.00**

The Challenger Model DG/H4/TM

DG/H4 Specifications

Load Capacity 25 lbs.
Minimum Height 34"
Maximum Height 70"
Elevation Adjustment 16"
Geared Center Post 1 3/8" Dia.
Leg Diameters 1 1/8" - 1 1/4"
Head Tilt Angles 60° up- 90° Down
Spring Loaded Head 2 Springs
Head Pan Rotation 360°
Weight 8 lbs.
Material & Finish Clear and Black Anodized Alum.

Self-Locking Gear Mechanism

DG/H4/TM Friction Head & Column **\$145.00**

Model FM-25

Specifications

- Camera platform 4" x 4 1/4"
- Accommodates cameras up to 25 lbs.
- Dual handle capability
- Positive tilt lock and pan lock
- Leakproof and dustproof sealing
- Easily visible bubble level gauge



EFP-17
W/COLUMN & HEAD



- Camera screw 3/8"-16 & 1/4"-20
- Extremely smooth pan & tilt movements
- Weight: 5 lbs.
- Height: 5"
- Fits ball on flat top tripod.
- Low profile design.
- Rugged construction.
- Reliable operation.
- Compatible with European standards.
- Unique quick release camera mounting screw with slot to allow camera balancing.
- Tilt: + 90°

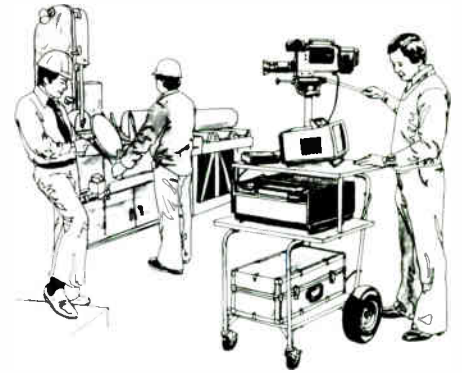
DG/TM/FM-25 Fluid Head & Column **\$350.00**

(Includes Head and Elevator Column Assig)

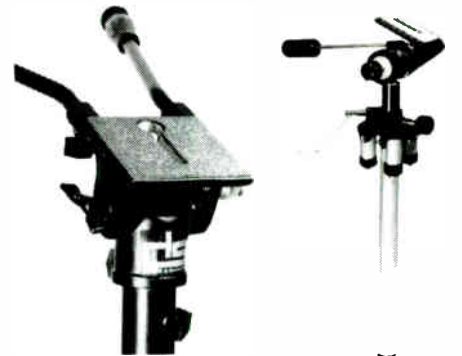
Model IFP-20 (Non-Folding) Industrial Field Production Cart

Wheelit IFP-20 is a heavy duty industrial, non-folding camera cart designed to assemble all of the necessary video equipment required for quality industrial video production. This Wheelit vehicle will accommodate camera, video cassette recorder with electric editing, monitor, camera control unit, AC adaptors, batteries and/or battery packs. Taping can be accomplished directly from the vehicle with the addition of an optional elevator column and head. The large inflatable pneumatic tires offer smooth transportation over rough terrain.

IFP-20 Production Cart **\$308.00**



IFP-20



DAVIS & SANFORD FLUID HEAD
MODEL DG/TM/FM-25

THE CHALLENGER
MODEL DG/H4/TM

IFP-20 Specifications

Upper platform* 29" x 19" x 40"H
Center platform 29" x 19" x 28"H
Lower platform 18" x 24" x 10"H
Load capacity 200 lbs.
Wheel base 21"
Wheels (inflatable) 12" pneumatic
Casters 5" swivel w/lock
Straps 3 ea. 8'
Shipping (3 crt.) K/D, 75 lbs. UPS

*NOTE: Upper platform is pre-drilled for elevator column.

Accessories:

Receptacle and Cord Reel, Elevator Column, Friction Head, or Fluid Head



P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

VIDEO EQUIPMENT CARTS



Model ENG-1 Mobile Camera Cart

The ENG-1 mobile camera cart was developed for the video industry as the ideal vehicle for transporting and employing portable video recording equipment. The unit accommodates most VTR and camera CCU's as well as their AC adaptors and battery packs. Addition of the optional elevator column and friction or cam link head converts the ENG-1 into one of the most versatile production tools available. ENG-1 folds to a slim 12 inches for transportation and storage. The equipment board is pre-drilled in 1-inch increments for rapid adjustment. **\$285.00**

ENG-1 Specifications

Equipment platform 14" x 29"
Camera platform 6" x 14" x 35"H
Wheel base 16"
Wheels 12"
Casters 4" swivel
Load capacity 150 lbs.
Straps 2 ea., 4"
Folded size 23" x 42" x 12"
Shipping Assm. 45 lbs. UPS
*NOTE: Camera platform is pre-drilled for optional column.

Accessories:

Receptacle and Cord Reel, Elevator Column, Friction Head, or Cam Head.

Model GR-3 Video Cart

The Model GR-3 is the smaller offspring of the ENG-1. This folding video cart is designed to store, transport, and operate your portable 1/2" VCR equipment. This lightweight, affordable cart is ruggedly built with 8" semi-pneumatic wheels and 4" front swivel casters. The GR-3 is standard with spring head and telescoping column which will accommodate cameras up to 7 pounds. With model GR-3 Wheelit, there is no need to carry or set-up equipment on location; it's all there on your cart when you are ready to shoot. The cart can be folded with your equipment in place. **\$325.00**

GR-3 Specifications

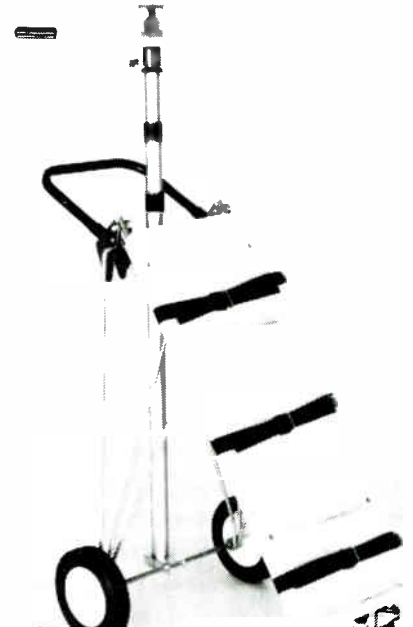
Equipment platform 13" x 33"
Wheel base 16"
Wheels 8"
Casters 4" swivel
Load capacity 100 lbs.
Straps 3 each, 5"
Folded size 21" x 41" x 10"
Column height 43" min., 82" max.
Shipping Assm. 39 lbs. UPS

Accessories:

Receptacle and Cord Reel.



**MODEL ENG-1
WITH COLUMN AND HEAD**



MODEL GR-3

Model CAM-10 Video Cassette Cart

Wheelit Model CAM-10 is designed to accept all 1/2" and 1/4" portable VCR equipment as well as their AC adaptors and battery packs. The upper shelf of the CAM-10 is parallel to the ground and is large enough to accept a full size monitor or a small VCR and monitor combination. The lower shelf can be placed in a horizontal position or can be firmly locked into a slanted position to hold a recorder and/or battery pack. The Model CAM-10 comes complete with elevator column and anti-dumping spring head and will handle TV cameras up to 15 pounds. **\$435.00**

CAM-10 Specifications

Top platform 16" x 24" x 36"H
Bottom platform 15" x 18" x 6"H
Wheel base 16"
Wheels 10"
Casters 4"
Load capacity 150 lbs.
Straps 2 ea. 6", 1 ea. 5"
Column height 45" min., 60" max.
Folded size 25" x 40" x 12"
Shipping Assm. 58 lbs. truck

Accessories:

Receptacle and Cord Reel.



MODEL CAM-10



P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

ELECTRONIC EQUIPMENT CARTS



MODEL 430



MODEL 4102



MODEL 3302

TRANSPORTER SERIES

Models 430/4102/3302 Indoor/Outdoor Carts

Models 430, 4102 and 3302, the work horses of the Wheelit line, are designed as general purpose indoor/outdoor carts. These non-folding transporters are standard with four inch casters, large rear wheels, and two equipment straps.

Models 430 and 4102 are ideal for operation of projection equipment from the back of a room, over the heads of an audience. The 430 has an extra wide top platform for larger equipment. Model 3302 is best suited to operation of audio/visual equipment from a center aisle audience arrangement.

430	\$160.00
4102	149.00
3302	138.00

Model 430 Specifications

Upper platform	30" x 20" x 41" H
Lower platform	19" x 21" x 13" H
Load capacity	150 lbs.
Wheel base	17"
Wheels	12"
Casters	4" swivel w/lock
Straps	1 ea. 8', 1 ea. 6'
Shipping	K/D, 58 lbs. truck

Model 4102 Specifications

Upper platform	21" x 19" x 41" H
Lower platform	19" x 21" x 13" H
Load capacity	150 lbs.
Wheel base	17"
Wheels	12"
Casters	4" swivel w/lock
Straps	2 ea. 6'
Shipping	K/D, 53 lbs. truck

Model 3302 Specifications

Upper platform	21" x 19" x 33" H
Lower platform	19" x 21" x 13" H
Load capacity	140 lbs.
Wheel base	17"
Wheels	10"
Casters	4" swivel w/lock
Straps	2 ea. 6'
Shipping	K/D, 47 lbs. UPS

Accessories

Receptacle and Cord Reel.

VAGABOND SERIES

Models 2727/4327/5330 Universal Carts

Wheelit Model 2727 is designed for universal transportation and utilization of audio/visual and electronic instrument equipment. This non-folding Wheelit features dual caster locks, tilt back handles, and 10-inch wheels.

The rigid tri-level Wheelit Model 5330 and the 4327 are designed for indoor transportation and utilization of video tape recording and playback equipment. The tallest Wheelit incorporates two tilt screws for positioning the monitor to standing eye level without adjustment.

2727	\$143.00
4327	187.00
5330	204.00

Model 2727 Specifications

Top platform	19" x 27" x 27" H
Bottom platform	18" x 24" x 9" H
Load capacity	150 lbs.
Wheel base	21"
Wheels	12"
Casters	4" swivel w/lock
Straps	1 ea. 8'
Shipping (2 crt.)	K/D, 48 lbs. UPS

Model 4327 Specifications

Top platform	19" x 27" x 43" H
Center platform	19" x 27" x 28" H
Bottom platform	18" x 24" x 9" H
Load capacity	160 lbs.
Wheel base	21"
Wheels	12"
Casters	5" swivel w/lock
Straps	1 ea. 8', 1 ea. 6'
Shipping (2 crt.)	K/D, 65 lbs. UPS

Model 5330 Specifications

Top platform	19" x 30" x 53" H
Center platform	19" x 30" x 34" H
Bottom platform	18" x 24" x 9" H
Load capacity	160 lbs.
Wheel base	21"
Wheels	12"
Casters	5" swivel w/lock
Straps	1 ea. 8', 1 ea. 6'
Shipping (2 crt.)	K/D, 75 lbs. UPS

Accessories

Receptacle and cord reel.



MODEL 2727



MODEL 4327



MODEL 5330



P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

ELECTRONIC EQUIPMENT CARTS

PORTAGE SERIES

Models S-4218/4218/TV-503

Indoor/Outdoor Carts

Wheelit Model 4218 is designed for indoor/outdoor transportation of video player and monitor unit. The 5" casters and 12" rear wheels assure a smooth ride and stability over questionable terrain. The model 4218 folds to a thin 12" to store in a closet or automobile trunk. As with all folding Wheelits, the platforms lock into the upright position with positive assurance. The Model S-4218 increases the utility and load capacity by adding a 15" x 18" bottom platform to the model 4218. This bottom platform locks into a slanted position when the cart is folded.

Wheelit Model TV-503 is a non-folding cart that features a top platform for placement of a television monitor for the viewers' standing line of vision. The top platform incorporates two leveling screws for tilting the monitor ten degrees. For presentation to a seated audience, the top platform is folded down and viewing equipment is placed upon the second shelf for proper eye level.

S-4218	\$253.00
4218	231.00
TV-503	242.00



MODEL S-4218



MODEL 4218



Model S-4218 Specifications

Upper platform	18" x 25" x 42" H
Center platform	18" x 25" x 30" H
Clearance	11" H x 25 1/4" W
Lower platform	15" x 18" x 8" H
Wheel base	16"
Wheels	12"
Casters	5" swivel w/lock
Load capacity	180 lbs.
Straps	1 ea. 8", 1 ea. 6"
Folded size	46" x 24" x 12"
Shipping	Assm. 69 lbs. truck

Model 4218 Specifications

Upper platform	18" x 25" x 42" H
Center platform	18" x 25" x 30" H
Clearance	11" H x 25 1/4" W
Wheel base	16"
Wheels	12"
Casters	5" swivel w/lock
Load capacity	180 lbs.
Straps	1 ea. 8", 1 ea. 6"
Folded size	46" x 24" x 12"
Shipping	Assm. 62 lbs. truck

Model TV-503 Specifications

Upper platform	24" x 19" x 50" H
Center platform	24" x 19" x 36" H
Clearance	13" H x 25 1/4" W
Lower platform	19" x 21" x 14" H
Wheel base	17"
Wheels	12"
Casters	4" swivel w/lock
Load capacity	160 lbs.
Straps	1 ea. 8", 2 ea. 6"
Folded size	non-folding
Shipping	Assm. 70 lbs. truck

Accessories

Receptacle and Cord Reel.



MODEL TV-503



P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

WORK STATION CARTS

FOLDING SLIM-LINE SERIES

Models 3628/S-3628/2916/S-2916 Work Station Carts

Wheelit Folding Slim-Line Model 3628 is designed for indoor/outdoor transportation of office machines, lab equipment, and electronic monitoring hardware. The large upper platform is positioned at a convenient working height for technicians on the move. Wheelit Model S-3628 has an additional lower platform to handle extra pieces of equipment. Both carts fold in seconds for fast and efficient storage.

Model 2916 was designed with the salesperson in mind. This rugged cart weighs only 33 lbs., folds to 10 inches, and yet has a load capacity of 150 lbs. Its platform height of 29" makes it the ideal working desktop. The thick sound-absorbing particle board with vinyl edge molding makes it the preferred demonstration cart. Model S-2916 has an additional lower platform for equipment accessories.

3628	\$193.00
S-3628	215.00
2916	160.00
S-2916	182.00



MODEL 2916



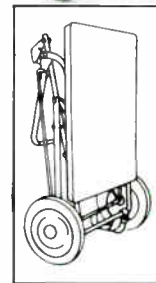
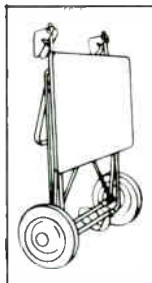
MODEL 3628



MODEL S-2916



MODEL S-3628



Model 3628 Specifications

Top platform	20" x 28" x 36" H
Folded size	42" x 25" x 12"
Load capacity	180 lbs.
Wheel base	16"
Wheels	12"
Casters	5" swivel w/lock
Straps	1 ea., 6'
Shipping	Assm. 48 lbs. truck

Model S-3628 Specifications

Top platform	20" x 28" x 36" H
Lower platform	15" x 18" x 7" H
Folded size	42" x 25" x 12" H
Load capacity	200 lbs.
Wheel base	16"
Wheels	12"
Casters	5" swivel w/lock
Straps	1 ea., 6'
Shipping	Assm. 54 lbs. truck

Model 2916 Specifications

Top platform	24" x 16" x 29"
Folded size	38" x 24" x 10"
Load capacity	150 lbs.
Wheel base	16"
Wheels	10"
Casters	4" swivel w/lock
Straps	1 ea., 6'
Shipping	Assm. 40 lbs. UPS

Model S-2916 Specifications

Top platform	24" x 16" x 29" H
Lower platform	15" x 18" x 6" H
Folded size	38" x 24" x 10" H
Load capacity	170 lbs.
Wheel base	16"
Wheels	10"
Casters	4" swivel w/lock
Straps	1 ea., 6'
Shipping	Assm. 48 lbs. UPS

Accessories:
Receptacle and Cord Reel.





P.O. Box 7350
Toledo, OH 43615
(419) 531-4900

ALL PURPOSE CARTS

FOLDING ACTION SERIES

Models C-402/68-402P/69-22VTR

All Purpose Carts

Wheelit Model C-402 is an all purpose utility vehicle designed for transportation of video tape equipment, audio/visual equipment, photography equipment, and business machines. Model C-402 has become a particular favorite of photographers because it offers an abundant carrying capacity.

Construction of Wheelits 68-402P and 69-22 VTR is similar; however, basic differences will be found in the length of the wheel bases and the dimensions of the platforms. The upper and lower platforms are spaced so that a VT monitor and recorder can be interchanged to accommodate different viewing heights. Folded, these Wheelits fit into most automobile trunks. Heavy duty equipment straps are standard.

C-402	\$242.00
68-402-P	259.00
69-22VTR	270.00

Model C-402 Specifications

Upper platform	21" x 16" x 40" H
Center platform	21" x 12" x 18" H
Lower platform	19" x 6" x 4" H
Load capacity	150 lbs.
Wheel base	16"
Wheels	12"
Casters	4" swivel w/lock
Folded size	15" x 38" x 25"
Straps	2 ea., 6'
Shipping	Assm. 56 lbs. truck

Model 68-402P Specifications

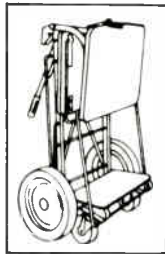
Upper platform	24" x 16" x 40" H
Center platform	24" x 15" x 18" H
Lower platform	19" x 8 1/2" x 5" H
Load capacity	175 lbs.
Wheel base	19"
Wheels	12"
Casters	5" swivel w/lock
Folded size	17" x 38" x 25"
Straps	1 ea., 8', 1 ea., 6'
Shipping	Assm. 65 lbs. truck

Model 69-22VTR Specifications

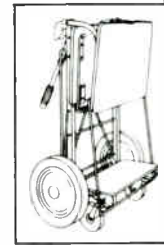
Upper platform	24" x 18" x 40" H
Center platform	24" x 18" x 14" H
Lower platform	19" x 11" x 5" H
Load capacity	175 lbs.
Wheel base	22"
Wheels	12"
Casters	5" swivel w/lock
Folded size	20" x 38" x 25"
Straps	2 ea., 9'
Shipping	Assm. 70 lbs. truck

Accessories:

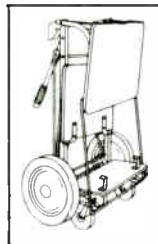
Receptacle and Cord Reel.



MODEL C-402



MODEL 68-402P



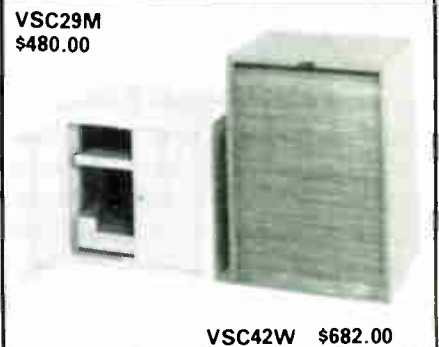



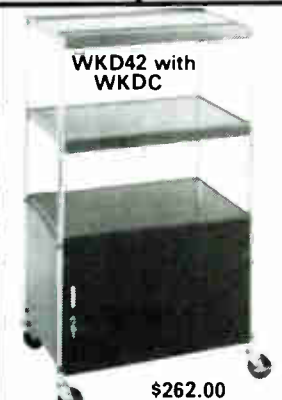







MODEL 69-22VTR



FOR MORE INFORMATION
ON A DEALER NEAR YOU OR
A FREE CATALOG CALL TOLL FREE
1-800-342-5492
1-800-424-3400 In Illinois

HWC/h. wilson co.
offers you **VERSATILITY,**
STABILITY and **SECURITY**
for your Video Equipment

 <p>#55 \$75.00</p>	 <p>VC-1-DA \$1010.00</p>	 <p>VSC29M \$480.00</p>	
 <p>VTR29MC \$243.00</p>		 <p>VSC42W \$682.00 #700 \$99.00</p>	
 <p>VS40 with VSC29W \$1004.00</p>	 <p>WKD42 with WKDC \$262.00</p>	 <p>VS69 with VSC42M & VSS18W \$1226.00</p>	 <p>W48S \$162.00</p>
 <p>#200-C \$127.00</p>	 <p>VC-3-DA \$555.00</p>	 <p>#60 \$65.00</p>	

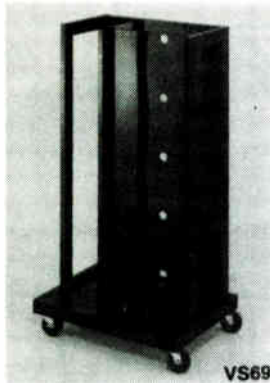
HWC/h.wilson co.

Prices and Specifications Subject to Change Without Notice.

VE-105

NEW Modular RACK & STACK Video Furniture System in Metal or Wood ... in any combination you desire!

It's the modular system you can design to your needs with options you select; sturdy metal mobile racks with shelves and cabinets in metal or wood. Comfortably secures your video equipment including your largest 25" video monitor.



Three-sided racks and extended base designed for stability and protection.

Video System Mobile Rack Modules

All racks constructed of heavy-gauge steel with 37-1/2" wide x 27-1/2" deep bases. VS40, VS54 equipped with 4" casters; VS69, VS78 with 5" casters. Two lock. Reinforced back panel has 2-1/2" dia. openings for electrical cords. Provisions for electrical assembly make it a self-contained mobile unit. Brown enamel finish. Accepts both wood and metal VSC29, VSC42 cabinets and VSS18, VSS24 shelves.

Model No.	Description	Floor to Top of Base (in.)	Ship Wt. (lbs.)	Price
VS40	40"H Rack Module	7	168	\$499.00
VS54	54"H Rack Module	7	195	530.00
VS69	69"H Rack Module	8	233	566.00
VS78	78"H Rack Module	8	251	590.00

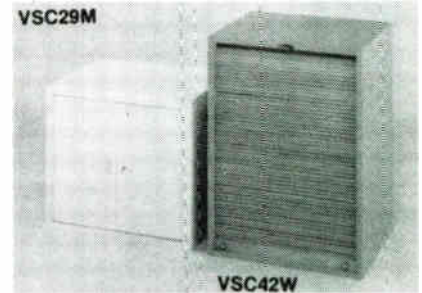


5" casters available on VS40, VS54.

ELECTRICAL ASSEMBLIES

Model No.	Description	Ship Wt. (lbs.)	Price
WE4-U.L.	4 outlets	2	\$27.00
WE6-U.L.	6 outlets	3	30.00

CSA Approved Electricals Available.



Video System Metal and Wood Cabinets

Choose between heavy-duty metal or wood modular cabinets. VSCM models made of heavy-gauge steel with almond enamel finish. Features lockable doors and equipment retaining lip on cabinet top. VSCW models made from laminated wood with high-pressure surfaces with lockable tambour door. VSC29M and VSC29W comes equipped with 5-1/2" deep pull-out tray and adjustable pull-out shelf. VSC42M and VSC42W has same features as 29", high cabinets plus extra adjustable pull-out shelf. All VSCM's, VSCW's provide electrical openings and vents.

Model No.	Description	Cabinet Dims. (Interior)	Ship Wt. (lbs.)	Price
VSC29M	28-3/4"H x 31-1/4"W x 24"D Metal Cabinet	25-1/2"H x 25-3/4"W x 23"D	110	\$480.00
VSC42M	41-3/4"H x 31-1/4"W x 24"D Metal Cabinet	38-1/2"H x 25-3/4"W x 23"D	121	600.00
VSC29W	28-3/4"H x 31-1/4"W x 24"D Wooden Cabinet	25-1/2"H x 28-3/4"W x 21-3/4"D	130	505.00
VSC42W	41-3/4"H x 31-1/4"W x 24"D Wooden Cabinet	38-1/2"H x 28-3/4"W x 21-3/4"D	160	682.00



Video System Shelves

VSSM models made of heavy gauge steel with brown enamel finish. VSSW models are 3/4" laminated with oak grain high-pressure surfaces. All shelves come complete with equipment retaining lip and bolts for fastening to sides of rack modules.

Model No.	Description	Ship Wt. (Lbs.)	Price
VSS18M	18"D x 31-1/2"W Metal Shelf	22	\$82.00
VSS24M	24"D x 31-1/2"W Metal Shelf	25	88.00
VSS18W	18"D x 31-1/2"W Wooden Shelf	25	80.00
VSS24W	24"D x 31-1/2"W Wooden Shelf	28	68.00

Caution...DO NOT EXCEED THE ATTACHMENT HEIGHT OF THE RACK MODULE.

HWC/h.wilson co.

555 W. Taft Drive
South Holland, IL 60473
(312) 339-5111 (800) 342-5492

VIDEO CONSOLES/MOUNTS

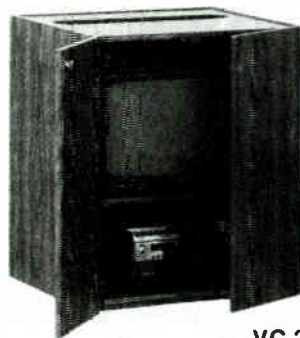


VC-1-DA

VC-1-DA Top unit holds up to a 21" video monitor plus VCR. Has flow-through ventilation. Lower cabinet has slide-out shelf. Extra shelf available. Cabinets may be independently locked. Features semi-concealed 4" swivel casters. Ships factory assembled.

Model VC-1-DA: 66"H x 30"W x 24"D. Shp. wt. 313 lbs. Price \$1010.00

VC-S Sliding Pull-Out Shelf: Shp. wt. 15 lbs. Price \$66.00



VC-2-DA

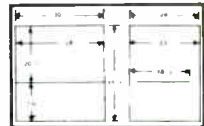
H.Wilson Video Consoles

Elegant, practical. All feature durable, 3/4" laminated wood with beautiful walnut grain surfaces that resist heat and scratches.

VC-2-DA Handsome, stationary console houses both your video monitor and VCR. Doors lock. Factory assembled.

Model VC-2-DA: 34"H x 30"W x 24"D. Shp. wt. 153 lbs. Price \$468.00

VC-S Sliding Pull-Out Shelf: Shp. wt. 15 lbs. Price \$66.00

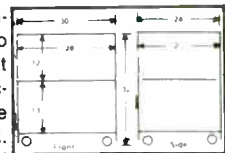


VC-3-DA

VC-3-DA Perfect console for your largest video monitor and VCR. Pull-Out Shelf makes VCR easily accessible. Features large storage area. Doors lock. Semi-concealed 4" swivel casters. Factory assembled.

Model VC-3-DA: 32"H x 30"W x 24"D. Shp. wt. 160 lbs. Price \$555.00

VC-S Slide-Out Shelf: Shp. wt. 15 lbs. Price \$66.00



TV CAMERA/VIDEO MOUNTS



50

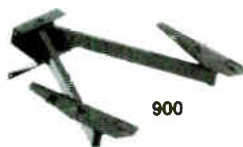


60



60

Choice of two great camera mounts to hold your lightweight security cameras. Model #60 attaches directly to your wall or ceiling or it can be attached to a standard square four-outlet electrical box. Has a downward tilt of about 25° and a full 360° rotation. Model #50 comes completely assembled and is easy to mount on your wall. Has a 60° lateral and a 20° vertical adjustment.



900



700



55

200-C

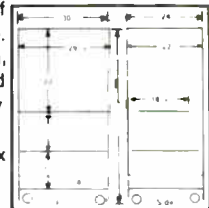


Choice of four great TV mounts. Model #55 attaches to your wall and will hold TV receiver up to 30 lbs. Has a 60° lateral and a 20° vertical adjustment. Model #700 holds TV up to 75 lbs. Rotates 60° and tilts up to 8°. Model #900 is a heavy-duty wall mount—holds TV up to 200 lbs. Swivel and tilt capability. Model #200 is a ceiling mount and holds TV up to 200 lbs. TV bolts to supports. Rotates 60° and tilts up to 15°. All are made of heavy gauge steel, dark brown finish.

Model No.	Description	Ship Wt. (Lbs.)	Price
50	Camera Mount	3	\$ 70.00
55	TV Mount	4	75.00
5055	Camera & TV Mount Package	7	130.00
60	Ceiling/Wall Mount	3	65.00
200-C	Ceiling Mount	25	127.00
700	Wall Mount for Commercial TV	10	99.00
900	Heavy-Duty TV Wall Mount	15	127.00

VC-4-DA Compact, well-ventilated, single cabinet, locking console. 51" height perfect for monitor viewing. Pull-out shelf for VCR; readily accessible. Drawer for cassettes, camera, accessories. Semi-concealed 4" swivel casters. Factory assembled.

Model VC-4-DA: 51"H x 30"W x 24"D. Shp. wt. 220 lbs. Price \$732.00



VC-4-DA



SUPER-RUGGED table for video systems

A basic, super-rugged, three-shelf table especially designed to support your heaviest video equipment. Has been tested to securely hold more than 450 lbs. Features 1" chrome-plated tubular steel legs and 18-gauge steel shelves - 33% heavier than used for conventional tables. Shelves have rolled retaining lip that adds strength, enhances safety. Top shelf has a non-slip rubber mat.

Shelf heights may be infinitely adjusted and the patented corner clips clamp the shelves to the legs with a grip that's stronger than a weld. Table rolls surely and easily on 4" swivel, ball-bearing casters. Two may be locked for in-place stability. Web strap available for securing monitor.

Model WKD-Basic Table

Model No.	Ht. (in.)	Shelf Size (in.)	Ship Wt. (Lbs.)	Price
WKD54	54	21x30	57	\$183.00
WKD48	48	21x30	56	181.00
WKD42	42	21x30	55	171.00

Specify "E" for electrical assembly with 20' cord, two grounded receptacles, U.L. listed. Add 3 lbs. to shipping wt; and add \$25.00. CSA approved add \$35.00.

Model AWS Stability Strap holds video monitor securely to shelf. Shp. Wt. 1 lb. **Price \$20.00**

Cabinet Kit for WKD Table

Add 30"Wx19"Hx21"D of lockable storage to your WKD Basic Table with the WKDC Cabinet Kit. Mounts between two shelves. You get a steel back panel, two side panels, and a pre-hung door with lock and two keys. Same brown color as shelves.

Model WKDC. Shp. Wt. 26 lbs. **Price \$91.00**

Add-a-Shelf

Need more equipment support surface? Add an extra shelf. Same construction, finish, height adjustment features as shelves for Basic Table. Corner clamps included.

Model WKDS: Shp. Wt. 10 lbs. **Price \$47.00**

Compact Video Center

Takes just 18"x24" of floor space. Locking cabinet. Rolls with ease on 2" hooded ball swivel casters. Top shelf adjusts to give 6-5/8", 10-5/8" or 17-3/4" clearance between shelves.

Model	Ht. (in.)	Shelf Size (in.)	Approx. Ship. Wt. (lbs)	Price
VTR40	40"	18x24	54	\$196.00
VTR40E	40"	18x24	56	\$221.00

*With top shelf at highest position. "E" model comes with electrical assembly. Top shelf has non-slip rubber mat.

Video Tables and Cabinets

Choose tables with flat or 5° slanted tops. All have non-slip rubber mats. Shelves have raised rims, except for SPEC 48. Cabinet models lock. 4" casters throughout; two lockable.

Model No.	Description	Top to Middle		Middle to Bottom		Shelf Size (in.)	Shp. Wt. (Lbs.)	Price
		Ht. (in.)	Shelf (in.)*	Ht. (in.)	Shelf (in.)*			
W54S	Top shelf slants 5°	54	25	17½	24x28	59	\$169.00	
W54TV	Top shelf flat	54	26½	17½	24x28	62	\$165.00	
W48S	Top shelf slants 5°	48	19	17½	24x28	56	\$162.00	
W48TV	Top shelf flat	48	20½	17½	24x28	57	\$157.00	
SPEC48S	For extra wide TV, top shelf slants 5°	48	20½	17½	25x34	69	\$206.00	
W42TV	Top shelf flat. For TV and general use	42	12½	17½	24x28	55	\$154.00	

TV CABINETIZED TABLES

W54SC	Top Shelf slants 5°	54	25	17½	24x28	78	\$253.00
W54C	Top shelf flat	54	26½	17½	24x28	78	\$249.00
W48SC	Top shelf slants 5°	48	19	17½	24x28	75	\$246.00
W48C	Top shelf flat	48	20½	17½	24x28	76	\$242.00
W42TVC	Top shelf flat	42	12½	17½	24x28	74	\$239.00

VIDEO TABLES AND CABINETS

VTR29	Open table for video equip	29		20½	18x40	46	\$131.00
VTR29MC	Fully enclosed 2 locking doors	29		20½	18x40	65	\$243.00

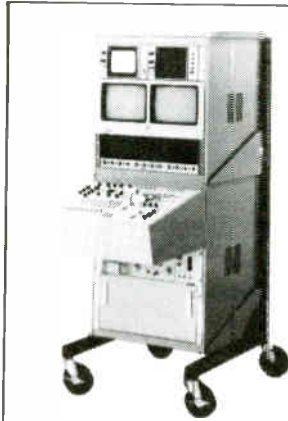
Specify "E" for electrical assembly; add \$25.00. *Clearance between shelves.

Accessories WEA Electric Assembly-20' power cord with double receptacle; UL listed; \$30.00 CSA approved \$35.00. 5" Casters; \$28.00. AWS Web Strap to hold receiver securely to top shelf 11' \$20.00. W15058 Tape Rack holds 24 video tapes; \$38.00.

Winsted makes it easy to...



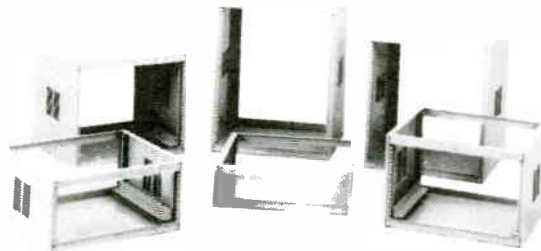
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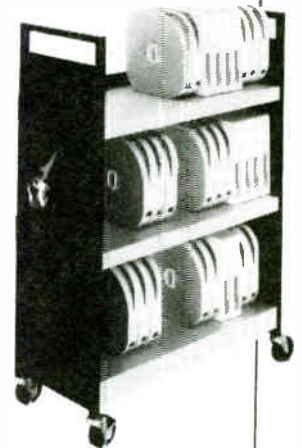
PRODUCE IT...



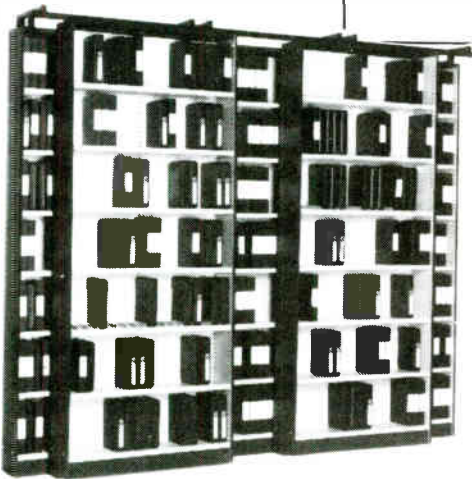
DUB IT...



MOUNT IT...



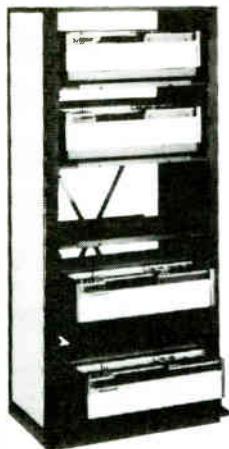
MOVE IT...



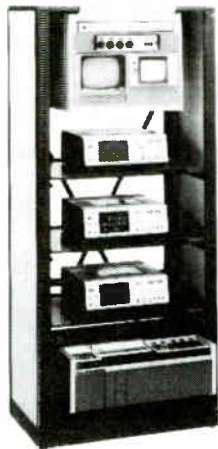
STORE IT!

The secret of a smooth-running video center is to have everything you need where you want it. Winsted makes that happen with the industry's most complete line of editing and production consoles, dubbing units, tape and film trucks and space-saving storage systems for film and videotape.

No matter what VTR equipment you use, Winsted's Matchmaker Systems offer a unit to match your requirements. Our designs are based on consultations with professional video users like yourself. You have chosen your video equipment carefully, to meet your specific needs. Now choose the video furniture system that fits your equipment...quality systems from Winsted.



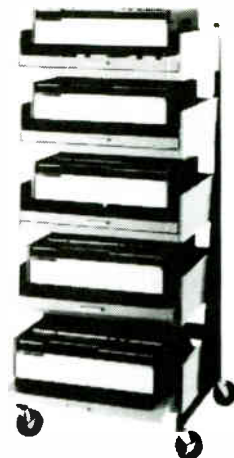
[I] D4500
\$817.00



[J] D4601
\$904.00



[K] D9200
\$874.00



[L] D9301
\$1270.00

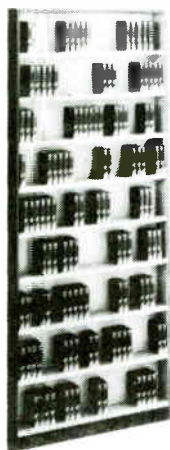
THE "DUBBING" GROUP

I. MODEL D4500 STATIONARY DUPLICATING CENTER. All shelves are on ball bearing rollers for easy pullout of machines, and vertically adjustable in 1" increments. Steel construction with beige and cocoa brown finish with walnut woodgrain shelves. Units can be bolted together for economical duplication system. Overall dimensions are 72"H x 20"D x 30"W.

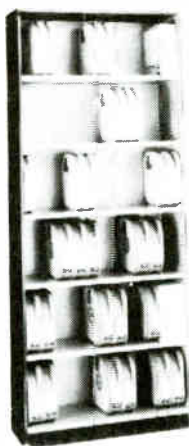
J. MODEL D4601 SPACE SAVING DUPLICATING CONSOLES. Four pullout VTR shelves. Rack cabinet gives 14" of rack space for switching and monitor equipment. All shelves vertically adjust in 1" increments. Overall dimensions are 72"H x 20"D x 30"W.

K. MODEL D9200 DUPLICATION CENTER. For 1/2" formats. All 6 shelves pull out for easier operation and are adjustable in 1" increments. Console rolls on 5" industrial casters (2 locking). Overall dimensions are 72"H x 20"D x 22"W.

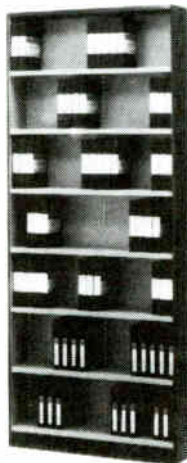
L. MODEL D9301 MOBILE 3/4" DUPLICATION CONSOLE. Rugged all steel construction. VTR drawers pull out on ball bearing rollers. All shelves vertically adjust in 1" increments. Console moves on heavy duty 4" industrial casters (2 locking). Overall dimensions 72"H x 26"D x 30"W.



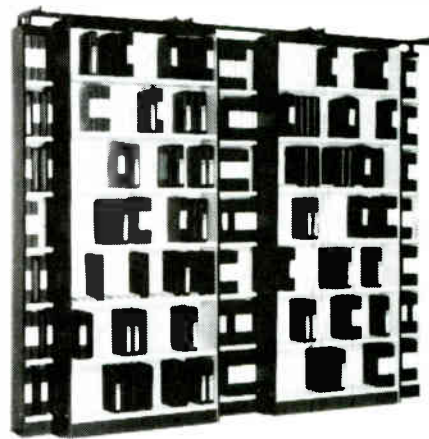
[M] T7104
\$419.00



[N] T7700
\$464.00



[O] T7400
\$439.00



[P] High Density Storage System

THE "STORAGE" GROUP

M. MODEL T7104 VIDEO CASSETTE STORAGE. For 1/2" video cassettes. All shelves are adjustable in 1" increments. Hold 270 Beta tapes. All steel construction with beige and cocoa brown finish. Overall dimensions 88"H x 5"D x 36"W.

N. MODEL T7700 VIDEO TAPE STORAGE. System holds 102 1" video tapes. 12" deep cabinet also holds 10-12/2" and 7" quad tapes. By adding more cabinets the system can grow into a High Density Storage. Overall dimensions 88"H x 5"D x 36"W.

O. MODEL T7400 U-MATIC TAPE STORAGE SYSTEM. For 3/4" U-Matic tapes. Bolt together construction with adjustable shelves. Holds 161 video cassettes. Inside dimensions 83"H x 8"D x 34-1/2"W. Overall dimensions 88"H x 8"D x 36"W.

P. MODEL T7400 TYPE HIGH DENSITY STORAGE SYSTEM. This is an example of Winsted's High Density Storage System for 3/4" U-Matic tapes. Also available for all other tape formats. Movable cabinets roll easily on steel tracks.

The Winsted Corporation

VIDEO & EDITING CONSOLES



[A] E9303
\$1415.00



[B] E9301
\$1568.00



[C] L9300
\$1957.00



[D] B3101
\$2046.00

THE "EDITING" GROUP

A. MODEL E9303 EDITING CONSOLE. Shelves adjust in 1" increments for perfect working height. All steel VTR shelves pull out with 12" safety stop. Editor shelf has 12" pullout work surface for scripts and schedules. Removable back panels conceal a 2" x 28" cable raceway. Overall dimensions 56"H x 28"D x 60"W.

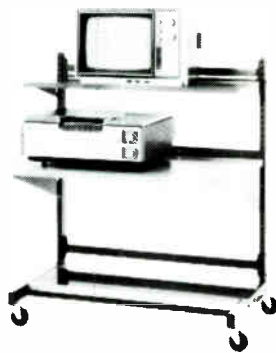
B. MODEL E9301 CONSOLE. Rugged steel construction. All shelves adjust in 1" increments for comfortable working height. Model shown is bolted together as "in line" console. Editor shelf pulls out 12" for better viewing of screens and dials. Console rolls on 5" industrial casters (2 locking). Overall dimensions 72"H x 28"D x 60"W.

C. MODEL L9300 LOW PROFILE EDITING CONSOLE. Same rugged construction as all other Winsted Consoles. Console shown with three 14" rack cabinets. Other rack cabinets and configurations are available. Includes decorative walnut woodgrain side panels and top, 2 pull out VTR shelves and one editor shelf. Overall dimensions 46"H x 45"D x 62"W.

D. MODEL B3101 VTR CONSOLE. Holds any 1" VTR. Overhead bridge adjusts up or down, has 10-1/2" rack space for monitor and 1/2 rack cabinets for vector scope and wave form monitor. Base cabinet has turntable that rotates 360° for easier servicing and viewing, recessed master on/off switch, 19-1/4" rack height for TBC and pull out drawer for manuals and tools. Overall dimensions are 78"H x 28"D x 32-3/4"W.



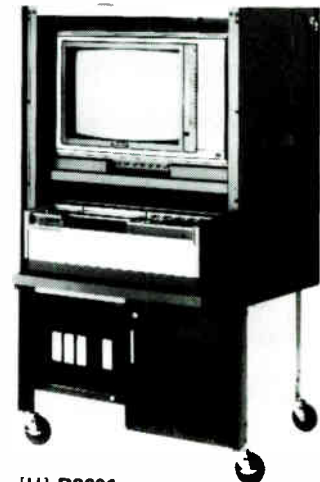
[E] R3400
\$289.00



[F] 48029
\$259.00



[G] R3500
\$298.00



[H] R3601
\$669.00

THE "VIDEOCENTER" GROUP

E. MODEL R3400 LOW PROFILE MOBILE VIDEO CENTER. Designed for smaller groups or individuals. Top shelf is set back for easy access to VTR. Lockable base cabinet holds tapes or valuable video equipment. Center rolls easily on 4" industrial casters (2 locking). Overall dimensions are 42"H x 22"D x 36"W.

F. MODEL 48029 ECONOMICAL MINI VIDEO CONSOLE. Wooden recorder shelf and steel monitor shelf. Each adjusts in 1" increments for greater working comfort. Rolls effortlessly on 3" industrial casters (2 locking). Includes 3-outlet electrical assembly with 3-wire 6-foot cord. Overall dimensions are 42"H x 22"D x 36"W.

G. MODEL R3500 STANDARD HEIGHT VIDEO CENTER. Ideal for conference rooms and large groups. Lockable lower cabinet for video tapes and equipment. All steel construction with beige and cocoa brown finish. Console moves easily on 4" industrial casters (2 locking). Overall size 54"H x 22"D x 32"W.

H. MODEL R3601 VIDEO CONSOLE. Provides complete equipment security. Top section has pull out VTR shelf for easier player operation and adjustable monitor shelf holds most 21" monitors. Ventilated locking rear panel provides full access to rear of video equipment. Bottom cabinet stores tapes and other video accessories. Overall dimensions are 60"H x 20-1/2"D x 30"W.

Prices and Specifications Subject to Change Without Notice.

VE-111

The Winsted Corporation

9801 James Circle
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 (612) 888-1957 (800) 328-2962

MODULAR VIDEO CONSOLES

SYSTEM/85... Modular Video Consoles

Snap on & off back and side panels give you complete machine accessibility



A Model H8800
 \$1118.00

A Model H8800. For use with Sony's 800 Series VTR's and 801 edit controller. Includes one G8502 basic console, one G8500 add-on console, two 85041 tops, two 85080 sloped editor shelves, one 88180 editing panel, one 85147 blank panel, one 85141 blank panel and two 85149 blank panels. Overall 41" H x 42 1/2" D x 43" W. Wt. 298 lbs. **\$1118.00**

Model H8500. (Not shown) Same as H8800 set up for "Type 5" VTR's and RM 440 controllers. Wt. 298 lbs. **\$1133.50**

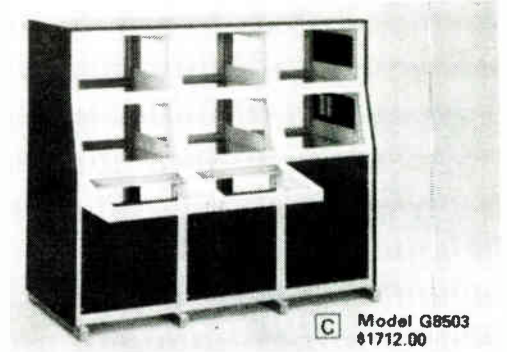
B Model H8502. For use with Sony's "Type 5" VTR's and RM 440 controllers. Includes one G8502 basic console, two G8500 add-on consoles, two 85041 tops, one 85040 top, two 85080 sloped editor shelves, one 85180 editor panel, one 85147 blank panel, three 85140 blank panels, three 85149 blank panels, one 85141 blank panel and one 85142 blank panel. Overall 41" H x 42 1/2" D x 61" W. Wt. 349 lbs. **\$1489.25**

Model H8802. (Not shown) Same as H8502 set up for Sony's 800 series VTR's and 801 edit controller. Wt. 349 lbs. **\$1466.00**

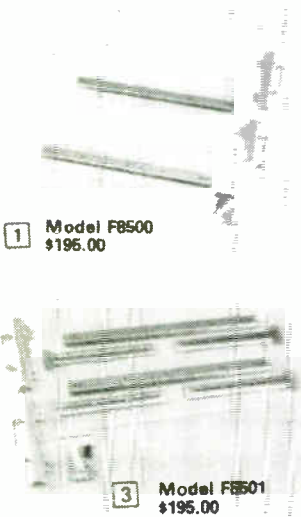
C Model G8503. Includes one G8502 basic console, two G8500 add-on consoles, three 85002 add-on top modules, one pair of 85122 side panels, two 85041 tops, one 85040 top, two 85080 sloped editor shelves, three 85149 blank panels and one 85142 blank panel. Overall 54" H x 42 1/2" D x 61" W. Wt. 375 lbs. **\$1712.00**



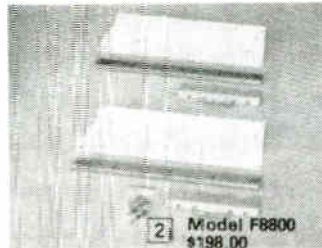
B Model H8502
 \$1489.25



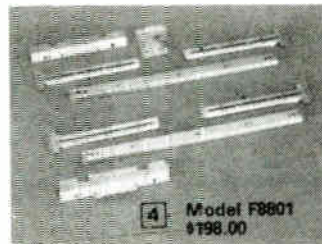
C Model G8503
 \$1712.00



1 Model F8500
 \$196.00



2 Model F8800
 \$198.00



3 Model F8501
 \$195.00

4 Model F8801
 \$198.00

RACK SLIDE KITS.

Order separately. Not included in console prices.

RACK SLIDE KITS FOR 85001 SLOPED UPPER CABINET

1 Model F8500. Rack slide kit for Sony's Type 5 VTR's. Wt. 8 lbs. **\$195.00**

2 Model F8800. Rack slide kit for Sony's 800 Series VTR's. Wt. 8 lbs. **\$198.00**

RACK SLIDE KITS FOR G8501 LOWER BASE MODULE

3 Model F8501. Rack slide kit for Sony's Type 5 VTR's. Wt. 8 lbs. **\$195.00**

4 Model F8801. Rack slide kit for Sony's 800 Series VTR's. Wt. 8 lbs. **\$198.00**

NOTE: For additional types of rack slide kits consult your dealer

The Winsted Corporation

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 (612) 888-1957 (800) 328-2962

CONSOLES

CUSTOM CONSOLES WITH CASTERS, WEDGES & PULL-OUT SHELVES

A **Model H8508.** For non-rack mounted Type 5 and 800 Series VTRs. Consists of one 85000 base console, one G8501 base console with side panels, two G8590 12 1/2" high cabinets with steel pull-out shelves, two 85081 angled editor shelves, two 85041 cabinet tops, two 85164 filler tops, one pair 85122 side panels, two 85149 19 1/2" blank panels, one 85148 15 1/2" blank panel, one 85152 5 1/2" blank panel, one 85180 mounting panel for "Sony" RM 440 controller. Overall dimensions: 42"H x 44"D x 43"W.
 Wt. 269 lbs. **\$1356.00**

B **Model G8527.** Three bay console with wedges. Consists of one G8501 base module with sides, two 85000 base modules, three 85001 slope modules, three 85003 14" add-on top modules, three 85161 cabinet wedges, two 85081 angled editor shelves, two 85041 tops, one 85040 top, one pair 85121 side panels, one pair 85123 side panels, and two 85149 19 1/2" blank panels. Measures 62 1/2"H x 61"W x 44"D.
 Wt. 354 lbs. **\$1946.00**

C **Model G8523.** Console includes: one 85000 base module, one G8501 base module with side panels, two 85003 14" add-on top modules, two 85085 15 1/2" flat editor shelves, two 85041 tops, two 85164 filler tops and one pair of 85122 side panels (order back panels separately). Measures 42"H x 44"D x 43"W.
 Wt. 255 lbs. **\$1009.00**

D **Model H8804.** For use with Sony's 800 Series VTRs. Includes one G8502 basic console, two G8500 add-on consoles, three 85002 add-on top modules, two 85041 tops, one 85040 top, one pair of 85122 side panels, two 85082 extended editor shelves, two 85142 blank panels, two 85147 blank panels, two 85143 panels. Overall dimensions 54"H x 47 1/2"D x 61"W (Order back panels separately.)
 Wt. 378 lbs. **\$1750.00**

Model H8504. (Not shown.) Same as H8804 set up for Sony's Type 5 VTRs and RM 440 Controller
 Wt. 378 lbs. **\$1773.25**

E **Model H8501.** For use with Sony's Type 5 VTR's. Includes one G8502 basic console, one G8500 basic add-on console, two 85041 tops, two 85080 sloped editor shelves, one 85180 editing panel, one 85141 blank panel, one 85147 blank panel, one 85580 pull-out shelf, two 85149 blank panels, two 85140 blank panels, and three pair of 85780 casters. Overall dimensions: 44"H x 42 1/2"D x 43"W.
 Wt. 299 lbs. **\$1298.50**

Model H8801. (Not shown.) Same as H8501 set up for 800 Series VTR's and 801 controller
 Wt. 299 lbs. **\$1283.00**



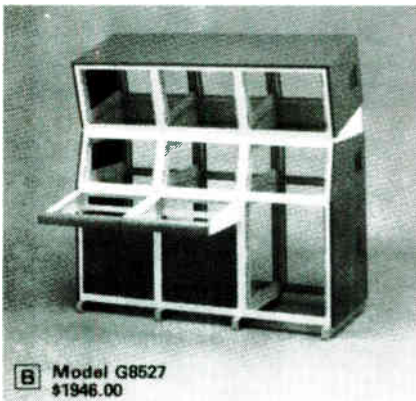
A Model H8508
 \$1356.00

OPTIONAL ACCESSORIES

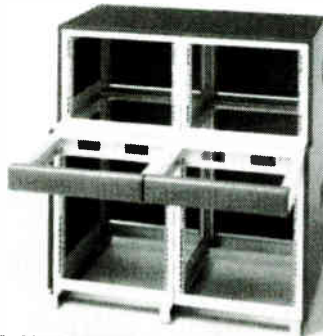
- Model 85580.** Pull-out shelf as shown in Model H8501.
 Wt. 10 lbs. **\$69.00**
- Model 85780.** Heavy-duty 3 industrial casters and caster braces as shown in Model H8501
 Wt. 5 lbs. **\$32.00**
- Model 98700.** Six-outlet electrical power strip
 Wt. 4 lbs. **\$69.00**



E Model H8501
 \$1298.50



B Model G8527
 \$1946.00



C Model G8523
 \$1009.00



D Model H8804
 \$1750.00

Prices and Specifications Subject to Change Without Notice.

VE-113

The Winsted Corporation

9801 James Circle
 Minneapolis, MN 55431
 (612) 888-1957 (800) 328-2962

CONSOLES/CABINETS



A Model G8300
\$1832.00



B Model G8513
\$1264.75



C Model G8517
\$2323.75

COMBINATION CONSOLES WITH 19" & 30" DOUBLE BAY AND CORNER SYSTEMS

A **Model G8300.** Ideal 'A/B Roll' console. For use with large, top loading VTR's. Consists of: one G8310 base with side panels, one 83000 base module, two 83002 sloped modules, one pair 83207 1/2 rack rails, one pair 83208 1/2 rack rails, two 83087 steel pull-out shelves, one 83081 stationary steel shelf, one G8340 wood editor shelf, one 85147 blank panel, one 85142 blank panel, one 85140 blank panel, one 83147 blank panel and one 83140 blank panel. Measures 42" H x 62" W x 45" D.
 Wt. 320 lbs. **\$1832.00**

B **Model G8513.** Shown set up with Cross Point Latch 6124 Special Effects Generator. Consult your dealer or Winsted when using other types of special effects generators and edit controllers. Console includes one G8530 double bay console, one pair 85120 base side panels, one 85188 mounting kit for Cross Point Latch 6124 SEG, two 85001 add-on slope modules, one pair of 85121 side panels for slope module, two 85002 add-on top modules, one pair of 85122 side panels for top module, two 85041 tops, one 85147 blank panel, one 85141 blank panel, and 85140 blank panel. Measures 58 1/2" H x 43 1/2" W x 46" D.
 Wt. 294 lbs. **\$1264.75**

C **Model G8517.** For use with Sony's 800 Series VTRs and EB800 editor. Includes one G8502 basic console, two G8500 add-on consoles, one 85006 editor console, one 85202 corner kit, two 85040 tops, two 85041 tops, one 85080 angled editor shelf, three 85149 blank panels, one 85147 blank panel, one 85142 blank panel and one 85140 blank panel.
 Wt. 475 lbs. **\$2323.75**

Model H8806. (Not shown.) Same as G8517 but set up for Sony's 801 edit controller.
 Wt. 475 lbs. **\$2252.75**

Model H8506. (Not shown.) Same as G8517 set up for Sony's Type 5 VTRs and RM440 controller.
 Wt. 475 lbs. **\$2276.00**

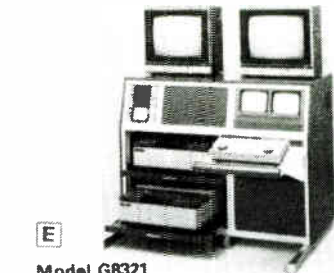
D **Model G8320.** Combination 19" and 30" console. Includes: one G8310 base module with side panels, one 85000 base module, one 85082 flat editor shelf, two 83580 steel pull-out shelf, one 85041 top and one 83044 top. Measures 29 1/2" H x 52" W x 45" D.
 Wt. 285 lbs. **\$1147.50**

E **Model G8321.** Includes one G8310 base with side panels, one 85000 base, one 85001 sloped module, one 83001 sloped module, one pair 83208 1/2 rack rails, two 83087 steel pull-out shelves, one 85082 flat editor shelf, one pair 85121 side panels, one 85041 top, one 85149 blank panel, one 85145 blank panel and two 85140 blank panels. Measures 42" H x 53 1/2" W x 51" D.
 Wt. 302 lbs. **\$1583.50**

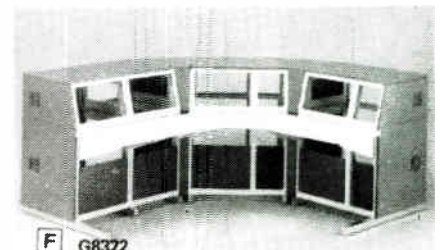
F **G8322.** Corner unit console. Shown with a combination of 19" and 30" modules. Winsted modules can be arranged as you like to fit your application. Flat work surfaces are custom made for each design. Please consult your dealer or factory for help in designing the perfect corner console for your needs



D Model G8320
\$1147.50



E Model G8321
\$1583.50



F G8322

DELUXE WOOD TRIM CONSOLES

Rich oak trim panels for a distinctive touch

A Model H8520. Wood-trim editing console includes: two 85000 base modules, one 85200 chrome leg, two 85001 sloped modules, two 85081 angled editor shelves, one 85180 controller panel, two 85149 blank panels, one 85148 blank panel, two 85140 blank panels, one pair 85520 wood side panels for base, one pair 85521 wood side panels for sloped module and one 85542 wood two-bay top. Measures 42 $\frac{1}{2}$ " H x 44" D x 44" W.
 Wt. 295 lbs. **\$1529.50**

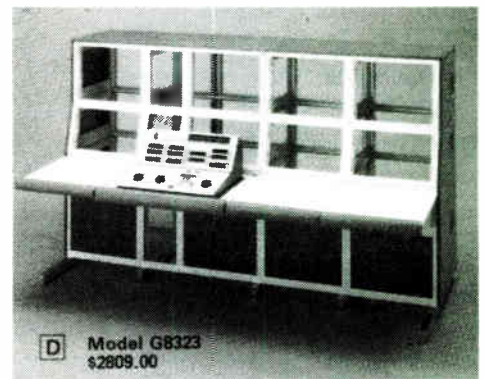
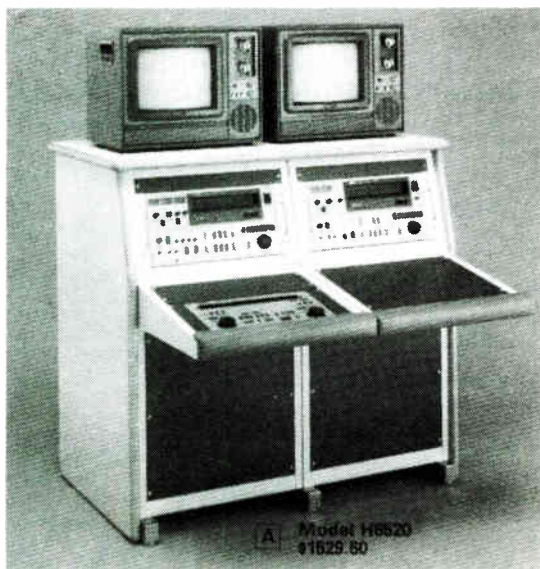
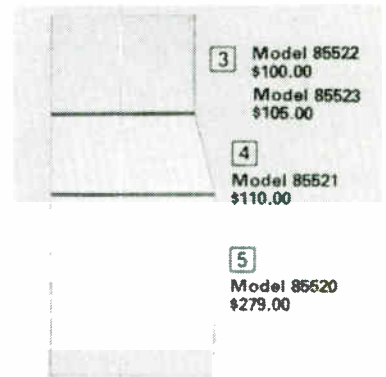
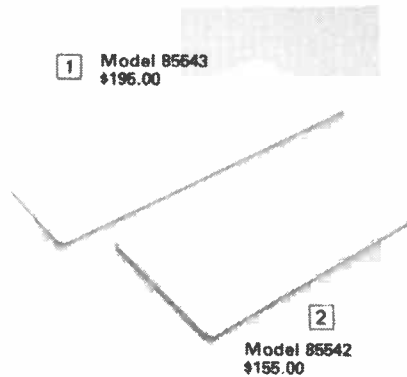
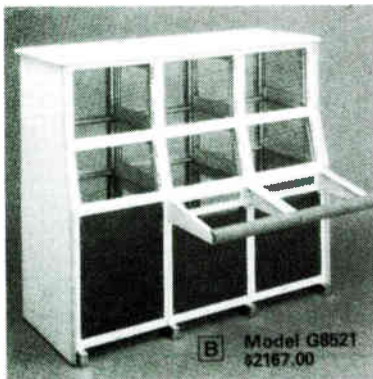
B Model G8521. Three bay wood-trim console includes: three 85000 base modules, one 85200 chrome leg, three 85001 sloped modules, three 85003 14" add-on modules, two 85081 angled editor shelves, three 85149 blank panels, one 85142 blank panel, one pair 85220 wood side panels for bases, one pair 85521 wood side panels for slope modules, one pair 85523 wood side panels, and one 85543 three-bay wood top. Measures 57 $\frac{1}{2}$ " H x 44" D x 62" W.
 Wt. 535 lbs. **\$2167.00**

D Model G8323. Designed for Sony's 3000 editor. Consists of one G8310 base with side panels, three 85000 base modules, one 83001 sloped module, three 85001 sloped modules, one 83003 14" top module, three 85003 14" top modules, one pair 83207 24 $\frac{1}{2}$ " one-half rack rails, one pair 83208 10 $\frac{1}{2}$ " one-half rack rails, one pair 83209 14" one-half rack rails, one G8341 3000 editor shelf, three G8540 flat shelves, one pair 85121 side panels, one pair 85123 side panels, four 85147 blank panels, two 85041 tops, one 85040 top and one 83040 top. Measures 54" H x 52" D x 92" W.
 Wt. 585 lbs. **\$2809.00**

WOOD SIDE PANELS

- 1 Model 85543.** Wood top for 3-bay console.
 Wt. 73 lbs. **\$195.00**
- 2 Model 85542.** Wood top for two-bay console.
 Wt. 52 lbs. **\$155.00**
- 3 Model 85522.** Wood panels for 10 $\frac{1}{2}$ " module.
 Wt. 14 lbs. **\$100.00 pr.**
- Model 85523.** Wood side panels for 14" module.
 Wt. 16 lbs. **\$105.00 pr.**
- 4 Model 85521.** Wood side panels for slope module.
 Wt. 16 lbs. **\$110.00 pr.**
- 5 Model 85520.** Side panel for base module.
 Wt. 31 lbs. **\$279.00 pr.**

NOTE: Other tops can be custom-made for your system. Consult your dealer or Winsted for pricing and delivery.

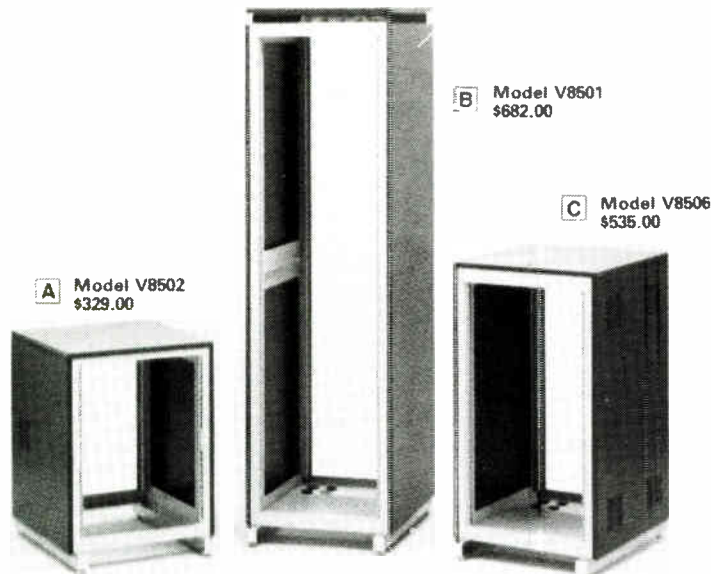


The Winsted Corporation

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RACKS/ACCESSORIES

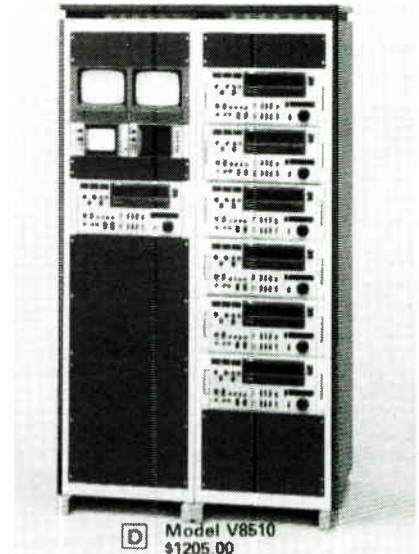
VERTICAL RACK CABINETS & ACCESSORIES – Standard EIA 19" rack widths with rear service door



A Model V8502
\$329.00

B Model V8501
\$682.00

C Model V8506
\$535.00



D Model V8510
\$1205.00

A Model V8502. Vertical rack with 24½" of rack space. Open bottom and vented sides for air flow. 30"H x 22"W x 26"D.
 Wt. 81 lbs. **\$329.00**

Back Panel for V8502. Wt. 10 lbs.
Model 85100 **\$59.00**

Casters and Braces for V8506, V8501 and V8502. Wt. 8 lbs.
Model 85780 **\$28.00 pr.**

B Model V8501. Vertical rack cabinet with 70" of rack space. Vented top and bottom. 79"H x 22"W x 26"D.
 Wt. 160 lbs. **\$682.00**

Rear Door for V8501. Wt. 31 lbs.
Model 85300 **\$128.00**

Muffin Fan for V8501. Wt. 5 lbs.
Model 10705 **\$59.00**

C Model V8506. Vertical rack cabinet has 35" of usable rack space. Gray and tan baked enamel finish, with vented sides and base for cooling. 42"H x 26"D x 22"W.
 Wt. 90 lbs. **\$535.00**

Rear Door for V8506. Wt. 25 lbs.
Model 85301 **\$83.00**

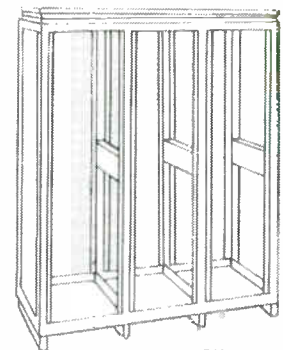
D Model V8510. Duplication center. Consists of two V8500 70" rack frame and one 85124 set of side panels. Order rear door doors and blank panels separately. 79"H x 26"D x 43"W.
 Wt. 265 lbs. **\$1205.00**

ADD-A-RACK

Basic frames can be bolted together, without side panels, to create an economical bank of equipment racks. Side panels are then installed at each end.

Model V8500 Basic 70" Rack without side panels
 Wt. 136 lbs. **\$523.00**

Model 85124 Side Panels (Pair)
 Wt. 55 lbs. **\$159.00**



ADD-A-RACK

OPTIONAL ACCESSORIES

1 Pull-out Shelf. Extends a full 20". For V8500 type vertical racks, 85000 base module, 85002 top module and 85003 top module. Wt. 12 lbs.

Model 85083 **\$169.00**

2 Stationary Shelf. V8500 type vertical racks, 85000 base module, 85002 top module and 85003 top module. Wt. 10 lbs.
Model 85086 **\$65.00**

Muffin Cooling Fan With mounting bracket. 4¾" universal mount, finger guard and 24" cord with plug. Delivers 105 CFM. For 115 volt system. Wt. 5 lbs. (Not shown.)

Model 10705 **\$59.00**

3 Power Panel. Mounts in any 19" rack mount cabinet. Six rear outlets, 15 amp circuit breaker and On/Off switch in front. Three-wire 15' power cord. 1¾"H x 19"W. Wt. 4 lbs.

Model 98700 **\$69.00**

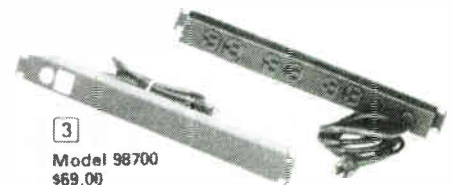
Flat Extended Shelf. Offers 15¾" of rack space. Wt. 12 lbs. (Not shown.)

Model 85085 **\$98.00**

1 Model 85083
\$169.00



2 Model 85086
\$65.00



3 Model 98700
\$69.00

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TAPE AND FILM TRUCKS

HEAVY DUTY TAPE AND FILM TRUCKS

Give you ready access to tape & film anywhere

A Video Tape Truck. Includes shelf backstops plus sliding supports to hold tapes upright. Wt. 76 lbs.

Model U5000. \$355.00

B Economical U-Matic Tape Truck. Holds 162 uncased or 132 cased $\frac{1}{4}$ " U-Matic tapes. Rolls easily on 4" casters 45" H x 17" D x 31" W. Wt. 71 lbs.

Model 50089. \$289.00

C Tape Truck. For 1" tape transport. Wt. 76 lbs.

Model U5003. \$355.00

D U-Matic Tape Truck. Holds up to 128 $\frac{1}{4}$ " tapes upright in a molded plastic holder. Wt. 94 lbs.

Model U5002. \$457.00

E Tape Truck. Convenient transport for $\frac{3}{4}$ ", 1" or 2" video tape. Wt. 77 lbs.

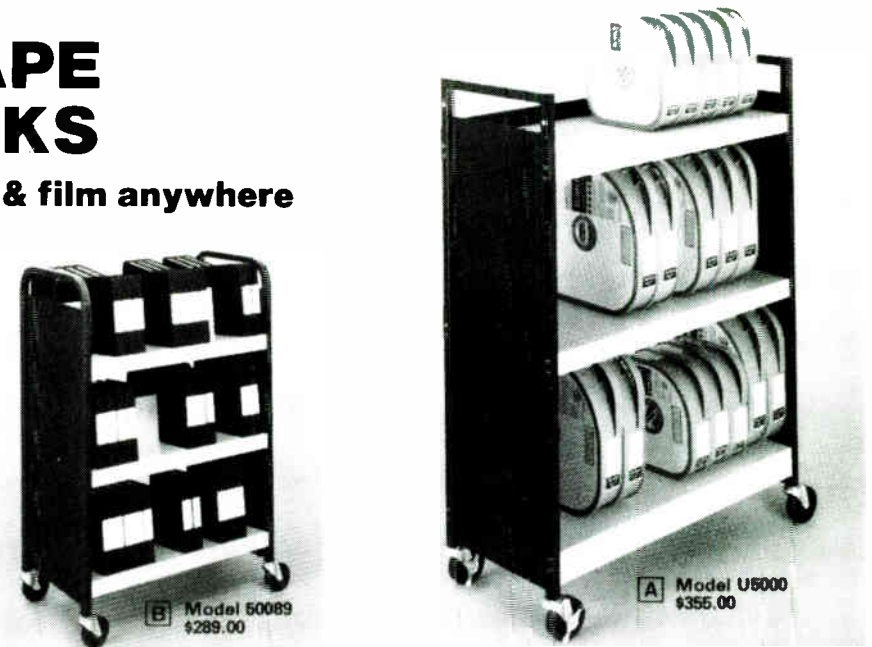
Model U5001. \$371.00

F Film Truck. Holds 54 reels of 16mm film in 1-1/16" wide wire supports. Open bottom shelf holds additional films or equipment. Wt. 83 lbs.

Model U5300. \$454.00

G Mobile Hanger Truck. Offers light-weight mobility and compact storage for Scotch $\frac{1}{2}$ " and $\frac{3}{4}$ " video cassette hanger system shipper/storage case. Can be adapted for unboxed bulk or boxed cassettes. Each of six hanger rails holds 18 boxed videocassettes. End pocket included. Wt. 75 lbs.

Model U5005. \$441.00



OPTIONAL ACCESSORIES

1 Videocassette Divider. Molded plastic divider holds 16 cased $\frac{1}{4}$ " videocassettes. Designed for use with U5001 tape truck. 10 $\frac{1}{8}$ " H x 7 $\frac{1}{2}$ " D x 32 $\frac{1}{2}$ " W. Beige. Carton of 5. Wt. 3 lbs.

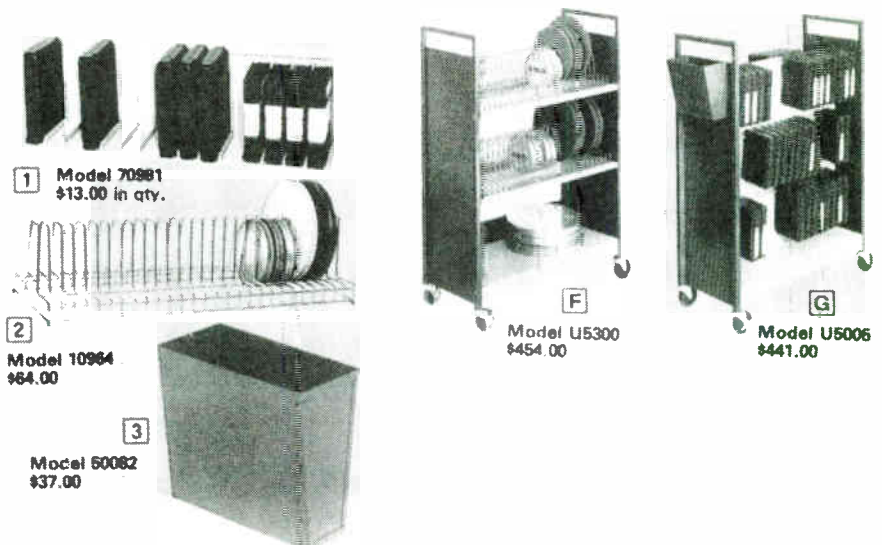
Model 70981 price each \$14.00
 5 or more \$13.00 ea.

2 Film Rack. Chrome-plated rack holds 27 reels of 16mm films. Fits film truck shelf or can be used separately. 1-1/16" spacing. Wt. 9 lbs.

Model 10964. \$64.00

3 End Pocket. Ideal for duplication orders or master videocassette. Hooks onto the end frame of any tape truck. 10" H x 5 $\frac{1}{2}$ " D x 10" W. Cocoa brown. Wt. 4 lbs.

Model 50082. \$37.00



Prices and Specifications Subject to Change Without Notice.

VE-117

OPEN SHELF TAPE CABINETS

For the organization & storage of all tape formats

A Model T7400. Ideal videotape storage system for $\frac{3}{4}$ " U-Matic videocassettes. Eight inch deep cabinet holds 161 videocassettes. Order molded plastic dividers for videocassettes separately (Model 70983—see Optional Accessories). Seven shelves. Overall: 88"H x 8"D x 36"W. (Inside dimensions: 34 $\frac{1}{2}$ "W x 83"H). Wt. 120 lbs. **\$439.00**

Add-on Unit. Model T7403. For side-to-side installation. Wt. 105 lbs. **\$409.00**

Model 74080. Extra Shelf. Wt. 4 lbs. **\$26.00**

B Model T7700. Video tape storage system holds 102 1" video tapes. Deeper 12" cabinet depth takes 1" broadcast tapes, 7"-10 $\frac{1}{2}$ " quad tapes and $\frac{3}{4}$ " U-Matic videocassettes. Order molded plastic dividers for videocassettes separately (Model 70983—see Optional Accessories). Six shelves. Overall: 88"H x 12"D x 36"W. (Inside dimensions: 34 $\frac{1}{2}$ "W x 83"H). Wt. 125 lbs. **\$464.00**

Add-On Unit. Model T7703. For side-to-side installation. Wt. 110 lbs. **\$426.00**

Model 77080. Extra Shelf. Wt. 5 lbs. **\$29.00**

C Model T7600. "Super Pak" videocassette tape storage system. Holds 207 $\frac{3}{4}$ " videocassettes. For maximum capacity tapes are stored and labeled on end. Order labels separately (Model 10940—see Optional Accessories). Nine shelves. Overall: 88"H x 10"D x 36"W. (Inside dimensions: 34 $\frac{1}{2}$ "W x 83"H). Wt. 139 lbs. **\$459.00**

Add-on Unit. Model T7603. For side-to-side installation. Wt. 118 lbs. **\$421.00**

D Model T7800. Quad Tape Storage System. A 16" deep cabinet that is perfect for 2" quad and holds 55 tapes. Five shelves. Overall: 88"H x 16"D x 36"W. (Inside dimensions: 34 $\frac{1}{2}$ "W x 84"H). Wt. 165 lbs. **\$519.00**

Add-On Unit. Model T7803. For side-to-side installation. Wt. 150 lbs. **\$479.00**

Model 78080. Extra Shelf. Wt. 6 lbs. **\$31.00**

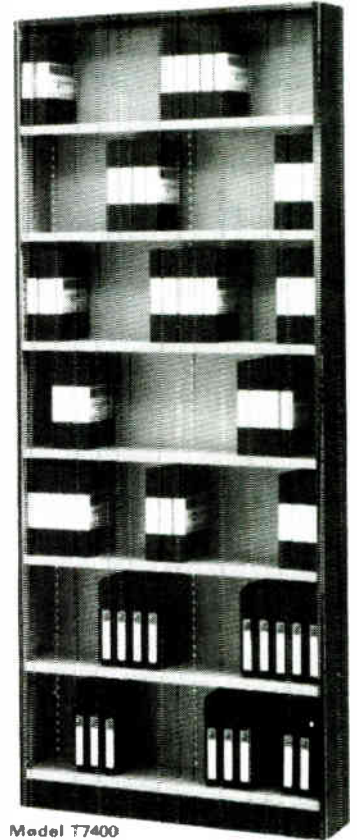
E Model 70300. Locking cabinet doors provide security for valuable master tapes. Doors fit all of the Winsted "T" series tape cabinets (except T7200 and T7500 models) and can be added to any existing "T" unit. Full length door hinge and two-point locking system. NOTE: Install cabinet doors only on cabinets that are securely fastened to a wall. Dimensions: 84 $\frac{1}{2}$ "H x 1 $\frac{1}{4}$ "D x 34 $\frac{1}{2}$ "W. Beige baked enamel finish. Wt. 61 lbs. **\$189.00**

F Model T7104. Beta or VHS Storage. Holds 270 Beta tapes or 240 VHS. Ideal for $\frac{1}{2}$ " videocassette storage. Order molded plastic dividers for videocassettes separately (Model 70985). Overall: 88"H x 5"D x 36"W. (Inside dimensions: 34 $\frac{1}{2}$ "W x 83"H). Wt. 137 lbs. (BETA). **\$419.00**

Model T7100. Wt. 135 lbs. (VHS). **\$398.00**

Add-On Unit. Model T7107. For side-to-side installation. Wt. 127 lbs. (BETA). **\$399.00**

Add-On Unit. Model T7103. For side-to-side installation. Wt. 120 lbs. (VHS). **\$378.00**



A Model T7400
\$439.00

OPTIONAL ACCESSORIES

1 Model 70983. Molded plastic divider insert ($\frac{3}{4}$ " tapes) for use in T7400, T7600, or T7700.

#70983 Individual Dividers. Wt. 3 lbs. **\$14.00**
5 or more \$13.00 ea.

2 Model 70986. Plastic cassette holder ($\frac{1}{2}$ " tapes) for use in T7100 or T7104 cabinets.

#70986 Individual Dividers. Wt. 2 lbs. **\$13.00**
5 or more \$12.00 ea.



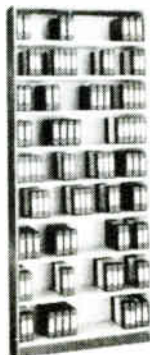
Model 70983
\$13.00 in qty



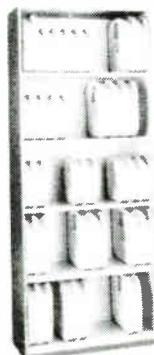
2 Model 70986
\$12.00 in qty



B Model T7700
\$464.00



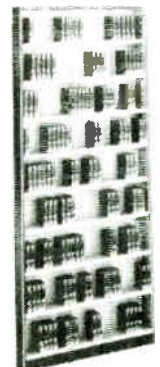
C Model T7600
\$459.00



D Model T7800
\$519.00

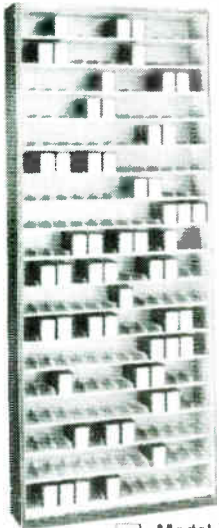


E Model 70300
\$189.00

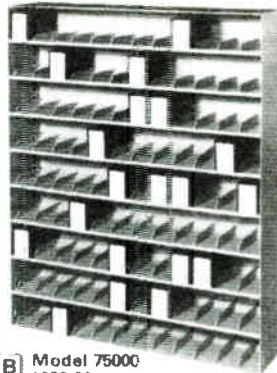


F Model T7104
\$419.00

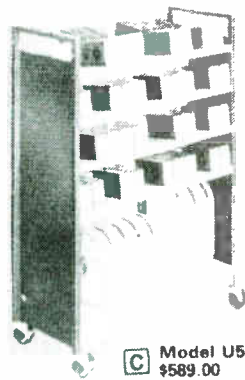
THE BROADCAST GROUP



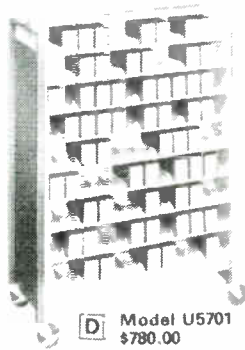
A Model T7500
\$627.00



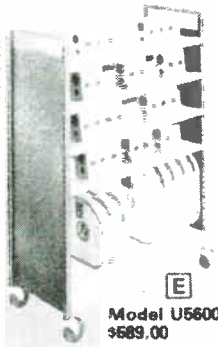
B Model 75000
\$228.00



C Model U5700
\$589.00



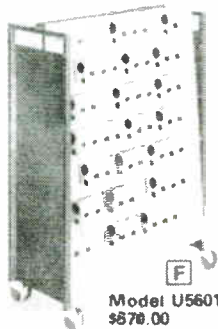
D Model U5701
\$780.00



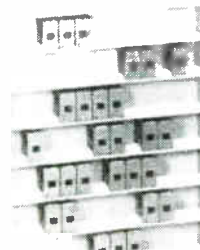
E Model U5600
\$589.00



H Model T7200
\$501.00



F Model U5601
\$576.00



G Model 72000
\$173.00

A **Model T7500 Tape Cabinet.** All steel cabinet holds 216 (Ampex ACR-25 type) tape cartridges. Instant, easy tape retrieval with Winsted exclusive "Pik-Quik" system. Overall dimensions: 88"H x 8"D x 36"W.

Wt. 185 lbs. **\$627.00**

B **Model 75000 Mini Cabinet.** Tape storage unit holds 108 (Ampex ACR-25 type) tape cartridges in a minimum of space. Can easily be wall mounted. Easy tape access. Overall dimensions: 42"H x 7 1/2"D x 34"W.

Wt. 69 lbs. **\$228.00**

C **Model U5700 Tape Truck.** Combination tape truck holds 96 Ampex ACR-25 cartridges plus 1" or 2" videotapes. Full access from both sides of truck. Heavy-duty, all-steel construction. Overall dimensions: 52"H x 16"D x 36"W.

Wt. 127 lbs. **\$589.00**

D **Model U5701 Programming Truck.** Big capacity tape truck holds 216 Ampex ACR-25 tape cartridges with "Pik-Quik" cartridge removal system. Easy access from both sides of truck. Rolls effortlessly, even when fully loaded. Overall dimensions: 54"H x 22"D x 36"W.

Wt. 205 lbs. **\$780.00**

E **Model U5600 Tape Truck.** Combination tape truck helps set up daily spot programming schedules quickly and efficiently. Holds 96 RCA TCR-100 tape cartridges plus 1" or 2" video tapes. Safe, convenient tape transport. Overall dimensions: 52"H x 16"D x 36"W.

Wt. 122 lbs. **\$589.00**

F **Model U5601 Programming Truck.** Holds 168 RCA TCR-100 tape cartridges with "Pik-Quik" cartridge removal system. Cartridge shelves are angled for full view tape selection plus safe transport. Ideal for mobile tape storage. Overall dimensions: 54"H x 16"D x 36"W.

Wt. 145 lbs. **\$670.00**

G **Model 72000 Mini Cabinet.** Holds 84 RCA TCR-100 tape cartridges in a minimum of space. Can easily be wall mounted. Convenient cartridge storage with easy tape access. Overall dimensions: 42"H x 4 1/2"D x 34"W.

Wt. 40 lbs. **\$173.00**

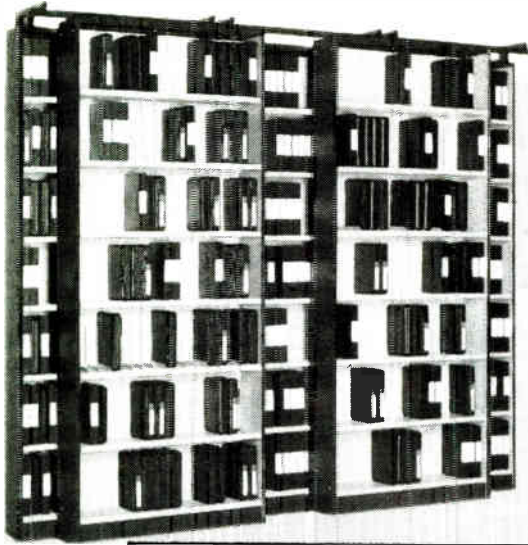
H **Model T7200 Tape Cabinet.** Safe, convenient storage cabinet holds 168 RCA TCR-100 type cartridges. Instant "Pik-Quik" tape retrieval system. Use cabinets individually or bolt together for modular storage. Overall dimensions: 88"H x 4 1/2"D x 36"W.

Wt. 120 lbs. **\$501.00**

The Winsted Corporation

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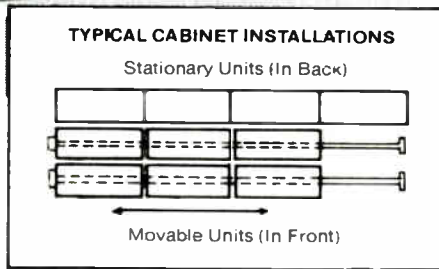
MOVABLE STORAGE SYSTEMS



MOVABLE STORAGE SYSTEMS In a variety of designs and 5" to 36" depths to serve your special storage needs

Winsted Shelf Storage System. Offer organization and storage for most any tape or film storage system. Choose from stock or custom shelving at affordable prices. All designs are completely flexible—can be adapted to a variety of configurations and setups to serve your special storage needs. What's more, Winsted shelving grows as your needs grow. Both stock and custom installations can be expanded, or relocated as your needs change.

A

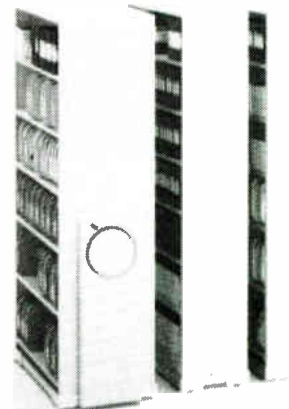
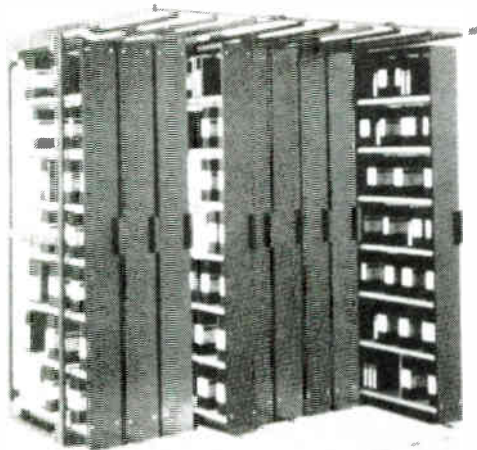


A "Super Density" Movable Cabinets. Offered in a range of cabinet depths for maximum storage in a limited space. Front row cabinets move side to side on floor tracks for easy access to rear storage. Ideal for "VHS," "BETA," "U-matic and broadcast tape storage.

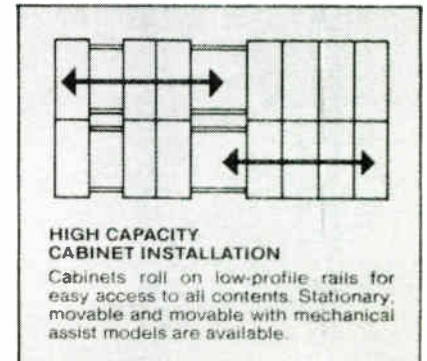
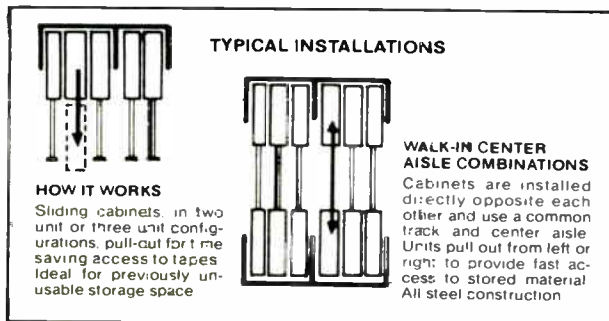
B Space-Saving Pull-Out Cabinets. Ideal for "high access" tape storage. May be installed in room alcoves or set-backs. Save floor space, too, by eliminating unnecessary aisles. Gives you 100% storage space efficiency. Units bolt together for any length system. Cabinets pull-out effortlessly on a low-profile track.

C High Capacity Tape Storage System. Affords compact storage in a limited space. Offered in a full range of cabinet depths to meet every storage need. Cabinets move laterally on low-profile rails for easy access to all records instantly, effortlessly.

B



C



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VERTICAL EQUIPMENT RACKS & ACCESSORIES

A Vertical Rack Cabinet. Offers 70" of ventilated rack space—standard EIA 19" rack width. Optional rear access door. Cast-er base with screw down floor levelers. Ventilated top with extra room for fan. Sturdy, heavy gauge steel construction. Baked enamel finish in Beige and Grey. Measures 79" H x 22½" W x 26" D. Wt. 160 lbs.

Model V8501 **\$682.00**

Vertical Equipment Rack. (Not shown.) Same as V8501 with rear door. Wt. 191 lbs.

Model V8504 **\$810.00**

B Vertical Rack Cabinet. With 35" of rack space. Ventilated bottom and sides for cooling air flow. Same construction as V9801. 42" H x 26" D x 22" W. Wt. 90 lbs.

Model V8506 **\$535.00**

Rear Door. For V9806. Wt. 25 lbs.

Model 85301 **\$98.00**

BLANK PANELS

19" wide in Grey enamel

Model 85140 1¾" Blank Panel **\$7.75**

Model 85141 3½" Blank Panel **\$9.00**

Model 85142 5¼" Blank Panel **\$11.00**

Model 85143 7" Blank Panel **\$13.50**

Model 85144 8¾" Blank Panel **\$15.75**

Model 85145 10½" Blank Panel **\$18.00**

Model 85146 12¼" Blank Panel **\$22.00**

Panel Bolts & Clips with Captive Nuts

Model G8051. 50 Panel Bolts & Clips **\$25.00**

Model G8101. 100 Panel Bolts & Clips **\$50.00**

OPTIONAL ACCESSORIES

Muffin Cooling Fan. (Not shown.) With mounting bracket, 4¾" universal mount, finger guard and 24" cord with plug. Delivers 105 CFM. For 115 volt system. Wt. 5 lbs.

Model 10705 **\$59.00**

Chassis Support Brackets. (Not shown.) For installation requiring additional equipment support. 1¼" x 1¼" x 21½". Wt. 4 lbs.

Model 85240 **\$14.00**

1 Power Panel. Mounts in any 19" rack mount cabinet. Six rear outlets. 15 amp circuit breaker, pilot light and On/Off switch in front. Three-wire 15 power cord. 1¾" x 19" W. Wt. 4 lbs.

Model 98700 **\$69.00**

2 Pull-Out Shelf. Full extension (20") pull-out shelf for V9803. Measures 1¾" x 20¾" x 17½" W. Wt. 10 lbs.

Model 85083 **\$169.00**

3 Stationary Shelf. Bolt in steel shelf for V9803. Wt. 8 lbs.

Model 85086 **\$65.00**

4 Rack Slide Kit. For use with Sony's Type 5 VTRs. Wt. 7 lbs.

Model F8501 **\$195.00**

5 Rack Slide Kit. For use with Sony's 800 Series VTRs. Wt. 7 lbs.

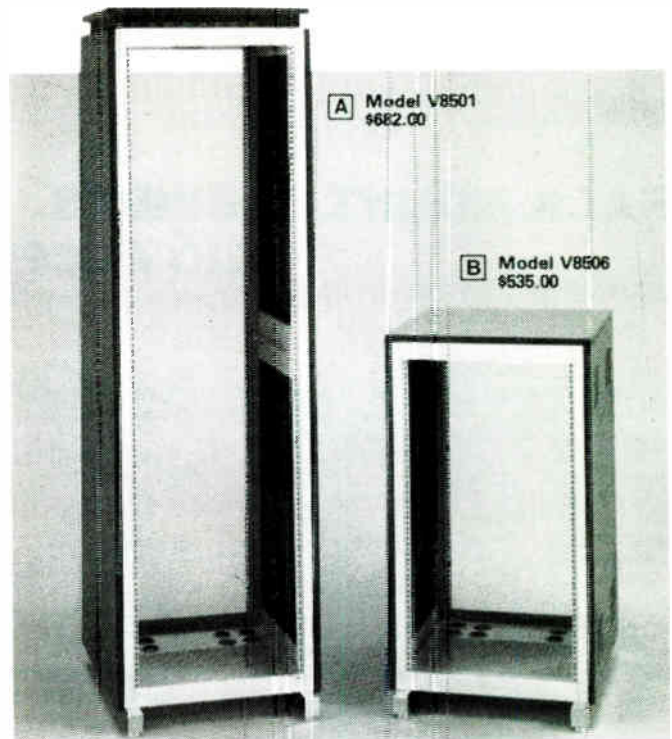
Model F8801 **\$198.00**

6 ADD-A-RACK. Basic frames can be bolted together, with outside panels, to create an economical bank of equipment racks. Side panels are then installed at each end.

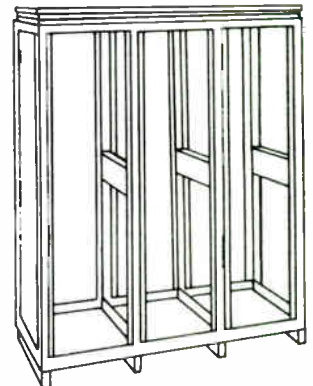
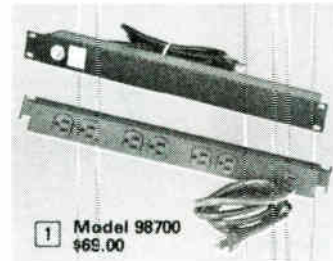
Model V8520 Basic 70" rack without side panels
 Wt. 136 lbs. **\$398.00**

Model 85124 Side Panels (Pair)

Wt. 55 lbs. **\$159.00**



IMPORTANT NOTE: Order Blank Panels Separately



6 ADD-A-RACK



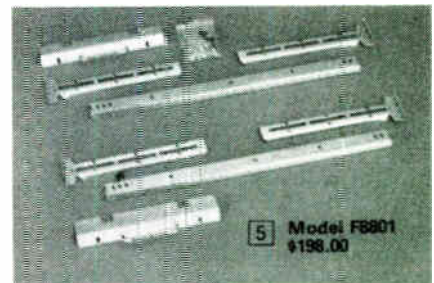
2 Model 85083
 \$169.00



3 Model 85086
 \$65.00



4 Model F8501
 \$195.00



5 Model F8801
 \$198.00

Prices and Specifications Subject to Change Without Notice.

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CONSOLES/CABINETS

RACK MOUNT CABINETS AND ACCESSORIES

A Model P9201. One C9200 frame, one 98006 rack mount cabinet (19 1/4" rack space), one 98008 rack mount cabinet (22 3/4" rack space), one 98081 switcher cabinet (15 1/4" rack-space), two pair 98242 frame brackets, one 92080 monitor shelf, one pair 98245 match plates, and one pair 98246 spacer brackets. 56"H x 36"D x 22"W overall.
 Wt 163 lbs. **\$918.00**

Model P9202 (Not shown). Same as P9201 with 10" wheels.
 Wt 186 lbs. **\$1030.00**

Rack Mount Cabinet. Standard EIA 19" width equipment cabinets. Shipped unassembled with one pair of 98247 support brackets, one pair of attachment brackets for 93580, 92581, 92080, and 93080 shelves, and equipment mounting hardware. Beige enamel finish.

B Model 98006. Rack space—19 1/4". 22"H x 18"D x 20"W.
 Wt 30 lbs. **\$174.00**

C Model 98008. Rack space—22 3/4". 25 1/2"H x 18"D x 20"W.
 Wt 33 lbs. **\$184.00**

D Model 98004. Rack space—14". 16 1/2"H x 18"D x 20"W.
 Wt 26 lbs. **\$159.00**

E Model 98001. Rack space—7" 9 3/4"H x 18"D x 20"W.
 Wt 20 lbs. **\$139.00**

F Model 98000. Rack space—3 1/2". 6 1/2"H x 18"D x 20"W.
 Wt 19 lbs. **\$124.00**

G Model 98002. Rack space—10 1/2". 13 1/4"H x 18"D x 20"W.
 Wt 21 lbs. **\$152.00**

OPTIONAL ACCESSORIES

1 Switcher Cabinet. Bolts to any Winsted rack mount cabinet. 15 1/4" rack space. Wt. 13 lbs.
Model 98081. \$114.00

2 Model 98242. Frame Brackets For mounting cabinets on C9200 frame at any height.
 Wt. 4 lbs. **\$28.00**

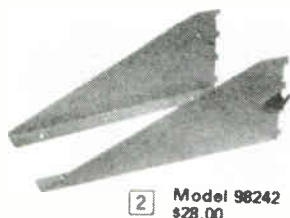
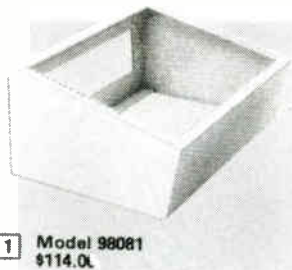
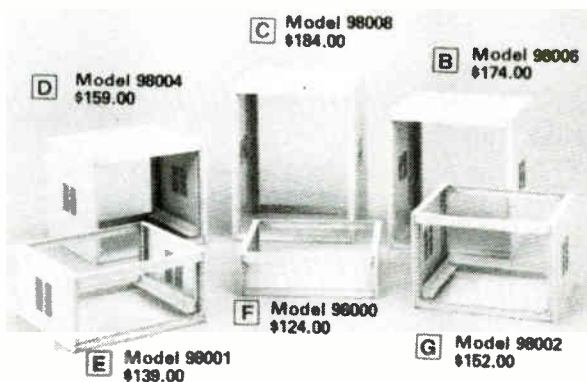
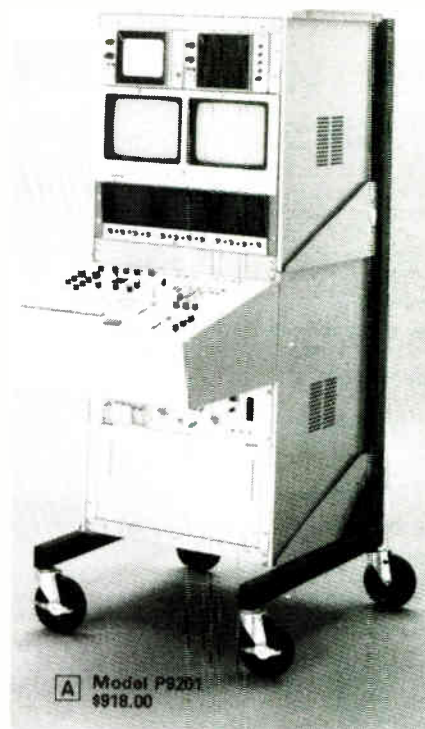
3 Model 98245. Match Plates. For vertically stacking rack mount cabinets.
 Wt. 4 lbs. **\$12.00**

4 Model 98040. Cabinet Top. To top off your enclosed cabinet.
 Wt. 7 lbs. **\$39.00**

5 Model 98700. Power Panel Mounts in any 19" rack mount cabinet. Six rear outlets 15 amp circuit breaker and On/Off switch in front. Three-wire 15 power cord 1 1/4" H x 19" W.
 Wt. 4 lbs. **\$69.00**

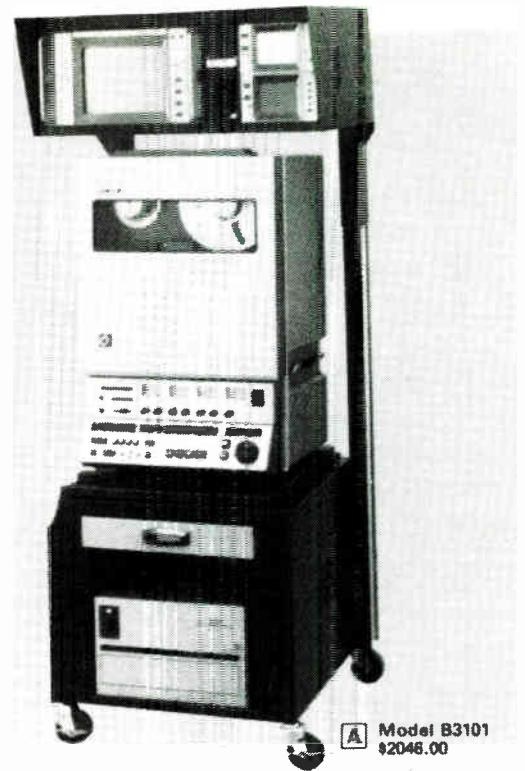
6 Model 98247. Chassis Support Brackets. For installations requiring additional brackets to those included with cabinets 1 1/4" x 1 1/4" x 15 1/2".
 Wt 3 lbs. **\$13.00**

7 Model C9200. 22" basic frame with back panels. 56"H x 26"D x 22"W.
 Wt 55 lbs. **\$287.00**



COMPACT 1" VTR CONSOLES

A total system designed for any 1" VTR



A Model B3101. Complete with 30000 base cabinet, 30720 turntable, B3103 monitor bridge, and two six-outlet electrical assemblies. 78"H x 28"D x 32 3/4"W.
 Wt. 306 lbs. **\$2046.00**

Model B3100. Same as above without 30720 turntable.
 Wt. 255 lbs. **\$1816.00**

Model B3102. Same as above (B3101) with 30320 turntable pull-out VTR shelf (For servicing NEC TT-7000 and RCA TR-800).
 Wt. 324 lbs. **\$2166.00**

B Model B3200 Console. Designed for the compact new 1" VTR. Top rack cabinet has 14" of rack space. Lower rack cabinet has variable rack space, please specify 14" or 19" when ordering. Decorative side panels with an all steel frame. Overall dimensions are 75"H x 26"D x 32"W.
 Wt. 421 lbs. **\$1478.00**

C Model 30000. Base cabinet, master On/Off switch, pull-out drawer, 4" locking casters and six-outlet electrical assembly. 26"H x 28"D x 26 1/2"W.
 Wt. 150 lbs. **\$889.00**

Model B3000. Same as above with 30720 turntable.
 Wt. 201 lbs. **\$1161.00**

Model B3001. Same as above (B3000) with 30720 turntable and 30320 turntable pull-out VTR shelf (for NEC TT-7000 and RCA TR-800).
 Wt. 219 lbs. **\$1281.00**



D Model R3800. Mini Base Console. Low profile for offices or point of sale areas. Locking doors for equipment security. Console can accommodate two VCR's on pull-out shelves or use as mobile cart for new compact 1" VTR's. Three-outlet electrical assembly optional. Overall dimensions: 37"H x 26"D x 24 1/2"W.
 Wt. 220 lbs. **\$719.00**

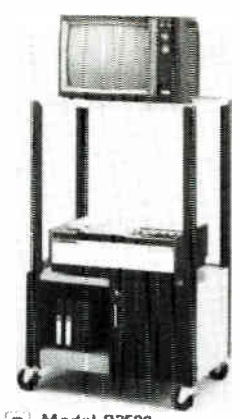
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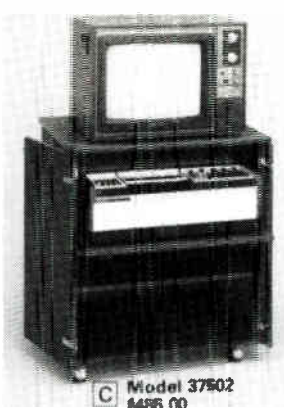
MOBILE CONSOLES



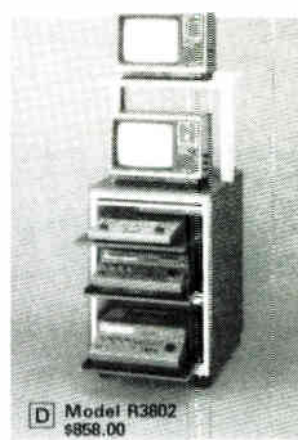
A Model R3400
\$289.00



B Model R3500
\$298.00



C Model 37502
\$486.00

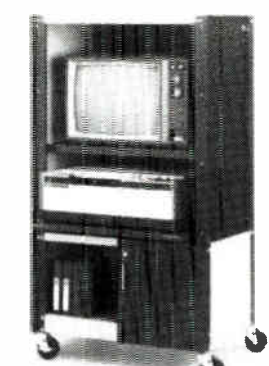


D Model R3802
\$858.00

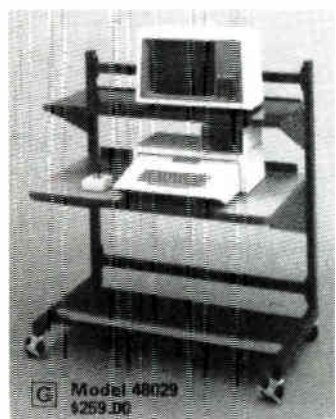


Model 48005
\$295.00

Model 48008
\$325.00



F Model R3601
\$669.00



G Model 48029
\$259.00

MOBILE VIDEO CENTERS

Mobile consoles to organize & store your video equipment

A **Low-Profile Video Center.** Designed for smaller groups and individual use. Monitor shelf is set back slightly to permit easy access to VTR shelf. Top shelf is 15" D x 32" W. Cabinet is 34" H x 22" D x 32" W. Wt. 88 lbs.

Model R3400..... \$289.00

Full Shelf Low-Profile Video Center (Not shown) Same as R3400. Top shelf is a full 22" D x 32" W. Lockable base cabinet is 17½" H x 22" D x 32" W. Overall dimensions: 34" H x 22" D x 32" W. Wt. 98 lbs.

Model R3401..... \$296.00

B **Standard Height Video Center.** Ideal for large groups. Upper shelf accommodates up to a 25" monitor. Top shelf is 22" D x 32" W. Lower cabinet is 17½" H x 22" D x 32" W. Overall dimensions: 54" H x 22" D x 32" W. Wt. 100 lbs.

Model R3500..... \$298.00

Three Shelf Video Center. Same features as our R3500 with the addition of a center shelf for a second VTR or supplies. Center shelf is 22" D x 28" W. Cabinet is 17½" H x 22" D x 32" W. Overall: 54" H x 22" D x 32" W. Wt. 112 lbs. (Not shown)

Model R3501..... \$334.00

C **Executive Video Console.** Holds any ¾" VTR machine and monitor of up to 25". Convenient shelf stores tapes and other video accessories. VTR shelf pulls

out for easy access to controls. Accessory equipment shelf adjusts up or down. Locking cabinet doors for extra security—swing back out of the way a full 250 degrees. Rear opening provides access to cords, cables and control adjustments. Decorative swivel casters make moving easy. 35" H x 22" D x 29" W. Wt. 162 lbs.

Model 37502..... \$485.00

D **Compact Mini Editing Station.** Designed to accommodate ½" or Sony's front loading ¼" editing system. Slide-out shelf for editing controller. Monitor bridge tilts up to 5 degrees and adjusts to three heights. Slide-out shelves (full 13" extension) for VCR's or storage. Locking flip-up doors and rear access panel for equipment security. Overall dimensions: 56" H x 26" D x 24½" W. Wt. 259 lbs.

Model R38C2..... \$858.00

E **Mobile Split-Top Tables.** Both keyboard and monitor tops are 16" deep in either 30" or 42" width. Keyboard top adjusts from 23" to 33" high on 1" centers. Monitor top is fixed at 36" high. Tops are 1½" thick with bumper edge. Cantilever legs have double wall panel leg and chrome base with 2" casters, two locking. Mobile models have 15" deep base shelf and modesty panel with 1½" diameter cable cutouts.

Model 48005. 36" H x 28" D x 30" W. Brown w/Walnut Top. Wt. 89 lbs. **\$295.00**

Model 48008. 36" H x 28" D x 42" W. Tan w/Oak Top. Wt. 91 lbs. **\$325.00**

F **Compact Portable Video Center.** Provides complete mobility, ease of operation, and key-lock security. Top section takes most 19" (some 21") monitors and VTR units. Locking swing-away doors. Ventilated locking rear panel for full access to video equipment. Bottom section provides safe storage for your expensive video accessories. 60" H x 22" D x 32" W. Wt. 179 lbs.

Model R3601..... \$669.00

G **Mobile Micro Computer Station.** Unit consists of monitor shelf and work surface which adjusts on 1" centers. Monitor shelf is 14" x 36" with retaining rim front and rear. Work surface is 20" x 36" with vinyl T-edge and rear retaining rim. 10" D base shelf has foot guard. 3" casters, two locking. Dark Brown enamel finish with Teak top. Overall: 42" H x 20" D x 36" W. Wt. 89 lbs.

Model 48029..... \$259.00

The Winsted Corporation

9801 James Circle
 Minneapolis, MN 55431
 (612) 888-1957 (800) 328-2962

STATIONARY AND MOVABLE DUBBING RACKS

STATIONARY & MOVABLE DUBBING RACKS FOR 1/2" & 3/4" FORMATS

A Model D4500. Stationary type with five walnut woodgrain pull-out VTR shelves. Shelves are mounted on ball-bearing rollers for easy pull-out. Overall: 72" H x 20" D x 32" W
 Wt. 194 lbs. **\$817.00**

B Model D4600. Stationary type with six pull-out VTR shelves. Overall: 72" H x 20" D x 32" W.
 Wt. 212 lbs. **\$911.00**

C Model D4502. Stationary type with four pull-out VTR shelves, one 98002 rack mount cabinet with one pair 98240 adapter brackets. Walnut woodgrain laminate VTR shelf. Overall: 72" H x 20" D x 32" W
 Wt. 226 lbs. **\$897.00**

Model 45000. Caster base for all D4500 and D4600 models. Two position mounting, screw type floor levelers. Overall: 4" H x 28" D x 32" W.
 Wt. 32 lbs. **\$179.00**

D Model D9300. Extended C9302 "L" frame with 4" casters (2 locking), four all-steel pull-out C9310 VTR drawers, and one 93580 monitor shelf. 71" H x 26" D x 30" W
 Wt. 337 lbs. **\$1207.00**

E Model D9202. Extended C9202 "L" frame with 5" casters (2 locking), five 92585 VTR shelves, one 98004 rack mount cabinet, one pair 98242 frame brackets. 72" H x 26" D x 22" W.
 Wt. 190 lbs. **\$1046.00**

F Model D9200. Extended C9205 "L" frame with 5" casters (2 locking). Six 92585 pull-out VTR shelves. Cocoa Brown frame with walnut woodgrain shelves. Beige brackets. 72" H x 26" D x 22" W.
 Wt. 161 lbs. **\$874.00**

G Model D9303. Basic C9300 frame, three pull-out C9310 VTR drawers and one 93580 monitor shelf. 56" H x 26" D x 30" W.
 Wt. 203 lbs. **\$955.00**

ADD-A-RACK

Basic rack frames can be bolted together without side panels to form an economical "in line" duplicating center. Side panels are installed at each end. Shelves can be installed at 1" increments to fit exact equipment needs.

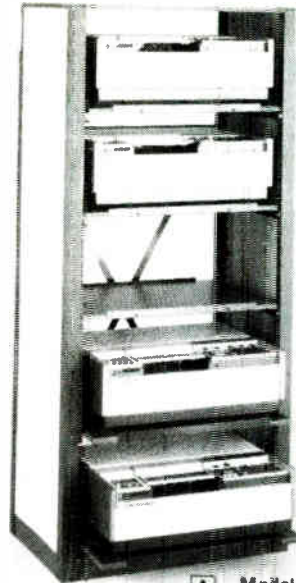
Model D4501. Basic rack without side panels.
 Wt. 89 lbs. **\$263.00**

Model 45121. Side panels (Pr.)
 Wt. 55 lbs. **\$84.00**

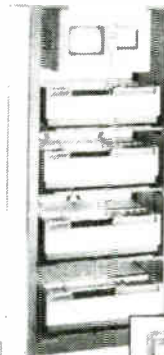
Model 45580. Pull-out shelves.
 Wt. 18 lbs. **\$94.00**



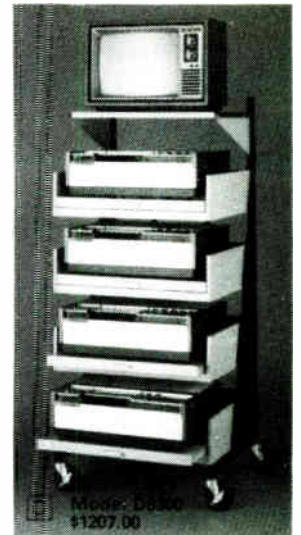
B Model D4600
\$911.00



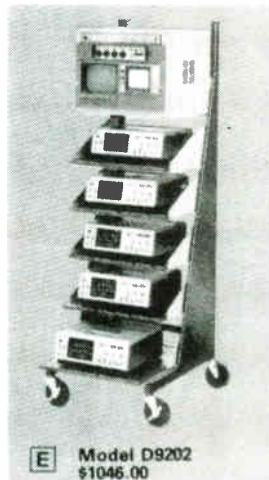
A Model D4500
\$817.00



C Model D4502
\$897.00



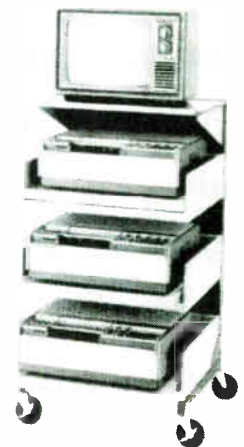
D Model D9300
\$1207.00



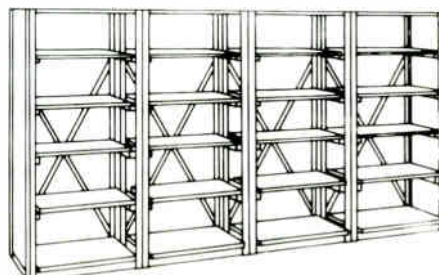
E Model D9202
\$1046.00



F Model D9200
\$874.00



G Model D9303
\$955.00



Prices and Specifications Subject to Change Without Notice.

VE-125

The Winsted Corporation

9801 James Circle
 Minneapolis, MN 55431
 (612) 888-1957 (800) 328-2962

EDITING AND PRODUCTION CONSOLES

LOW PROFILE EDITING & PRODUCTION CONSOLES

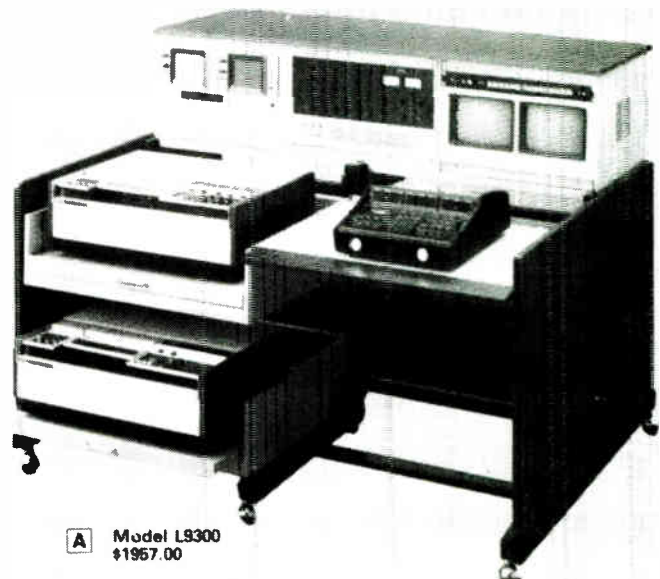
**For operator convenience
 and over-the-top viewing**

A Model L9300. Two 93021 short frames, two 92100 back panels, one pair of 93200 leg extensions, two 93081 monitor/rack mount shelves, three 98002 rack mount cabinets (10½" rack space each), one C9311 pull-out editor shelf, two C9310 pull-out VTR drawers, one pair 93521 wood side panels and one 93540 wood top. Overall dimensions: 46" H x 45" D x 62" W
 Wt. 440 lbs. **\$1957.00**

B Model L9309. Includes one 93021 short frame, one 93100 back panel, one 92021 short frame, one 92100 back panel, two C9210 pull-out VTR shelves, one C9311 pull-out editor shelf, one 92581 monitor shelf, one 93580 monitor shelf, one 93200 leg extension and one pair of 93521 wood side panels. Overall dimensions: 32" H x 52" W x 45" D
 Wt. 326 lbs. **\$1352.00**

C Model L9306. Two 92021 short frames, two 92100 back panels, one 93021 short frame, one 93100 back panel, two 92586 editor shelves, two C9310 pull-out VTR drawers, two 92581 flat monitor shelves, one 93582 editor shelf, two 98006 rack mount cabinets (19¼" of rack space each), one pair of 93200 leg extensions and one pair of 93521 wood side panels. Overall dimensions: 54" H x 45" D x 76" W
 Wt. 456 lbs. **\$2047.00**

D Model L9307. Two 93021 short frames, two 93100 back panels, one C9311 pull-out editor shelf, one C9312 pull-out switcher shelf, three 98002 rack mount cabinets (10½" of rack space), two 93081 monitor/rack mount shelves, one pair of 93520 wood sides, one 93540 wood top, one C9200 "L" frame, one pair of 93200 rear leg frame extensions, and three C9210 pull-out VTR shelves. Dimensions of editing console are 46" H x 45" D x 62" W. VTR console is 56" H x 26" D x 22" W.
 Wt. 593 lbs. **\$2801.00**



A Model L9300
\$1957.00



B Model L9309
\$1352.00



D Model L9307
\$2801.00



C Model L9306
\$2047.00

The Winsted Corporation

9801 James Circle
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 (612) 888-1957 (800) 328-2962

MOBILE EDITING CONSOLES

MOBILE EDITING CONSOLES



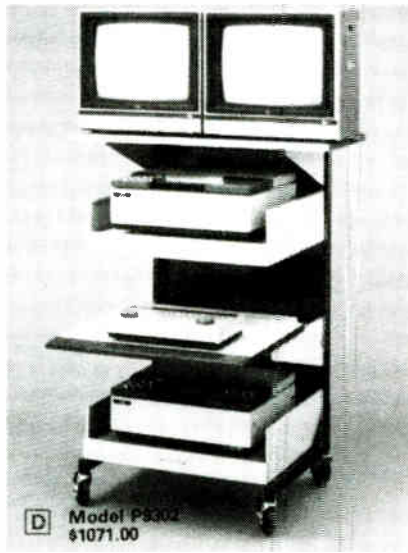
B Model E9306
 \$2073.00



A Model E9303
 \$1415.00



C Model P9207
 \$1211.00



D Model P9302
 \$1071.00

Interchangeable shelf and drawer modules adjust up and down in 1" increments to best suit your needs.

A Model E9303. Includes two complete sets of C9300 "L" frames with "5" swivel casters (4 locking) three 93580 monitor shelves, one 93582 editor shelf, one mini-monitor shelf 93084, and two all-steel C9310 VTR drawers. Frames can be joined to make an "in-line" console. Overall dimensions: 56"H x 28"D x 60"W. Wt. 300 lbs. **\$1415.00**

B Model E9306. Three complete C9300 "L" frames with 5" swivel casters (6 locking), three 93580 monitor shelves, one 93582 editor shelf, four all-steel C9310 drawers, and one 93084 mini-monitor shelf. Each of three consoles shown set-up. Individual consoles are 56"H x 28"D x 30"W overall. Wt. 428 lbs. **\$2073.00**

C Model P9207. Includes two C9200 "L" frames, two C9210 pull-out VTR shelves, one 92586 editor shelf and two 92581 monitor shelves. Overall dimensions: 56"H x 44"W x 28"D. Wt. 266 lbs. **\$1211.00**

D Model P9302. One C9300 "L" frame with 5" casters (2 locking), one 93581 extended monitor shelf, two C9310 VTR drawers and one C9311 editor shelf. Overall dimensions: 56"H x 26"D x 42"W. Wt. 208 lbs. **\$1071.00**

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ALPHA TECHNOLOGIES

1305 Fraser Street, D-6
 Bellingham, WA 98226 USA
 (206) 671-7703

POWER SUPPLIES

AP SERIES CATV STANDBY POWER SUPPLIES

Alpha Standby Power Supplies protect your CATV system against powerline disturbances and complete loss of utility power. In addition, they are designed to operate in harsh outdoor environments with wide temperature fluctuations. Continuity and quality of supply is maintained independently of commercial power or weather.

Reliability is the key to the value of a standby power supply—reliability through design, workmanship and many years of product experience.

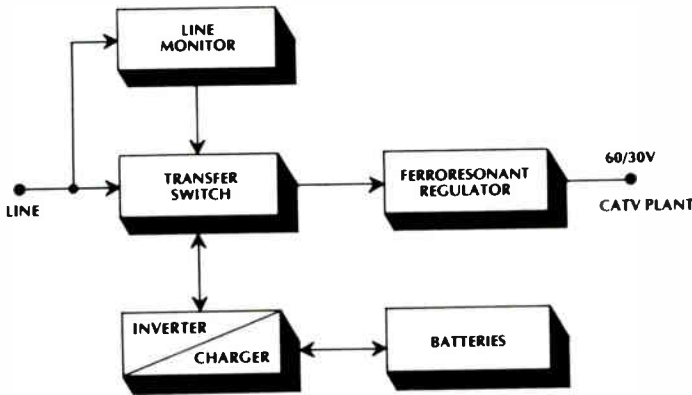
Cable operators, large and small, have recognized Alpha's commitment to this unsurpassed reliability—over 20,000 Alpha Standby Power Supplies are now installed across North America and Europe.

Operation of the Alpha Standby Power Supply:
 The unit consists of a Ferroresonant Regulator, Battery Charger, Bank of Batteries, Inverter, Transfer Switch and Line Monitor as shown in the Block Diagram.

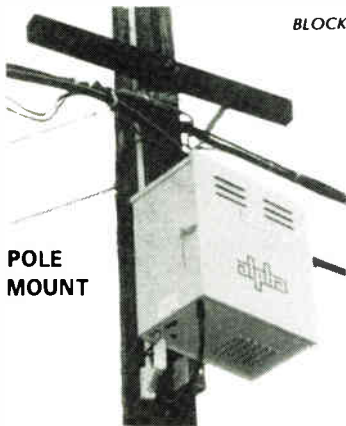
During normal operation, power passes through the Transfer Switch to the Ferroresonant Regulator, which feeds the CATV system. This regulator provides line and load regulation and prevents high speed line transients from entering the cable system. Simultaneously the automatic temperature-compensated charger maintains the batteries at full capacity. Standby time and battery life are maximized. When the line voltage falls below a preset level, the Line Monitor activates the Transfer Switch. This switch connects the battery driven inverter to the regulator, at the same time providing positive isolation from the power line. To ensure uninterrupted service, transfer takes place in less than one cycle. Frequency and phase relation to the line are preserved through crystal control and phase-lock circuitry.

In case of prolonged power outages, an adjustable Low Battery Voltage Shutdown prevents irreversible damage to the batteries. Transfer back to utility power is delayed by 20-30 seconds to allow for line settling.

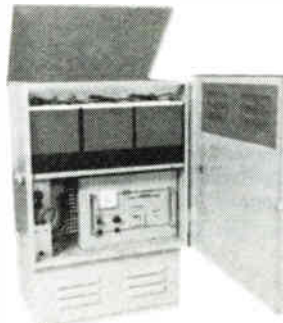
All Circuit functions are designed with one goal in mind...to provide your system with the cleanest, most reliable power, continuously.



BLOCK DIAGRAM



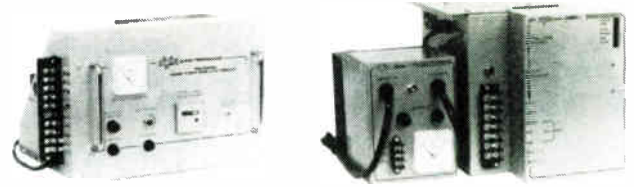
POLE MOUNT



PEDESTAL MOUNT

VRF-2

Prices and Specifications Subject to Change Without Notice.



POWER MODULES FOR AP SERIES STANDBY POWER SUPPLIES

The AM Series power Modules are the operational heart of all ALPHA Standby Power Supplies. They contain the Battery Charger, the Inverter, the Transfer Switch and all necessary Control Electronics to provide the back-up power function in a compact, smoothly functioning and reliable package.

All AM Series modules fit any available AP Series enclosures and all options. Mounting is by means of a simple, one screw tie down. Should service be required the entire module can be removed after a few screw terminal connections are undone. To ensure uninterrupted service while performing this procedure, Alpha highly recommends the use of the Model AP-60S Service Power Supply, shown below.

The modules have the following features and specifications:

FEATURES:

- Three prong grounded line cord input
- Barrier terminal strip for battery, output and options connections
- Output current meter, 0-15 AMPS iron vane type (except AM-8801)
- Battery fuse (30 AMP) or breaker (40 AMP)
- Output fuse or breaker (15 AMP)
- 'Line On' and 'Standby' indicator lights (except AM-8801)
- Optional elapsed time meter
- Front panel pushbutton for test/reset functions with APM, RSM or RPM
- Heavy duty high temp insulation transformer for high reliability
- Upward compatibility through easy to exchange plug-in boards
- Positive line-disconnect through mechanical relay—no back-feed
- High output float/equalize type charger—temperature compensated
- Phase-synchronized transfer and re-transfer from line to standby
- Crystal controlled clock for accurate frequency during outage
- Output waveform virtually unchanged during inverter operation
- Completely overload and short-circuit protected—automatic recovery
- Easy service—all components mounted on chassis and two P.C. boards

SHORT FORM SPECIFICATIONS:

Model	AM-660 (SE)	AM-660-14	AM-960 (SE)	AM-8801	AM-880T
Input Voltage VAC *	120(240)	120	120(240)	120	120
Input Current AMP *	8(4)	9	10(5)	9	7
Output Voltage VAC *	30(60)	30/60	30/60	120	60
Output Current AMP **	12(10)	14	15(12)	10	12
Output Power VA **	720(400)	840	900(720)	1200	720

* Nominal, 60Hz/50Hz

** Maximum

MODEL AP60S—SERVICE POWER SUPPLY

The Model AP60S is the ideal service companion to the AP Series Power Supplies. It is simply plugged into one of the enclosure's utility outlets and connected to the Service Power Inserter, located in the output filter. The switch is thrown and cable power is derived from the Service Power Supply. The Standby Module can now be serviced, removed or replaced, ensuring a complete fix of the problem.

The Model AP60S also makes an excellent emergency or bench power supply.

SPECIFICATIONS FOR MODEL AP60S

Input Voltage
 120 VAC - Nominal +/- 15%, 60Hz
 Output Voltage
 30/60 VAC RMS Nominal
 Output Current
 14 AMPs Maximum
 Regulation
 +/- 1% Line and Load Overload
 and Short-circuit Protected
 Size 8.5 H x 8 W x 10 D (inches)
 215 x 200 x 225 (mm)
 Weight 28 lbs
 13 kg



BARCO ELECTRONIC n.v.

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P.O. Box 699 - 30 Chapin Rd.
Pine Brook, NJ 07058
201) 882-0584

TV DEMODULATOR



TVDM 34



REMOTE CONTROL

TVDM 34 TV DEMODULATOR OFF-AIR TELEVISION DEMODULATOR

- Digital search tuning system using the latest voltage synthesis techniques
- 32 channel memory capacity
- Sequential channel selection
- 7 segment LED display of the selected channel
- Tuning indication with LED bar indicating the position of the channel in the band
- Mono- and multi-standard version
- 2 video and 1 audio output
- Built-in monitoring loudspeaker
- Headphone and loudspeaker connection
- 19" rackmountable (2 units height)
- Fully modular construction for fast and easy servicing
- Standard equipped with two front handles

Applications

The TVDM 34 demodulator accepts TV off-air signals to deliver video and audio output signals. This demodulator can be used as a separate unit or in combination with a BARCO monitor (CS, CM), thus transforming it into a receiver monitor and with the BARCOVISION video projector.

Versions

Mono-standard: BG, 1; others on special request
Multi-standard: BG-DK-I-L-MN; others on special request

Option

Wired remote control: 2 x 16 preselections, volume control, off

Accurate program searching

The digital search tuning system uses the latest voltage synthesis techniques.

By pressing the "f →" button (search), the system moves through each band, stopping whenever a transmitter is located.

This transmitter is automatically stored in the memory on the displayed program selection channel, retaining it for future use, even after mains supply interruptions. Over-programming to another preselection channel is possible with the "X → Y" button, when using the optional wired remote control. LED indicators show the tuning range and the band being searched.

A presettable fine tuning facilitates precise tuning on the chosen transmitter.

A sequential channel selector is provided with a two digit 7 segment LED display of the selected channel.

Memory information is protected during mains supply interruptions. Volume control for the built-in audio monitoring facility.

For multi-version

6 switches allow standard selection for the first 6 programs of the sequential channel selector. The others being preset for the BG standard.

Inputs and Outputs

Aerial input 75 ohm (unbalanced)
Video out: 2 x BNC-sockets
1 Vpp CVBS
Audio out: 1 x DIN socket
1.2 Vpp/10 k ohm
External loudspeaker: DIN socket
8 ohm, 6 W sinus
Input for wired remote control

SPECIFICATIONS

Tuner:

Tuning range: VHF band I: 48 - 110MHz
band III: 108 - 296MHz
UHF band IV/V: channels 21-69
from 0-28 V for band I,
band III, band IV/V
Noise figure: VHF band I: < 8.5dB
band III: < 8dB
UHF band IV/V: < 10dB

Tuning voltage.

Noise figure:

Power supply:

Voltage: 110/220V fuse switchable
Frequency: 50-60Hz
Consumption: 25 watt

Dimensions:

Front plate: W 483mm H 89mm
Cabinet: W 483mm H 90mm* D 250mm

*inclusive feet

98-25350 TVDM 34 Off-Air Demodulator \$800.00
94-23086 Remote Control Unit 75.00

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

EARTH STATION ANTENNA

MODEL 6053 3.7 METER ANTENNA W/PRIME FOCUS FEED

Features

- Lightweight reflector reduces size of cartons and shipping costs. Easily transported to installation site.
- Individual reflector panels are interchangeable and field replaceable.
- Antenna meets proposed FCC 2° spacing requirement.
- Feed can be rotated thru 360° of polarization adjustment from the rear of the antenna.
- Textured front panel diffuses sunlight and reduces solar heating at the focal point.

The Blonder-Tongue Model 6053 is a 3.7 meter Earth Station Antenna featuring a segmented, fiberglass reflector, dual polarized prime focus feed, and a T-Bar Azimuth/Elevation Mount. The Model 6053 is designed for receive-only applications in the 3.7-4.2 GHz range and is especially well suited as a low cost, easily installed SMATV antenna. The antenna is capable of video programming anywhere in the continental United States from domestic satellites.

The parabolic reflector consists of 10 identical self-aligning sections of lightweight compression-molded fiberglass (FRP) material resulting in an excellent strength-to-weight ratio, easy assembly and trouble-free ground installation.

The Model 6053 antenna comes complete with reflector, T-Bar mount and prime focus feed. The T-Bar mount's pointing accuracy is within .2° at a wind velocity of 65 MPH and is designed to withstand winds of 125 MPH with optional braces. The antenna can be easily erected at a site with no special tools or equipment.



Specifications

Electrical

Operating Frequency Range
3.7 to 4.2 GHz
Feed Type
Prime Focus
Gain at Midband
41.7 dB
VSWR
1.25:1
Polarization
Dual linear
Polarization Adjustment
360° continuous
Cross-Polarized Suppression
30 dB minimum on axis
Isolation between Ports
30 dB minimum for dual linear operation
Beamwidth at Midband
15°
First Sidelobe Level
-18 dB typical
Radiation Pattern, Averaged
29-25 log θ # 7
-8 dB # 92
32-25 log θ # 48
-10 dB # 180

Antenna Noise Temperature (referenced for OMT port) typical

Elevation	Ta
5°	47 K
10°	38° K
20°	28° K
30°	24 K
40°	23 K

Feed Flange
CPR-229G

Environmental

Temperature Range
Operational -40°C to +60°C
Wind Loading (at 0°C (-32 F))
Operational 104 km/h (65 mi/h) wind gusting to 136 km/h (85 mi/h)
Survival Standard 177 km/h (110 mi/h) without braces
Optional 200 km/h (125 mi/h) with high wind braces
Meets or exceeds MIL-STD-810B Atmospheric Conditions
Impervious to salt, pollutants, and corrosive contaminants as encountered in coastal and industrial areas

Mechanical

Mount Configuration
Azimuth/Elevation T-Bar Mount
Aligns to any satellite within the visible geostationary orbit serving the continental U.S.
Reflector
10 segment fiberglass (FRP) 3.7M (12 ft) diameter
Shipping Dimensions

	Cu Ft	Lbs
Reflector	100	575
Back-up Structure	16	475
Feed	14	50
Complete Antenna	130	1100
Optional Inground Mast	2	250

Options

High wind braces
In-ground mast

Note: Model 6053 antenna complies with FCC Rule Para. 25.209 and CCIR Recommendation 465 and Report 391.1

6053 Dual polarity w/T-Bar mount \$2318.00

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

EARTH STATION ANTENNAS

4.6 METER EARTH STATION ANTENNAS

Model 6048 with Prime Focus Feed

FEATURES

- Elevation-Over-Azimuth Mount for ease of operation
- Prime Focus Feed for minimum system cost
- Protected environment for LNCs
- Designed for minimum shipping and installation costs
- No panel alignment or testing required
- Minimum site preparation required
- Easy installation, minimum maintenance

4.6 Meter Antenna

Blonder-Tongue's field-proven 4.6-meter earth station antenna now includes a standard elevation-over-azimuth mount for ease of operation and pointing accuracy. The antenna is designed for receive-only applications in the 3.7 to 4.2 GHz range and is especially well suited for CATV operations receiving video programming from domestic satellites.

The parabolic reflector is made of twelve precision die-stamped aluminum panels for consistent surface accuracy. The twelve panels are uniform and completely interchangeable, allowing convenient handling, lower shipping costs and easy installation. After a foundation has been prepared, two men can install the antenna in less than one day. No special tools are required and no part weighs more than 100 pounds (45 kg).

Elevation-Over-Azimuth Mount

The 4.6-meter earth station has a standard elevation-over-azimuth mount, engineered to provide continuous satellite arc coverage from any location in the contiguous United States. Pointing the antenna is rapid and accurate. Complete 360° azimuth coverage does not require alignment of the foundation to a specific heading, eliminating the possibility of installation errors associated with foundation centerlines.

Economical Pier Foundation Kit

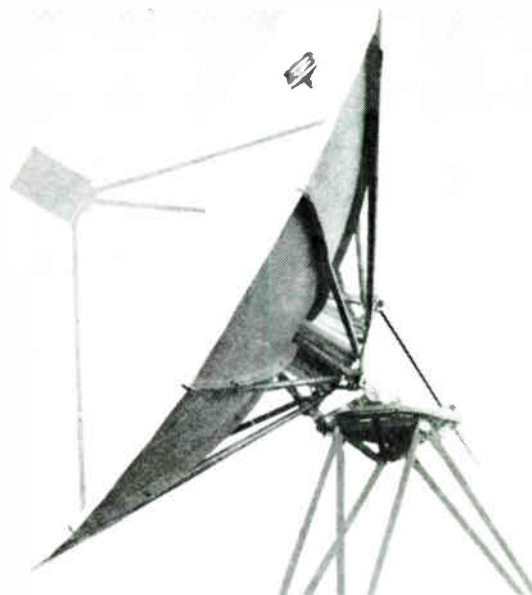
A cast pier foundation kit is available as an economical alternative to a concrete slab foundation. The pier foundation is designed for steady 100 mph windloads. It consists of three cast pier inserts. A steel framework bolts the inserts into a triangle which is lowered into three augered holes containing prepared re-bar cages. The holes are then filled with concrete. Installing the pier foundation is less time consuming and less expensive than pouring a concrete slab foundation.

NOTE: When ordering antennas with pier foundation kits please specify: Model 6049 for Prime Focus Feed Antenna/Pier Foundation Kit.

High-Performance Prime Focus Feed

Blonder-Tongue's standard prime focus feed offers consistent high quality and unusual economy in a mid-sized earth station antenna. Sidelobe performance is excellent meeting 29-25 log θ sidelobe specifications. The feed system provides dual-polarization capability in the 3.7 to 4.2 GHz range, and can be manually rotated to any position.

- | | | |
|-------------|-----------------------------------|-----------|
| 6048 | AZ/EL mount w/anchor bolts | \$5107.00 |
| 6049 | AZ/EL mount w/pier foundation kit | \$5345.00 |



4.6 METER ANTENNA WITH PRIME FOCUS FEED

SPECIFICATIONS

Electrical, Prime Focus Feed

Operating Frequencies
3.7 to 4.2 GHz
Gain at Midband (referenced to OMT port)
Receive
43.0 dBi minimum at 3.95 GHz
VSWR
1.31 maximum
Polarization
Receive-only dual linear
Polarization Adjustment
360° continuous
Cross-Polarized Suppression
35 dB minimum on axis
Isolation between Ports, Receive
35 dB minimum for dual linear operation
Beamwidth at Midband (nominal)
3 dB
Receive 11°
First sidelobe Level
-20 dB
Prime Focus Radiation Pattern Averaged Sidelobe Envelope*
Receive (where θ is angle off axis)
29-25 log θ dBi, $2^\circ \leq \theta \leq 7^\circ$
- 8 dBi, $7^\circ \leq \theta \leq 9.2^\circ$
32-25 log θ dBi for $9.2^\circ \leq \theta \leq 48^\circ$
-10 dBi, $48^\circ \leq \theta \leq 180^\circ$
Antenna Noise Temperature (referred to OMT port) typical
Elevation
5° 50K
10° 34K
15° 27K
20° 24K
30° 20K
40° 18K
Feed Interface
Receive
CPR 229F Flange
General
Antenna Type
Prime focus or cassegrain
Antenna Diameter
4.6m (15.1 ft.)
Reflector Construction
12 panels, precision die-stamped

Mount Configuration
Elevation-over-Azimuth
Satellite Coverage
Any satellite located between 5° and 90° elevation from any location
Net Weight (approximate)
544 kg (1200 lbs)
Shipping Weight (approximate)
1043 kg (2300 lbs)
Shipping Volume (approximate)
57m³ (200 ft³)

Environmental
Wind Loading**
Operational
Pointing Accuracy in 96 km/h (60 mph) wind
Gusting to 137 km/h (85 mph)
20° RMS @ 15° C (59° F)
25° RMS @ -40° (-40° F)
Temperature, Operational -40° C to +65° C
(-40° F to +149° F)
Survival (steady state wind velocities)

No ice
160 km/h (100 mph) from any direction
@ 15° C (59° F)
151 km/h (94 mph) from any direction
@ 0° C (32° F)
145 km/h (90 mph) from any direction
@ -40° C (-40° F)
5 CM (2 in.) Radial Ice
112 km/h (70 mph) from any direction
@ 0° C (32° F)
Solar Radiation
11 mw/mm² (710 mw/m²)
Atmospheric Conditions
Salt, pollutants, and corrosive contaminants as encountered in coastal and moderate industrial areas

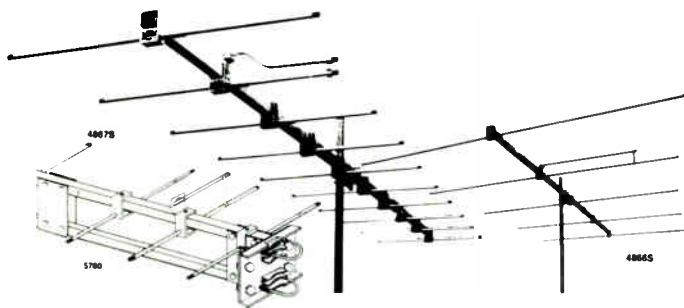
Options
Pier Foundation Kit

**All conditions assume adjustable components securely clamped

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

SINGLE CHANNEL PROFESSIONAL ANTENNAS



BTY* SERIES

VHF Single Channel Professional Antennas

STOCK NOS. 4866S and 4867S(-)

- Patented* off-center driven element provides excellent 75 ohm match without use of fragile capacitors as required in gamma match antennas
- UPS shippable for reduced freight and handling cost
- Hard drawn, heavy wall aluminum boom for added strength. Square boom design assures positive lock with mast mounting bracket
- End-sealed aluminum elements for maximum vibration dampening. Lo-Band elements are fiber filled
- Antennas constructed to withstand 125 mph winds
- Elements are permanently affixed to an aluminum mounting block. Block has square interior aperture to completely encircle boom for optimum element alignment while preventing rotation
- Heavy duty bracket has serrated teeth for added grip to mast. Bracket accepts mast sizes up to 2" in outside diameter
- B-T Cantilever Mount available for rear mounting on a tower or mast. Unique design permits vertical or horizontal orientation of mast

BTY series single channel 5 and 10 element antennas are high quality, professional VHF/FM antennas designed for CATV and MATV installations. These antennas are designed with a two piece boom permitting the antennas to be shipped via UPS to reduce freight and handling costs. They are available for channels 2 thru 6, FM and 7 thru 13. NOTE: BTY-FM antenna has two driven dipoles for a total of six elements. BTY VHF antennas feature high gain and a narrow beamwidth at the individual channel. Two piece, square boom construction and end-sealed aluminum elements provide added strength, excellent wind resistance and exceptional weathering properties. The heavy duty mounting bracket is positioned at the antenna's center of gravity for balanced mounting to the mast. BTY antennas can also be rear mounted vertically or horizontally on a tower leg or mast (1-1/4" to 2-1/2" OD) using a B-T Model 5760 Cantilever Mount. BTY Series antennas feed 75 ohm coaxial cable downwards.

*Pat. No. 4,218,686. Other Pat. Pend.

Material and Finish

Boom—6063-T6 aluminum tubing, 1-1/4" Sq.; .062 wall thickness.
Elements—6063-T52, 1/2" Dia. aluminum tubing; .049 wall thickness.

Element Mounting Block—solid extruded aluminum; 1-3/4" x 2-3/4" x 1".

Mast Mounting Bracket—14 gauge steel with electroless nickel plating.

6063-T6 is a hi-strength aluminum/magnesium/titanium alloy.

Output Connector: 1-"F" Type

Shipping Weight: 13.2 lbs. (Max.)

Shipping Size: 4" H x 5-1/2"W x 85"L (Max.)

SPECIFICATIONS

Electrical/5 Element

Gain Over Isotropic: 112 dBi

Gain Over 1/2 Wave Dipole: 9 dB

VSWR: 1.32

Return Loss: 17 dB

Front To Back Ratio: 20 dB

Impedance: 75 ohms

Beamwidth (-3dB):

Vertical: 70°

Horizontal: 63°

Bandwidth: 8 MHz, TV channels
23 MHz, FM

Attenuation Of Undesired

Side Lobes: 22 dB

Accessories Supplied: Mast

mounting bracket assembly,

Weather Boot

Electrical/10 Element

Gain Over Isotropic: 13.2 dBi

Gain Over 1/2 Wave Dipole: 11 dB

VSWR: 1.22

Return Loss: 20 dB

Front To Back Ratio: 21 dB

Impedance: 75 ohms

Beamwidth (-3dB):

Vertical: 49°

Horizontal: 51°

Bandwidth: 8 MHz, TV channels

Attenuation Of Undesired

Side Lobes: 25 dB

Accessories Supplied: Mast

mounting bracket assembly,

Weather Boot

MECHANICAL

Model No.	Stock No.	Ch. No.	Maximum Element Width		Boom Length		Turning Radius		Wind Resistance Lbs.*	
			In.	Cm	In.	Cm	In.	Cm	No Ice	1/2" Ice
BTY-10-7	4867S-7	7	33	84	131	333	64	163	52.56	70.27
BTY-10-8	4867S-8	8	32	81	126	320	63	160	50.83	68.33
BTY-10-9	4867S-9	9	32	81	122	310	62	157	49.44	66.38
BTY-10-10	4867S-10	10	31	79	118	300	60	152	48.00	64.44
BTY-10-11	4867S-11	11	31	79	115	292	58	147	47.00	63.00
BTY-10-12	4867S-12	12	29	74	110	279	56	142	45.00	60.55
BTY-10-13	4867S-13	13	28	71	106	269	53	135	43.88	58.60

BTY-5-2	4866S-2	2	106	269	128	325	60	152	49.84	66.16
BTY-5-3	4866S-3	3	97	246	116	295	54	137	45.67	61.78
BTY-5-4	4866S-4	4	85	216	105	268	48	122	41.85	56.44
BTY-5-5	4866S-5	5	75	191	96	244	44	112	38.73	52.00
BTY-5-6	4866S-6	6	71	180	96	244	44	112	38.73	52.00
BTY-5-FM	4866S-FM	FM	64	163	120	305	68	173	47.06	63.73

*Thrust in lbs. transferred to supporting structure based on 100 miles per hour sustained wind on antenna.

CANTILEVER ANTENNA MOUNT

STOCK NO. 5760

The Blonder-Tongue Model 5760 Cantilever Mount consists of a heavy duty square aluminum boom and all clamping hardware required for rear-end mounting of Blonder-Tongue antennas, Nos. 4866, 4867, 4871. The use of cantilever end-mounting is widespread in CATV systems since the antennas are usually attached to tower legs rather than to masts. The cantilever is designed to be mounted parallel to and below the antenna boom. Boom is 1-1/4" square aluminum tubing (6063-T6), 64-3/8" long. Mounting plates and brackets are #41 gauge stainless steel.

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

YH-SERIES YAGI ANTENNAS

...Extra rugged for the highest quality systems.

- Extra heavy duty construction
- Superior high-gain performance
- VSWR 1.5 (14dB R.L.)
- Bandwidth 6MHz

The most rugged single-channel TV antennas available. Boom and all elements are made of heavy-duty, hard drawn aluminum tubing. Internal vibration dampers are sealed into all elements over four feet long. One piece dampers run the full length of the element to eliminate fatigue producing vibrations, greatly increasing the life of the antenna.

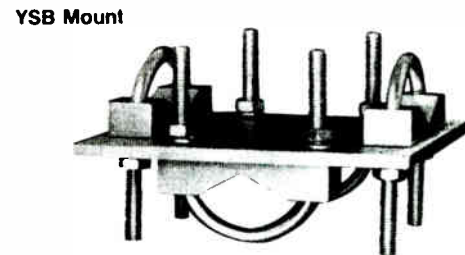
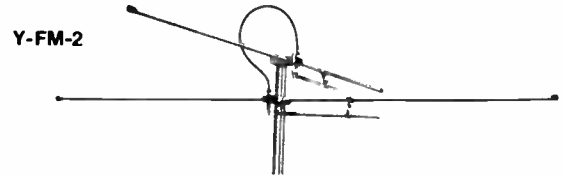
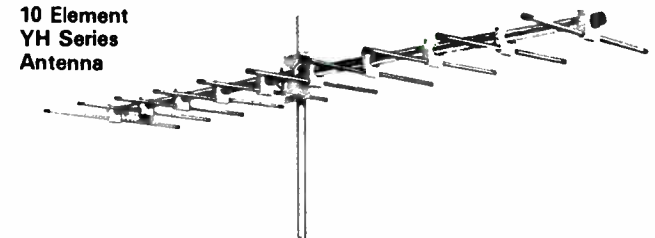
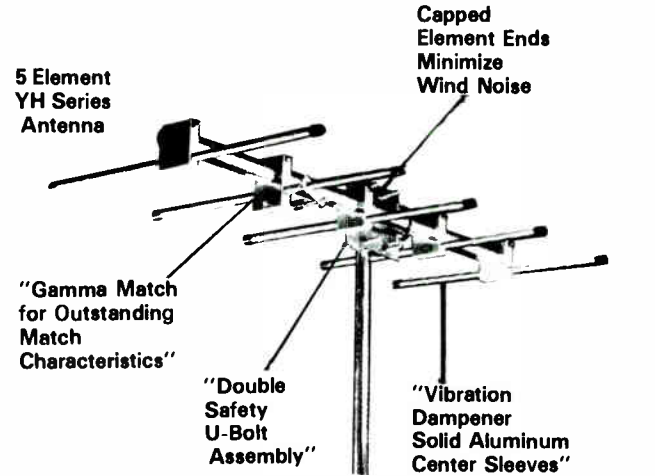
A gamma matching system with a completely encapsulated, moisture and weatherproof capacitor provides direct 75-ohm coaxial feed with no external matching baluns. Maximum transfer of received signals from the antenna to the feed cable is assured.

No holes are drilled in the boom. Elements are clamped on. Element ends are sealed with caps. Wind noise is minimized.

MECHANICAL DETAILS

- Boom — 0.058" wall thickness, 6061-T6 hard drawn aluminum, 1-1/2" outside diameter
- Elements — 0.058" wall thickness, 6061-T6 hard drawn aluminum, 3/4" outside diameter. Low band elements are fiber filled
- Element-to-Boom Connection — 3-1/2" x 3" x 1" solid aluminum block
- Boom-to-Mast Mounting — 6" x 7", 1/4" solid aluminum plate with four 3/8" cadmium plated U-bolts
- Accepts mast sizes from 2" to 2-1/2" outside diameter
- Wide element spacing provides typical gain 2dB higher than competitive models

RUGGEDIZED SINGLE-CHANNEL ANTENNAS



Model No.	Ch.	No. El.	Gain dBI	F-B Ratio	Beam Width -3dB		W.	L	Wind Resistance Lbs. **	
					E	H			No Ice	1/2" Ice
5 Element Lo-Band-Stock Nos. 4748 & Ch. No. or FM										
YH-25	2	5	10.7	23dB	52°	63°	103"	122"	48.9	81.3
YH-35	3	5	10.7	23dB	52°	63°	93"	111"	44.4	73.5
YH-45	4	5	10.7	23dB	52°	63°	85"	101"	42	67.5
YH-55	5	5	10.7	23dB	52°	63°	74"	89"	39	63
YH-65	6	5	10.7	23dB	52°	63°	69"	83"	34.8	56.4
YH-FM5	FM	5	10.7	23dB	52°	63°	66"	98"	37.5	59.4
5 Element Hi-Band-Stock Nos. 4758 & Ch. No. or FM										
YH-75	7	5	10.7	23dB	52°	63°	33"	55"	25.5	37.8
YH-85	8	5	10.7	23dB	52°	63°	32"	54"	24.9	36.9
YH-95	9	5	10.7	23dB	52°	63°	31"	52"	24.3	36.3
YH-105	10	5	10.7	23dB	52°	63°	30"	51"	23.7	35.1
YH-115	11	5	10.7	23dB	52°	63°	29"	49"	23.4	34.5
YH-125	12	5	10.7	23dB	52°	63°	28"	48"	23.1	33.9
YH-135	13	5	10.7	23dB	52°	63°	27"	47"	22.2	32.7
10 Element Lo-Band-Stock Nos. 4749 & Ch. No.										
YH-210	2	10	13.6	27dB	38°	48°	103"	268**	125.7	215.4
YH-310	3	10	13.6	27dB	38°	48°	93"	256**	117.3	201.6
YH-410	4	10	13.6	27dB	38°	48°	85"	222**	111.3	191.4
YH-510	5	10	13.6	27dB	38°	48°	74"	198**	104.7	180.3
YH-610	6	10	13.6	27dB	38°	48°	69"	185**	96	165.3
YH-FM10	FM	10	13.6	27dB	38°	48°	66"	182**	100.5	174
10 Element Hi-Band-Stock Nos. 4759 & Ch. No.										
YH-710	7	10	13.6	27dB	38°	48°	33"	119"	51.3	75.9
YH-810	8	10	13.6	27dB	38°	48°	32"	115"	50.7	74.4
YH-910	9	10	13.6	27dB	38°	48°	31"	114"	49.2	72.6
YH-1010	10	10	13.6	27dB	38°	48°	30"	112"	47.4	69.9
YH-1110	11	10	13.6	27dB	38°	48°	29"	105"	46.8	68.7
YH-1210	12	10	13.6	27dB	38°	48°	28"	103"	46.2	67.5
YH-1310	13	10	13.6	27dB	38°	48°	27"	101"	44.4	64.8

* Supplied with load support struts. Boom shipped in two sections with all connecting hardware supplied.

** Thrust in lbs. transferred to supporting structure based on 30 lbs. per square foot wind pressure (100 miles per hour sustained wind on round boom antennas, 80 miles per hour sustained wind on square boom antennas).

Y-FM-2 OMNIDIRECTIONAL FM ANTENNA

Stock No. 4808

- Full 88-108MHz Frequency Range

The Y-FM-2 is a twin dipole FM antenna. Two 1/2 wave dipole elements mounted 90° to one another on the antenna mast give this antenna an omnidirectional reception pattern. Maximum transfer of received signals is assured by a weatherproof gamma match. An F-type connector accepts cable sizes from RG-59/U to .412 aluminum. Elements are attached to the boom (not supplied) with solid aluminum blocks. Element ends are sealed with end caps to minimize wind noise.

YSB MOUNTING ASSEMBLY

Stock No. 4760

- Stack antennas of the same channel for increased gain.

Bracket for stacking BTY and YH-Series antennas. Connects vertical and horizontal members of stacking frame. Six units required for horizontal quad array. Dimensions: 1/4" x 6" x 7" flat aluminum plate with four 3/8" diameter U-bolts. U-bolts adjustable to take any tubing from 1-1/2" O. D. to 2-1/2" O. D.

Prices and Specifications Subject to Change Without Notice.

VRF-7

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

VHF AND UHF ANTENNAS

PROFESSIONAL VHF BROADBAND ANTENNA HI-BAND, 10 ELEMENT Stock No. 4871

DESIGN FEATURES

- Patented* off-center driven elements provide excellent 75 ohm match without use of fragile capacitors as required in gamma match antennas.
- Hard drawn, heavy wall aluminum boom for added strength. Square boom design assures positive lock with mast mounting bracket.
- End-sealed aluminum elements provide maximum vibration dampening.
- Elements are permanently affixed to an aluminum mounting block. Block has square interior aperture to completely encircle boom for optimum element alignment while preventing rotation.
- Heavy duty bracket has serrated teeth for added grip to mast. Bracket accepts mast sizes up to 2" outside diameter.

For CATV and MATV installations. It has a 10 element, broadband design for VHF channels 7 to 13 and features high gain and narrow beamwidth. The output feeds a 75 ohm downlead. The antenna has a two piece boom permitting less expensive UPS shipment, easier handling and reduced shelf space. Two piece, square boom construction and end-sealed aluminum elements provide added strength, excellent wind resistance and exceptional weathering properties. The heavy duty mounting bracket is positioned at the antenna's center of gravity for balanced mounting to the mast. The antenna can also be rear-end mounted vertically or horizontally on a tower leg or mast using a B-T Model 5760 Cantilever Mount.

ELECTRICAL

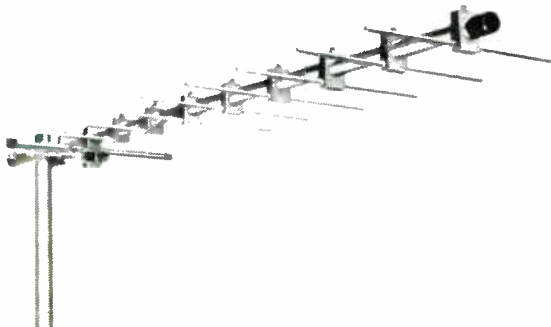
Gain Over Isotropic: 12.2dBI
Gain Over 1/2 Wave Dipole: 11dB (Ch. 7); 10dB (Ch. 13)
VSWR: 1.6:1
Return Loss: 14dB
Impedance: 75 ohms
Beamwidth (-3dB) Horizontal: 50.5° (Ch. 7); 42° (Ch. 13)
Attenuation of Undesired Side Lobes: 20dB
Bandwidth: 174-216MHz. 1/2dB flatness

MECHANICAL

Maximum Element (Reflector) Width: 35-1/2" (88.75 cm)
Boom Length: 104" (261 cm)
Turning Radius: 84" (210 cm)
Wind Resistance: 52 lbs. (23.6Kg)† (No Ice); 76 lbs. (34.5Kg)† (1/2" Ice)

Maximum Cross Sectional Area: 1.3 sq. ft. (0.117m²)
Operational/Survival Wind Velocity: 125 mph (200 kph) (No Ice)

† Thrust in lbs. transferred to supporting structure based on 100 miles per hour sustained wind on antenna.



Y-10 UHF ANTENNAS

Stock No. 4778-(*)

- Sold Aluminum Reflector and Director Elements
- High-Quality Gamma Match Gives Accurate 75-ohm Match
- Simple Installation

VRF-8

For CATV systems using UHF channels. Each antenna is designed to receive a single UHF channel, and provide higher gain and narrower beamwidth at the channel of interest than broadband UHF antennas. Heavy-gauge aluminum is used for durability and light weight. The mounting assembly is on rear of the antenna allowing it to be mounted directly to vertical tower members. This feature prevents the mast from interacting with the elements and interfering with the antennas' performance.

MECHANICAL

Boom: 0.058" wall thickness, 6063-T 832 aluminum, 3/4" O.D.
Elements: 1/4" solid, 2011-T3 aluminum
Center Sleeve: 1-9/16" x 1" x 3/4" solid aluminum block
Mounting Assembly: 3-1/2" x 1-1/2" x 1/2" bracket with single 3/8" x 2-1/2" cadmium plated U-bolt

Cable Connector: type F

Mast Size: accepts up to 2" O.D. mast

Wind Resistance: 100 MPH

ELECTRICAL

Gain: 13.6dB
Front/Back Ratio: 27dB
Bandwidth: 6MHz
Impedance: 75 ohms

Return Loss: 14dB R.L. (VSWR 1.5)
Beamwidth: (-3dB points)
Vertical: 48°
Horizontal: 38°
(*) Specify Channel

ANTENNA STACKING DATA

Stacking single channel antennas (using more than one antenna for the same channel) increases gain and improves directivity. Some typical stacking arrays are shown below. To operate properly, single channel antennas in an array must be separated by a minimum of one wave length at the center frequency of the channel or a multiple of it. Dimensions A and B on the illustration are determined by this formula:

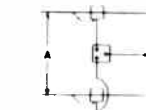
$$\text{One wavelength (in air)} = \frac{11811}{\text{Channel Frequency in MHz}} \text{ inches}$$

5 Element VHF Antenna Stacking Dimensions:

Channel	2	3	4	5	6	FM	7	8	9	10	11	12	13
Dimension A	8'8"	7'10"	7'2"	6'3"	5'10"	5'0"	2'9"	2'8"	2'7"	2'6"	2'5"	2'4"	2'4"
Dimension B	17'4"	15'8"	14'4"	12'6"	11'8"	10'0"	5'6"	5'4"	5'2"	5'0"	4'10"	4'9"	4'8"

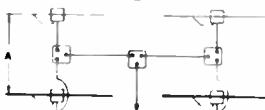
10 Element VHF Antenna Stacking Dimensions:

Channel	2	3	4	5	6	FM	7	8	9	10	11	12	13
Dimension A	17'4"	15'8"	14'4"	12'6"	11'8"	10'0"	5'6"	5'4"	5'2"	5'0"	4'10"	4'9"	4'8"
Dimension B	17'4"	15'8"	14'4"	12'6"	11'8"	10'0"	5'6"	5'4"	5'2"	5'0"	4'10"	4'9"	4'8"



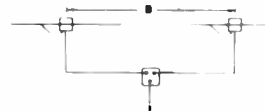
2 bay vertical array

Approximately 3 dB gain increase improves vertical pattern



4 bay horizontal array

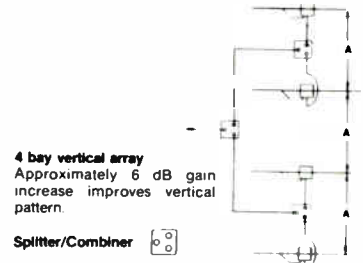
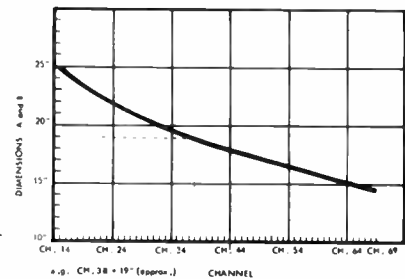
Approximately 6 dB gain increase improves vertical 8 horizontal pattern.



2 bay horizontal array

Approximately 3 dB gain increase improves horizontal pattern.

10 Element UHF Antenna Stacking Dimensions:



4 bay vertical array

Approximately 6 dB gain increase improves vertical pattern.

Splitter/Combiner

Cable lengths between antennas and splitter/combiner must be equal.
Use SBL-2U/V splitter.

Prices and Specifications Subject to Change Without Notice.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

GALAXY III PLUS SERIES PREAMPLIFIERS

- Designed for multi-set home or MATV system use
- Ultra low noise, mast-mounted preamp
- High gain post amplifier permits relatively long cable runs from the antenna without signal degradation
- Split band amplifier eliminates low band interference with high band in VHF
- Individually packaged in full-color display box with all mounting hardware and cable connectors

The Galaxy III Plus Series are two-unit amplification systems that can provide all the gain required for optimum television signal distribution in a multi-set home or a moderate size MATV installation. The system consists of a low noise, mast-mounted preamplifier and a high output indoor post amplifier/power supply. This arrangement allows each component to be optimized for its particular function and results in the best possible system performance.

All mast mounting hardware for the preamplifier and all cable connectors required are supplied with the unit. The Galaxy III Plus Series employs the most modern technology for protection from lightning and power line surges.

Skyliner III Plus

Two unit VHF amplification system for multi-set home or moderate size MATV installations.

Vaulter III Plus

Two unit UHF/VHF amplification system for multi-set home or moderate size MATV installations. Used with separate VHF and UHF antennas.

Suburban III Plus

Same as Vaulter III Plus except for use with combined UHF/VHF antenna.



Galaxy III Plus

As has been the practice in previous B-T preamplifiers, the Galaxy III series preamps employ a sharp cut-off filter at the input to reduce interference from strong local FM transmitters. As a result, the FM band gain drops to about 10 dB below the low-band gain at 95 MHz and above. Since this filter is at the input, noise figure at FM is also degraded somewhat. Thus the Galaxies can be considered to pass FM for most stronger signal applications, but will not be suitable for critical weak signal FM preamplification.

GALAXY III SERIES PREAMPLIFIERS

The Only Home Preamplifier with All These Features:

- All new transformer and power adder simplify hook-up and mounting
- Lowest UHF noise figure of any preamp available plus lower VHF noise figure
- Three way split-band amplifier sections (VHF 2-6, 7-13, and UHF) to eliminate low band signal interference with high band and to optimize dynamic range
- All UHF models fully operational thru ch. 83
- Each Galaxy III is protected from lightning and power line surges
- Dual models have a built-in splitter for two TV set feed from one preamp
- Units available for use with single or dual antennas
- Includes heavy duty mast mounting hardware to insure secure installation
- Individually packaged in colorful display box

A complete new look line of superior performance rated, mast mounted preamplifiers for any home installation requirement. Galaxy III units feature modern design; a high-impact polypropylene case; simplified mounting and all-channel range (thru ch. 83 on UHF). A compact indoor transformer and power adder are included with all models.

Horizon III

VHF amplifier for weak signal areas, 300 OHM downlead, 300 OHM output.

Horizon III Dual

Same as Horizon III with two outputs for two TV sets.

Horizon III Jr.

Economy VHF amplifier for medium signal areas. 300 OHM downlead, 300 OHM outputs for two TV sets.

Skyliner III

VHF amplifier for weak signal areas. 75 OHM downlead, 75 OHM output.

Skyliner III Jr.

Economy VHF amplifier for medium signal areas. 75 OHM downlead, 75 OHM output.

Skyliner III Dual

Same as Skyliner III with two 75-ohm outputs for two TV sets.

Able U2 III

UHF amplifier for weak signal areas. Amplifies channels 14-83, 300 OHM downlead, 300 OHM output.

Able U2 III Dual

Same as Able U2 III with two outputs for two TV sets.

Able U2 III 75

UHF amplifier for weak signal areas. Amplifies channels 14-83, 75 OHM downlead, 75 OHM output.

Cross Country III

All channel amplifier. Single 300 OHM UHF/VHF antenna input, 300 OHM downlead, 300 OHM output.

Suburban III

All channel amplifier. Single 300 OHM UHF/VHF antenna input. 75 OHM downlead, 75 OHM output.

Voyager III

All channel amplifier. Separate 300 OHM UHF and VHF antenna inputs. 300 OHM downlead, 300 OHM output.

Voyager III Dual

Same as Voyager III, but with outputs for two TV sets.

Vaulter III

All channel amplifier. Separate 300 OHM UHF and VHF antenna inputs. 75 OHM downlead, 75 OHM output.

Vaulter III Dual

Same as Vaulter III, but with outputs for two TV sets.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000



SCMA SINGLE CHANNEL VHF PREAMPLIFIER

Stock No. 4761 - (*)

- Low Noise Figure GUARANTEED
- Best Adjacent Channel Overload Rejection
- High Gain with Flat 6 MHz Bandpass

The SCMA is a very low noise, single-channel VHF and FM pre-amplifier. All solid state design featuring two "field effect" transistors provides a guaranteed ultra high signal-to-noise ratio. The actual noise figure of each individual unit is indicated on the case. Excellent gain and the ability of the unit to accept a wide range of input signal levels makes the SCMA ideal for difficult signal areas. The unit has exceptional immunity to overloads caused by strong adjacent channel signals. A full six MHz bandpass insures excellent color operation. Standard units have a 75-ohm F connector input and either F type output connector or .412" aluminum cable output connector.** A 20 dB output monitor jack (backmatched) permits the unit's performance to be checked without interrupting service. The unit mounts on the antenna mast and power duplexed on the downlead, eliminating the need for a separate power lead. Current required is -21 VDC at 65 ma. Mounting hardware and cable connectors supplied.

*Specify Channel

**Specify Output Connector (including type of .412 cable).

SPECIFICATIONS

Noise Figure: Channels 2-6, FM; less than 3.0 dB, Channels 7-13; less than 2.5 dB. **Gain:** Channels 2-6; 29 dB, Channels 7-13, 26 dB; FM, 24 dB. **Minimum Recommended Input for TASO Grade 1 (Excellent Picture):** -10 dBmV. **Operating Temperature Range:** -40° to +140°F.

SCMA-U-75 SINGLE CHANNEL UHF PREAMPLIFIER

Stock No. 4526-(*)

- Low Noise Figure GUARANTEED
- Unit Optimized for Single UHF Channel

This ultra-low noise UHF preamplifier is optimized for a single UHF channel. A unit's channel number and noise figure at that channel are indicated on its case. Beside its very low noise figure and excellent gain, each SCMA-U provides exceptional immunity to overloads caused by strong adjacent channels. Current required is 24ma at -21 VDC. All required mounting hardware and cable connectors are supplied. *Specify Channel

SPECIFICATIONS

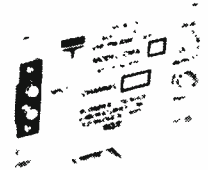
Noise Figure: 3.5 dB +/- 1 dB typical (actual guaranteed noise figure indicated on case). **Gain:** Channels 14-69, 22 dB; 40-69, 21.5 dB; 70-83, 21 dB. **Minimum Recommended Input for TASO Grade 1 (excellent) picture:** Channels 14-39, 300pV (-10.5 dBmV); 40-60, 330pV (-9.6 dBmV); 70-83, 335pV (-9.5 dBmV). Use Model 1526 Power Supply.

BROADBAND PREAMPLIFIERS

CMA-(BB, HB, AND LB)

Broadband TV Preamplifiers

Stock No. 4948 (*)



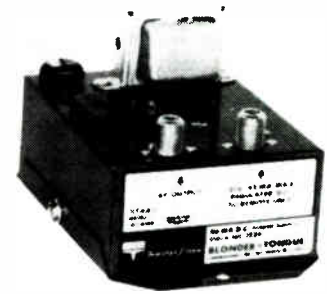
- High Gain and Input Capability
- Provides Superior Performance with Wideband Antennas
- Available in Broad Band, High Band or Low Band to Meet Any Requirement

These companions to Blonder-Tongue's famous line of channelized low-noise preamplifiers combine exceptionally high signal-handling capability and gain with good input match to make them ideal for use with wideband antennas. A 300-ohm input connector and a 75-ohm type F, output connector permits the use of coaxial downlead without the necessity of a separate balun. A rugged metal case, wide operating temperature range, and mast-mounting design combine to make it ideal for tower installations. A backmatched output-monitoring jack is included for monitoring the units performance without interrupting service. Mounting hardware and a BTF-591 cable connector are supplied.

*Specify Band

SPECIFICATIONS

Frequency Range — **BB:** 54-216 (Ch. 2-13); **LB:** 54-88 (Ch. 2-6); **HB:** 174-216 (Ch. 7-13). **Input Capability (typical)** — **BB:** +25 dBmV (each of 7 channels); **LB:** +28 dBmV (each of 3 channels); **HB:** +26 dBmV (each of 4 channels). **Gain**—**BB:** 26 dB typical, 23 dB min.; **LB:** 26 dB typical, 24 dB min.; **HB:** 26 dB typical, 24 dB min. **Input Match (300 ohm)**—**BB:** 11 dB RL typical, 8 dB RL min.; **LB:** 10 dB RL typical, 8 dB RL min.; **HB:** 12 dB RL typical, 10 dB RL min. **Output Match (75 ohm)**— **BB:** 8 dB RL typical, 5 dB min. **LB:** 11 dB RL typical, 8 dB min.; **HB:** 9 dB RL typical, 6 dB min. **Noise Figure (All models):** 5.5 dB typical, 7.0 dB max. **Power Requirement:**— 21 VDC, 50 ma duplexed on downlead. Blonder-Tongue 1536 power supply recommended. **Dimensions:** 5" L x 3-7/8" W x 2-5/16" H.



POWER SUPPLIES AND PROTECTORS

1526 POWER SUPPLY

Stock No. 1526

- RF Feed Thru—Powers One Side of RF Thru Line Only
- Short Circuit Proof Regulator
- Compact, Lightweight Design

Delivers a regulated and surge-protected -21 volts DC at 40 ma. Designed primarily for powering a single SCMA-U mast mounted preamplifier. AC outlet provided for looping AC power from one power supply to another. UHF VHF feed thru for duplexing power on coaxial cable. BTF-591 cable connectors supplied. **RF thru loss:** UHF, 0.5 dB; VHF 0.3 dB.

One Jake Brown Road
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DYNAMIC™ CATV PROCESSOR Stock No. 4455(*)

- Lower Adjacent Channel Intermod Trap Reduces Adjacent Channel Distortion and Intermodulation Products.
- Front Panel Auto/Manual Switch Facilitates Proof of Performance Testing without Altering Previous Level Settings.

The DYNAMIC is a CATV Channel Processor with automatic gain control and fully solid state circuitry. It is intended to amplify and stabilize the level of a single VHF channel in CATV headend systems. It is available for TV channels 2 thru 13, FM, A-1, A-2, A thru I, IF, and CH D inverted.

The combination of a low noise, high gain amplifier with high output capability and wide AGC window assures a large dynamic range providing a stable quality signal, free of distortion and intermodulation products.

Gain: VHF 52dB (min.)
57dB (typ.) FM 47dB (min.)
52dB (Typ.)

Bandpass Flatness: (Pix - 0.5 MHz Pix + 3.75 MHz) 0-35dB Gain Control Range: +/- 0.25dB Typ., +/- 0.9dB max. (6 MHz BW)
0-35dB Gain Control Range +/- 0.4dB Typ.

0-40dB Gain Control Range +/- 0.6dB Typ.
FM: (91 MHz to 108 MHz) +/- 1.5dB Typ., +/- 2.0dB max.

Maximum Output: 66.0dBmV Typ. for 1/2dB sync compression

Alternate Channel Rejection: -27dB Typ. (+/- 9 MHz from channel center) (use with BPFb Bandpass Filter and Audiomatic input for adjacent channel operation)

Power Requirements: 117 VAC, 60Hz, 0.11 amp (DC Auxiliary, -24 VDC, 0.15a)

Test and Monitor Points: EXTERNAL: OUTPUT. -30dB

Recommended Maximum Output Operating Level: 60dBmV for all distortion products -60dB (aural carrier -15dB, color subcarrier -25dB)

Output Level Range: 40-60 BmV min.

AGC Range: 40dB

AGC Stiffness (output change for +/- 20dB input change):

= 0.2 at 60dBmV output

= 0.3 at 50dBmV output

= 0.6 at 40dBmV output

Noise Figure (full gain): 5.5dB typ.

Input Return Loss: 13dB Typ. on channel

Output Return Loss: 18dB Typ. 54-216 MHz

Semiconductor Complement: 3 IC's, 1 FET, 12 Transistors, 19 Diodes

Mechanical: Line Cord: 3 wire grounded; 3 wire convenience outlet. Connectors: BTF-100, F-type, Female "G/F" at output test. Fuse: 1/8 amp, Slo-Blo. Dimensions: 19" L x 1 1/4" H x 5 1/8" D. Shipping Weight: 5 pounds.

(*) Specify Channel



AUDIOMATIC™ AURAL LEVEL CONTROL*

Stock No. 4461 *U.S. Pat. 4,081,839

- Compatible With Any Channel Processor
- IC ALC Unaffected by Chroma Subcarrier
- Hi-Q Asymmetrical Helical Resonator Notch Filter Controls Aural Carrier Level

The AUDIOMATIC Model 4461 is a self-contained automatic sound control system that continually monitors the Aural-Visual Carrier ratio of an incoming channel signal, and by processing this information, automatically varies the depth of a Hi-Q Helical Resonator notch filter to maintain an constant, pre-set ratio. The AUDIOMATIC is designed to automatically maintain a constant Aural-Visual Carrier ratio at the output of any Channel Processor.

Frequency Range: ch. 2-13, Midband (specify channel)

Thru-loss at visual carrier: 3.0 typical

Amplitude response flatness between 0.75 MHz to 5.0 MHz above lower boundary frequency (Pix -0.5 MHz to Pix +3.75 MHz): +/- 0.5dB typical (FCC spec is +/- 2dB)

Notch filter attenuation, manual front panel control: 0dB to 12dB (additional 4dB with rear panel control, with increased thru-loss)

Aural carrier ALC range indicator: LED indicates aural carrier ratio is being maintained

Aural carrier ALC range: 12dB or 16dB

Channel sample level requirements: +10 to +30dBmV(AGC'd in Audiomatic)

Temperature range: 0 to 50 C (32 F to 122 F) for 1dB change in A/V ratio when using max notch depth. No change when using less than max notch depth.

Power requirement: 117 VAC, 60Hz, 0.11 amp; (DC Auxiliary -24VDC, 0.15 amp)

Power Supply: No change in aural carrier level with AC power input between 100 VAC and 130 VAC

Battery backup operation: Automatically transfers to external -24 VDC battery power in event of AC powerline failure or AC voltage drop below 100 VAC

Size: 19" rack x 1 1/4" panel space x 5 1/2" deep

Aural Notch Filter shapes

CONVENTIONAL

Amplitude response of standard (symmetrically shaped) aural carrier notch filter (rolls off on color subcarrier. Does not meet CATV FCC specs)

AUDIOMATIC

The tandem system of BPF-c, AUDIOMATIC, and DYNAMIC meets the required FCC amplitude response specifications.

MCA-b VHF PROCESSOR, HIGH OUTPUT, SINGLE CHANNEL, AGC CONTROLLED

Stock No. 4454

- Interchangeable broadband amplifier board to facilitate maintenance
- Adjustable sound trap for lower distortion
- Lightning and line voltage surge protected
- True peak detector AGC
- Wide Dynamic Range

The MCA-b channel processor is a high-output VHF TV amplifier with automatic gain control and all solid-state circuitry. It is intended to amplify and stabilize the level of a single VHF-channel in MATV headend systems.

The MCA-b features high output even on adjacent channels through use of built-in intermodulation notch filter and built-in aural carrier level control notch filter.

Electrical:

Maximum output for 1/2 dB sync compression: 68.5 dBmV (2.7 volts) min.: 70.5 dBmV (3.3 volts) typ. with sound at -15dB

Recommended output operating level for color operation in alternate or adjacent channel systems (920 KHz beat at -55 dB, adjacent channel beat at -50 dB), with sound carrier adjusted to -15 dB, color subcarrier -25 dB: 68.0 dBmV (2.5 volts) min.; 69.5 dBmV (3.0 volts) typ.

Gain: 55.0 dB min.; 60.0 dB typ.

Noise Figure at Full Gain: 5.5 dB typ.

Output Level Control Range: 20 dB min.

AGC Range: 40 dB min.

AGC Stiffness (output change for +/- 20 dB input change): Less than +/- 0.25 dB at 69 dBmV output; less than +/- 0.5 dB at 59 dBmV output

Maximum input with level set at 69 dBmV output: 43 dBmV

Bandpass Flatness, 6 MHz BW (over 35 dB gain control range): +/- 1.0 dB max.; +/- 0.5 dB typ.

Alternate channel rejection (Use with BPFa Bandpass Filter at input for adjacent channel operation): -26 dB (+/- 9 MHz from channel center)

Input Match: 16 dB return loss typ.

Output Match: 18 dB return loss typ. greater than 9 MHz from channel center; 18 dB return loss typ. on channel

Power Requirement: 117 VAC, 60 Hz, 0.11 amp.

Test and Monitor Points: External: Output, -30 dB; Internal: AGC, 9.5V

Semi-conductor Complement: 1-IC, 1-FET, 7-transistors, 13 diodes

Mechanical: Line Cord: 3-wire grounded; 3-wire convenience outlet. Connectors: BTF-100, F-type, Female. Fuse: 1/8 amp. Slo-Blo. Dimensions: 19" L x 1 1/4" H x 4" D. Shipping Weight: 4 pounds.

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
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CHANNEL CONVERTER/ FILTERS/MODULATORS



MUC-3 UHF TO VHF SINGLE CHANNEL CONVERTER

STOCK NO. 1468

- Uniform gain independent of the channel conversion for stable operation.
- High input capability with low noise figure for wide dynamic range over entire UHF band.
- Local oscillator is easily adjustable thru front panel for fine tuning.
- Rigid extruded aluminum base and sturdy aluminum cover for added protection of components.
- Sealed RF can minimizes radiation and isolates RF module from undesired signals.

The Masterline MUC-3 is a single channel UHF to VHF converter with a temperature compensated, highly stable L-C oscillator. Each converter is factory tuned for a specific customer-selected conversion.

FORBIDDEN CONVERSIONS

UHF Channel to VHF Channel

22,23,24,25	7
25,26,27,28	8
28,29,30,31	9
31,32,33,34	10
34,35,36,37	11
37,38,39,40	12
40,41,42,43	13

NOTE: The Forbidden Conversions listed would lead to picture impairment in single stage converters. Special conversions such as UHF to subchannels, midband, superband, hyperband, and European versions are also not available in the MUC-3 Converter. Other models provide these options.



UX-3 SINGLE CHANNEL UHF TO VHF CONVERTER

STOCK NO. 1424

- High frequency crystals minimize total number of potentially interfering spurious harmonics
- Custom built/conversion compatibility verified

Crystal-controlled, solid-state, UHF to VHF amplified converter. **Gain:** 4-13 dB (depending on conversion). **Noise figure:** 9-15 dB (depending on conversion). 75-ohm input and 75-ohm loop-thru outputs. BTF connectors (male connectors supplied). **Crystal:** +/-0.005%. **Power Requirements:** 117V, 60Hz, 0.065A. **Size:** 9"L x 4-5/8"W x 3-1/4"H. Specify UHF input and VHF output channels, when ordering. Custom built. If UHF channel frequency minus VHF frequency is greater than 500 MHz use **Model 8214 Ux-3 .002%** converter for compliance with FCC CATV specs.



ESHM

ESHM MODULATOR FOR CATV AND PRIVATE CABLE SYSTEMS

Stock No. 5928

- Heterodyne conversion process provides proper vestigial sideband selectivity for use in adjacent channel color systems
- Removable converter module for easy, in-field channel change, without opening modulator housing
- SAW filter provides flat group delay and maintenance-free bandpass characteristics
- Three light indicator system shows proper video modulation and over or under modulation
- Aural/Visual IF loop-thru allows IF scrambling or alternate source of composite IF. Separate aural and video loop-thru is available
- Wide range of available frequencies—TV channels 2-13, midband (A-I), superband (J-W).

The ESHM is an all solid-state heterodyne audio/video modulator. It generates modulated visual and aural RF carrier output on any single VHF (2-13), Midband (A-I), or Superband (J-W) channel of a closed circuit CATV or SMATV system. It requires only standard baseband video and audio inputs. The ESHM also features excellent modulation qualities for use with character generators. The heterodyne conversion system provides proper vestigial sideband selectivity for use in adjacent channel color systems. The modulator uses a SAW (Surface Acoustic Wave) filter which provides flat group delay and maintenance-free bandpass characteristics.

A combined IF loop-thru accommodates the use of an alternate source of combined IF, as well as IF scrambling equipment. Optionally, separate aural and visual IF loop-thrus can be provided for the ESHM in order to use alternate scrambling systems. The modulator accepts standard NTSC signals (Sync negative, 0.5-2.5 p-p) from video sources such as a satellite receiver, video tape recorder, TV demodulator, or TV camera. All level controls and modulation indicators are located on the front panel for ease of operation.

The ESHM has a removable heterodyne module, (slide-out drawer), which permits qualified service personnel to easily change channels in the field, without removing the entire modulator from the headend rack.

A three-light indicator system pinpoints correct video modulation as well as under or overmodulation. An audio overmodulation indicator is also provided.

ESHM CHANNEL CONVERSION REPLACEMENT MODULE

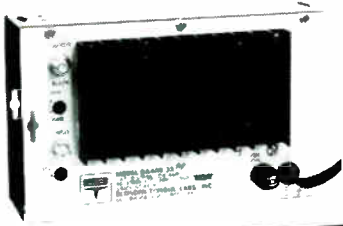
Stock No. 5938

Slide-out drawer allows changing of channels in the field quickly and easily without removing the entire modulator from a headend rack or opening the modulator housing. Specify channel when ordering.

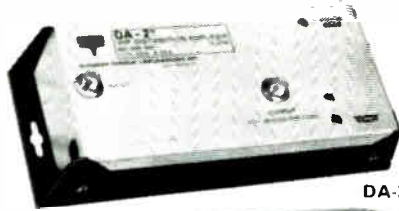
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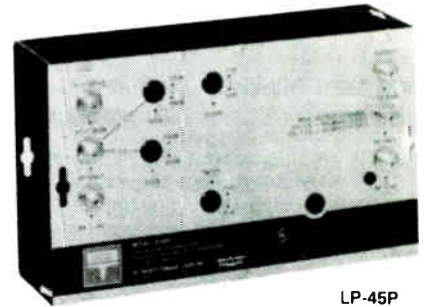
CATV DISTRIBUTION AMPLIFIERS



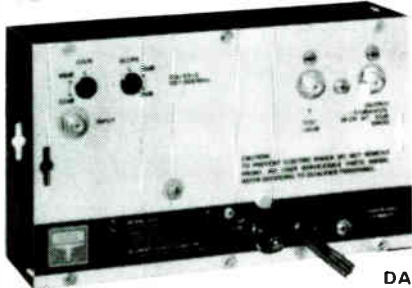
DA 400-33



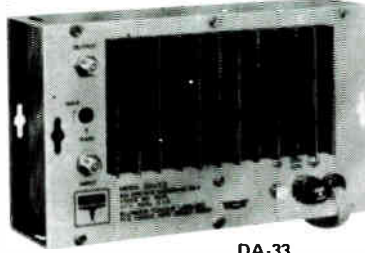
DA-21



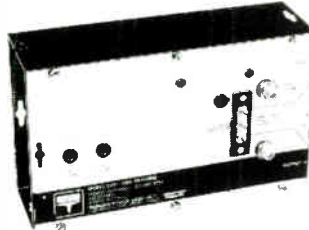
LP-45P



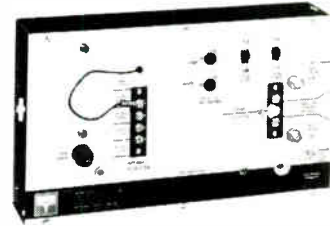
DA-51



DA-33



LP-30



LP-51

DA 400-33 CATV DISTRIBUTION AMPLIFIER Stock No. 4475

- Full 53 Channel Bandwidth; 40 MHz to 400 MHz
- Uses Two Ultra Reliable, Push-pull Hybrid Integrated Circuits
- Wide Range, Continuous Gain and Slope Controls
- Regulated Power Supply
- Surge Protected Amplifier and Power Supply Sections

The DA 400-33 is a high-output, 53 channel CATV Distribution Amplifier. The unit uses push-pull hybrid IC amplifiers and has cable slope compensation from 40 MHz to 400 MHz. The DA 400-33 features a gain control adjustable from 15 to 33 dB (continuously variable).

The DA 400-33 is designed for a wide variety of applications. It is primarily used for the CATV distribution of TV/FM signals in the 40 to 400 MHz frequency range. Other applications include use as an instrumentation amplifier to increase the output level of a sweep or signal generator; as a preamplifier for CATV signal level meters for making FCC required signal leakage measurement.

CATV INDOOR DISTRIBUTION AMPLIFIERS

DA-51 2/3 WIDEBAND DISTRIBUTION AMPLIFIERS

- Specifically Designed for CATV "DROP" Distribution Systems
- Wide Frequency Range for Incorporating MID-SUPER Bands with VHF/FM

Designed for TV signal distribution systems that use a CATV "drop" as a signal source. 50 to 300 MHz bandpass. An excellent amplifier for apartment buildings fed from a CATV system wide frequency range allows the DA-51 to be used in systems incorporating MID and SUPER band channels with the standard VHF and FM channels. Push-Pull Hybrid IC output. Has high output capability of 56 dBmV on each of 12 channels. Two models of the DA-51 are available: DA-51-3 with a slope control covering 50-300 MHz, and DA-51-2 with a slope control operating between 50-220 MHz.

DA-21 CATV DISTRIBUTION AMPLIFIER

- Ideal CATV Distribution Amplifier in Small Apartment Buildings

The latest in CATV distribution amplifiers. 50-300 MHz response. Includes many features found only in higher priced units.

DA-30 WIDEBAND DISTRIBUTION AMPLIFIER

- Flat Response — 50-300 MHz.
- 40 dBmV Output per Channel for 21 Channels.
- Front Panel Gain and Slope Controls.
- Slim Line Design — Easy to Install.

Designed specifically for apartment building and other multi-set installations served by CATV. Features flat response from 50 to 300 MHz for distribution of VHF, MID, and SUPER band channels. Good output capability and wide gain and slope control ranges make it easy to adapt to any system. Front panel gain and slope controls.

DA-33 WIDEBAND AMPLIFIER

- Ultra-Wide Bandwidth 0.5 MHz-300 MHz
- Push-Pull Hybrid IC Amplifier
- Exceptionally High Output

The DA-33 features extremely wide bandwidths; 0.5 MHz to 300 MHz, wide range continuous gain control and surge protected amplifier and power supply sections. It is ideal for increasing the output level of sweep generator or signal generator to test very lossy devices under test, such as long lengths of coaxial cables, coaxial relay isolation, etc. The DA-33 is also used as a preamplifier for CATV signal level meter (SLM) used to make FCC required signal leakage measurements. It may also be employed as a sub-channel return amplifier. In this case external multiplexers such as Blonder-Tongue MSVM are required to bypass VHF in the forward direction.

The DA-33 is also used aboard ship where its coverage of the short wave and communications bands is desired.

LP-30 CATV LINE EXTENDER AMPLIFIER

Stock No. 4618

- Push-Pull Hybrid IC for High Output Capability
- 50 to 300 MHz Bandpass—30 Channel Capability
- Input and Output Adaptors Permit Use of Aluminum Cable Connectors
- Backmatched Input and Output Test Points for Uninterrupted Service

The LP-30 CATV Line Extender Amplifier is designed for direct insertion in CATV trunklines. Designed primarily for buried systems, this amplifier's input and output connectors are both located on the same end of the unit. This feature facilitates vertical installation in CATV equipment pedestals. Adaptors are supplied to permit use of aluminum cable connectors.

The LP-30 may be powered from either the input or output side of the thru-line and has a 6 amp, thru-power capability. Gain and cable slope adjustments located on the front panel. Gain is continuously adjustable between 10 and 30 dB. Cable slope may be varied between a fixed minimum of 6 dB and a maximum of 20 dB. Input and output test jacks are provided for signal and amplifier performance monitoring.

LP-45P IN-LINE AC POWERED AMPLIFIER

- High Output and Gain Provide Exceptional Stability
- Added Flexibility — Wide Range Gain and Tilt Controls

The LP-45P amplifier is designed for VHF/FM CATV distribution systems in which AC power is duplexed on the TV signal distribution cable. The unit accepts power from either its input or output sides. It will pass power straight through or can be used to block power from either side. Connectors are standard 75-ohm, F-type. Test points (isolated from AC power) are provided on both the input and output. This amplifier features all solid state, printed circuit board construction. Split-band amplifier design permits separate gain and band slope adjustment (low band with FM and high band). Wide trunkline spacing and elimination of temperature equalizers is possible, owing to the wide dynamic range of the LP-45P.

LP-51 CATV LINE EXTENDER AMPLIFIER

Stock No. 4421-(2) (3)*

- Push-Pull Hybrid IC for High Output Capability
- Wide Range, Continuous Slope and Gain
- Input and Output Adaptors Permit Use of Aluminum Cable Connectors
- Selector Allows Powering from Input or Output and Provides Thru-line for Powering Subsequent Units in Cascade

The LP-51 is a broadband CATV Line Extender Amplifier designed for direct insertion in CATV branchlines. The amplifier's input and output connectors are both located at the same end of the unit. This feature facilitates vertical installation in CATV pedestals. Adaptors are supplied to permit the use of a variety of aluminum cable connectors. Slope controls are available that hinge at 220 MHz or 300 MHz.

The LP-51 may be powered from either the input or output side of the thru-line. A power selector jumper board allows installers to block power from either the input connector or to pass power through the amplifier. The voltage necessary to power the amplifier ranges from 20 to 60 VAC, and is selectable externally with a jumper board.

The line extender has high output capability through the use of a push-pull integrated circuit in the output stage. Push-pull design results in cancellation of second order distortion products (typically to 65dB below rated output); triple beat suppression, 64dB.

* (2) 50-220MHz (3) 50-300MHz

Prices and Specifications Subject to Change Without Notice.

VR-13

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
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(201) 679-4000

VIDEO/AUDIO MODULATOR PRODUCTS

TVM 4930 Television Modulator

Stock No. 4930 \$1979.53

The TVM is an all solid-state, high quality, audio video modulator that generates TV channel RF carriers using video and audio sources. The unit accepts standard polarity video (sync negative) of .5-2VP-P level. The TVM features a loop-thru video input and a balanced line level bridging input provided for the audio. Level controls and modulation indicators are provided on the front panel. Aural intercarrier phased locked to 4.5 MHz.

- Switch Selectable VID/4.5 MHz Optional Input
- Wide Frequency Range; Ch 2 thru 13, Sub and Midband
- Balanced Low Impedance MIC Input with XLR Connector
- Vestigial Sideband Filtering Suitable for Adjacent Channel Color Systems

Various options are available in the TVM. These include:

Option 2 \$468.58

CHANNEL LOCK MODULE: Visual carrier channel lock to an amplified and filtered off-the-air channel to eliminate co-channel beat.

Option 3 \$292.88

FCC GROUP DELAY PRE-CORRECTION NETWORK: Envelope delay and chroma delay meet FCC Group Delay specifications.

Option 4 \$190.39

VIDEO LPF: Video low pass filter removes spurious signals above 4.2 MHz from video sources to protect adjacent channels from interference.

Option 5 \$292.88

A/V AGC: Audio/Video AGC controls the audio and video level to prevent overmodulation or undermodulation of aural and visual carrier respectively.

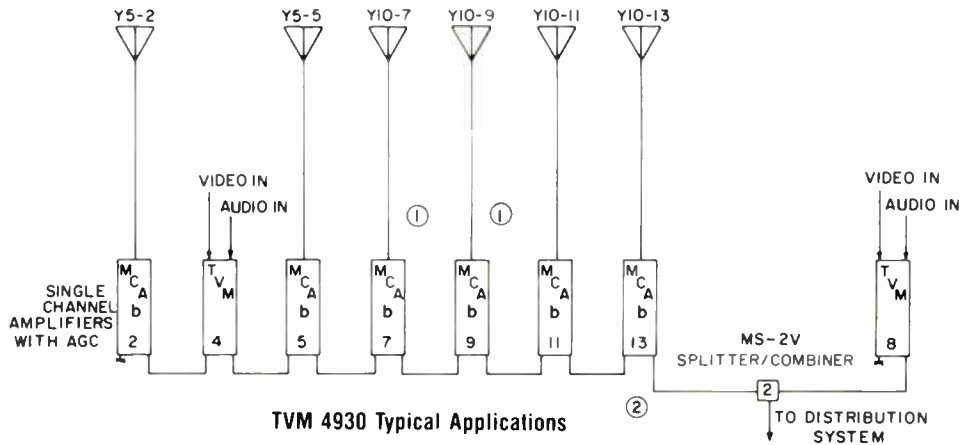
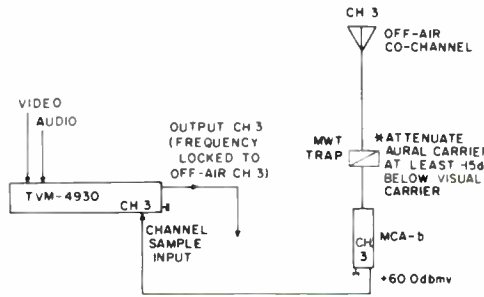
Option 7 No charge when ordered with 4930

AURAL/VIDEO SEPARATOR: Takes composite video/4.5 MHz from a microwave receiver output and provides 4.5 MHz aural input to aural mixer and video to video modulator. Microphone input circuitry and 4.5 MHz phase lock circuits are deleted. High-level audio input is included for bench testing when 4.5 MHz aural is not available.

NOTE: A maximum of two options may be selected from Options 3, 4, 5, and 7. Audio AGC portion of Option 5 is not functional with Option 7. Use Option 6 with Option 7.

Frequency Range, Standard: TV Channel 2 to Channel 13; **Special:** Sub-band, IF, and Midband channels.

Visual Carrier Output: +57 dBmV.



TVM 4930 Typical Applications



AVMTa Modulator

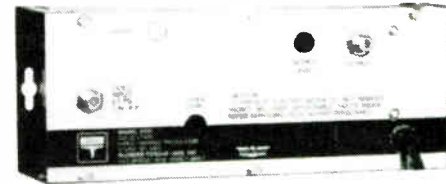
Stock No. 4923 \$1068.81

The AVMTa is an all solid-state, audio video modulator that provides a modulated visual and modulated aural carrier RF output on any single VHF TV channel 2-13. It can be used to put sound and color video on any unused channel of a closed circuit, MATV or CATV system. The AVMTa works with standard video sources such as a TV camera, video tape recorder, or TV demodulator. The wide range audio input can be directly driven from an AM or FM tuner tape recorder, or Hi Impedance dynamic or crystal microphone. The AVMTa may also be used for carrier substitution.

The model number of the AVMTa indicates its channel of operation, e.g., AVMTa-4 is a channel 4 unit. All AVMTa's are designed for rack or cabinet mounting.

Frequency Range, Standard: SUB Channels B-1 to B-6; VHF Channels 2 to 13; **Special Order:** Midband.

Spurious Beats in adj. channel at +50 dBmV output: -50 dB min., -65 dB typ.; **All other spurious outputs up to 300 MHz.:** -60 dB, -65 dB typ.



VCM: Video Channel Modulator

Stock No. 4926 \$442.71

The VCM-4926 solid-state video channel modulator is designed to provide low cost modulated visual carrier RF output on any single TV channel 2-13. It may be used as a carrier substitution generator.

The VCM contains a vestigial sideband filter, suitable for adjacent channels operation and also assures quality performance for both monochrome and color TV channels. The operating RF output level is at least +20 dBmV with a control provided on the front panel for adjustment over a 14 dB range. The VCM accepts video inputs from a line, film chain, camera or TV demodulator. The video signal before modulation is DC restored at tips of sync, thus preventing variations in the RF output due to changes in the picture content.

*Specify Channel

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
201) 679-4000

AUDIO/VIDEO MODULATOR



MAVM Audio/Video Modulator

Stock No. 5923

FEATURES

- Heterodyne Conversion Process Insures Optimum Vestigial Sideband Selectivity for Adjacent Channel Color Systems
- I.F. Loop Thru Allows Replacement of Standard I.F. Output with Alternate Source of Composite I.F. or Allows Use in All-Call Alert Systems
- Field Replaceable Heterodyne Converter Board for Easy In-Field Channel Conversion
- Calibrated Video and Audio LED Indicators
- Video and Audio Level Controls

MAVM Audio/Video Modulator \$811.46
MAVM Converter Module 268.94

The MAVM is an all solid state heterodyne audio/visual modulator that provides a modulated visual and aural RF carrier output on any single VHF (2-13), Midband (A-1), or Superband (J-W) channel. The Modulator can be used to put sound and color video on any unused channel of a closed circuit MATV or SMATV system. The heterodyne conversion system which is employed insures optimum vestigial sideband selectivity for adjacent channel color systems.

I.F. loop-thru capability in the MAVM supplies a padded I.F. output before channel conversion. This feature provides the capability to replace standard internally generated I.F. and "all call" capability.

The MAVM has a field replaceable heterodyne converter board which permits qualified service personnel to change channels in the field.

The Modulator accepts standard polarity (sync negative) of 0.7-2.5Vp-p level from video sources such as a satellite receiver, TV camera, video tape recorder or TV demodulator. All level controls and modulation indicators are located on the front panel for ease of operation.

SPECIFICATIONS

RF

Frequency Range:	TV Channels 2-13, Midband Channels A-1, Superband Channels J-W
Output Level:	+40 dBmV, Typical 35dBmV Min.
Output Level range:	10 dB, continuously adjustable by the front panel output level control
Aural/Visual Carrier Ratio Control:	-9 dB to -30 dB, continuously adjustable by the front panel output level control
Visual Carrier Frequency Tolerance:	10 KHz Typical
Aural Carrier Frequency:	4.5 MHz above visual carrier \pm 500 Hz
Spurious Output (except for video sidebands) at 35 dBmV output:	64 dB down, Typical (A/V carrier ratio 17 dB)
IF Output Level:	Set at 30 dBmV
IF Input Level:	35 dBmV Max., A/V carrier ratio 15dB, color subcarrier @ -25dB, for 920 beat (External IF in) > 55 dB down
Output Return Loss:	12 dB
IF Output Return Loss:	10 dB
IF Input Return Loss:	12 dB
Intermod Distortion: (3 tone 920 beat)	60 dB, 35dBmV output, A/V carrier ratio-15 dB, color subcarrier -25 dB

VISUAL

Video Input for 87.5% depth of modulation:	0.7V p-p Min
Video Modulation Depth:	Set @ 87.5% adjustable to 96% Typical
Vestigial Sideband Response:	Optimized for adjacent channel operation
Video Input Return Loss:	18 dB
Visual Carrier to Noise Ratio in 4 MHz Bandwidth:	60 dB
P-P Video to RMS Hum Ratio:	60 dB
Differential Gain: @ 87.5% Modulation	\pm 0.25 dB
Differential Phase: @ 87.5% Modulation	\pm 1°

AURAL

Input Audio for 25 KHz Peak Deviation:	50mV RMS
Aural Overmodulation LED Deviation:	25 KHz \pm 2 KHz
4.5 MHz Inter-carrier Stability:	\pm 2.5 KHz, 0°C to 50°C
Power Requirements:	100-130 VAC, 60 Hz, 0.8 A
Fuse:	3 AG, 125V, 1/8A Slo-Blo
Temperature Range:	0°C to 50°C

MECHANICAL

Dimensions:	19"W x 1 1/4"H x 4 1/4"D
Weight:	5 1/2 lbs. (Approximate)
Connectors	
Audio In:	RCA phono
Video In:	"F" type
RF Out:	"F" type
I.F. In and Out:	"F" type

Mounting brackets are included with the MAVM for installing the unit in a standard 19" EIA equipment rack.

BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

MATV DISTRIBUTION AMPLIFIERS

MVB-15 VHF/FM Distribution Amplifier

Stock No. 1445

Low noise, high gain, broadband VHF and FM amplifier featuring the exclusive patented* ICEF circuit for increased input capability while combining low distortion with a low noise figure. Full band FM amplification when tunable FM trap is not used. 75-ohm input and output. **\$63.89**

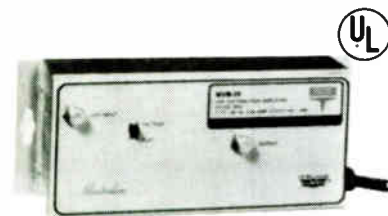


MVB-25 VHF Distribution Amplifier

Stock No. 1498

- Designed Specifically for VHF MATV Installations
- Patented* ICEF Circuit Increases Input Capability
- Provides Snow-Free Reception in Weak Signal Areas
- Switchable FM Stop Filter Eliminates Interference from Strong FM Signals when Necessary

The MVB-25 is a medium gain, low noise, VHF broadband amplifier. It features the exclusive, patented inductively coupled emitter feedback (ICEF) circuit that increases input capability while combining low distortion with a low noise figure. **\$91.10**



MVB-35 VHF/FM Distribution Amplifier

Stock No. 1450

- Designed for Medium Size VHF MATV Installations
- Separate Gain Control for High and Low Bands
- Split Band Input Amplifiers
- Switchable FM Bandstop Filter Prevents FM Overload

The MVB-35 is a medium gain, low noise VHF broadband amplifier. It includes patented* inductively coupled emitter feedback circuit for wide dynamic range. **\$147.77**



MUVB-15 UHF/VHF/FM Distribution Amplifier

Stock No. 1444

Amplifies all VHF and UHF channels thru ch 83 plus FM. Low noise, high gain distribution amplifier for large home or small MATV systems. Features ICEF circuit separate VHF and UHF sections and tunable FM trap. Single UHF VHF 75-ohm input and output. **\$87.28**



MUVB-25 UHF/VHF Distribution Amplifier

Stock No. 1499

- Superior UHF Gain to 890 MHz — Ideal for Translator Reception
- Extra Low-Noise Figure for Snow-Free Pictures
- Accepts Inputs from Separate UHF and VHF Antenna Cables or from a Single UHF/VHF Antenna Cable
- Switchable FM/MID Band Stop Filter — Removes Interference from FM and Communications Band.

The MUVB-25 is a medium gain, low noise, broadband amplifier with both UHF and VHF amplifiers. The VHF section of the amplifier features the exclusive patented* inductively coupled emitter feedback (ICEF) circuit that increases input capability while combining low distortion with a low-noise figure. **\$128.42**



MUVB-35 UHF/VHF/FM Distribution Amplifier

Stock No. 1451

- Full UHF Gain to 890 MHz — Ideal for Translator Reception
- VHF Split Band Amplifiers Reduce Distortion
- Separate Gain Controls for High and Low Band VHF and UHF
- Switchable FM Bandstop Filter Prevents FM Overload

The MUVB-35 is a medium gain, broadband UHF VHF FM amplifier designed for use in medium size "on-channel" MATV systems. It features wide dynamic range, excellent stability and low noise. A switchable input mode permits the use of either a combined UHF VHF antenna or separate UHF and VHF antennas in a system. **\$281.65**



MVB-45 VHF/FM Distribution Amplifier

Stock No. 1446

- Dynamic Range Increasing Type Gain Control
- Maintains Signal-to-Noise Ratio at Reduced Gain Settings
- Separate Gain Control for High and Low Band
- High Input Capability with Low Noise Figure
- Switchable FM Bandstop Filter Prevents FM Overload

The MVB-45 is a broadband VHF FM MATV distribution amplifier featuring high gain and high output with low noise assuring a wide dynamic range. It consists of independent high and low band input amplifiers, main amplifier with three stages of RF amplification and power supply. Switchable combined or split inputs are provided for use with either a single antenna (low band FM high band) or for separate low band and high band antennas. **\$332.59**



MASTERLINE PLUS® MVB-56 VHF/FM Distribution Amplifier

Stock No. 1447

- Automatic Overload Protection. Stabilizes Output Levels Over a Wide Range of Input Signal Levels to Prevent Overload
- High Output Capability and Low Noise Figure for Wide Dynamic Range
- Dynamic Range Increasing Type Gain Control
- Selectable Manual Gain Control or Automatic Level Control for each band
- FM Bandstop Filter can be "Switched In" to Prevent FM Signal Overload or "Switched Out" when High FM Sensitivity is Desired

The MVB-56 is a solid state, broadband VHF FM MATV Amplifier with automatic overload protection to stabilize the output signal level. This very high gain unit consists of a main amplifier with three RF amplification stages, independent high and low band input amplifiers, automatic overload protection circuitry, independent variable high and low band gain controls. Signals can be provided by either a single antenna (low band FM, high band) or by separate low band and high band antennas since the MBV-56 has switchable, combined or split inputs. *US Pat No 3,413,563 **\$423.71**



MASTERLINE PLUS® MVB-62 VHF/FM Distribution Amplifier

Stock No. 1455

- Dynamic Range-Increasing Type Gain Control
- Automatic Overload Protection
- Integrated Circuit Design for Added Reliability
- -30 dB Test Point for Ease of Monitoring

The MVB-62 is a 75 ohm solid state, low noise, high output VHF distribution amplifier with automatic overload protection to stabilize the output signal. It is designed for large MATV systems using an off-the-air signal source. The unit features independent (LB HB) automatic level controls, high output capability and a low noise figure. Switchable combined or split inputs permit signals from a single antenna (LB HB FM) or separate antennas. The MVB-62 has switch selectable Manual Gain Control or Automatic Level Control in each band. **\$673.92**



BLONDER-TONGUE LABS, INC.

One Jake Brown Road
Old Bridge, NJ 08857
(201) 679-4000

VARIFLEX SYSTEM II

The VARIFLEX System II is a new generation modular headend designed for medium and large MATV applications. The plug-in modular approach simplifies installation by eliminating interconnecting cables. The system consists of a broadband VHF FM Amplifier mounted on a

base plate. The Amplifier has both automatic and manual level controls. The base plate accepts a maximum of eight cartridges on non-adjacent VHF channel assignments. Amplified channel filters, passive channel filters, and UHF to VHF single channel down converters are avail-

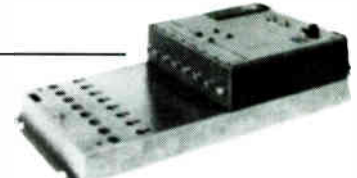
able. An input separator module can be added when a single broadband antenna is used to feed several filters. A locking security cover is available to enclose the complete system.

VARIFLEX System II Specifications

Amplifier Stock No. 1477

- **Gain** : LB FM 45.5 dB
: HB 47.5 dB
- **Bandpass Flatness** : LB FM 1.0 dB
54-88, 88-108, 174-216 MHz : HB 1.2 dB
(0-18 dB gain control range)
- **Noise Figure (Full Gain)** : LB = 6.4 dB
: HB = 5.4 dB
- **Input Return Loss** : LB = 17 dB
: HB = 11.5 dB
- **Output Return Loss** : LB = 13 dB
: HB = 15 dB
- **Output Capability**
Flat (7 Ch. crossmodulation @ -46 dB) : 55.5 dBmV
Block Tilt -6 dB (LB 6 dB below HB) : 57.5 dBmV

- **Gain Control Range (minimum)** : 18 dB
- **AGC Stiffness** : -0.8 dB
(18 dB input change of 7 Ch. @ 56 dBmV output)
- **Hum Modulation** : -58 dB
(117 VAC, 25 C)
- **Power Capability (INPUT)** : 265 mA @ -21 VDC
Any combination of VARIFLEX II Amplified Filters, Filters or Converters
- **Power Requirement** : 117 VAC, 60 Hz, 0.25A



Amplified Filter Stock No. 1476 - (*)

- **Gain** : LB 12.5 dB
: HB 12 dB
: FM 11 dB
- **Bandpass Flatness** : LB 1.0 dB (0-20 dB gain control range)
(6 MHz Bandwidth) : HB 1.0 dB
: FM 1.5 dB
- **Noise Figure** : LB 9.2 dB
(Full Gain) : HB 8.3 dB
- **Input Return Loss** : LB 11 dB
: HB = 13.5 dB
: FM 7.5 dB

- **Recommended Input Range** : 8.0 dBmV to 26 dBmV (Use Filter #4576 for higher level inputs)
(For rated output and 9 dB into ALC range of VARIFLEX II Amplifier)
- **Gain Control Range** : 20 dB minimum
- **Selectivity** : LB 30 dB 9 MHz from
: HB 35 dB center of channel
: FM 13 dB (6 MHz from band edge)
- **Power Requirement** : -21 VDC, 17 mA, diplexed to RF output



*Specify Channel

Filter Stock No. 4576 - (*)

- **Selectivity** : 40 dB down 9 MHz from channel center
TV Channels 2-13
: FM 20 dB down 6 MHz from band edge
- **Return Loss** : 13 dB RL (input)
- **Attenuation Range** : 6 dB (min. loss) to 24 dB

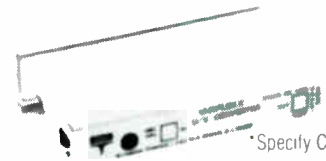
- **Bandpass** : TV Channels 2-13 6 MHz (-0.75 dB Flatness)
: FMA 88-108 MHz
: FMB 92-108 MHz



*Specify Channel

Converter Stock No. 1490 (*)

- **All UHF to VHF**
Conversions except Channels : 22-25 to 7 34-37 to 11
: 25-28 to 8 37-40 to 12
: 28-31 to 9 40-43 to 13
: 31-34 to 10
- **Gain/Attenuation** : Adjustable from +13 dB to -12 dB
- **Return Loss** : Input = 16 dB
: Output = 18 dB
- **Selectivity** : 18 dB down to 6 MHz from band edge
- **Power Requirement** : -21 VDC (supplied from amplifier)



*Specify Channel

VHF Separator Stock No. 4578

- **Impedance** : 75 ohms
- **Return Loss** : 18 dB RL (Input)
- **Insertion Loss** : 0.3 dB
- **Isolation between outputs** : 20 dB min



Cover Stock No. 4579

- **Dimensions** : 17 7/8" L x 10" W x 6 1/4" H
- **Material** : 20 Gauge Turnplate (coated steel)
- **Finish** : Black Textured
- **Weight** : 5 1/4 lbs
- **Accessories** : Double bit tumbler lock and two keys



Prices and Specifications Subject to Change Without Notice.

VRF-17

FEATURES

- Full broadcast quality and versatility
- Every unit fully tested
- Wide variety of standard patterns and gains

Bogner broadcast quality broadband slot antennas are designed for translator and low/medium power TV broadcasters. Bogner antennas are fully comparable in quality and versatility to the finest high-power antennas available to broadcasters today, but are substantially lower in cost. This is achieved through use of the inherently simple Bogner single slot per bay design, standardization of radiation patterns, and the utilization of modular construction and modern manufacturing techniques.

Antennas with any of twelve horizontal patterns, and a choice of vertical patterns, gains, and power input ratings up to 10kW, can be delivered in a very short period of time after order. These antennas are available for any High VHF (Band III) channel up to 8 MHz wide (between 170 and 230 MHz); for any one, or for any group of contiguous, UHF (Bands IV and V) channels up to 30 MHz wide (between 470 and 890 MHz); or for any SHF group up to 42 MHz wide (1990 to 2700 MHz).



TV Transmitting Antennas (Low and Medium Power)

MDS 2160 TO 2163 MHz BAND, O AND A PATTERNS	
(other directional patterns 25% additional)	
Model	Price
B4SO, B4SA	\$ 3,950.00
B8SO, B8SA	6,675.00
B16SO, B16SA	12,800.00
B24SO, B24SA	17,900.00

ITFS/MMDS 2500 TO 2690 MHz BAND, ANY 42 MHz GROUP	
(1.25 max. VSWR over full 2500 to 2690 MHz band 5% additional)	
Model	Price
B4S ()	\$ 7,500.00
B8S ()	10,000.00
B16S ()	15,000.00
B25S ()	22,000.00

First null fill and electrical beam tilt available on all MDS and ITFS antennas, except (B4S ()) at no additional charge.

Combined MDS and MMDS and dual polarized antennas available. Consult factory.

UHF SLOT ANTENNAS*		
Model	Power Rating	Price
B4U ()	(To 1 1/2 KW)†	\$ 5,995.00
B8U ()	(To 3 KW)†	12,100.00
B16U ()	(To 3 KW)†	20,200.00

B24U ()	(To 3 KW)†	28,500.00
B4U ()M	(To 3 KW)†	7,500.00
B8U ()M	(To 6 KW)†	14,700.00
B8U ()H	(To 10 KW)†	17,700.00
B16U ()M	(To 10 KW)†	24,000.00
B24U ()M	(To 10 KW)†	32,500.00
B16U ()H	(To 15 KW)††	29,900.00
B24U ()H	(To 30 KW)††	44,500.00
DEICERS for B4U ()		1,350.00
DEICERS for B8U ()		2,700.00
DEICERS for B16U ()		4,300.00
DEICERS for B24U ()		4,800.00
LPS1	(To 1 KW)†	3,800.00
LPS2	(To 1 KW)†	3,400.00
LPS3	(To 1 KW)†	3,100.00
LPS4	(To 1 KW)†	2,950.00

First null fill and electrical tilt available on B8U, B16U, and B24U models at no additional charge.

VHF HI BAND SLOT ANTENNAS (CH 7-13)**

Model	Power Rating	Price
B2V ()	(To 3 KW)†	\$ 8,650.00
B4V ()	(To 3 KW)†	19,600.00
B6V ()	(To 3 KW)†	28,100.00
B2V ()M	(To 5 KW)†	10,700.00
B4V ()M	(To 10 KW)†	21,550.00
B6V ()M	(To 10 KW)†	30,900.00
B6V ()H	(To 30 KW)††	36,200.00
DEICERS for B2V ()		1,900.00

DEICERS for B4V ()	3,800.00
DEICERS for B6V ()	5,700.00

Electrical beam tilt on B4V and B6V models, and first null fill on B6V models, available at no additional charge.

VHF LO BAND DIPOLE ANTENNAS (CH 2-6 and FM)

Model	Price
BVP	\$ 2,500.00
B2VP	6,350.00
B4VP	13,950.00
B6VP	21,400.00
B2VM/N	13,950.00
B4VM/N	28,850.00
B6VM/N	44,950.00
B2VK/L	21,400.00
B4VK/L	43,650.00
B6VK/L	66,100.00
B2VJ	28,850.00
B4VJ	58,300.00
B6VJ	88,150.00

Dipole arrays include dipoles, interconnecting cables and power divider for installation on customer supplied tower.

†Peak visual input power, plus 20% aural at 40°C ambient

††Peak visual input power, plus 10% aural at 40°C ambient

For special horizontal patterns or higher input power consult factory.
Lightning rod \$125.00 (not available for dipoles)

*UHF SLOT ANTENNA OPTIONS

MULTICHANNEL COVERAGE	
STANDARD	VSWR under 1.10:1 over one 8MHz channel; no additional charge
OPTION A	VSWR under 1.30:1 over 30MHz; total additional charge \$1,200.00 for B4U (), \$2,150.00 for B8U (), \$4,300.00 for B16U (), \$5,000.00 for B24U ()
OPTION B	VSWR under 1.20:1 over 30MHz; total additional charge \$1,750.00 for B4U (), \$3,250.00 for B8U (), \$6,500.00 for B16U (), \$7,500.00 for B24U ()
OPTION C	VSWR under 1.30:1 over greater than 30MHz band but under 8% band (ratio of highest to lowest frequency under 1.08); total additional charge \$2,700.00 for B4U (), \$5,400.00 for B8U (), \$10,800.00 for B16U (), \$12,000.00 for B24U ()
OPTION D	VSWR under 1.30:1 over greater than 30MHz band but under 15% band (ratio of highest to lowest frequency greater than 1.08 but under 1.15); total additional charge \$3,800.00 for B4U (), \$7,000.00 for B8U (), \$14,000.00 for B16U (), \$16,000.00 for B24U () (This option available for O and A patterns only)

**VHF SLOT ANTENNA OPTIONS (CH 7-13)

OPTION E	Multichannel coverage for up to 3 adjacent channels with VSWR under 1.20:1 add 20%		
HARSH ENVIRONMENT PACKAGE			
OPTION F	Steel fully hot dip galvanized supporting pipe and director elements, stainless steel slot cavity corrosion resistant coatings and completely copper feed system; additional charge:		
B4U (), \$1000	B8U (), \$1500	B16U (), \$3000	B24U (), \$4500
B2V (), \$2000	B4V (), \$4000	B6V (), \$6000	

CARLON

25701 Science Park Drive
Cleveland, OH 44122
(216) 831-4000 Telex 98-5300

NON-METALLIC CONDUIT PIPE

CARLON PLUS 40® RIGID NON-METALLIC CONDUIT (Heavy Wall EPC)

The most widely used rigid conduit in the United States, UL listed for use underground, encased in concrete or direct buried, and for use exposed or concealed in most conduit applications above ground. It is rated for use with 90°C conductors and is sunlight resistant. (See NEC Article 347 and other sections for approved locations.) Special compounds are used which reduce emission of smoke and HCL in fire situations, and impart better weathering characteristics.



PLUS 40 HEAVY WALL

NOM. SIZE	CATALOG NO.	O.D.	I.D.	WALL	WT. PER 100' PLAIN END	FEET PER BUNDLE
1/2"	49005	.840	.622	.109	17	100
3/4"	49007	1.050	.824	.113	23	100
1"	49008	1.315	1.049	.133	34	100
1 1/4"	49009	1.660	1.380	.140	46	50
1 1/2"	49010	1.900	1.610	.145	55	50
2"	49011	2.375	2.067	.154	76	50
2 1/2"	49012	2.875	2.469	.203	120	10
3"	49013	3.500	3.068	.216	156	10
3 1/2"	49014	4.000	3.548	.226	186	10
4"	49015	4.500	4.026	.237	220	10
5"	49016	5.563	5.047	.258	298	10
6"	49017	6.625	6.065	.280	387	10

Rigid Non-Metallic Conduit is normally supplied in standard lengths of 10 feet including one coupling. For specific requirements it may be produced in lengths shorter or longer than 10 feet, with or without couplings. Couplings may be integrally formed (as shown) or attached.

CARLON PLUS 80® RIGID NON-METALLIC EXTRA HEAVY WALL CONDUIT (EPC-80)

Carlton Plus 80® conduit is designed for above ground and underground applications where an extra heavy wall PVC conduit is needed. Frequently used where subject to severe physical abuse such as for pole risers, bridge crossings, and in heavy traffic areas. UL listed for use with 90°C conductors and is sunlight resistant.



PLUS 80 EXTRA HEAVY WALL

NOM. SIZE	CATALOG NO.	O.D.	I.D.	WALL	WT. PER 100' PLAIN END	FEET PER BUNDLE
1/2"	49405	.840	.546	.147	21	100
3/4"	49407	1.050	.742	.154	29	100
1"	49408	1.315	.957	.179	42	100
1 1/4"	49409	1.660	1.278	.191	58	50
1 1/2"	49410	1.900	1.500	.200	70	50
2"	49411	2.375	1.939	.218	96	10
2 1/2"	49412	2.875	2.323	.276	145	10
3"	49413	3.500	2.900	.300	194	10
4"	49415	4.500	3.826	.337	284	10
5"	49416	5.563	4.813	.375	394	10

Rigid Non-Metallic Conduit is normally supplied in standard lengths of 10 feet. Couplings may be integrally formed (as shown) or attached. For specific requirements it may be produced in lengths shorter or longer than 10 feet, with or without couplings.

CARLON PLUS A® THIN WALL RIGID NON-METALLIC CONDUIT (EPT)

Carlton Plus A® , UL listed (concrete encasement only) for use with 90°C conductors, complies with UL Standard 651A. It is used primarily in underground installations encased in concrete.



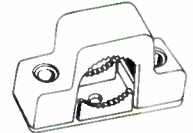
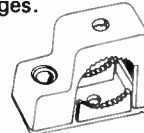
PLUS A THIN WALL

PART NO.	Nom. Size	O.D.	I.D.	Wall	Wt. Per 100' Pin. End	Ft. Per. Bundle
49111	2"	2 375	2 175	100	53	10
49113	3"	3 500	3 250	125	96	10
49115	4"	4 500	4 200	150	148	10

Rigid Non-Metallic Conduit is normally supplied in standard lengths of 10 feet including one coupling (attached). For specific requirements it may be produced in lengths shorter or longer than 10 feet, with or without couplings.

SNAP STRAP CONDUIT WALL HANGERS ONE AND TWO HOLE

New, high strength clamp solves bowing problems resulting from the expansion and contraction of conduit caused by varying temperature changes.



ONE HOLE

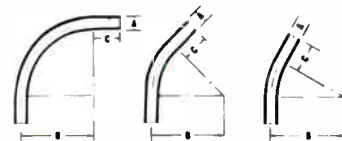
Part No.	Size	Pkg. Qty.
E978D	1/2"	100
E978E	3/4"	100
E978F	1"	100

TWO HOLE

Part No.	Size	Pkg. Qty.
E978G	1 1/4"	100
E978H	1 1/2"	100
E978J	2"	100

DIMENSIONS OF STANDARD RADIUS ELBOWS

For use with non-metallic solvent weld fittings. Both ends plain. Special radius elbows available on request.



Applicable to 90°-45°-30° Elbows

Size	A	8 Min.	C Min.
1/2"	.840	4	1 1/2
3/4"	1 050	4 1/2	1 1/2
1"	1 315	5 1/2	1-7/8
1 1/4"	1 660	7 1/4	2
1 1/2"	1 900	8 1/4	2
2"	2 375	9 1/2	2
2 1/2"	2 875	10 1/2	3
3"	3 500	13	3-1/8
3 1/2"	4 000	15	3 3/4
4"	4 500	16	3-3/8
5"	5 563	24	3-5/8
6"	6 625	30	3 3/4



OFFSETS



Part No.	Size	Pkg. Qty.
E994D	1/2"	100
E994E	3/4"	50
E994F	1"	50

Prices and Specifications Subject to Change Without Notice.

VRF-19

CARLON

25701 Science Park Drive
Cleveland, OH 44122
(216) 831-4000 Telex 98-5300

STANDARD COUPLINGS

Socket type for joining non-metallic conduit.



Part No.	Size	A	B	D	OD	C	N	L
E940D	1/2	852	836	758	1 1/4	1 1/4	1/2	1 1/2
E940E	3/4	1 064	1 046	948	1 3/4	1 3/4	1/2	1 3/4
E940F	1	1 330	1 310	1 210	1 5/8	1 5/8	1/2	2
E940G	1 1/4	1 677	1 655	1 535	2 1/8	2 1/8	1	2 1/2
E940H	1 1/2	1 918	1 894	1 755	2 3/8	2 3/8	1 1/2	2 3/4
E940J	2	2 393	2 369	2 190	2 7/8	2 7/8	1 3/4	2 7/8
E940K	2 1/2	2 890	2 868	2 688	3 1/8	3 1/8	1 3/4	3 1/4
E940L	3	3 515	3 492	3 375	3 7/8	3 7/8	1 3/4	3 7/8
E940M	3 1/2	4 015	3 992	3 780	4 1/2	4 1/2	1 3/4	3 3/4
E940N	4	4 515	4 491	4 265	5 1/2	5 1/2	2	3 3/4
E940P	5	5 593	5 553	5 097	6 1/4	6 1/4	2 1/2	4 1/8
E940R	6	6 658	6 614	6 115	7 1/2	7 1/2	2 1/2	4 3/4

FEMALE ADAPTORS

For adapting non-metallic conduit to threaded fittings, metallic systems. Female threads on one end, socket end on other.



Part No.	Size	A	B	D	OD	C	T	L
E942D	1/2	852	836	620	1 1/4	1 1/4	3/4	1 1/4
E942E	3/4	1 064	1 046	822	1 3/4	1 3/4	3/4	1 3/4
E942F	1	1 330	1 310	1 046	1 5/8	1 5/8	3/4	1 1/2
E942G	1 1/4	1 677	1 655	1 377	2 1/8	2 1/8	1	2
E942H	1 1/2	1 918	1 894	1 607	2 3/8	2 3/8	1 1/2	2 1/2
E942J	2	2 393	2 369	2 064	2 7/8	2 7/8	1 1/2	2 3/4
E942K	2 1/2	2 890	2 868	2 450	3 1/8	3 1/8	1 1/2	2 3/4
E942L	3	3 515	3 492	3 000	3 7/8	3 7/8	1 1/2	3 1/4
E942M	3 1/2	4 015	3 992	3 500	4 1/2	4 1/2	1 1/2	3 3/4
E942N	4	4 515	4 491	4 000	5 1/4	5 1/4	2	3 3/4
E942P	5	5 593	5 553	5 047	6 1/4	6 1/4	2 1/2	4 1/8
E942R	6	6 658	6 614	6 055	7 1/4	7 1/4	2 1/2	4 3/8

TERMINAL ADAPTORS

For adapting non-metallic conduits to boxes, threaded fittings, metallic systems. Male threads on one end, socket end on the other.



Part No.	Size	A	B	D	OD	C	S	L
E943D	1/2	852	836	597	1 1/4	1 1/4	3/8	1 3/8
E943E	3/4	1 064	1 046	800	1 3/4	1 3/4	3/8	1 3/8
E943F	1	1 330	1 310	1 018	1 5/8	1 5/8	3/8	1 3/8
E943G	1 1/4	1 677	1 655	1 332	2 1/8	2 1/8	1	1 3/4
E943H	1 1/2	1 918	1 894	1 566	2 3/8	2 3/8	1 1/2	2 1/4
E943J	2	2 393	2 369	2 000	2 7/8	2 7/8	1 1/2	2 3/4
E943K	2 1/2	2 890	2 868	2 376	3 1/8	3 1/8	1 1/2	2 3/4
E943L	3	3 515	3 492	2 954	3 7/8	3 7/8	1 1/2	3 1/4
E943M	3 1/2	4 015	3 992	3 440	4 1/2	4 1/2	1 1/2	3 1/4
E943N	4	4 515	4 491	3 940	5 1/4	5 1/4	2	3 3/4
E943P	5	5 593	5 553	4 815	6 1/4	6 1/4	2 1/2	4 1/8
E943R	6	6 658	6 614	5 860	7 1/2	7 1/2	2 1/2	4 3/8

END BELLS

For termination of non-metallic conduit into a manhole.



Part No.	Size	A	B	D	OD	X	C	N	L	R
E997F	1	1 330	1 310	1 049	1 5/8	1 5/8	1 1/2	2	3 3/8	1/4
E997G	1 1/4	1 677	1 655	1 380	2 1/8	2 1/8	1 1/2	2 1/2	4	1/4
E997H	1 1/2	1 918	1 894	1 610	2 3/8	2 3/8	1 1/2	3	4 1/2	1/4
E997J	2	2 393	2 369	2 067	2 7/8	2 7/8	1 1/2	3	4 3/4	1/4
E997K	2 1/2	2 890	2 868	2 469	3 1/8	3 1/8	1 1/2	3 1/2	5 1/4	1/4
E997L	3	3 515	3 492	3 078	3 7/8	3 7/8	1 1/2	3 1/2	5 3/4	1/4
E997M	3 1/2	4 015	3 992	3 558	4 1/2	4 1/2	1 1/2	3 1/2	5 3/4	1/4
E997N	4	4 515	4 491	4 036	4 1/2	4 1/2	1 1/2	3 1/2	5 3/4	1/4
E997P	5	5 593	5 553	5 057	5 1/4	5 1/4	2 1/2	3 1/2	5 3/4	1/4
E997R	6	6 658	6 614	6 075	6 1/4	6 1/4	2 1/2	3 1/2	5 3/4	1/4

*Fabricated end bells available on special order only.

SOCKET CAPS

Caps available 1/2" to 1-1/2". Plugs available 1-1/2" to 6".



Part No.	Size	A	B	OD	C	L
E958D	1/2	848	836	1 1/4	1 1/4	1 1/4
E958E	3/4	1 058	1 046	1 3/4	1 3/4	1 3/4
E958F	1	1 325	1 310	1 5/8	1 5/8	1 5/8
E958G	1 1/4	1 670	1 655	2 1/8	2 1/8	2 1/8
E958H	1 1/2	1 912	1 894	2 3/8	2 3/8	2 3/8

VRF-20

Prices and Specifications Subject to Change Without Notice.

COUPLERS/ADAPTORS

ADAPTORS FOR NON-METALLIC ENCLOSURES

Adapts non-metallic conduit to all electrical boxes by inserting adaptor through knockout and cementing into Carlon couplings.



Part No.	Size	D	OD	X	CM	L
E996D	1/2	662	840	1 1/4	2 1/2	2 1/2
E996E	3/4	824	1 050	1 3/4	2 1/2	2 1/2
E996F	1	1 049	1 315	1 5/8	2 1/2	2 1/2
E996G	1 1/4	1 380	1 660	2 1/8	1 1/4	1 1/4
E996H	1 1/2	1 610	1 900	2 3/8	1 1/4	1 1/4
E996J	2	2 067	2 375	2 7/8	1 1/4	1 1/4
E996K	2 1/2	2 469	2 875	3 1/8	1 1/4	1 1/4
E996L	3	3 068	3 500	4 1/2	2	2 1/4
E996M	3 1/2	3 548	4 000	4 1/2	2 1/4	2 1/4
E996N	4	4 026	4 500	5 1/4	2 1/4	2 1/4

5" and 6" available on special request

EXPANSION COUPLINGS

(EXPANDS TO A MAXIMUM OF 6")

E945 Series Expansion couplings are designed to compensate for temperature variations of 120°F in exposed applications per 200 feet of conduit. E955 Series Expansion couplings are for use in extremely short runs. If installed at lowest anticipated temperature, coupling should be in full open position. If installed at intermediate temperature, adjust coupling proportionately. See instructions on label. Be sure to secure barrel portion of expansion coupling only.

NOTE: When encased in concrete, conduit is immobilized by the concrete and will conform to the expansion rate of the concrete.



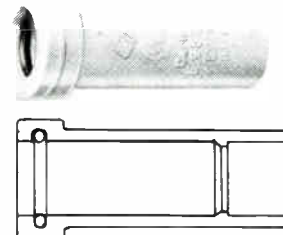
Part No.	Size	Part No.	Size
E9450	1/2	E945K	2 1/2
E945E	3/4	E945L	3
E945F	1	E945M	3 1/2
E945G	1 1/4	E945N	4
E945H	1 1/2	E945P	5
E945J	2	E945R	6

EXPANSION FACTORS

Cat. No.	Size	Sched 40 Conduit Ave. OD	Lay Lengths		Available Length Expansion-Contraction
			Stop to Stop Total Closed	Stop to Stop Total Open	
E945D	1/2	.840	12 1/4	18 3/8	6 3/8
E945E	3/4	1.050	12 1/4	18 3/8	6 3/8
E945F	1	1.315	12 3/4	19 1/8	6 3/8
E945G	1 1/4	1.660	12 3/4	19 1/8	6 3/8
E945H	1 1/2	1.900	12 3/4	19 1/8	6 3/8
E945J	2	2.375	13 1/2	19 1/8	6 3/8
E945K	2 1/2	2.875	14	20 3/8	6 3/8
E945L	3	3.500	16 1/2	23	6 1/2
E945M	3 1/2	4.000	16 1/2	23	6 1/2
E945N	4	4.500	17 1/2	24	6 1/2
E945P	5	5.563	18 1/2	24 1/2	6
E945R	6	6.625	20 1/2	26 1/2	6

SHORT EXPANSION COUPLINGS

(EXPANDS TO A MAXIMUM OF 2")



Part No.	Size
E955D	1/2
E955E	3/4
E955F	1
E955G	1 1/4
E955H	1 1/2
E955J	2

CATEL

DIVISION UNITED SCIENTIFIC CORP.

4800 Patrick Henry Drive
Santa Clara, CA 95054
(408) 988-7722 TWX 910-338-2263

PROCESSOR SYSTEMS

FMU 2150C SATELLITE STEREO PROCESSOR SYSTEMS

FEATURES

- Warner Music TV Compatible
- Composite Video & Subcarrier Input
- Frequency Agile (Synthesized) FM Stereo Output
- Dual Tone Decoders
- VTR Control/Audio and Video Switching
- Independent 600 ohm Mono Output
- Status Indicators and Front Panel Metering

Description

The Catel FMU 2150C is a single unit processor in a 1-3/4" rack mount, which is designed for the Warner MTV Service or any other satellite subcarrier service using separate L + R and L - R subcarriers.

The processor features a state of the art Frequency Agile FM stereo modulator which can be programmed on any frequency in the 88-108 MHz range. Frequencies in the 50-200 MHz range can also be accommodated on special order.

A comprehensive tone decoding/switching section provides all necessary tone decoding for the dual 19 kHz tones transmitted for commercial insertions. All video and audio switching functions are contained within the unit. An internal Matrix/Stereo generator converts L and R audio from commercial inserts to true stereo.

Front panel diagnostics include a subcarrier presence indicator, tone decoder and switching status, and an L + R VU meter which can be used to monitor deviation of the main program audio, or the commercial substitution audio.

*Dolby registered Trade Mark of
Dolby Laboratories



FMU 2150C

SPECIFICATIONS:

SUBCARRIER INTERFACE

Input Frequencies

- 5.8 MHz (L - R)
- 6.62 MHz (L + R), supplied by satellite receivers as part of the composite baseband signal.

Input Configuration

- 75 ohm, BNC connector

Input Sensitivity

- 30 to -16 dBV (0 dBV = 1 Volt P.P. Video) or subcarrier amplitudes of 30 to 150 mV P.P. in baseband video

Input Deviation Acceptance

- ±75 kHz APL
- ±237 kHz PPL

TV MODULATOR INTERFACE

Output Configuration

- 600 ohm, unbalanced, screw terminal strip

Output Level

- 0 dBm at APL

FM STEREO INTERFACE

Output Frequency

- Synthesized, 87 to 108 MHz std., or 50 to 200 MHz on special order

Frequency Stability

- ±.001% phaselocked

Output Configuration

- Built in directional coupler, BNC

Output Level

- +25 to +45 dBmV (adjustable) including built in directional coupler loss

Spurious Products

- >65 dB

AUDIO CHARACTERISTICS

Within ± 0.5 dB of transmitted signal from 30 Hz to 15 kHz

Pre-Emphasis

75 μ Sec, modified to 25 μ Sec by Dolby*B encoder, at uplink location

Distortion

≤0.3% THD at 1kHz

Stereo Separation

≥30 dB at 1 kHz

TONE SWITCHING

Tone Frequencies

19 kHz ± 10 Hz

Trigger Sensitivity

≤15 kHz peak deviation of carrier by tone

VTR Relay

One set form C contacts, 2A rating at 30V DC, momentary closure

Commercial Insert Relay

One set form C contacts, 2A rating, closed for duration of tone. (Audio switching performed electronically inside unit.)

PHYSICAL CHARACTERISTICS

Dimensions

19"W x 1-3/4"H x 9"D

Shipping Weight

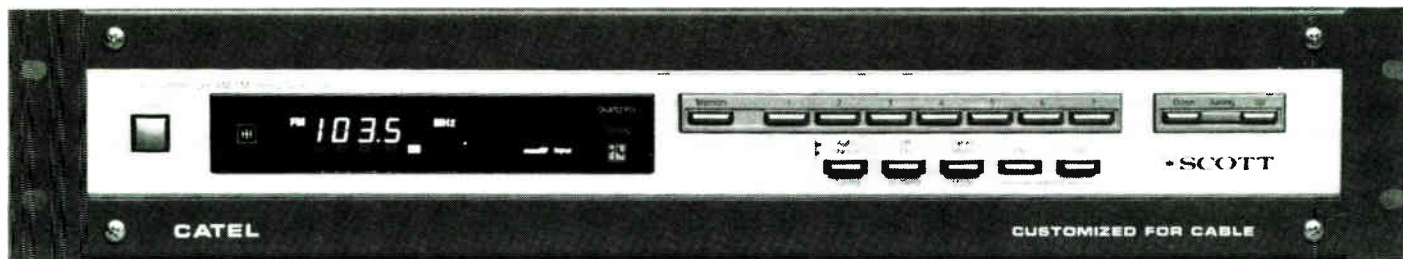
15 lbs.

Operating Temperature

+10 to +40°C

Power Requirements

115 or 230VAC (specify) 16 watts

**CT-558 "CABLE CUSTOMIZED"
AM/FM HEADEND MONITOR TUNER****FEATURES**

- AM/FM Reception
- Total Digital Tuning—Down/Up Frequency Seeker
- Quartz PLL Frequency Synthesis
- 7 Memory Presets
- Signal Strength Indicator with 10dB steps
- 50dB Stereo Separation
- Multi-function Display Lights up to Indicate Correctly Tuned Station, Frequency Selected, Memory Function, Stereo Mode, and Signal Strength

The CATEL CT-558 AM/FM Stereo—quartz PLL synthesized tuner is customized for headend rack mounting and was selected from the H.H. Scott superior line of high fidelity stereo tuners for its exceptional performance and reliability. This tuner is the epitome of tuners available on the market today.

CATEL has customized the CT-558 in only 3-1/2" of rack space for close monitoring of your premium FM audio service. Modifications include an output level of 0dBm at 600 ohms which can be connected to the audio portion of a TV modulator for background music.

This state of the art tuner featuring quartz PLL frequency synthesis includes a microprocessor-controlled memory permitting insertion of from one to seven stations for instant recall by the touch of a numbered button. Additional enhancements include auto-scan tuning, fluorescent display for display readout, signal strength and center tuning, stereo indicator, active hi-blend filter, mode selector, 9.8dB f/1.7uV sensitivity, a varactor diode tuning.

The CATEL CT-558 tuner is truly a professional component with sensitivity and reliability as inherent characteristics.

SPECIFICATIONS:**FM Tuner Section**

Tuning Range: 87.9 to 107.9MHz
Usable Sensitivity: -55dBmV (1.7uV)
50dB Quieting Sensitivity: (Mono) -48dBmV (4uV)
(Stereo) -28dBmV (40uV)

Audio Output Level: 0dBm at 600 ohms
Signal to Noise Ratio: (Mono) 78dB
(Stereo) 72dB

Total Harmonic Distortion: 0.04% at 1kHz (stereo)
0.03% at 1kHz (mono)
Frequency Response: 25Hz to 15kHz +0.5dB, -1.5dB
Stereo Separation: 50dB at 1kHz
Spurious Rejection: 65dB at 98MHz
Image Rejection: 60dB at 98MHz
AM Suppression Ratio: 70dB
Capture Ratio: 1.2dB
Alternate Channel Selectivity: 60dB at 400kHz

AM Tuner Section

Tuning Range: 530 to 1620kHz
Usable Sensitivity: 250uV/m (Bar Ant)
Audio Output Level: 0.25V, 2K ohm
Signal to Noise Ratio: 52dB
Image Rejection: 45dB

General:

Power Requirement: 120V 60Hz
Power Consumption: 35 watts
Dimensions: 19"W x 3-1/2"H x 11-1/4"D
Shipping Weight: 3.5kg (8.25 lbs)

CATEL

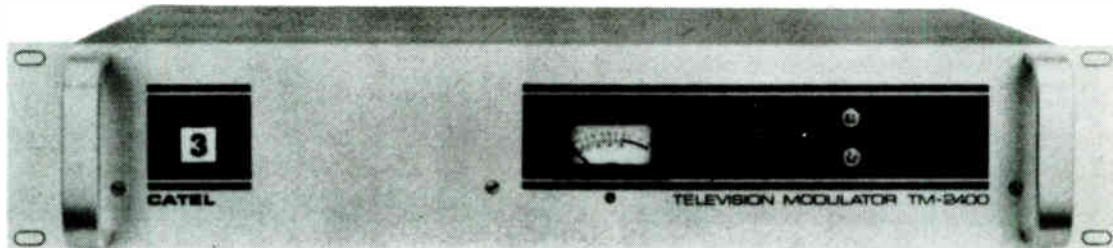
DIVISION UNITED SCIENTIFIC CORP.

4800 Patrick Henry Drive

Santa Clara, CA 95054

(408) 988-7722 TWX 910-338-2263

TELEVISION MODULATOR



TM-2400

TM-2400 TV MODULATOR

FEATURES

- I.F. modulation at moderate price
- In-the-field channel change
- Output level of +54 dBmV standard, to 60 dBmV optional
- Meter for both video and sound modulation levels
- Low differential gain: + /-0.5 dB
- Low differential phase: + /-1.0 degree
- Automatic white limiter
- High impedance or 600 ohm audio input
- 6 to 440 MHz frequency range
- Ten pole band pass filter
- Available on most international standards

DESCRIPTION:

The TM-2400 TV modulator brings the advantages of IF modulation within reach of almost any CATV and CCTV system. Technical performance meets the most stringent broadcast, CATV and CCTV requirements. It can be used with film chains, cameras, VTRs or TV demodulators. For microwave, a second version (TM-2400B) is available with composite video and 4.5 MHz intercarrier input. The TM-2400 is available in CCIR standard B, G, I, K, M and N, and is compatible with NTSC, PAL or SECAM VIDEO.

In addition, the TM-2400 is the only unit in its price range with easy, in-the-field channel change, a feature usually found only on more expensive modulators.

As a result, users can change the operating channel by simply changing a P.C. board assembly. Aural and visual circuits are also modular, to make field maintenance easier. Since the IF design allows modulation at a fixed frequency, filters are optimized for a true vestigial side band signal.

SPECIFICATIONS

SPECIFICATION	VISUAL	AURAL
Frequency Range	All Channels With Modular Converter	All Channels With Modular Converter
Input Level	Min. 0.5 Volt Peak to Peak for 87.5% Modulation	Min. -10 dBm for 100% Modulation (± 25 kHz Deviation)
Input Impedance	75 Ohms, Unbalanced, Terminating	5,000 Ohms, Unbalanced, and 600 Ohms, Balanced
Output Impedance	75 Ohms	75 Ohms
Output Level Capability	+ 60 dBmV	Adjustable from 12 to 27 dB Below Visual Carrier
Recommended Output	+ 54 dBmV (Factory Set)	+ 39 dBmV (Factory Set)
Output Control Range	20 dB, Continuously Variable	15 dB, Continuously Variable
Frequency Response	30 Hz to 4.2 MHz at ± 1 dB	Within ± 1 dB of Pre-emphasis Curve, 50 to 15 kHz
Frequency Stability	0.005%	± 1 kHz
Hum and Noise	60 dB Down at 87% Modulation	60 dB Down with ± 25 kHz Deviation
Distortion		≤ 1% at Full Deviation
Modulation Range	0 to 92% APL, Variable	± 25 kHz
Spurious Beats	Minimum 60 dB Below Video Carrier @ + 54 dBmV (Aural Carrier) @ + 39 dBmV	
Color Response	± 0.5 dB Max. Diff. Gain ± 1.0 Degree Max. Diff. Phase	
Power Input	105 to 125 VAC, 60 Hz, 25 Watts (230 V, 50 Hz optional)	
Dimensions	3½" x 12" x 19" Rack Mounted	
Shipping Weight	17 Pounds	
Connectors	Video, BNC, Audio, Cannon XL, R F F	
Optional Extras	Non-standard Connectors, Group Delay Network (Meets FCC Specifications 73.687 with GDF2300 Group Delay Pre-distortion Network)	

SPECIFICATIONS CCIR M/NTSC

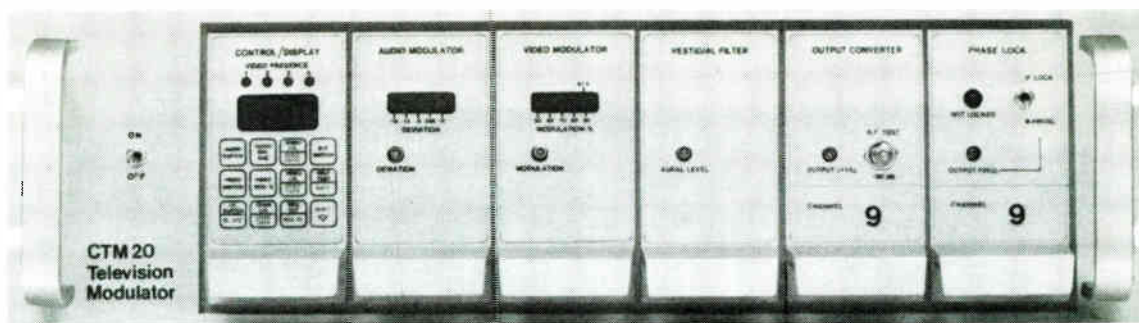
Contact factory for other standards, specs.

CATEL

DIVISION OF UNITED SCIENTIFIC CORP.

4800 Patrick Henry Drive
Santa Clara, CA 95054
(408) 988-7722 TWX 910-338-2263

COLOR TELEVISION MODULATOR



CTM20

CTM20 Color Television Modulator

FEATURES

- Microcomputer Control
- Extensive Control and Monitoring Capability
- Central Control Serial Data Interface
- Totally Modular Expansion
- Multiple Audio/Visual Switching
- Internal Message Generator
- Complete Scrambler Interface
- Surface Acoustic Wave (SAW) IF Filtering
- Bar Graph Modulation Indicators
- Calibrated Detent Modulation Controls
- Self Test Mode
- Audio/Video/IF AGC Signal Level Normalizing

The CTM20 is a high performance digitally controlled modulator designed for all applications in CATV system headends, local origination, terrestrial microwave service, and satellite TVRO signal remodulation for cable distribution. The modulator incorporates an on-board microcomputer control system, complete audio, video, and IF signal switching, and provisions for controlling operating levels, signal switching, and the monitoring of system performance from a central terminal or under local control.

System Design Flexibility

The modulator is designed to give total configuration control to the system operator. All options for the modulator can be readily field installed by the equipment user. System revisions, updates, or reconfiguration can be made from the central control computer and through the option hardware within the modulator.

SAW Vestigial Sideband Filter

A surface acoustic wave IF filter is utilized in the CTM20. Inherently linear phase and a flat amplitude response across the channel passband are achieved with the SAW filter, insuring excellent video signal transparency and waveform fidelity. The exceptional shape factor obtained with the SAW filter affords excellent adjacent channel protection. Auxiliary video and IF filters with attendant all-pass delay correction circuits are not required with the SAW filter.

Phase Equalization

The SAW IF filter exhibits an inherently flat group delay characteristic across the channel passband. The shaped group delay characteristic specified for color television transmission is provided by an all-pass phase equalizer in the video module.

Control and Monitoring System

A microcomputer based control system contained within the CTM20 provides extensive controlling and monitoring capability. All switching functions as well as modulation levels and the channel output level are controllable from a headend terminal. Up to four audio and three video signal sources may be accepted by each modulator. A video message generator option located within the modulator offers preprogrammed, custom messages as the fourth video signal source.

Local control of the modulator's audio, video, and IF switching is accomplished by means of parallel, hardwired switch input lines to the modulator's control module.

Audio and video modulation levels are internally precalibrated to normalized values. Adjustment of detent type front panel controls permits local override of the preset levels or central controller command if desired.

Control Features

AGC — Automatic level control of selected audio, video, and IF signal inputs is optionally available within the CTM20. These options serve to normalize the modulator's modulation characteristics and carrier level under all conditions of signal switching, and provide the means for remote programming and monitoring of these functions.

Signal Switching

The internal signal switching provisions within the CTM20 will accommodate multiple signal sources (both baseband and IF) and various modes of switch program control. All commands for signal switching are processed by the microcomputer located within the modulator and permit the control of switching functions by local commands generated at the headend site, by automatic prioritized signal selection, or by override of both these through central controller commands.

Baseband Switching

The audio/video switches respond to the microcomputer generated commands, with switching decisions based on 4 data input types:

- hardwired, parallel data switch commands into the modulator
- presence of video at each of 4 audio/video switch locations in the modulator
- the priority level of each switch relative to all other switches
- central controller serial data input commands to the modulator

Audio switching normally will follow the associated video switch unless otherwise specified by central controller command. The hardwired, parallel data inputs permit audio override to energize the emergency audio alert switch or to switch off all audio sources.

IF Switching

The substitute IF signal switching control may be enabled by either local, hardwired input line commands, or by the central controller data input. Automatic switching to an external IF signal source may be initiated by the loss of a selected video input signal source if so desired.

Signal Scrambling

A scrambler interface for both IF and baseband encoders is included in the CTM20 chassis. Separate picture and sound carrier loop through connectors provide the interface to IF scramblers. Video loop through connectors at the video output bus allow baseband scrambling of the CTM20 switch selected video source. An aural subcarrier input provides for sound security in baseband encoding systems.

Monitoring Features Self Test Mode

The self contained local monitoring system provides a self test mode that is automatically initiated with power up of the modulator, or at the request of the local keyboard. Ten parameters are sequentially checked against internal preset limits contained in ROM. The measured parameters are:

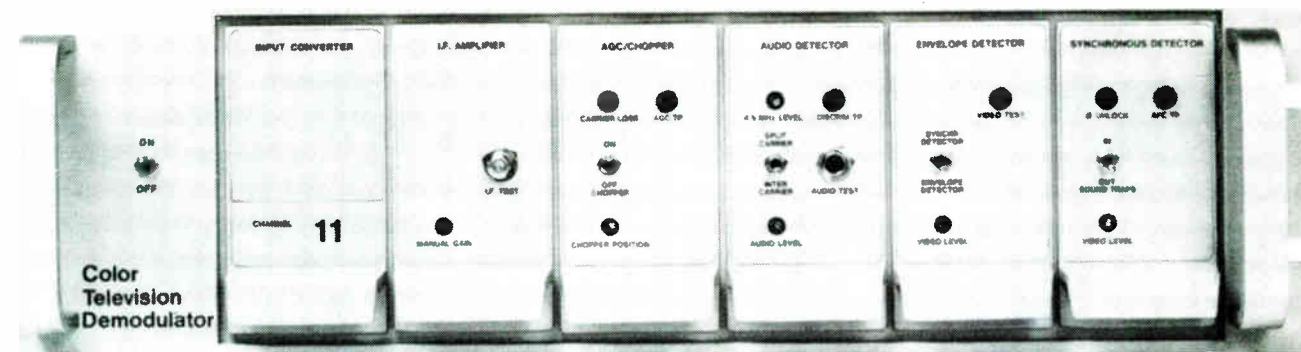
- Audio, video, VSB filter, and converter module currents
- Audio and video modules local 5 and 15 volt regulator outputs
- Audio module and output converter AFC levels

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4800 Patrick Henry Drive
Santa Clara, CA 95054
(408) 988-7722 TWX 910-338-2263

COLOR TELEVISION DEMODULATOR



CTD10

CTD10

Color Television Demodulator

FEATURES

- Synchronous/Envelope Detection
- Zero Carrier Chopper
- Video Squelch
- Switchable Sound Traps
- Split Carrier/Intercarrier Sound
- Audio Squelch
- Balanced Audio Output
- DC and AC Input Powering

The CTD10 Series Demodulators are solid state and have been designed for use in cable system applications. The demodulated signal is available for monitoring, video processing, or remodulation for transmission over cable system or microwave systems.

Synchronous/Envelope Detection

Both synchronous and envelope video demodulation are available in the CTD10. Selection of the desired detection mode may be chosen by front panel control, or remotely from rear panel contacts. Logic circuitry automatically enables the envelope detection mode with removal of the optional synchronous detector module. Rear panel terminal jumpering also permits automatic transfer to envelope detection with synchronous detection phase unlock.

SPECIFICATIONS

Input Level Range:

- 20 dBmV to +30 dBmV VHF Channels
- 10 dBmV to +30 dBmV UHF Channels

Operating Channels:

- Any standard VHF 2 thru 13
- Any standard UHF 14 μ thru 83 μ
- Sub-Low Cable Channels T 7-T11
- Cable Channels 14 thru 36 (A-W)

Noise Figure:

- 6 dB Channels T7 thru T11 & 2 thru 6
- 7 dB Channels 7 thru 13
- 12 dB Channels 14 μ thru 83 μ

Input Impedance:

- 75 ohms nominal

Input VSWR:

- 16 dB (1.37:1) 6 MHz Channel width, over specified input level range

AGC Type:

- Keyed AGC, sync tip referenced

AGC Control:

- ± 0.5 dB maximum video variation over specified input level range

Image Rejection:

- 60 dB VHF, 50 dB UHF

IF Rejection:

- 60 dB

Adjacent Channel Rejection:

- 60 dB

IF Frequency:

- 45.75 MHz Visual Carrier,
- 41.25 MHz Aural Carrier

Video Output Impedance:

- 75 ohms, 30 dB min return loss

Video Output Level:

- Adjustable to 1.5 VP-P, sync tip to peak white

Video Frequency Response:

- a) Envelope detector ± 0.5 dB, 30 Hz-3.58 MHz
- b) Synchronous detector, sound traps in: ± 0.5 dB, 30 Hz-4.18 MHz
- c) Synchronous detector sound traps out: ± 0.5 dB, 30 Hz, -4.5 MHz

Envelope Delay:

- a) Sound traps in circuit, Chroma/Luminance delay within ± 25 nsec of complement of FCC transmitter nominal delay
- b) Sound traps out of circuit, Chroma/Luminance delay within ± 25 nsec (synchronous detector only)

Linearity:

- 2% Synchronous, 5% Envelope Detection

Differential Gain:

- $\pm 1\%$ Synchronous
- $\pm 2.5\%$ Envelope Detection

Differential Phase:

- $\pm 0.5^\circ$ Synchronous
- $\pm 1.0^\circ$ Envelope Detection

Chopper:

- Position adjustable within vertical blanking interval, width adjustable between 30 μ sec and 60 μ sec

Chopper Carrier Cutoff:

- 55 dB

Video Squelch:

- Activation selectable from one or more of 3 modes
- a) Carrier loss
- b) Adjustable threshold carrier level
- c) Synchronous Detection Phase Unlock

Audio Output Level:

- Adjustable to 2.0 VRMS across 600 ohms (Before deemphasis starts). The main output is balanced or unbalanced to ground depending on the selected option. The monitor output is always unbalanced to ground

Audio Frequency Response:

- ± 0.5 dB from 30 Hz to 15 kHz

Audio Deemphasis:

- 75 μ sec

Audio Harmonic Distortion:

- 0.5%, 30 Hz to 15 kHz, 25 kHz deviation at specified maximum audio output level

4.5 MHz Output:

- Adjustable to 0.2 VP-P, 75 ohms source impedance, 1:25:1 VSWR

AC Powering Input:

- 100 to 130 VAC, 50-60 Hz, 30 watts

DC Powering Input:

- 21.5 to 30.0 VDC, 800 mA, negative ground

Option Code C

DC Powering Input:

- 21.5 to 28.0 VDC, 1.5A, floating ground

Ambient Temperature:

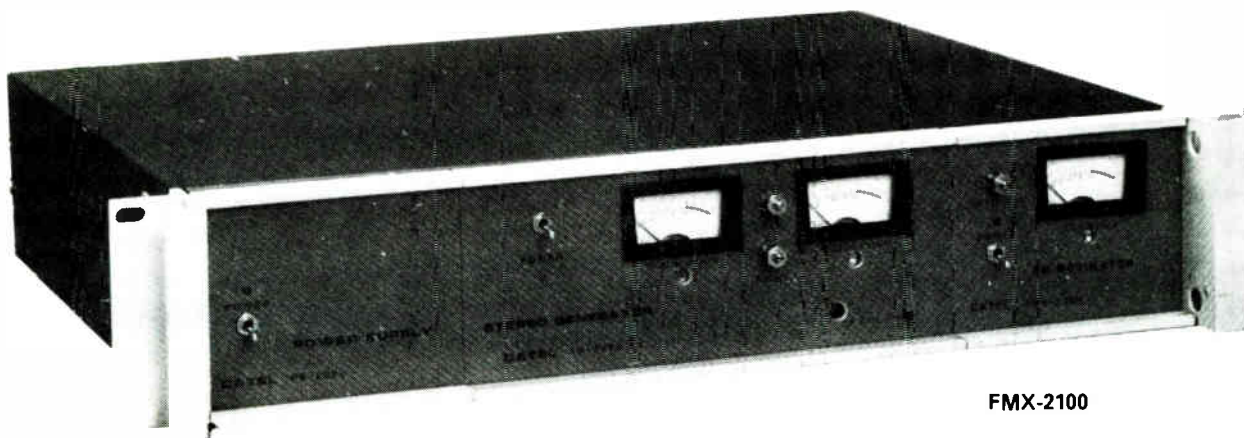
- 0 to +55°C operating

Dimensions:

- Standard 19" rack mount, 5-1/4"H, 16" chassis depth

Weight:

- 24 lbs.



FMX-2100

FMX-2100 FM Modulator

FEATURES

- Direct modulation of RF carrier
- Oven regulated VCO for high stability
- Fully solid state
- Crystal controlled output on any VHF or HF frequency
- Pre-emphasis or optional flat response
- Output plus 45 dBmV...continuously variable over 15 dB range
- Meter indicates percentage of modulation

The FMX-2100 FM Modulator is a modular packaged frequency modulation cable transmitter designed specifically for CATV and CCTV applications. When used with the SM-2200 Stereo Generator it makes possible the origination of stereo programming. With direct audio sources such as AM/FM tuners, tape decks, microphone preamplifiers and short wave receivers, it can add varied FM signals to the cable system. In addition to the re-transmission of audio signals the wide band (plus or minus 75 kHz) deviation makes

the unit ideal for multiplexed voice or data transmission.

The crystal controlled output of the FMX is normally on a customer selected frequency in the 88 to 108 MHz frequency range. It is also available, at added cost, on any other HF or VHF frequency on special order. The unit is fully solid state and employs an oven regulated VCO for greater stability. Up to ten FMX-2100 Modulators can be powered from a single PS-2000 Regulated Power Supply.

SPECIFICATIONS

Frequency Output:

50 to 55, 87 to 108, 170 to 174 MHz. Other frequencies to 200 MHz are available on special order

Output Impedance:

75 Ohms

Output Level:

+45 dBmV

Output Control:

Continuously Variable

Frequency Stability:

0.005%, Crystal Controlled

Response:

Response:

Within ± 1 dB of Pre-emphasis Curve, 50 to 15 kHz or 50 to 60

kHz, ± 1 dB without Pre-emphasis

(Hi Z input)

Modulation Frequency Range:

30 Hz to 100 kHz

Modulation Capability:

75 kHz Deviation

Hum and Noise:

60 dB Below Maximum Output

Power Requirements:

+12.6 VDC @150 ma

Multiplexing:

Catel SM-2200 Available, See Data Sheet

Input Impedance/Level:

5000 Ohms Unbalanced and 600

Ohms Balanced Standard, - 10

dBm for 100% Modulation

Modulation:

Oven Regulated VCO

Distortion:

less than or equal to 1% at 100% Modulation (1 kHz)

Spurious Signals:

60 dB Below Maximum Output

Dimensions:

3-1/2" x 4" x 12" Deep

Weight:

3 lbs.

Connectors:

"F" Standard

Options:

1. Special Frequencies
2. 25 μ Sec, 50 μ Sec
3. TTL, Current loop or EIA data interfaces, and TV Sync interface.

CATEL

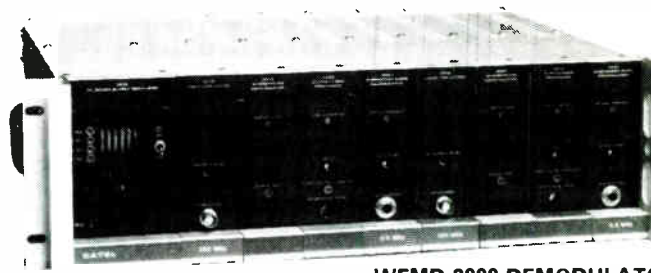
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Santa Clara, CA 95054
(408) 988-7722 TWX 910-338-2263

MODULATORS/DEMODULATORS



WFMM 3000 MODULATOR



WFMD 3000 DEMODULATOR

SERIES 3000

Signal Transmission Systems for Broadband Coax and Fiber

Series 3000 is a new family of professional quality signal transmission systems, using plug-in modules, for broadband communications.

Combining CATEL's over 15 years of experience with innovative ideas in electronic design, Series 3000 gives broadband coax users superior performance, high reliability, and unequalled convenience. These advantages are described below, using, as an example, the new WFMS-3000 broadband video/FM transmission system.

The WFMS-3000 is a complete, 70 MHz IF based, broadband system featuring sophisticated circuitry and compliance with international standards. The system provides virtually transparent transmission of wideband signals such as video (PAL/NTSC/SECAM), high speed PCM Multiplex Data, and Analog FDM Multiplex signals.

Modular Flexibility

The basic Series 3000 housing is a 5-1/4" EIA, rack mount frame and power supply that accepts up to eight separate Series 3000 modules. Three modules typically make up any basic sub system. So, two sub systems can be combined in one cabinet, with two individual module slots left free for auxiliary functions. For instance, an FM modulator and demodulator can form a full modem. Any 3000 Series module can be used in any slot because all slots have identical universal connecting, and all systems are user programmable by means of rear panel BNC jumpers. True modular performance is guaranteed because modules can be replaced without need for systems adjustments to meet full specs.

Wide Frequency Range

In step with the latest bandwidth expansions of broadband coax systems, operating frequencies in the Series 3000 cover 5 octaves, from sub-low to hyperband frequencies. In the WFMS-3000 system, for example, double conversion input and output converters are used to cover the 14 to 130 MHz range, and single conversion converters cover the 130 to 450 MHz range.

To enhance the frequency agility of the Series 3000 Systems, a frequency translator

can be created by pairing back to back input and output converters with an IF AGC and filter module (3720 Wideband IF Processor).

Fiber Optics and Data I/O Compatible

Cabinet space in all Series 3000 systems is provided for modules that can interface the system to fiber optics links, high speed data buses, T1 Multiplexers and FDM Multiplexers. Or, the extra slots can be used for auxiliary functions. In a typical television link application, they are taken up by an Audio Modulator and an Audio Demodulator.

User Programmable Options

The circuit boards on all Series 3000 PC boards have a variety of options, such as different clamping, emphasis, supplementary phase equalization, and signal filtering modes which are implemented via jumpers. Therefore, system modules can be customized for specific installations.

AC or DC Operation

Series 3000 systems can be AC or DC powered. The standard AC mode provides both 110 and 220 volts, selectable by a switch on the rear panel of the Power Supply Module, which comes as part of the basic Series 3000 cabinet.

Front Panel Diagnostics

A major feature of the Series 3000 is the use, on module front panels, of LED performance indicators and alarms, BNC connectors or test jacks and screwdriver adjustments. You are able to see, at a glance, the status of your system, easily make any signal tests needed and quickly make any necessary adjustments. The front panel features of the WRMS system are described below.

Sub-Carrier Audio Modulator

The 3303 Sub-Carrier Modulator is used to carry audio as a 4.5 MHz (NTSC), or a 5.5 MHz (PAL/SECAM) sub-carrier above video. This module accepts audio and a video loop, and presents composite video to the Video Input Processor Module. Front panel controls are provided for deviation adjustments (monitored by a 4 segment LED indicator), and sub-carrier superimposition level.

Input Video Processor

The 3101 Video Input Processor provides clamping, CCIR pre-emphasis, video gain and DC disposition to the IF Modulator. A video presence indicator is provided as a diagnostic aid.

Wideband FM Modulator

The Wideband IF Modulator is available in two versions: Model 3102 (NTSC), and Model 3104. The 3104 is particularly well suited to high speed data applications, as well as PAL/SECAM television signals. These modules are phase-locked on 70 MHz, to ensure precise channel centering. Test points for incoming processed video and modulated IF, an AFC alarm and an LED deviation indicator are provided for diagnostics.

Output Converter

The 3105 (14 to 130 MHz) and 3106 (130 to 450 MHz) Output Converters accept the 70 MHz IF signal and translate it to the desired frequency. A -20dB test connector is provided for convenient monitoring of the output signal.

Input Converter

The 3205 (14 to 130 MHz) and 3206 (130 to 450 MHz) Input Converters translate the received channel frequency to the 70 MHz IF. A 70 MHz test point is provided for observing the 70 MHz IF signal.

Wideband FM Demodulator

The 3202 Wideband IF Demodulator provides the selectivity to the system through phase corrected IF filters. A spare phase equalizer is built into the module, which can be user programmed into the IF path to fine tune any desired specification for special applications. AGC is combined with limiting, to reduce AM to PM conversions and ensure consistent performance over the specified input level range. Front panel diagnostics include a low input level indicator, as well as a test point for the demodulated baseband signal.

Sub-Carrier Audio Demodulator

The 3401 Sub-Carrier Demodulator is a particularly versatile module. Designed to accept a composite (video + sub-carrier) signal, this unit delivers a demodulated audio signal, a filtered video signal with sub-carrier removed, and the original composite video signal. An elaborate, phase-equalized low pass filter, with buffering amplifiers, is used to ensure minimal degradation of the filtered video signal.

More detailed instructions about all these front panel features are available in the instruction manuals furnished with each Series 3000 system.

Prices and Specifications Subject to Change Without Notice.

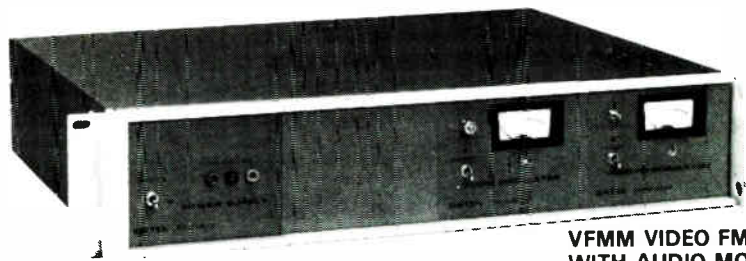
VRF-27

CATEL

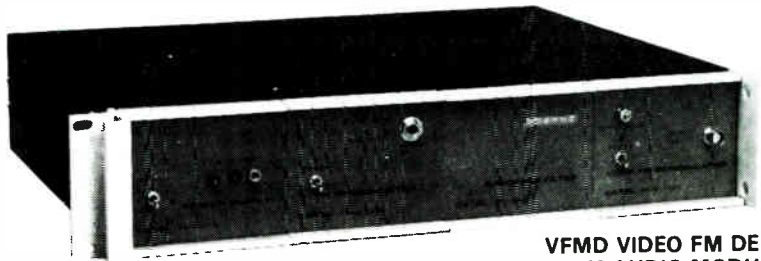
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MODULATORS/DEMODULATORS



VFMM VIDEO FM MODULATOR
WITH AUDIO MODULE



VFMD VIDEO FM DEMODULATOR
WITH AUDIO MODULE

VFMS-2000 System

FEATURES

- Greater than 60 dB Signal to Noise
- Improved Impulse Noise Immunity
- Longer Transmission Runs with Less Distortion
- No Gain and Tilt Compensation Required
- Low Maintenance, Solid State Design
- Minimum Cross-Modulation Effect
- High Output Levels
- Improved Group Delay Performance
- Ideal for PCM Multiplex
- Lower Cost than Comparable AM Systems
- Minimum Effect from Intruded Signals

The Catel VFMS Video FM Transmission System consists of a VFMM-2000 Video FM Modulator and a VFMD-2000 FM Video Demodulator. Frequency range available is from 16 to 340 MHz with standard bandwidth of 14 MHz. (NTSC) or 16 MHz PAL/SECAM.

Due to the noise immunity advantages inherent in FM, this system is capable of long distance transmission of high speed data, television pictures of facsimile with minimum distortion.

SPECIFICATIONS

VFMS-2000 Video FM System

- Frequency Range:
16 MHz, to 340 MHz—System (Specify)
- Channel Bandwidth:
14 MHz (NTSC), 16 MHz (PAL)
- Video Frequency Response:
 ± 0.5 dB 30 Hz to 4.2 MHz NTSC, 25 Hz to 5.5 MHz (PAL/SECAM)
- Chrominance-Luminance Delay:
 ± 50 nsec (62-340 MHz Systems)
- Differential Gain:
 ± 0.5 dB
- Differential Phase:
 $\pm 2^\circ$, 3.58/4.43 MHz
- Signal to Noise Ratio:
60 dB Min. Back to Back (Unweighted)
+ 15 dBmV Receive Level
- Field Squarewave Tilt:
2% Max.
- Operating Temperature:
+ 10 to + 40°C, Ambient

VFMM-2000 Video FM Modulator

- Input Level:
1.0V Peak-Peak, (Adjustable)
- Input Impedance:
75 Ohm Unbalanced
20 dB Return Loss
- Deviation:
800 kHz, Sync tip to peak white
- Output Impedance:
75 Ohm Unbalanced
16 dB Return Loss
- Output Level:
 ± 54 dBmV, (Adjustable)

- Frequency Stability:
 $\pm 0.1\%$
- Spurious Output:
Min. of 60 dB Below Peak
Carrier Level Outside 14 MHz Bandwidth

VFMD-2000/BPF-2100 Video FM Demodulator

- Input Level:
+ 10 dBmV Min. to + 30 dBmV Max.
- Input Impedance:
75 Ohm Unbalanced
16 dB Return Loss
- Output Level:
1V Peak to Peak (Adjustable)
- Output Impedance:
75 Ohm Unbalanced
20 dB Return Loss

PS-2500 BP Power Supply

- Input:
110/220 VAC, 50/60 Hz, 60W Max.
- Outputs:
+ 12.6 VDC
-15.0 VDC
- Regulation:
Electronic
- Protection:
Input—Fused
Output—Electronic Short Circuit Protected

- Options:
Video bandwidths to 20 MHz
Enhanced deviation
High level launch to + 80 dBmV
Low level receive to -10 dBmV,
Preamp & Equalizer
12, 24 or 48 VDC power supplies

FMX-2100 Audio Modules

- Output Level:
+ 45 DbmV (Adjustable)
- Frequency Range:
14-200 MHz
- Audio Frequency Response:
 ± 1 dB of 75 Microsecond Pre-emphasis
curve 50 Hz to 15 kHz
- Deviation:
 ± 75 kHz Max.
- Harmonic Distortion:
Less than 1% (50 Hz to 15 kHz)

- Hum and Noise:
60 dB below 100% Modulation
- Input Level:
-10 dBm
- Input Impedance:
5000 Ohms unbalanced or 600 Ohms
balanced
- Spurious Signals:
60 dB below max. output
- Frequency Stability:
 $\pm 0.005\%$
- Power Requirements:
+ 12.6 VDC 220 mA max. (Powered by
PS2500 Power Supply)

FMRX-2200

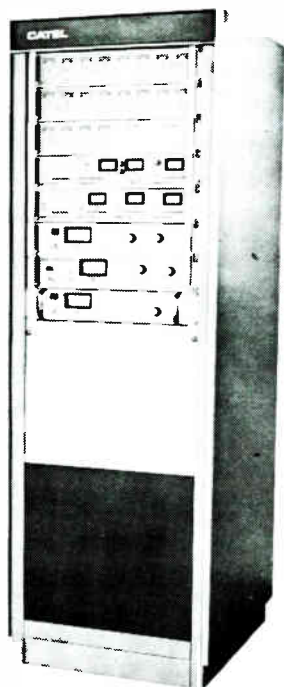
- Frequency Range:
4 MHz to 200 MHz (Specify)
- Sensitivity:
3 Microvolts for 30 dB Quieting (IHF)
- Selectivity:
Less than 150 kHz at 30 dB down
Less than 250 kHz at 50 dB down
- Passband:
200 kHz
- AM Rejection:
50 dB
- Capture Ratio:
2.5 dB
- Spurious Response:
-80 dB Minimum
- Audio Output:
+ 10 dBm at 600 Ohms
- Audio Frequency Response:
 ± 1 dB of 75 Microsecond De-emphasis
Curve, 50 Hz to 15 kHz
- Harmonic Distortion:
Less than 1% (50 Hz to 15 kHz)
- Hum and Noise:
-60 dB Minimum
- Power Requirements:
12.6 VDC, 115 mA (Powered by PS2500
Power Supply)
- Options:
50 Microsecond Pre and De-emphasis
Flat Response
Stereo Capability

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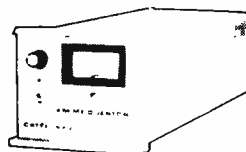
COLOR TELEVISION MODULATOR



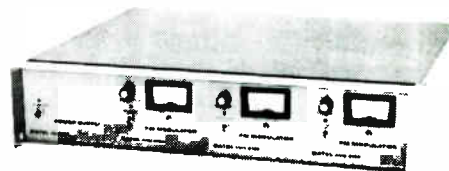
20 channel off-air FM system
with other CAFM equipment



FMX-2100 with
tamper-guard cover



FMX-2100 module



Three FM channels
plus power supply

CAFM

Today, with the increasing emphasis on additional sources of CATV revenue, a growing number of operators are finding that expansion of FM services is an effective, yet relatively simple and inexpensive way to increase subscribers and profits. The combination of greater variety in both TV and FM, plus the improvement in FM reception, results in an extremely attractive and saleable home entertainment package.

First of all, the availability of a wide variety of high quality FM signals can attract people who are not too interested in more television channels but who are critical music listeners. Many FM fans will be happy to pay a premium for improved reception and added variety.

Secondly, CAFM can increase the revenue from existing subscribers. This can be a significant source of profit, since the cable is already in place. If FM was not in your original package, you may be able to qualify for new rates because CAFM brings real benefits to the community. The Catel CAFM package can also strengthen applications for new franchises.

To implement such a program, a majority of systems use the Catel CAFM program. The Catel CAFM program involves the use of modular, rack mount equipment (see Figure 1) to add as many as 50 channels of off-air and locally originated FM programming, and such special services as time and weather broadcasts. And, since Catel CAFM equipment is modular, you can start small and add other services as the market grows.

Catel FM equipment is specifically designed to satisfy the requirements of any size CATV system. With few exceptions, the product modules described below are 12" D x 3 1/2" H; module widths vary from 2" to 8". Catel has standard, 19" wide cabinets with 16" of module space. These hold various module combinations to give you maximum budget and design flexibility in both initial system setup and later system expansion.

FM REPEATER

FMR-2000: Uses crystal-controlled RF modules for superior, individual channel processing of off-air FM signals. The FMRM-A adds monaural TV sound to your system.

Prices and Specifications Subject to Change Without Notice.

FEATURES

- Ceramic filters and integrated circuits in the intermediate frequency stages
- No drift, crystal controlled input and output
- Each module delivers full output...no post amplifier or filtering required
- On channel or off set operation
- Light emitting diodes...provide constant performance monitoring
- 20 channels in only 10 1/2" of rack space
- Optional squelch and special selectivity available
- Redundant powering concept...provisions for emergency power
- Uses both limiting and automatic gain control
- Separate level control for each channel

FM MODULATORS

FMX-2100: Generates signals from direct audio sources. Standard frequencies: 88-108 MHz; special frequencies 14-300 MHz.

FEATURES:

- Direct modulation of RF carrier
- Oven regulated FCO for high stability
- Fully solid state
- Crystal controlled output on any VHF or HF frequency
- Pre-emphasis available (optional)
- Output plus 45dBmV...continuously variable over 15 dB range
- Meter indicates percentage of modulation

AM-2000: Converts audio frequency signals to 4.5 MHz aural sub-carrier frequency or to any other frequency in the 4.5-14 MHz range.

FEATURES

- Fully solid state
- Oven regulated FCO for high stability
- Frequency range 2-14 MHz
- Meter indicates percentage of modulation
- Output plus 40 dBmV with 15 dB range
- Modular construction
- Direct modulation of RF carrier

FM DEMODULATORS

Crystal-controlled units for any frequency from 4.5-300 MHz. **Stereo:** FMRX-2100; **Monaural:** FMRX-2200, or FMRX-2400.

STEREO GENERATOR

SM-2200: Produces L-R double sideband suppressed carrier, L plus R and 19 MHz pilot signals from left and right audio sources.

TIME/WEATHER

WVW (FMW-2100) or NOAA (FMT-2100): Units include receiver with FM Modulator and power supply to provide NBS or NOAA broadcasts in the FM band.

AM/FM RECEIVER

KT-5500: Cable customized AM/FM Tuner for use as "off air" audio source for FM or TV Modulators, or for use as a monitor of your CAFM services.

VRF-29

CHANNELL COMMERCIAL CORP.

620 W. Foothill Boulevard
 Glendora, CA 91740
 (818) 963-1694
 800-423-1863 Telex 670-368

PEDESTAL HOUSING

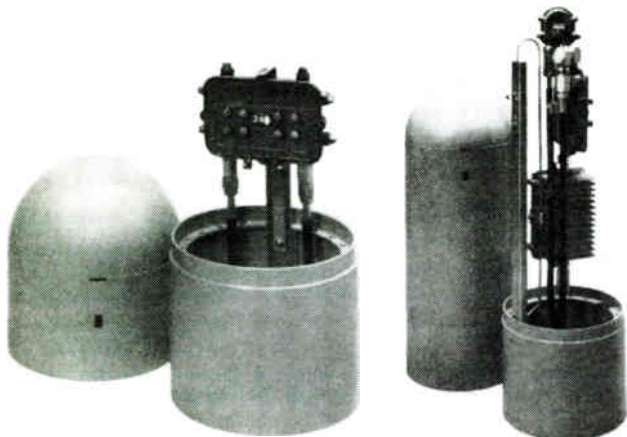
PEDESTAL HOUSING SINGLE AND DUAL GRADE PLANT

FEATURES COMMON TO ALL MODELS

- Aesthetically pleasing housing—low profile design
- Complete 360° access working area
- High security locking system
- Constructed of high quality ABS plastic
- Corrosion proof
- Never needs painting
- Unaffected by severe temperatures from -60°F to +160°F
- Vented to minimize condensation
- Top of pedestal easily removed and replaced
- "T.V." identification permanently molded into top hood



CPH-1016



CPH-1006

CPH-1022

CPH-1016

Strand bracketry provides cost effective installation of all active equipment.

Dimensions 10" dia., 21" - 23" above grade

Weight 11 lbs. with stake

Basic Unit Shipped complete with stake attached, hasp lock and designated drop holes in base

NOMENCLATURE

CPH-1016 Basic light green color, hasp lock

CPH-1016C Beige color, hasp lock

CPH-1016DG Dark green color, hasp lock

CPH-1016B With bracket

CPH-1016LK With lock

CPH-1016CBLK Beige color, bracket, and lock

CPH-1022

22-inch cover height provides extra working space; strand bracketry provides cost effective installation of all active equipment.

Dimensions 10" dia., 27" - 29" above grade

Weight 13 lbs. with stake

Basic Unit Shipped complete with stake attached, hasp lock and designated drop holes in base

NOMENCLATURE

CPH-1022 Basic light green color, hasp lock

CPH-1022C Beige color, hasp lock

CPH-1022DG Dark green color, hasp lock

CPH-1022B With bracket

CPH-1022LK With lock

CPH-1022CBLK Beige color, bracket, and lock

CPH-1006

Strand bracketry provides cost effective installation of all passive devices.

Dimensions 10" dia., 16" - 18" above grade

Weight 8.4 lbs. with stake

Basic Unit Shipped complete with stake attached, hasp lock and designated drop holes in base

NOMENCLATURE

Dimensions

NOMENCLATURE

CPH-1006 Basic light green color, hasp lock

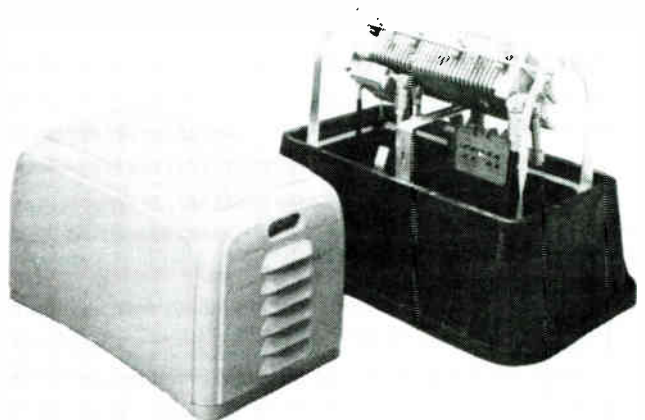
CPH-1006C Beige color, hasp lock

CPH-1006DG Dark green color, hasp lock

CPH-1006B With bracket

CPH-1006LK With lock

CPH-1006CBLK Beige color, bracket and lock



CPH-1730

CPH-1730

Prepackaged, with accessories factory installed. Universal bracketry permits cost effective installation of large active equipment.

Dimensions 17" wide, 30" long, 17" above grade

Weight 50 lbs.

Basic Unit Shipped complete with ground skirt, lock and dual mounting bracket

NOMENCLATURE

DCPH-1730BLK Basic light green color, lock

DCPH-1730CBLK Beige color, lock

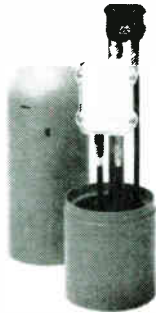
CHANNELL COMMERCIAL CORP.

620 W. Foothill Boulevard
Glendora, CA 91740
(818) 963-1694
800-423-1863 Telex 670-368

PEDESTAL HOUSING Cont'd SINGLE AND DUAL GRADE PLANT

FEATURES COMMON TO ALL MODELS

- Aesthetically pleasing housing—low profile design
- Complete 360° access working area
- High security locking system
- Constructed of high quality ABS plastic
- Corrosion proof
- Never needs painting
- Unaffected by severe temperatures from -60°F to +160°F
- Vented to minimize condensation
- Top of pedestal easily removed and replaced
- "T.V." identification permanently molded into top hood



CPH-816

CPH-816

Strand bracketry provides cost effective installation of combination passive devices.

Dimensions 8" dia., 20"-22" above grade
Weight 8 lbs. with stake
Basic Unit Shipped complete with stake attached and hasp lock

NOMENCLATURE

CPH-816 Basic light green color, hasp lock
CPH-816C Beige color, hasp lock
CPH-816DG Dark green color, hasp lock
CPH-816B With bracket
CPH-816LK With lock
CPH-816CBLK Beige color, bracket and lock



CPH-658

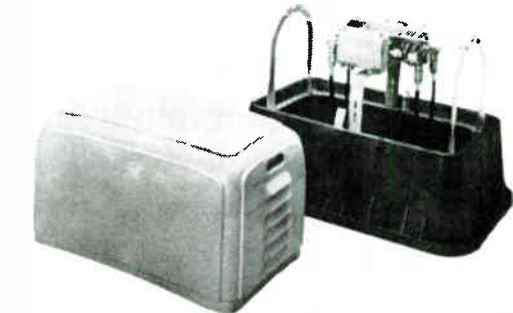
CPH-658

Horizontal/Vertical slotted "L" bracket provides versatile mounting of all passive devices.

Dimensions 6.5" dia., 11"-18" above grade
Weight 4.5 lbs. with stake
Basic Unit Shipped complete with stake attached and hasp lock

NOMENCLATURE

CPH-658 Basic light green color, hasp lock
CPH-658C Beige color, hasp lock
CPH-658DG Dark green color, hasp lock
CPH-658B With bracket
CPH-658LK With lock
CPH-658T With trap holders
CPH-658CBLKT Beige color, bracket, lock and trap holders



DCPH-1730

DCPH-1730

Concealed high security locking system. Prepackaged, with accessories factory installed. Dual strand bracketry permits cost effective installation of large active equipment.

Dimensions 17" wide, 30" long, 17" above grade
Weight 50 lbs.
Basic Unit Shipped complete with ground skirt, lock and dual mounting bracket

NOMENCLATURE

DCPH-1730BLK Basic light green color, lock
DCPH-1730CBLK Beige color, lock



DCPH-1006

DCPH-1006

Design allows separation of A and B cable sides. Dual strand bracket permits cost effective installation of two passive devices.

Dimensions 10" dia., 11" - 14" above grade
Weight 8.4 lbs. with stake
Basic Unit Shipped complete with stake attached, hasp lock and designated drop holes in base

NOMENCLATURE

DCPH-1006 Basic light green color, hasp lock
DCPH-1006C Beige color, hasp lock
DCPH-1006DG Dark green color, hasp lock
DCPH-1006B With dual bracket
DCPH-1006LK With lock
DCPH-1006CBLK Beige color, bracket and lock

Prices and Specifications Subject to Change Without Notice.

VRF-31

P.O. Box 1729
 Hickory, NC 28603
 (704) 324-2200 (800) 438-3331
 Telex 802-166

PARAMETER I® COAXIAL CABLE SOLID COPPER



Solid copper center conductor; expanded polyethylene dielectric; solid aluminum sheath.

J



Similar in construction to plain version, except with outer jacket of black linear low density polyethylene.

JSS

Similar to J except with Migra-Heal compound between jacket and aluminum sheath.

JASS



Similar to JSS, except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and the inner jacket. The armor is coated on outside with heat sealable film which bonds to outer jacket and seals edges to form an effective moisture barrier and provide mechanical protection.

J-M109



Similar to J, except "Figure 8" construction with galvanized steel messenger.

J-M250



Similar to J, except "Figure 8" construction with galvanized steel messenger.

412 SERIES P-1 75-412

Center Conductor Diameter	0.080 in. ± 0.001 in.	2.03 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.362 in.	9.19 mm
Diameter Over Outer Conductor	0.412 in. ± 0.006 in.	10.46 mm ± 0.15 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-1 75-412J & P-1 75-412JSS

Nominal Diameter Over Jacket	0.512 in.	13.00 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-412JASS

Nominal Diameter Over Corrugated Armor	0.590 in.	14.99 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.670 in.	17.02 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-412J—M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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500 SERIES P-1 75-500

Center Conductor Diameter	0.100 in. ± 0.001 in.	2.54 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.450 in.	11.43 mm
Diameter Over Outer Conductor	0.500 in. ± 0.007 in.	12.70 mm ± 0.18 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-1 75-500J & P-1 75-500 JSS

Nominal Diameter Over Jacket	0.600 in.	15.24 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-500JASS

Nominal Diameter Over Corrugated Armor	0.675 in.	17.15 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.755 in.	19.18 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-500J—M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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750 SERIES P-1 75-750

Center Conductor Diameter	0.148 in. ± 0.001 in.	3.76 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.686 in.	17.42 mm
Diameter Over Outer Conductor	0.750 in. ± 0.010 in.	19.05 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.032 in.	0.81 mm

Jacket Versions P-1 75-750J & P-1 75-750JSS

Nominal Diameter Over Jacket	0.850 in.	21.59 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-750JASS

Nominal Diameter Over Corrugated Armor	0.950 in.	24.13 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.03 in.	26.16 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-750J—M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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PARAMETER I® COAXIAL CABLE COPPER CLAD

CA



Copper clad aluminum center conductor; expanded polyethylene dielectric; solid aluminum sheath.

JCA



Similar in construction to CA, except with outer jacket of black linear low density polyethylene.

JCASS

Similar to JCA except with Migra-Heal compound between jacket and aluminum sheath.

JACASS



Similar to JCASS except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and inner jacket. The armor is coated on outside with heat sealable film which bonds to outer jacket and seals edges to form an effective moisture barrier and provide mechanical protection.

JCA-M109



JCA-M250



Similar to JCA, except "Figure 8" construction with galvanized steel messenger.

412CA SERIES

P-1 75-412CA

Center Conductor Diameter	0.080 in. ± 0.001 in.	2.03 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.362 in.	9.19 mm
Diameter Over Outer Conductor	0.412 in. ± 0.006 in.	10.46 mm ± 0.15 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-1 75-412JCA & P-1 75-412JCASS

Nominal Diameter Over Jacket	0.512 in.	13.00 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-412JACASS

Nominal Diameter Over Corrugated Armor	0.590 in.	14.99 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.670 in.	17.02 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-412JCA-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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500CA SERIES

P-1 75-500CA

Center Conductor Diameter	0.100 in. ± 0.001 in.	2.54 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.450 in.	11.43 mm
Diameter Over Outer Conductor	0.500 in. ± 0.007 in.	12.70 mm ± 0.18 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-1 75-500JCA & P-1 75-500JCASS

Nominal Diameter Over Jacket	0.600 in.	15.24 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-500JACASS

Nominal Diameter Over Corrugated Armor	0.675 in.	17.15 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.755 in.	19.18 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-500JCA-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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750CA SERIES

P-1 75-750CA

Center Conductor Diameter	0.148 in. ± 0.001 in.	3.76 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.686 in.	17.42 mm
Diameter Over Outer Conductor	0.750 in. ± 0.010 in.	19.05 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.032 in.	0.81 mm

Jacket Versions P-1 75-750JCA & P-1 75-750JCASS

Nominal Diameter Over Jacket	0.850 in.	21.59 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-1 75-750JACASS

Nominal Diameter Over Corrugated Armor	0.950 in.	24.13 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.03 in.	26.16 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-1 75-750-M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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PARAMETER III® COAXIAL CABLE SOLID COPPER

PLAIN



Solid copper center conductor; expanded polyethylene dielectric; solid aluminum sheath.

J



Similar in construction to plain version except with outer jacket of black linear low density polyethylene.

JSS

Similar to J except with Migra-Heal compound between jacket and aluminum sheath.

JASS



Similar to JSS except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and inner jacket. The armor is coated on outside with heat sealable film which bonds to outer jacket and seals edges to form an effective moisture barrier and provide mechanical protection.

J-M109



Similar to J except "Figure 8" construction with galvanized steel messenger.

412 SERIES

PARAMETER III® COAXIAL CABLE P-3 75-412

Center Conductor Diameter	0.089 in. ± 0.001 in.	2.26 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.362 in.	9.19 mm
Diameter Over Outer Conductor	0.412 in. ± 0.006 in.	10.46 mm ± 0.15 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-3 75-412J and P-3 75-412JSS

Nominal Diameter Over Jacket	0.512 in.	13.00 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-412JASS

Nominal Diameter Over Corrugated Armor	0.590 in.	14.99 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.670 in.	17.02 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-412J-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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500 SERIES

PARAMETER III® COAXIAL CABLE P-3 75-500

Center Conductor Diameter	0.111 in. ± 0.001 in.	2.82 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.450 in.	11.43 mm
Diameter Over Outer Conductor	0.500 in. ± 0.007 in.	12.70 mm ± 0.18 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-3 75-500J and P-3 75-500JSS

Nominal Diameter Over Jacket	0.600 in.	15.24 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-500JASS

Nominal Diameter Over Corrugated Armor	0.675 in.	17.15 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.755 in.	19.18 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-500J-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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750 SERIES

PARAMETER III® COAXIAL CABLE P-3 75-750

Center Conductor Diameter	0.169 in. ± 0.001 in.	4.29 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.678 in.	17.22 mm
Diameter Over Outer Conductor	0.750 in. ± 0.010 in.	19.05 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.036 in.	0.91 mm

Jacket Versions P-3 75-750J and P-3 75-750JSS

Nominal Diameter Over Jacket	0.850 in.	21.59 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-750JASS

Nominal Diameter Over Corrugated Armor	0.950 in.	24.13 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.03 in.	26.16 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-750J-M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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PARAMETER III® COAXIAL CABLE COPPER CLAD

CA



Copper clad aluminum center conductor; expanded polyethylene dielectric; solid aluminum sheath.

JCA



Similar in construction to CA, except with outer jacket of black linear low density polyethylene.

JCASS

Similar to JCA except with Migra-Heal compound between jacket and aluminum sheath.

JACASS



Similar to JCASS except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and the inner jacket. The armor is coated on outside with heat sealable film which bonds to outer jacket and seals edges to form an effective moisture barrier and provide mechanical protection.

JCA-M109



Similar to JCA, except "Figure 8" construction with galvanized steel messenger.

412CA SERIES P-3 75-412CA

Center Conductor Diameter	0.089 in. ±0.001 in.	2.26 mm ±0.03 mm
Nominal Diameter Over Dielectric	0.362 in.	9.19 mm
Diameter Over Outer Conductor	0.412 in. ±0.006 in.	10.46 mm ±0.15 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-3 75-412JCA & P-3 75-412JCASS

Nominal Diameter Over Jacket	0.512 in.	13.00 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-412JACASS

Nominal Diameter Over Corrugated Armor	0.590 in.	14.99 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.670 in.	17.02 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-412JCA-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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500CA SERIES P-3 75-500CA

Center Conductor Diameter	0.111 in. ±0.001 in.	2.82 mm ±0.03 mm
Nominal Diameter Over Dielectric	0.450 in.	11.43 mm
Diameter Over Outer Conductor	0.500 in. ±0.007 in.	12.70 mm ±0.18 mm
Nominal Outer Conductor Thickness	0.025 in.	0.64 mm

Jacket Versions P-3 75-500JCA & P-3 75-500JCASS

Nominal Diameter Over Jacket	0.600 in.	15.24 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-500JACASS

Nominal Diameter Over Corrugated Armor	0.675 in.	17.15 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.755 in.	19.18 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-500JCA-M109

Diameter of Steel Messenger	0.109 in.	2.77 mm
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625CA SERIES P-3 75-625CA

Center Conductor Diameter	0.169 in. ±0.001 in.	4.29 mm ±0.03 mm
Nominal Diameter Over Dielectric	0.678 in.	17.22 mm
Diameter Over Outer Conductor	0.750 in. ±0.010 in.	19.05 mm ±0.25 mm
Nominal Outer Conductor Thickness	0.036 in.	0.91 mm

Jacket Versions P-3 75-625JCA & P-3 75-625JCASS

Nominal Diameter Over Jacket	0.850 in.	21.59 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-625JACASS

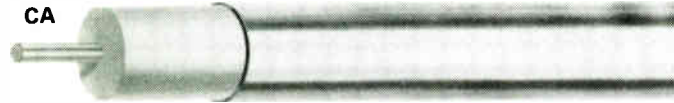
Nominal Diameter Over Corrugated Armor	0.950 in.	24.13 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.03 in.	26.16 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-625JCA-M109

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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PARAMETER III® COAXIAL CABLE COPPER CLAD



Copper clad aluminum center conductor; expanded polyethylene dielectric; solid aluminum sheath.



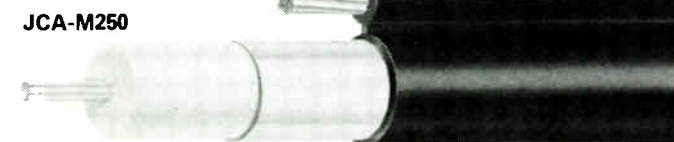
Similar in construction to CA, except with outer jacket of black linear low density polyethylene.

JCASS

Similar to JCA, except with Migra-Heal compound between jacket and aluminum sheath.



Similar to JCASS, except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and the inner jacket. The armor is coated on outside with heat sealable film which bonds to outer jacket and seals edges to form an effective moisture barrier and provide mechanical protection.



Similar to JCA, except "Figure 8" construction with galvanized steel messenger.

750CA SERIES P-3 75-750CA

Center Conductor Diameter	0.169 in. ± 0.001 in.	4.29 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.678 in.	17.22 mm
Diameter Over Outer Conductor	0.750 in. ± 0.010 in.	19.05 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.036 in.	0.91 mm

Jacket Versions P-3 75-750JCA & P-3 75-750JCASS

Nominal Diameter Over Jacket	0.850 in.	21.59 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-750JACASS

Nominal Diameter Over Corrugated Armor	0.950 in.	24.13 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.03 in.	26.16 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-750JCA-M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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875CA SERIES P-3 75-875CA

Center Conductor Diameter	0.194 in. ± 0.001 in.	4.93 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.797 in.	20.24 mm
Diameter Over Outer Conductor	0.875 in. ± 0.010 in.	22.23 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.039 in.	0.99 mm

Jacket Versions P-3 75-875JCA & P-3 75-875JCASS

Nominal Diameter Over Jacket	0.975 in.	24.77 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-875JACASS

Nominal Diameter Over Corrugated Armor	1.047 in.	26.59 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.127 in.	28.63 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-875JCA-M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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1000CA SERIES P-3 75-1000CA

Center Conductor Diameter	0.220 in. ± 0.002 in.	5.59 mm ± 0.05 mm
Nominal Diameter Over Dielectric	0.890 in.	22.61 mm
Diameter Over Outer Conductor	1.000 in. ± 0.015 in.	25.40 mm ± 0.3 mm
Nominal Outer Conductor Thickness	0.055 in.	1.40 mm

Jacket Versions P-3 75-1000JCA & P-3 75-1000JCASS

Nominal Diameter Over Jacket	1.10 in.	27.94 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions P-3 75-1000JACASS

Nominal Diameter Over Corrugated Armor	1.20 in.	30.48 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.28 in.	32.51 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

Messenger Versions P-3 75-1000JCA-M250

Diameter of Steel Messenger	0.250 in. (Strand)	6.35 mm (Strand)
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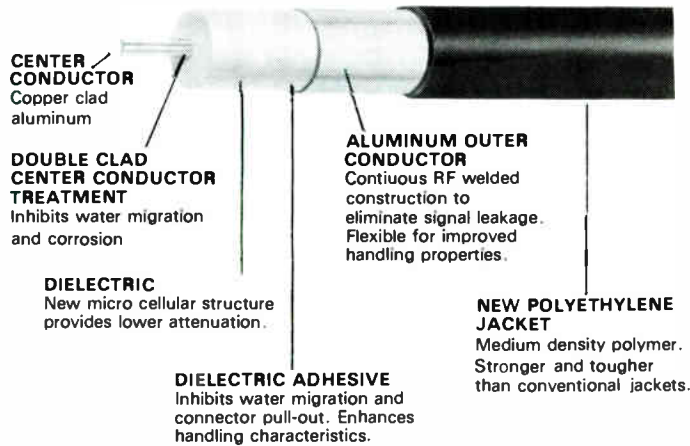
P.O. Box 1729
 Hickory, NC 28603
 (704) 324-2200 (800) 438-3331
 Telex 802-166

QUANTUM REACH® SUPER LOW LOSS COAXIAL CABLE

GENERAL DESCRIPTION

Copper covered aluminum center conductor; Double-Clad™ center conductor corrosion protection; microcellular gas expanded polyethylene dielectric with surface coated adhesive bonding agent; RF welded aluminum outer conductor; jacket of black medium density polyethylene with optional co-extruded tracer stripe.

JCA

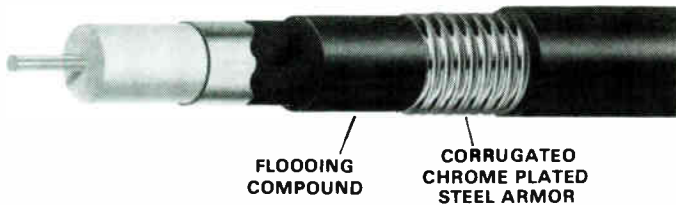


JCASP



Similar in construction to JCA (above) except with asphaltic flooding compound which inhibits cable corrosion in the event of severe jacket damage.

JACASP



Similar in construction to JCASP (above) except with corrugated chrome plated steel armor applied longitudinally and with flooding compound between the armor and the inner jacket. The armor is bonded to the outer jacket and enhances cable longevity in burial applications.

500 SERIES QUANTUM REACH®

QR-500JCA

Center Conductor Diameter	0.117 in. ± 0.001 in.	2.97 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.476 in.	12.09 mm
Diameter Over Outer Conductor	0.500 in. ± 0.005 in.	12.70 mm ± 0.13 mm
Nominal Outer Conductor Thickness	0.012 in.	0.305 mm

Jacket Versions QR-500JCASP

Nominal Diameter Over Jacket	0.580 in.	14.73 mm
Nominal Jacket Wall Thickness	0.040 in.	1.02 mm

Armored Versions QR-500JACASP

Nominal Diameter Over Corrugated Armor	0.655 in.	16.64 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	0.735 in.	18.67 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

860 SERIES QUANTUM REACH®

QR-860JCA

Center Conductor Diameter	0.203 in. ± 0.001 in.	5.16 mm ± 0.03 mm
Nominal Diameter Over Dielectric	0.828 in.	21.03 mm
Diameter Over Outer Conductor	0.860 in. ± 0.010 in.	21.84 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.016 in.	0.41 mm

Jacket Versions QR-860JCASP

Nominal Diameter Over Jacket	0.960 in.	24.38 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions QR-860JACASP

Nominal Diameter Over Corrugated Armor	1.060 in.	26.92 mm
Nominal Shield Thickness	0.008 in.	0.20 mm
Nominal Diameter Over Outer Jacket	1.140 in.	28.96 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

1125 SERIES QUANTUM REACH® SUPERTRUNK™ CABLE

QR-1125JCA

Center Conductor Diameter	0.263 in. ± 0.001 in.	6.68 mm ± 0.03 mm
Nominal Diameter Over Dielectric	1.081 in.	27.46 mm
Diameter Over Outer Conductor	1.125 in. ± 0.010 in.	28.58 mm ± 0.25 mm
Nominal Outer Conductor Thickness	0.021 in.	0.53 mm

Jacket Versions QR-1125JCASP

Nominal Diameter Over Jacket	1.225 in.	31.12 mm
Nominal Jacket Wall Thickness	0.050 in.	1.27 mm

Armored Versions QR-1125JACASP

Nominal Diameter Over Corrugated Armor	1.300 in.	33.02 mm
Nominal Shield Thickness	0.010 in.	0.25 mm
Nominal Diameter Over Outer Jacket	1.380 in.	35.05 mm
Nominal Thickness of Outer Jacket	0.040 in.	1.02 mm

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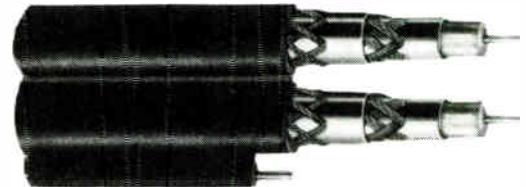
F595SSV



F6SSVM



F2-59SSV



F2-6SSVM

59 SERIES SOLID POLYETHYLENE DIELECTRIC — NON-BONDED FOIL

Basic Construction

Center Conductor: Nom. 0.025" copper covered steel;
 Dielectric: Solid natural polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated non-
 bonded tape with overlap; Outer Shield: 34 AWG bare
 aluminum braid wire; Jacket: Black polyethylene flooded
 design only; Nom. O.D.: 0.242"

Model No. 67% Braid Coverage

S5967EF See basic construction, polyethylene jacket.

S2-5967EF See basic construction, except dual, polyethylene jacket.

Model No. 95% Braid Coverage

S5995EF See basic construction, polyethylene jacket.

6 SERIES SOLID POLYETHYLENE DIELECTRIC — NON-BONDED FOIL

Basic Construction

Center Conductor: Nom. 0.029" in copper covered steel;
 Dielectric: Solid natural polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated non-
 bonded tape with overlap; Outer Shield: 34 AWG bare
 aluminum braid wire; Jacket: Black polyethylene flooded
 design only; Nom. O.D.: 0.272"

Model No. 60% Braid Coverage

S660EF See basic construction, polyethylene jacket.

S2-660EF See basic construction, except dual polyethylene jacket.

Model No. 90% Braid Coverage

S690EF See basic construction, polyethylene jacket.

59 SERIES CELL-O-AIR® FOAM DIELECTRIC — SUPER-SHIELD

Basic Construction

Center Conductor: Nom. 0.032" copper covered steel;
 Dielectric: Gas expanded polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated tape with
 overlap bonded to the dielectric; 34 AWG bare aluminum
 braid wire; non-bonded aluminum-polyethylene-aluminum
 tape with overlap; 34 AWG bare aluminum braid wire;
 Jacket: Black polyvinylchloride or polyethylene (flooded)
 (available in beige and white upon request); Nom. O.D.:
 0.265"; Messenger: Single — 0.051" galvanized steel, Dual
 — 0.072" galvanized steel

Model No.

F59SSV See basic construction, vinyl jacket.

F59SSVM Vinyl jacket, 0.051" messenger.

F2-59SSV Dual, vinyl jacket.

F2-59SSVM Dual, vinyl jacket, 0.072" messenger.

F59SSEF Flooded, polyethylene jacket.

F2-59SSEF Dual, flooded, polyethylene jacket.

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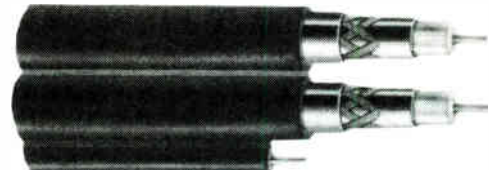
F59TSV



F6TSVM



F2-6TSV



F2-59TSVM

59 SERIES CELL-O-AIR® FOAM DIELECTRIC — TRI-SHIELD

Basic Construction

Center Conductor: Nom. 0.032" copper covered steel; Dielectric: Gas expanded polyethylene; Inner Shield: Aluminum-polypropylene-aluminum laminated tape with overlap bonded to the dielectric; 34 AWG bare aluminum braid wire; non-bonded aluminum-polypropylene-aluminum tape with overlap; Jacket: Black polyvinylchloride (available in beige and white upon request); Nom. O.D.: 0.246"; Messenger: Single — 0.051" galvanized steel, Dual — 0.072" galvanized steel

Model No.	67% Braid Coverage
F59TSV	See basic construction, vinyl jacket.
F59TSVM	Vinyl jacket, 0.051" messenger.
F2-59TSV	Dual, vinyl jacket.
F2-59TSVM	Dual, vinyl jacket, 0.072" messenger.

6 SERIES CELL-O-AIR® FOAM DIELECTRIC — TRI-SHIELD

Basic Construction

Center Conductor: Nom. 0.040" copper covered steel; Dielectric: Gas expanded polyethylene; Inner Shield: Aluminum-polypropylene-aluminum laminated tape with overlap bonded to the dielectric; 34 AWG bare aluminum braid wire; non-bonded aluminum-polyvinylchloride-aluminum tape with overlap; Jacket: Black polyvinylchloride (available in beige and white upon request); Nom. O.D.: 0.278"; Messenger: Single — 0.051" galvanized steel

Model No.	60% Braid Coverage
F6TSV	See basic construction, vinyl jacket.
F6TSVM	Vinyl jacket, 0.051" messenger.
F2-6TSV	Dual, vinyl jacket.

6 SERIES CELL-O-AIR® FOAM DIELECTRIC — SUPER-SHIELD

Basic Construction

Center Conductor: Nom. 0.040" copper covered steel; Dielectric: Gas expanded polyethylene; Inner Shield: Aluminum-polypropylene-aluminum laminated tape with overlap bonded to the dielectric; 34 AWG bare aluminum braid wire; non-bonded aluminum-polypropylene-aluminum tape with overlap; 34 AWG bare aluminum braid wire; Jacket: Black polyvinylchloride or polyethylene (flooded) (available in beige and white upon request); Nom. O.D.: 0.300"; Messenger: Single — 0.051" galvanized steel, Dual — 0.072" galvanized steel

Model No.	
F6SSV	See basic construction, vinyl jacket.
F6SSVM	Vinyl jacket, 0.051" messenger.
F2-6SSV	Dual, vinyl jacket.
F2-6SSVM	Dual, vinyl jacket, 0.072" messenger.
F6SSEF	Flooded, polyethylene jacket.
F2-6SSEF	Dual, flooded, polyethylene jacket.

11 SERIES CELL-O-AIR® FOAM DIELECTRIC — SUPER-SHIELD

Basic Construction

Center Conductor: Nom. 0.064" copper covered steel; Dielectric: Gas expanded polyethylene; Inner Shield: Aluminum-polypropylene-aluminum laminated tape with overlap bonded to the dielectric; 34 AWG bare aluminum braid wire; non-bonded aluminum-polyethylene-aluminum tape with overlap; 34 AWG bare aluminum braid wire; Jacket: Black polyvinylchloride or polyethylene (flooded) (available in beige and white upon request); Nom. O.D.: 0.405"; Messenger: Single — 0.072" galvanized steel

Model No.	
F11SSV	See basic construction, vinyl jacket.
F11SSVM	Vinyl jacket, 0.072" messenger.
F11SSEF	Flooded, polyethylene jacket.

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PARAMEDROP[®]
 DROP WIRE



F5967BV



F2-5995BV



F5967BVM



F2-5967BVM

59 SERIES CELL-O-AIR[®] FOAM DIELECTRIC — BONDED FOIL

Basic Construction

Center Conductor: Nom. 0.032" copper covered steel;
 Dielectric: Gas expanded polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated tape with
 overlap bonded to dielectric; Outer Shield: 34 AWG bare
 aluminum braid wire; Jacket: Black polyvinylchloride or
 polyethylene (flooded) (available in beige and white upon
 request); Nom. O.D.: 0.242"; Messenger: Single — 0.051"
 galvanized steel, Dual — 0.072" galvanized steel

Model No.	67% Braid Coverage
F5967BV	See basic construction, vinyl jacket.
F5967BVM	Vinyl jacket, 0.051" messenger.
F2-5967BV	Dual, vinyl jacket.
F2-5967BVM	Dual, vinyl jacket, 0.072" messenger.
F5967BEF	Flooded, polyethylene jacket.
F2-5967BEF	Dual, flooded, polyethylene jacket.

Model No.	95% Braid Coverage
F5995BV	See basic construction, vinyl jacket.
F5995BVM	Vinyl jacket, 0.051" messenger.
F2-5995BV	Dual, vinyl jacket.
F5995BEF	Flooded, polyethylene jacket.

6 SERIES CELL-O-AIR[®] FOAM DIELECTRIC — BONDED FOIL

Basic Construction

Center Conductor: Nom. 0.040" copper covered steel;
 Dielectric: Gas expanded polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated tape with
 overlap bonded to dielectric; Outer Shield: 34 AWG bare
 aluminum braid wire; Jacket: Black polyvinylchloride or
 polyethylene (flooded) (available in beige and white upon
 request); Nom. O.D.: 0.272"; Messenger: Single — 0.051"
 galvanized steel, Dual — 0.072" galvanized steel

Model No.	60% Braid Coverage
F660BV	See basic construction, vinyl jacket.
F660BVM	Vinyl jacket, 0.051" messenger.
F2-660BV	Dual, vinyl jacket.
F2-660BVM	Dual, vinyl jacket, 0.072" messenger.
F660BEF	Flooded, polyethylene jacket.
F2-660BEF	Dual, flooded, polyethylene jacket.

Model No.	90% Braid Coverage
F690BV	See basic construction, vinyl jacket.
F690BVM	Vinyl jacket, 0.051" messenger.
F2-690BV	Dual, vinyl jacket.
F2-690BVM	Dual, vinyl jacket, 0.072" messenger.
F690BEF	Flooded, polyethylene jacket.
F2-690BEF	Dual, flooded, polyethylene jacket.

11 SERIES CELL-O-AIR[®] FOAM DIELECTRIC — BONDED FOIL

Basic Construction

Center Conductor: Nom. 0.064" copper covered steel;
 Dielectric: Gas expanded polyethylene; Inner Shield:
 Aluminum-polypropylene-aluminum laminated tape with
 overlap bonded to dielectric; Outer Shield: 34 AWG bare
 aluminum braid wire; Jacket: Black polyvinylchloride or
 polyethylene (flooded) (available in beige and white upon
 request); Nom. O.D.: 0.405"; Messenger: Single — 0.072"
 galvanized steel, Dual — 0.109" galvanized steel

Model No.	60% Braid Coverage
F1160BV	See basic construction, vinyl jacket.
F1160BVM	Vinyl jacket, 0.072" messenger.
F2-1160BV	Dual, vinyl jacket.
F2-1160BVM	Dual, vinyl jacket, 0.109" messenger.
F1160BEF	Flooded, polyethylene jacket.

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59 FOAM SERIES (Standard Shield, Tri-Shield, Super-Shield)

Physical Dimensions Component	STANDARD SHIELD		TRI-SHIELD		SUPER-SHIELD	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.032	0.81	0.032	0.81	0.032	0.81
Nominal Diameter Over Dielectric	0.144	3.66	0.144	3.66	0.144	3.66
Nominal Diameter Over First Shield (Tape)	0.148 (nonbonded) 0.152 (bonded)	3.76 3.86	0.152	3.86	0.152	3.86
Nominal Diameter Over Second Shield (Braid)	0.173 (nonbonded) 0.177 (bonded)	4.39 4.50	0.177	4.50	0.177	4.50
Nominal Diameter Over Third Shield (Tape)	N/A		0.186	4.72	0.186	4.72
Nominal Diameter Over Fourth Shield (Braid)	N/A		N/A		0.212	5.39
Nominal Diameter Over Jacket	0.242	6.15	0.246	6.25	0.265	6.73
Nominal Jacket Wall Thickness	0.035	0.89	0.030	0.76	0.030	0.76
Nominal Diameter of Steel Messenger	0.051 (single) 0.072 (dual)	1.30 1.83	0.051 (single) 0.072 (dual)	1.30 1.83	0.051 (single) 0.072 (dual)	1.30 1.83

59 SOLID SERIES

Electrical Characteristics

Nominal Capacitance	16.2 pf/ft	53 nf/km
Nominal Impedance	75 ohms	
Nominal Velocity of Propagation	82%	

Mechanical Characteristics

Minimum Breaking Strength of Messenger	0.051 0.072	180 lbs. 365 lbs.	82 kg _r 166 kg _r
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Attenuation at 68°F. (20°C.)

Frequency (MHz)	Maximum (dB/100 ft.)	Maximum (dB/100 m)
5	0.68	2.23
55 / Channel 2	2.05	6.73
83 / Channel 6	2.45	8.04
187 / Channel 9	3.60	11.81
211 / Channel 13	3.80	12.47
250	4.10	13.45
300	4.45	14.60
350	4.80	15.75
400	5.10	16.73
450	5.40	17.72

Physical Dimensions

Component	Inches	mm
Nom. Center Conductor Diameter	0.025	0.64
Nom. Diameter Over Dielectric	0.144	3.66
Nominal Diameter Over First Shield (Tape)	0.148 (nonbonded) 0.152 (bonded)	3.76 (nonbonded) 3.86 (bonded)
Nominal Diameter Over Second Shield (Braid)	0.173 (nonbonded) 0.177 (bonded)	4.39 (nonbonded) 4.50 (bonded)
Nominal Diameter Over Jacket	0.242	6.15
Nominal Jacket Wall Thickness	0.030	0.76

Electrical Characteristics

Nominal Capacitance	20.5 pf/ft	67 nf/km
Nominal Impedance	75 ohms	
Nominal Velocity of Propagation	66%	

Attenuation at 68°F. (20°C.)

Frequency (MHz)	Maximum (dB/100 ft.)	Maximum (dB/100 m)
5	0.82	2.69
55 / Channel 2	2.55	8.37
83 / Channel 6	3.15	10.33
187 / Channel 9	4.60	15.09
211 / Channel 13	4.90	16.08
250	5.25	17.22
300	5.80	19.03
350	6.20	20.34
400	6.60	21.65
450	7.00	22.97

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6 FOAM SERIES (Standard Shield, Tri-Shield, Super-Shield)

Physical Dimensions Component	STANDARD SHIELD		TRI-SHIELD		SUPER-SHIELD	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.040	1.02	0.040	1.02	0.040	1.02
Nominal Diameter Over Dielectric	0.180	4.57	0.180	4.57	0.180	4.57
Nominal Diameter Over First Shield (Tape)	0.184 (nonbonded)	4.67	0.186	4.72	0.186	4.72
	0.186 (bonded)	4.72				
Nominal Diameter Over Second Shield (Braid)	0.210 (nonbonded)	5.33	0.212	5.39	0.212	5.39
	0.212 (bonded)	5.39				
Nominal Diameter Over Third Shield (Tape)	N/A		0.218	5.54	0.218	5.54
Nominal Diameter Over Fourth Shield (Braid)	N/A		N/A		0.244	6.20
Nominal Diameter Over Jacket	0.272	6.91	0.278	7.06	0.300	7.62
Nominal Jacket Wall Thickness	0.035	0.89	0.030	0.76	0.030	0.76
Nominal Diameter of Steel Messenger	0.051 (single)	1.30	0.051 (single)	1.30	0.051 (single)	1.30
	0.072 (dual)	1.83	0.072 (dual)	1.83	0.072 (dual)	1.83

6 SOLID SERIES

Electrical Characteristics

Nominal Capacitance	16.2 pF/ft	53 nF/km
Nominal Impedance	75 ohms	
Nominal Velocity of Propagation	82%	

Mechanical Characteristics

Minimum Breaking Strength of Messenger	0.051	180 lbs.	82kg _r
	0.072	365 lbs.	166kg _r

Attenuation at 68°F. (20°C.)

Frequency (MHz)	Maximum (dB/100 ft.)	Maximum (dB/100 m)
5	0.52	1.70
55 / Channel 2	1.60	5.25
83 / Channel 6	1.95	6.40
187 / Channel 9	2.85	9.35
211 / Channel 13	3.05	10.00
250	3.30	10.82
300	3.55	11.64
350	3.85	12.63
400	4.15	13.61
450	4.40	14.43

Physical Dimensions

Component	Inches	mm
Nom. Center Conductor Diameter	0.029	0.74
Nom. Diameter Over Dielectric	0.180	4.57
Nominal Diameter Over First Shield (Tape)	0.184 (nonbonded)	4.67 (nonbonded)
	0.186 (bonded)	4.72 (bonded)
Nominal Diameter Over Second Shield (Braid)	0.210 (nonbonded)	5.33 (nonbonded)
	0.212 (bonded)	5.39 (bonded)
Nominal Diameter Over Jacket	0.272	6.91
Nominal Jacket Wall Thickness	0.030	0.76

Electrical Characteristics

Nominal Capacitance	20.5 pF/ft	67 nF/km
Nominal Impedance	75 ohms	
Nominal Velocity of Propagation	66%	

Attenuation at 68°F. (20°C.)

Frequency (MHz)	Maximum (dB/100 ft.)	Maximum (dB/100 m)
5	0.64	2.10
55 / Channel 2	2.10	6.89
83 / Channel 6	2.55	8.36
187 / Channel 9	3.80	12.46
211 / Channel 13	4.05	13.28
250	4.40	14.43
300	4.80	15.74
350	5.20	17.06
400	5.50	18.04
450	5.80	19.02

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11 FOAM SERIES (Standard Shield, Super-Shield)

PHYSICAL DIMENSIONS Component	STANDARD SHIELD		SUPER-SHIELD	
	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.064	1.63	0.064	1.63
Nominal Diameter Over Dielectric	0.280	7.11	0.280	7.11
Nominal Diameter Over First Shield (Tape)	0.286	(nonbonded) 7.26	0.289	7.34
	0.289	(bonded) 7.34		
Nominal Diameter Over Second Shield (Braid)	0.310	(nonbonded) 7.87	0.313	7.95
	0.313	(bonded) 7.95		
Nominal Diameter Over Third Shield (Tape)	N/A		0.319	8.10
Nominal Diameter Over Fourth Shield (Braid)	N/A		0.343	8.71
Nominal Diameter Over Jacket	0.405	10.29	0.405	10.29
Nominal Jacket Wall Thickness	0.045	1.14	0.035	0.89
Nominal Diameter of Steel Messenger	0.072	(single) 1.83	0.072	(single) 1.83
	0.109	(dual) 2.77			0.109	(dual) 2.77

ELECTRICAL CHARACTERISTICS

Minimum Breaking Strength of Messenger	0.072 0.109	365 lbs. 1800 lbs.	166 kg, 818 kg,
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MECHANICAL CHARACTERISTICS

Nominal Capacitance	16.2 pf/ft	53 nf/km
Nominal Impedance	75 ohms	
Nominal Velocity of Propagation	82%	

ATTENUATION at 68°F (20°C.)

Frequency (MHz)	Maximum (dB/100 ft.)	Maximum (dB/100 m)
5	0.29	0.95
55 / Channel 2	0.96	3.15
83 / Channel 6	1.18	3.87
187 / Channel 9	1.75	5.74
211 / Channel 13	1.90	6.23
250	2.05	6.72
300	2.25	7.38
350	2.40	7.87
400	2.60	8.53
450	2.75	9.02



S59 HEC HEAD END CABLE CONSTRUCTION

Center Conductor:

22 AWG (.0253") silver plated copper center conductor

Dielectric:

Solid natural polyethylene

Shield:

1. Aluminum-polypropylene-aluminum laminated bonded tape
2. Two layers of 34 AWG tinned copper braid, each 95% coverage

Jacket:

Black polyvinylchloride with imprinted identification

Nominal Dimensions

Conductor: Diameter Over 1st Shield: .153 inches
 0.0253 inches Diameter Over 2nd Shield: .177 inches
Dielectric: Diameter Over 3rd Shield: .202 inches
 0.144 inches Diameter Over Jacket: .265 inches

Transmission Data

Frequency (MHz)	Maximum Attenuation (68°F.)	
	(dB/100 ft.)	(dB/100 m)
5	0.82	2.69
55	2.55	8.37
83	3.15	10.33
187	4.60	15.09
211	4.90	16.08
250	5.25	17.22
300	5.80	19.03
350	6.20	20.34
400	6.60	21.65
450	7.00	22.97

Nominal Impedance: 75 ohms 2 ohms
 Capacitance: 21.0 ± 1 pf/ft. (67 nf/km)
 Velocity of Propagation: 66%

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MC² COAXIAL CABLES
Attenuation Chart (dB/100 ft.)
Maximum Attenuation at 68°F

Frequency MHZ	FEEDER		TRUNK & SUPER TRUNK		
	.440"	.500"	.650"	.750"	1.00"
5	.17	.14	.65	.10	.07
30	.41	.35	.28	.25	.18
55	.56	.48	.38	.34	.24
83	.69	.59	.47	.41	.30
100	.75	.65	.51	.45	.33
175	1.01	.86	.69	.60	.45
211	1.11	.95	.76	.66	.49
250	1.21	1.03	.83	.72	.54
270	1.26	1.08	.86	.75	.56
300	1.33	1.14	.91	.79	.60
312	1.36	1.16	.93	.81	.61
325	1.39	1.19	.95	.83	.62
350	1.44	1.23	.99	.86	.65
375	1.49	1.28	1.02	.88	.67
400	1.54	1.32	1.06	.91	.70
425	1.59	1.36	1.09	.94	.72
450	1.64	1.40	1.13	.97	.74
475	1.68	1.44	1.16	1.00	.76
500	1.72	1.48	1.19	1.03	.78
550	1.81	1.55	1.25	1.08	.82

Submarine Armored MC² Coaxial Cable

Designed to offer submarine protection at a fraction of the cost of conventional steel wire armor, our new submarine armored cable uses copper wire armor to give MC² cable the weight and tensile strength needed for successful underwater applications.

The construction, available in (.500"), (.750") and (1.00") sizes, is manufactured as follows:

Bare coaxial cable is jacketed with polyisobutylene flooding compound beneath the black polyethylene jacket (General Cable Specifications 7004, 7007 and 7008). A layer of copper wires is helically stranded around the cable. The cable is covered with an asphalt flooding compound which includes rubber, and jacketed with black polyethylene.

MC² Coaxial Cable Flooding Compounds For Jacketed Cable

In general, aluminum resists the corrosive effects of the atmosphere extremely well. Tests performed by the American Society for Testing Materials (ASTM) and by our research laboratory have shown that aluminum samples are not severely affected even by long-term exposure to a salt fog atmosphere. However, the environment of an operating cable television system differs significantly from these test conditions. The aluminum is coupled to galvanized steel strand, usually by stainless steel lashing wire. Movement of the cable against these materials occurs due to thermal changes. In the presence of an industrial or marine environment, severe corrosion can occur to bare cables and jacketed cables are recommended. In other environments, bare cables are often sufficient.

Once the aluminum is jacketed, its corrosion susceptibility is increased if the jacket is damaged. In situations where differences in the oxygen concentration can arise, i.e., low oxygen under the jacket and high oxygen at the location of the jacket failure, this moisture becomes the electrolyte of a differential aeration cell. Corrosion resulting from a differential aeration cell or limited supply of oxygen where moisture has migrated under the jacket is progressive. The addition of chlorides to this situation (salt air environment) accelerates the attack in terms of severity and extent.

Buried installations, although soils vary significantly in their corrosiveness, in general represent more severe environments than unprotected aluminum can withstand and jackets must be employed. If jacket damage exists, extensive corrosion damage occurs as a result of stray currents or galvanic cells. To prevent this damage, we recommend our burial flooding compound, which entirely covers the aluminum sheath, and prevents migration of moisture between the sheath and the jacket. In the event of minor jacket damage, it will tend to flow into the damaged area and often continues to isolate the aluminum sheath from the environment, thereby minimizing corrosion.

Aerial installation exposes cable to a less severe environment than direct burial. However, the cable is exposed to temperature cycling not encountered underground. This temperature cycling can make the burial flooding compound difficult to use. Shrinkback of the jacket, and flow of the flooding compound from cable ends on hot days have been reported by system operators. We recommend our aerial flooding compound, an asphalt compound which includes rubber. Though it completely covers the aluminum sheath, its flow is minimized.

Coaxial Cable .440", .500", .650", .750", 1.00", MC²

1. CABLE DESIGN MC² coaxial cables will be manufactured in the following constructions:

1.1 Bare. The cable shall consist of a solid inner conductor of either copper or copperclad aluminum, disc spacers, sleeve insulation and an outer conductor of aluminum. The inner conductor shall be annealed copper or copperclad aluminum. A thin adhesive coating will be applied overall. The dielectric shall consist of compartments of air and thermoplastic discs with a dielectric sleeve overall. The discs are uniformly spaced and hold the inner conductor centered within the sleeve and the aluminum outer conductor. The discs are bonded to both the coated inner conductor and the dielectric sleeve. The outer conductor shall consist of an electrical grade welded aluminum tube drawn down in a compression fit over and bonded to the sleeve in order to prevent moisture migration.

1.2 Jacketed Aerial. A black medium density polyethylene jacket shall be extruded over the cable (described in 1.1). When flooding is specified for aerial application, a rubber-modified asphalt flooding compound will be applied between the outer conductor and the jacket.

1.3 Jacketed for Direct Burial. A black medium density polyethylene jacket shall be extruded over the cable (described in 1.1). A clear, viscous flooding compound shall be applied which will flow to fill any minor construction damage in the overlying jacket.

1.4 Figure 8 (Messengered). The support wire and the coaxial cable (described in 1.1) shall be parallel and covered by a black high molecular weight polyethylene jacket to form a figure 8 cross section. The support wire shall be either solid galvanized steel on the .440", .500" sizes or a flooded stranded 7 wire EHS galvanized steel.

1.5 GP Armored. The construction described in 1.3 shall be covered by a steel tape, corrugated and longitudinally folded around the jacket with positive overlap. Flooding compound shall be applied to cover both sides of the corrugated steel tape. A black medium density polyethylene jacket shall be applied over the flooded steel tape.

GENERAL INSTRUMENT CORP.

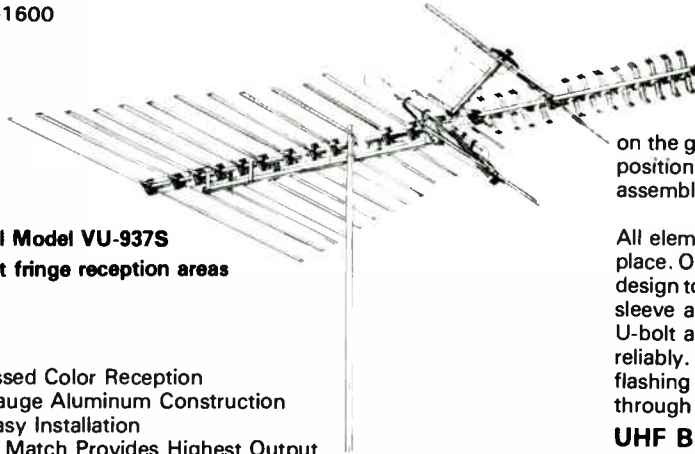
R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

SUPER VU-FINDER ANTENNAS



All Channel Model VU-937S For deepest fringe reception areas

Features

- Unsurpassed Color Reception
- Heavy-Gauge Aluminum Construction
- Quick, Easy Installation
- Excellent Match Provides Highest Output
- Center-of-Gravity Balance
- Positive Locking Fold-Out Elements
- Coloraxial Convertible

SUPER VU-FINDER Antennas are an improved series of all-channel, 300-Ohm Coloraxial convertible units. Engineered for highest gain, reliability and ease of installation, each model provides premium reception of color and black and white TV signals on VHF and UHF channels as well as FM stereo.

Each SUPER VU-FINDER cascades a UHF Corner-Reflector Yagi section and VHF Paralog section for outstanding gain, high front-to-back ratios and excellent match.

The VHF and UHF sections are directly connected with a permanent die-stamped insulator to deliver maximum strength VHF and UHF to the downlead terminals. Excellent match VSWR: VHF 1.8:1, UHF 1.5:1 eliminates phase shift which adversely affects color reception.

The antennas are installer engineered for quick and reliable installation. The mechanical features include unitized construction, space-age insulators, snap-out corner reflector, rugged square boom, dual boom construction on larger models, new steel U-bolt assemble and heavy gauge aluminum snap-out elements. They only require 6 inches of vertical mast space for mounting.

Model VU-931S through 934S are shipped completely assembled and ready to install. Large models VU-935S, 936S and 937S are assembled

SUPER VU-FINDER Specifications

Model	Reception Area	Impedance (ohms)	Elements*				Beam-Width (Degrees)	Front-to-Back Ratio (dB)	Boom Length (Inches)	Turning Radius (Inches)	Weight (Lbs.)	Convert to Coax With	Accepts Power Zoom	Comes with FS-1314-FM
			VHF		UHF									
			D	P	D	P								
VU-931S	Local	300	4	5	1	7	75° Lo 45° Hi 50° U	8 Lo 12 Hi 18 U	50	60	4.5	STO-82	Yes	Yes
VU-932S	Metropolitan	300	5	5	1	13	75° Lo 42° Hi 45° U	14 Lo 16 Hi 20 U	68%	67	5.5	STO-82	Yes	Yes
VU-933S	Suburban	300	7	6	1	19	72° Lo 36° Hi 40° U	16 Lo 18 Hi 20 U	102%	77	7	STO-82	Yes	Yes
VU-934S	Suburban to Fringe	300	8	9	1	19	70° Lo 35° Hi 35° U	18 Lo 20 Hi 20 U	114	77	8	STO-82	Yes	Yes
VU-935S	Deep Fringe	300	9	11	1	31	68° Lo 35° Hi 30° U	20 Lo 20 Hi 22 U	147%	90	12	STO-82	Yes	Yes
VU-936S	Deeper Fringe	300	9	15	1	35	65° Lo 33° Hi 30° U	21 Lo 22 Hi 22 U	171%	109	15	STO-82	Yes	Yes
VU-937S	Deepest Fringe	300	13	13	1	37	68° Lo 33° Hi 30° U	23 Lo 23 Hi 24 U	194	113	18	STO-82	Yes	Yes

*Without VU-8PZ. When using VU-8PZ add 8 parasitics to UHF element count.

O = Driven Elements

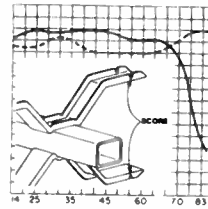
P = Parasitic Elements

on the ground and then put up in one piece. Installation requires only positioning on the mast and tightening the nuts on the U-bolt assembly.

All elements and corner reflectors fold out and positively snap into place. Once in place, they stay there (special attention given in Paralog design to critical point-of-element support—full 360° crimped support sleeve and lock-tight Paralog insulators used on all models). New U-bolt assembly positioned at the center of gravity grips and holds reliably. No twisting on the mast. Positive electrical contact prevents flashing and golden armour coating maintains good electrical contact through years of exposure to the elements.

UHF Breakaway Butterfly

UHF elements are designed for maximum gain on standard UHF channels. Breaking away the elements at the score line will extend the range for higher gain through 890 MHz.



FM Breakaway

Super VU-Finder Models except VU-931S, VU-932S now come with FM blocking elements which reduce FM up to 12 dB. To receive FM at full gain, break off element at score mark. Antenna gain curves are shown for full FM gain (block elements removed).



Power Zoom, Model VU-8PZ

Extends UHF section of Super VU-Finder antennas by 33.5 inches to provide additional UHF gain. Can be shipped UPS.

Prices and Specifications Subject to Change Without Notice.

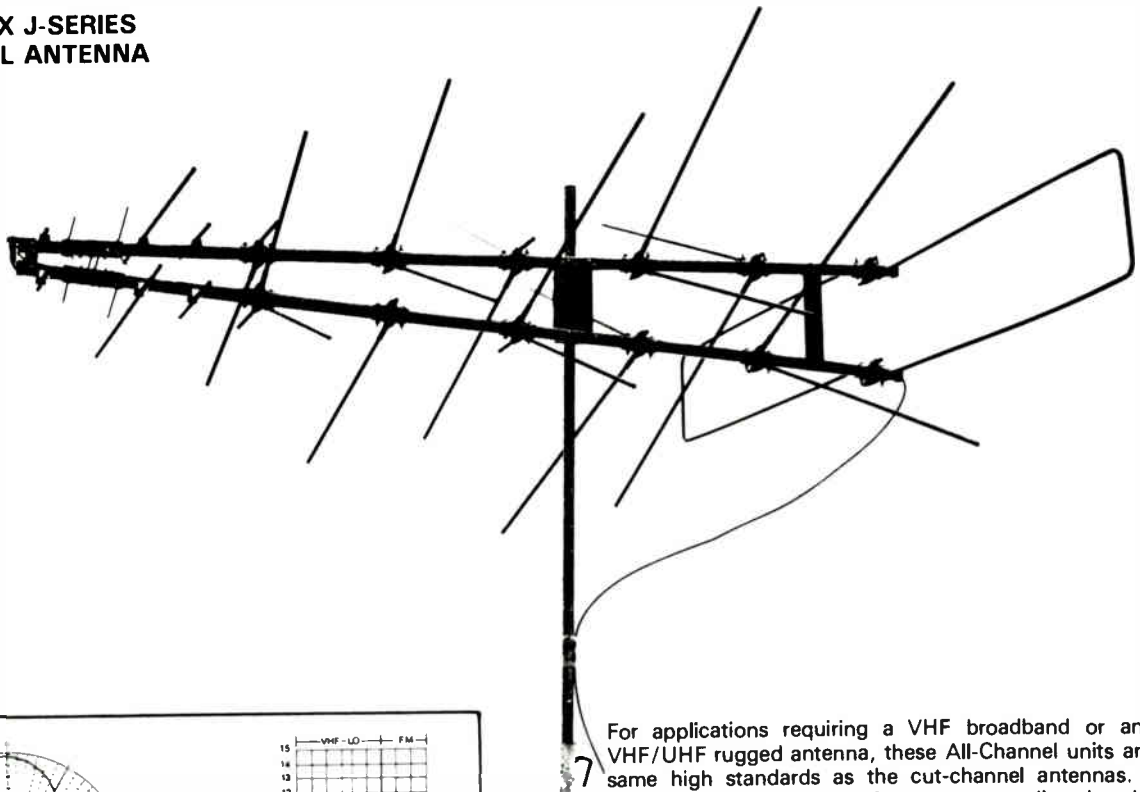
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GENERAL INSTRUMENT CORP.

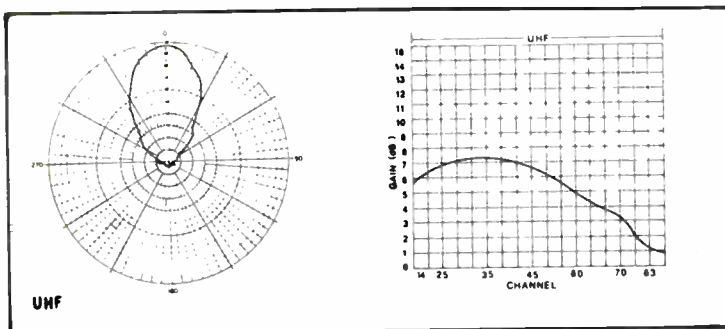
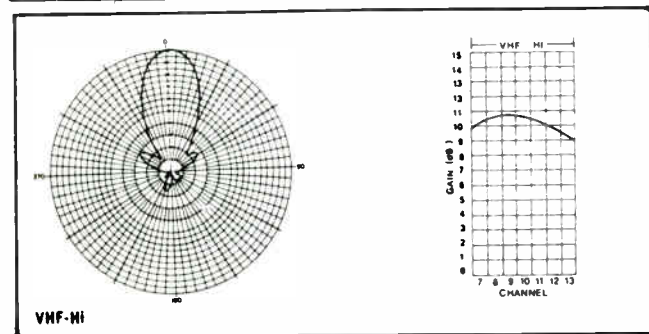
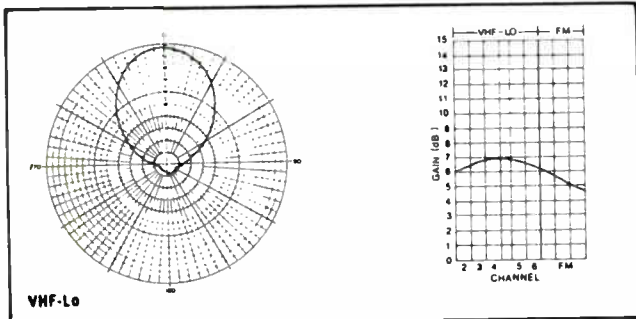
ANTENNAS

R.F. SYSTEMS DIVISION
4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

MODEL J-283X J-SERIES ALL-CHANNEL ANTENNA



For applications requiring a VHF broadband or an All-Channel VHF/UHF rugged antenna, these All-Channel units are built to the same high standards as the cut-channel antennas. Log periodic bi-conical design gives performance exceeding the physical size of the antenna. The unique design gives flat response which is essential to the reception of quality color. Extra-heavy-duty construction; seamless chrome-aluminum tubing; ends sealed against entry of moisture; protected with a special anti-corrosion finish for all weather-resistant installations.



SPECIFICATIONS—J-283X ANTENNA

Gain (dB):	See Gain Curves
Impedance:	75 Ω, 1.5:1 VSWR
Front-to-Back Ratio:	VHF: 18 dB; UHF: 20 dB
Beamwidth (degrees):	VHF: (Lo) 70°, (Hi) 45°; UHF: 55°
Elements:	8 V, 7 U
Boom Length (inches):	90½
Turning Radius (inches):	65
Weight (lbs.):	20
Mast Size (inches):	1½ to 2
Connector:	F type

Wind Load	Thrust (lbs.)	
	No Ice	¼" Ice
85 mph	90	152
100 mph	122	208

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

SATELLITE TV SYSTEM

DISH ANTENNAS

General Instrument's family of top quality dish antennas is available in 8', 10', 12' and 15' sizes. Assembly is easy and quick due to interchangeable dish sections and a feed assembly that requires no focal length adjustment. The deep dish design gives low noise temperature performance and the unique reflector manufacturing process assures maximum surface accuracy and efficiency.

SPECIFICATIONS

Model No. Group	F/D Ratio	Midband Gain (dBi)	-3dB Beam Width (Degrees)	-15dB Beam Width (Degrees)	Noise Temp at 30° Elevation (°K)	Nominal Diameter
SA081	.40	38.1	2.2	4.5	32	8'
SA108	.30	40.3	1.8	3.8	22	10'
SA102	.30	40.3	1.8	3.8	22	10'
SA122	.33	42.2	1.5	3.2	21	12'
SA156	.35	44.2	1.2	2.4	20	15'

MRS-2 SATELLITE RECEIVER

The General Instrument Model MRS-2 satellite receiver is a cost effective realization of state-of-the-art block downconversion technology with today's most requested features.

FEATURES

- Detent tuning with illuminated channel indication
- Built-in matrix/discrete stereo processor with mode select switch and narrow/wide bandwidth
- Push button control for all popular polarization devices: "pulsed" rotating probes (including skew control), ferromagnetic, pin-diode with interface
- Switchable (3/4) RF modulator included
- FCC approved
- Built-in motor drive (east-west) control switch with illuminated meter for indication of relative dish position
- Signal strength meter with ultra-sensitive dual mode to aid the dish alignment

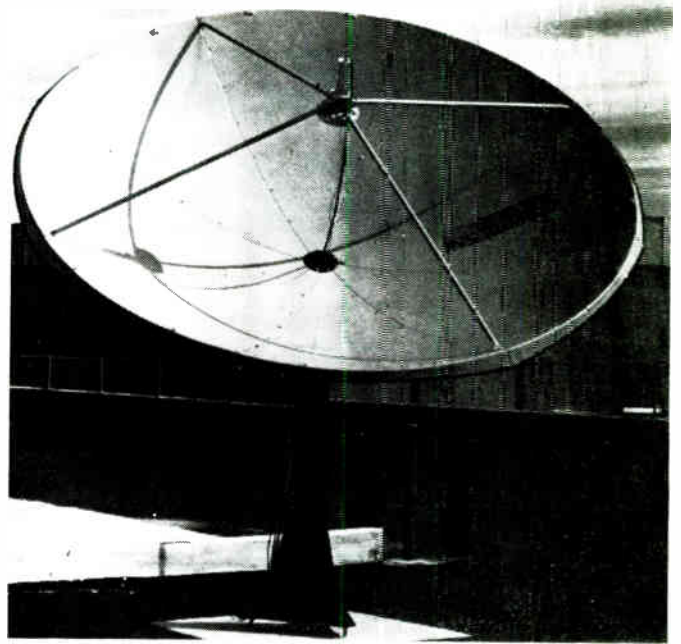
SPECIFICATIONS

RF/IF	AUDIO
Input Frequency: 950MHz to 1450MHz	Subcarriers (A or B): 5.0-8.0MHz tunable
Input Impedance: 75 ohms	Bandwidth: 240kHz wide/160kHz narrow
Input Level: -60 to -20dBm	Mode Select: -Mono sub A only
Bandwidth: 500MHz	-Matrix stereo
IF Frequency: 70MHz	-Discrete stereo
IF Bandwidth: 24MHz	Frequency Response: 50Hz to 15kHz
Image Rejection: 23dB nominal	De-Emphasis: 75 u.s.
Threshold Level: Better than 8dB C/N	Output Level: 150mV/10K min.
VIDEO	Harmonic Distortion: 1% maximum
De-Emphasis: CCIR 405-1, 525 lines	MODULATOR: Switchable for chan. 3/4
Frequency Response: to 4.2MHz	POWER SUPPLY: External power module: 115VAC, input; 18.5VAC, 750mA output
Dispersion Removal: 2 IRE maximum	MECHANICAL: 2.5" x 13.5" x 10"
Output Level: 1V p-p	
Output Impedance: 75 ohms	
Output Polarity: negative/positive sync	

ANTENNA POLAR MOUNT

The polar mounts for General Instrument dish antennas are designed for ease of installation and operation as well as long life. The mount is used to aim the dish antenna at the individual satellites by rotation on a single axis.

They are available with a manually operated handcrank or in a motorized version which allows for remote control in aiming at satellites. The General Instrument polar mounts are precision instruments which, when properly installed, will travel through the complete polar arc with pinpoint accuracy.



SATELLITE SYSTEMS

8-Foot Systems — 1 Piece Aluminum Antenna	Price
SATV081M2 System with 8-foot antenna, manually operated polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	\$2180.00
SATV081M2M System with 8-foot antenna, motorized polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	2620.00
10-Foot Systems — 8 Piece Steel Antenna	
SATV108M2 System with 10-foot antenna, manually operated polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	\$2570.00
SATV108M2M System with 10-foot antenna, motorized polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	2995.00
10-Foot Systems — 2 Piece Aluminum Antenna	
SATV102M2 System with 10-foot antenna, manually operated polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	\$3495.00
SATV102M2M System with 10-foot antenna, motorized polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	3930.00
12-Foot Systems — 2 Piece Aluminum Antenna	
SATV122M2 System with 12-foot antenna, manually operated polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	\$3745.00
SATV122M2M System with 12-foot antenna, motorized polar mount with pedestal base, feed with electronic polarizer, 120° LNB, MRS-2 receiver	4180.00
System Upgrades	
100° LNB instead of 120°, add to system price	\$95.00

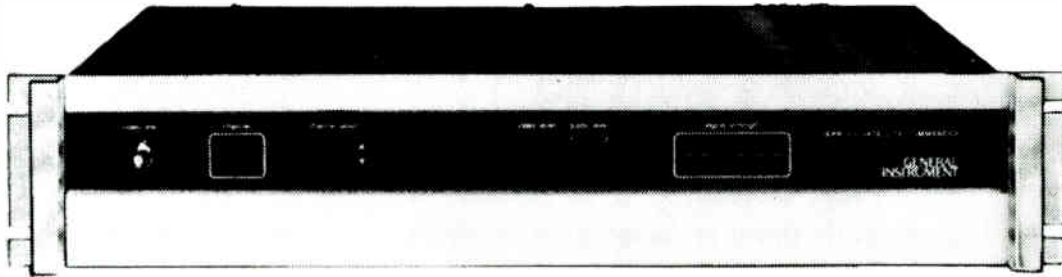
Prices and Specifications Subject to Change Without Notice.

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GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION
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SATELLITE RECEIVER



MODEL STCM-4

SATELLITE COMMANDER RECEIVER STCM-4

Features

- Block down conversion compatible (950-1450 MHz input)
- 24 Channel frequency agile tuning with digital display
- Video clamping
- Front panel bar graph signal strength meter
- 6.8 MHz and 6.2 MHz audio subcarriers
- 8 dB threshold
- 15V DC output through coaxial cable to power a low noise amplifier/block converter (LNB)
- 70 MHz receiver IF permits the use of readily available terrestrial interference filters

The Model STCM-4 Satellite Commander receiver is specifically designed for SMATV and CATV applications. It features frequency agile 24-Channel electronically synthesized tuning and a digital Channel display.

Very low distortion and an 8.0 dB threshold are insured by eliminating amplitude noise from the signal through a limiter-discriminator. For a relative indication of the strength of the input signal, a bar type meter is located on the front panel.

The receiver provides DC power for the LNB through the coaxial signal cable. Both 6.8 and 6.2 MHz audio subcarriers are standard.

A single RF input is available for either horizontal or vertical polarization and tunes either the 12 odd or 12 even channels, depending on the polarization of the input.

Specifications for Satellite Receiver, Model STCM-4

TUNING	24 Channel frequency agile for satellites transmitting at 3.7 to 4.2 GHz
RF INPUT	Input Frequency 950 to 1450 MHz Input Level -30 to -60 dBm Input Connector Type Modified "F" Female Input Return Loss 14 dB minimum Local Oscillator Spurious at Input Port -80 dBm maximum Noise Figure 15dB maximum Impedance 75 Ohm
IF	IF Frequency 70 MHz IF Bandwidth 27 MHz Threshold 8 dB Impedance 50 Ohm
COMPOSITE BASEBAND OUTPUT	Output Voltage 1V p-p minimum up to 10 feet of coaxial cable, 1K Ohm load Connector Type BNC Female
VIDEO CHARACTERISTICS (REF 100 IRL)	Video Level Control Range 1V p-p adjustable +/- 3 dB Impedance 75 Ohm unbalanced Energy Dispersal Rejection -30 dB minimum Gain/Frequency Response +/- 0.6% maximum Field Time Distortion 1% maximum Line Time Distortion 1% maximum Short Time Ringing (2T Pulse) K Factor of 2% maximum Differential Gain (10-90% APL) +/- 2% maximum Differential Phase (10-90% APL) +/- 1 Degree maximum Chrominance-Luminance Delay Inequality 50 ns maximum De-emphasis CCIR REC 405-1
AUDIO CHARACTERISTICS	Sub-carrier Frequency Both 6.8 MHz and 6.2 MHz Frequency Response 50 Hz to 15 KHz Output Level +/- 0.5 dB Impedance 0 dBm at 1 KHz adjustable Harmonic Distortion 600 Ohm balanced De-emphasis 1% maximum 75 usec
POWER CHARACTERISTICS	Power Consumption 115 Vac +/- 10%, 60 Hz +/- 3Hz 50 Watts maximum
MECHANICAL CHARACTERISTICS	Size 19" W x 13" D x 3.5" H (48.3 cm x 33.0 cm x 8.9 cm) Weight Net: 11.5 lbs.

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

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TV SIGNAL DISTRIBUTION EQUIPMENT



MODEL 1000 BROADBAND DATA MODEM

Features

- Frequency-Agile Point-to-Point Modem
- 16 Data Rates: From 110 BPS to 19.2 KBPS
- 50 kHz per Data Channel
- Sensitivity of $-16 \text{ dBmV} \pm 10 \text{ dB}$
- Synchronous or Asynchronous

The Metronet 1000 Broadband Data Modem is designed to interconnect computers and computer terminal devices over a coaxial cable network. Units are available for either full-duplex or half-duplex operation. The modem interfaces with user devices at any of 16 data rates, from 110 BPS to 19.2 KBPS, in either the synchronous or asynchronous mode. Metronet 1000 is also available for single or dual cable operation. With the dual cable operation, a second R.F. connector is provided for the dual cable and the diplex filter is not used. A choice of 156.25 MHz or 192.25 MHz

offset between send and receive channels is available with either the single or dual cable option.

The modem is frequency-agile through dip-switch setting. Up to 102* modems can operate in full-duplex mode, and 204* modems in half-duplex mode, on a 6 MHz TV channel pair. A high receive-level sensitivity permits operation at relatively low signal levels. This, coupled with a narrow bandwidth of 50 kHz per data channel, allows serving a large number user without system overload. No other point-to-point modem has this narrow bandwidth capability.

The Metronet 1000 Modem is part of General Instrument's family of communication products. It is designed by broadband communications experts to provide you with the best in technology and performance for your network needs.



MODEL 1600 BROADBAND T-1 MODEM

Features

- T-1 Point-to-Point Modem
- Voice Trunking Applications
- High Speed Data Communication
- Sensitivity of $0 \text{ dBmV} \pm 10 \text{ dB}$
- Synchronous

The Metronet 1600 Broadband T-1 Modem is designed to provide high speed (1.544 MBPS) for voice trunking and high speed data transfer. All units are capable of full-duplex operation and are used for synchronous transmission. This modem is used in point-to-point applications and has DS-1 digital interface.

The modem has a bandwidth of 3 MHz per carrier and is capable of full-duplex communication within a 6 MHz channel pair. The unit features a wide variety of

input/output channel pairs which allow it to be used with subsplit, midsplit or highsplit systems. It can also be used on single or dual cable systems. With the dual cable option, a second R.F. connector is provided for the dual cable and the diplex filter is not used. The offset of 156.25 MHz or 192.25 MHz between send and receive channels is available with either single or dual cable option.

The Metronet 1600 Modem is part of General Instrument's family of communication products. It is designed by broadband communications experts to provide you with the best in technology and performance for your network needs.

*When used with the Metronet 8000 Transverter, which provides a guard band at each edge of the TV channel, to ensure compatibility with video signals on the same cable.

Prices and Specifications Subject to Change Without Notice.

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GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

TV SIGNAL DISTRIBUTION EQUIP.



MODEL 8000 RF FREQUENCY TRANSVERTER

Features

- Six MHz Block Translation
- Compatible with Sub-Split, Mid-Split, High-Split and Dual Cable Systems
- Works with all Metronet Modems
- Compact Unit Designed for Rack Mounting

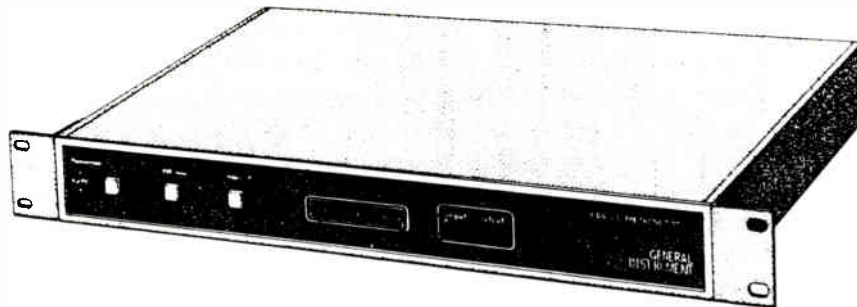
The Metronet 8000 R.F. Frequency Transverter is a frequency translator designed to convert, with proper gain, the low-frequency upstream TV channels to the high-frequency downstream TV channels. The primary application for the transverter is with Metronet Broadband Data Modems, to allow for both upstream and downstream transmission of data.

The standard input ranges of the transverter are channels T-7 to 2A (5.75 to 59.75 MHz) and channels 60-16 (108 to

136 MHz). The output range is offset by either 156.25 MHz or 192.25 MHz to accommodate sub-split, mid-split or high-split systems. The standard output ranges for a 156.25 MHz offset are channels 21 to 13 (162 to 215 MHz). The standard output ranges for a 192.25 MHz offset are channels 11 to 28 (198 to 252 MHz) and channels 37 to 41 (300 to 330 MHz).

Metronet 8000 is suitable for single or dual cable operation. Two R.F. connectors are provided. For single cable operation, the headend diplex filter can be used to separate the forward and reverse signals.

The Metronet 8000 is part of General Instrument's family of communication products. It is designed by broadband communications experts to provide you with the best technology and performance for your network needs.



MODEL 9000 TRANSVERTER REDUNDANCY SWITCH

Features

- Automatic or Manual Transverter Switching
- Compatible with Sub-Split, Mid-Split, High-Split and Dual Cable Systems
- Built-In Visual Alarm Indicators
- Contacts for External Alarm Indicator
- Compact Unit Designed for Rack Mounting

The Metronet 9000 redundancy switch provides automatic switching from the primary to a backup M8000 frequency transverter. If the transverter output level falls below an established threshold due to a degradation in gain or frequency drift, the unit will switch to the backup transverter and provide visual indication of failure. In addition, contacts are provided for activation of external devices or alarms.

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

TV REMOTE CONTROLLER



LCC-91 TV Remote Controller For Homes Without Cable TV

FEATURES

- Remote control lets you change television channels from the comfort of your chair.
- Turn your TV set on and off — even fine tune the picture — without touching the dial.
- Up to 91 channel capacity, approved by the F.C.C., and U.L.
- Eliminates wear and tear on your TV's tuner due to its advanced microprocessor technology.
- Wireless hand controller switches stations.
- Lighted digital display on converter indicates the channel you're tuned to.
- Simple do-it-yourself installation in minutes.
- Works with virtually all TV models. Receives VHF and UHF signals from a TV antenna.

TV Remote Controller Receiver Unit

Power Source	AC 120V 60 Hz
Power Consumption	14W
Channel Coverage	VHF 2-13, UHF 14-83, Cable midband A-1
Controls	Search up/down, power on/off switch, fine tuning
Antenna input	VHF, UHF, Midband
Impedance	300-ohms balanced
Output Impedance (to TV Set)	75 ohms
Output Channels	Channel 3 or 4, adjustable by end user
Components	9 IC's, 25 Transistors, 32 Diodes, 2 LED's, 1 Photo Diode
LED Display Height	.560"
Weight	4 lbs., 4 oz.
Dimensions	9½" w x 2¼" h x 8¾" d
Gain (AGC attack point 3dBm)	VHF 7dB min/21dB max UHF 10dB min/25dB max Midband 0dB min/14dB max

Handheld Transmitter

Power Source	One 9V Transistor Battery
Controls	Power on/off switch, direct channel number selection, search up/down, fine tuning
Range of Operation	20 feet or more
Weight	5 oz. including battery
Dimensions	3" w x 1" h x 5" d

LCC-58 TV Remote Controller For Homes With Cable TV

(Formerly Model DRX-105)

FEATURES

- Remote control lets you change television channels from the comfort of your chair.
- Turn your TV set on and off — even fine tune the picture — without touching the dial.
- Up to 58 channel capacity, approved by the F.C.C., U.L. and C.S.A.
- Saves wear and tear on your TV's tuner due to its advanced microprocessor technology.
- Wireless hand controller switches channels.
- Lighted digital display on the converter indicates the channel you're tuned to.
- Rich wood-grain finish looks attractive in any room's decor.
- Simple do-it-yourself installation in minutes.
- Works with all TV models and compatible with virtually all cable systems.

TV Remote Controller Receiver Unit

Power Source	AC 120V, 60 Hz		
Power Consumption	16W		
Channel Coverage	VHF (low)	54-88MHz	Channels 2-6
	VHF (high)	174-216MHz	Channels 7-13
	Midband	120-174MHz	Channels 14-22
	Superband	216-300MHz	Channels 23-36
	Hyperband	300-402MHz	Channels 37-53
	Extended	72-120MHz	Channels 54-61
Frequency Assignments	Standard, IRC, HRC switchable by user.		
Controls	Search up/down, power on/off switch, fine tuning.		
Input Impedance	75 ohms		
Output Impedance (to TV Set)	75 ohms		
Output Channels	2 or 3 (Specify channel when ordering.)		
Components	7 IC's, 14 Transistors, 23 Diodes, 2 LED's, 1 Photo Diode		
LED Display Height	.560"		
Weight	4 lbs., 4 oz.		
Dimensions	9½" w x 2¼" h x 8¾" d		
Gain	1dB min., 7dB max.		

Handheld Transmitter

Power Source	One 9V Transistor Battery
Controls	Power on/off switch, direct channel number selection, search up/down, fine tuning
Range of Operation	20 feet or more
Weight	5 oz. including battery
Dimensions	3" w x 1" h x 5" d

Prices and Specifications Subject to Change Without Notice.

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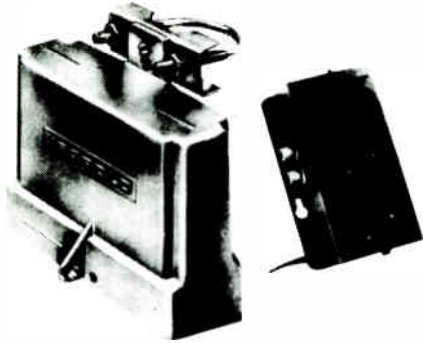
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TV SIGNAL DISTRIBUTION EQUIP.



DE-SNOWER PREAMPLIFIERS

VHF-TV/FM BROADBAND MODEL DSB-587 75-OHM

Jerrold's DSB-587 is a high output VHF preamplifier with the added feature of a built-in turnable FM trap. Gain: 28 dB. Output capability at +40 dBmV per channel for 7 channels at -46 dB cross-modulation, is sufficient to drive a small distribution system. The FM trap may be tuned to insert 10 dB of attenuation on a band 1.25 MHz wide within the FM band. If there is no strong FM band. Uses remote power supply, Model 587. Lightning protected. 75-ohm input. Four F-659 connectors supplied.

UHF-TV BROADBAND MODEL DSU-II 75-OHM

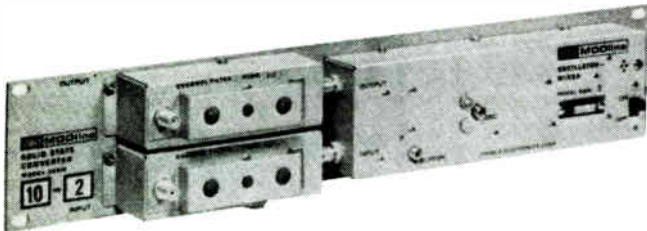
Jerrold Model DSU-II is a high-gain, low-noise, 75-ohm UHF-TV preamplifier. The use of unique stripline constructed transistors with low radial lead inductance optimizes noise figure over the UHF band. Housed in a rugged mast mounting aluminum casting, the preamplifier is ready for immediate installation. An indoor mounting power supply DSU-PS is also supplied. The 75-ohm input impedance makes this unit a perfect match to the J-275 antenna for system applications. Four F-659 connectors supplied.

VHF-TV/FM SINGLE CHANNEL DSS-SERIES 75-OHM

The "De-Snower" DSS-Series is Jerrold's highest gain line of single-channel preamplifier systems, Models DSS-2 through DSS-13 for VHF television channels, and Model DSS-FM for the full FM radio band. These systems are used with cut-to-channel antennas such as Jerrold J-55 and J-105-Series Ruggedized Antennas for large MATV systems in fringe to extreme fringe locations. The preamplifier is enclosed in a weatherproof aluminum housing which has a universal bracket for either mast or indoor mounting. When ordering, specify channel number or FM.

Models	Frequency Range (MHz)	Gain (dB)	Noise Figure (dB)	Frequency Response (dB)	Max. Output Each Channel (dBmV)	Minimum Input (for 30 dB C/N in dBmV)	Impedance (All Terminals)	Match (dB)	Power Supply Model	Power Consumption Watts
DSB-587	54-216	28	6.5 (lo) 6.0 (hi)	±.75	+40 (7 ch. -46 dB Xmod)	-22.5 (lo) -23 (hi)	75	12	587	5
DSS-(*)	TV: 6 FM: 20	30 30	4.0 4.5	±.75	+54 (5% sync clip) +45 (3 ch. 3rd order -40)	-25	75	In: 7 Out: 10	587	5
DSU II	470-800 800-890	26 23	470: 6.5 800: 7.0 890: 7.5	±1.25	+40 (3 ch. -46 dB Xmod)	-22	75	6	DSU-PS	5

*Specify TV channel number or FM.



SINGLE CHANNEL CONVERTERS VHF-TV TO VHF-TV CONVERTERS

SCON-Series

Now Including Sub-VHF to Midband

- Zener-regulated full-wave power supply
- Crystal-controlled oscillator with input buffer circuit
- Double conversion compatibility

Jerrold SCON-Series are VHF-to-VHF converters and are solid-state, crystal-controlled modular units. The accompanying chart indicates possible conversions. Standard SCON's comprise an oscillator-mixer assembly with one input and output filter. Filters (FLC or FHC) are factory tuned for specified channels. SCON Sub-to-Mid comprises input filter, oscillator-mixer-assembly and outboard filter Model PBF-Mid. All filters are factory tuned to channels specified. Ordering information: Specify model, then channel conversions. For example: T8 to C should read SCON Sub-to-Mid T8-C.

Specifications

Frequency Stability	- 0.5% within operating temp. range
Channel Conversions	UHF (14 to 83) to VHF (2 to 13)†

† Table of Prohibited Conversions

UHF	TO	VHF
	19	6
22 23 24 25 52 53 81 82 83		7
25 26 27 28 56 57		8
28 29 30 31 60 61		9
16 31 32 33 34 64 65		10
34 35 36 37 68 69		11
21 37 38 39 40 72 73		12
40 41 42 43 76 77 78		13

GENERAL INSTRUMENT CORP.

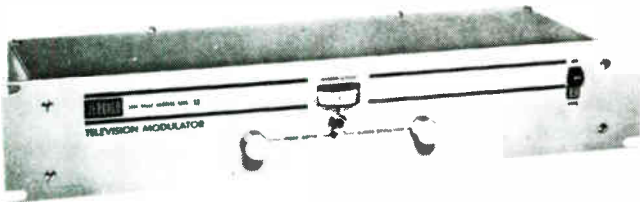
R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

TV SIGNAL MODULATOR



UNI-MOD II MODEL UM-2* AUDIO-VIDEO MODULATOR

- Monochrome or Color Operation
- Front Panel Control and Metering of Aural and Visual Modulation
- Adjacent Channel Operation Made Possible by Unique Helical Resonator Bandpass Filter
- Crystal Controlled Visual Carrier
- 4.5 MHz Aural Offset Automatic Frequency Controlled with Integrated Circuitry
- Loop Thru

Jerrold's Uni-Mod Modulator Model UM-2* is an audio-video unit designed for adjacent channel operation in MATV and CCTV systems. The unit modulates separate RF carriers with video and audio program information, then combines and filters the signals to conform with a standard TV channel format. Uni-Mods are available with outputs on sub-channels T-8 thru T-13, standard VHF-TV channels 2 thru 13 and Mid-Band Channels A thru I. Output level is sufficient to drive a medium size distribution system directly and sharp skirt filtering allows mixing with off-the-air channels. (See the mixing diagram.) Flat video response and low differential phase and gain specifications give the Uni-Mod excellent video performance. Meter face simplicity allows even the non-technical operator to set up and produce quality pictures.

*Specify TV channel.

Video

Input Impedance 75 ohms, VSWR: 1.5:1 (14 dB return loss)
 Input Type Composite video, sync negative
 Input Level 0.5 V p-p (for 87.5% modulation)
 Frequency Response +/- 0.5 dB to 4.2 MHz
 Differential Gain 2 dB at 3.58 MHz, full modulation
 Differential Phase 5° at 3.58 MHz, full modulation
 Metering Peak depth of Modulation
 Control Depth of Modulation

Audio

Input Impedance 600 ohms, unbalanced
 Input Type Baseband audio
 Input Level 50 mV RMS (-35 dBm) for full deviation
 Frequency Response 100 Hz to 15 kHz, +/- 1 dB to std. 75 usec. pre-emphasis
 Harmonic Distortion 3%
 Metering Deviation
 Control Amount of Deviation

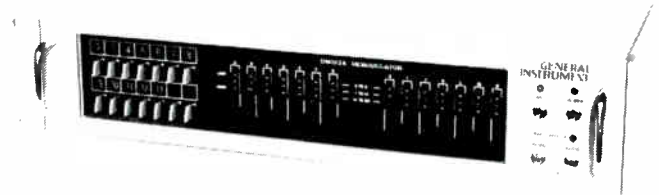
RF

Output Impedance 75 ohms, VSWR: 1.5:1 (14 dB return loss)
 Output Level
 Visual Carrier + 62 dBmV, adjustable—standard VHF
 + 40 dBmV, sub and mid VHF
 Aural Carrier 10 to 15* dB below visual, adjustable
 Output Frequency
 Visual Carrier VHF channel (2-13, T8-T13 and A-I crystal controlled, .005%)
 Aural Carrier 4.5 MHz above visual carrier, AFC-controlled within +/- 3 kHz
 Output Control Range 10 dB
 Spurious Output -60 dB, except lower adjacent channel, which is -52 dB
 Radiation -80 dB, meets FCC radiation requirements
 76.605 (a) 12

*Aural carrier factory-set for 15 dB below visual.

General

Temperature Range 0°C (32°F) to 50°C (122°F)
 Power Requirements 117 V, 60 Hz, 17 W
 Dimensions 19" W x 3 1/2" H x 7 1/4" D



TELEVISION DEMODULATOR, MODEL DM-283A FOR MATV, CCTV AND CATV APPLICATIONS

- All Channel
- Push Button Channel Selection
- Quality Color & Black & White Signals
- Front Panel LED Indicators
- Automatic Noise Cancellation (ANC)
- AFT
- AGC

The Television Demodulator, Model DM-283A, provides quality baseband video and audio signals from any selected TV channel (2 to 83).

The DM-283A offers high video output level capability. AFT, AGC, and ANC features assure excellent output signals under a wide range of operating conditions and input levels.

Front panel controls include push button express tuning and illuminated on-off power and AFT switches. LED indicators display status of AFT and power functions.

DM-283A SPECIFICATIONS

Circuitry Design	100% Solid State
Channel Selection	Push button express tuning, varactor type system, preset fine tuning with band select, VHF channels 2-13, UHF channels 14-83
AFT	Automatic Fine Tuning with defeat switch and precise tracking across all 83 channels
AGC	Automatic Gain Control, Amplified Type
ANC	Automatic Noise Cancellation
Noise Figure	VHF: Better than 6 dB UHF: Better than 12.5 dB
Minimum Input Level	-36 dBmV
Antenna Inputs	75 Ohm, F-59 Connectors
Color Video Quality	Low Chrominance to Luminance Differential Gain and Phase
Video IF Characteristics	Bandwidth 3.8 MHz at -6 dB; Adjacent Channel Rejection: Picture, 50 dB; Sound, 60 dB
IF Stages	SAW filter "IF" with IC amplifier
Audio Outputs (Dual)	600 Ohms at 0 dBm, unbalanced; 0.25V P-P Max.
Video Outputs (Dual)	1.0V P-P Adjustable, into 75-Ohm Load, Negative Sync.
Power	120 VAC, 60 Hz; approx. 20W Dissipation
Circuit Protection	Dual buffered and short circuit protected video, audio and 4.5 MHz aural outputs
Power Supplies	Regulated power supplies
Cabinet Construction	Baked light gray finish with silk screened black anodized recessed control panel
Dimensions	3-1/2"H x 19"W x 13"D (rack mountable)
Weight	14 lbs.

Prices and Specifications Subject to Change Without Notice.

VRF-53

GENERAL INSTRUMENT CORP.

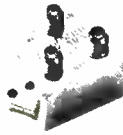
R.F. SYSTEMS DIVISION

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TV SIGNAL DISTRIBUTION EQUIPMENT



1592C



1596C



SWS-2



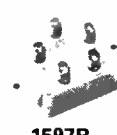
SWS-2UV



1593C



1594C



1597B



SWS-4



SWS-4UV

Model 1592C

VHF Splitter, 2-Way

A convenient-size, two-way splitter for use in systems requiring a frequency range of 5-300 MHz. Shipped bulk, less connectors.

Models 1596C and 1596CDP

UHF/VHF Splitter, 2-Way

Model 1596C is a hybrid, two-way splitter with extended bandpass from 5-890 MHz. This 75-ohm splitter uses precision printed circuits, packaged in a zinc cast housing. The housing provides better than 80 dB shielding. Model 1596C is bulk packed, less connectors. Model 1596CDP is display packaged with three F-659 connectors.

Model SWS-2

VHF Splitter, 2-Way

Two-way indoor/outdoor hybrid splitter/combiner, 5-400 MHz equipped with axial (face-mounted) F-type fittings for wall mounting. Shipped bulk, less connectors.

Model SWS-2UV

UHF/VHF Splitter, 2-Way

Same as above, except 5-890 bandwidth.

Model 1593C

VHF Splitter, 3-Way

Three-way indoor/outdoor hybrid splitter/combiner with grounding screw, 5-400 MHz. Equipped with radial (side-mounted) F-type fittings for surface mounting. Shipped bulk, less connectors.

Model 1594C

VHF Splitter, 4-Way

Same as above, except 4-way.

Model SWS-4

VHF Splitter, 4-Way

Four-way indoor/outdoor hybrid splitter/combiner, 5-400 MHz. Equipped with axial F-typed fittings for wall mounting. Shipped bulk, less connectors.

Model SWS-4UV

UHF/VHF Splitter, 4-Way

Same as above, except 5-890 bandwidth.

Models 1597B, 1597BDP

UHF/VHF Hybrid Splitter, 4-Way

Model 1597B is a 75-ohm, four-way UHF/VHF hybrid splitter with sub-channel capability. The hybrid network is constructed on a printed circuit board which is mounted in a zinc cast housing. Shielding is better than 80 dB.

The unit is designed for mixing four separate inputs to obtain a common output or splitting a common input into four separate outputs. It is for indoor surface mounting. Model 1597BDP is display packed with five F-659 connectors.

SPECIFICATIONS		\$4.26	\$9.55	\$4.15	\$5.20	\$10.20	\$7.63	\$16.15	\$9.66	\$8.65
MODEL NUMBER		1592C	1596C	SWS-2	SWS-2UV	1593C	1594C	1597B	SWS-4	SWS-4UV
NO OF OUTPUTS		2	2	2	2	3	4	4	4	4
BANDWIDTH (MHZ)		5-300	5-890	5-400	5-890	5-400	5-400	5-890	5-400	5-890
MAX INSERTION LOSS (dB)	VHF	3.5	3.5	3.5	3.5	1 AT 3.5—2 AT 7.0	7.0	7.0	7.0	7.2
	UHF	N/A	3.8	N/A	4.0	N/A	N/A	8.4	N/A	8.0
MIN ISOLATION BETWEEN OUTPUTS (dB)	VHF	20	20	30	20	30	30	20	30	20
	UHF	N/A	18	N/A	18	N/A	N/A	18	N/A	18
MIN RETURN LOSS (dB)	VHF	20	19	20	17	20	20	13	20	13
	UHF	N/A	17	N/A	17	N/A	N/A	14	N/A	14
SHIELDING (dB)		80	80	80	80	80	80	80	80	80
SHIPPING WEIGHT (oz.)		6	8	4	4	3	4	8	6	6

Model LGB-4

Grounding Block

Jerrold Model LGB-4 is a grounding block assembly for positive grounding of lead-in cable shield. The LGB-4 can be mounted in any position on a flat surface, indoors, or outdoors; two wood screws are supplied for this purpose. F-61A connectors.

The ground connection is made with a heavy gauge copper wire connected to a grounding rod or to a nearby cold water pipe. **\$1.63**

Model T-6000

Jerrold All-Channel Matching Transformers

Model T-6000 matching transformer provides excellent balance (40 dB, VHF) and is ideal for TV set mounting in all signal areas. The T-6000 matches 75-ohm coaxial cable to a 300-ohm TV set and is a must for reducing local pickup (ghosts) in MATV systems. It also incorporates an exclusive Jerrold fitting to accept our Snap-fit SF-59 cable connector, designed to prevent damage where sets are moved frequently. Model T-6000 is bulk-packed 25 per carton with instructions, less connectors. **\$1.66**

Model T-6000DP

Same as T-6000 except individually display card packaged, with 12 display cards per shipping carton. Each display card contains a T-6000 transformer, F-659 connector, 1082 ferrule, and ET-659 expansion tool. **\$2.16**

Model T-6789

All-Channel Matching Transformer

Model T-6789 75/300-ohm matching transformer incorporates superior T-6000 performance into an indoor/outdoor design, readily adaptable to either an outdoor antenna or a TV set. Design improvements include a tighter coaxial fitting seal, soldered spade-tip lugs for better connection, and twinlead conductor which resists bending or twisting to protect UHF signals. Model T-6789 is bulk-packed 25 per carton with instructions, less connectors. **\$4.18**

Model T-6789DP

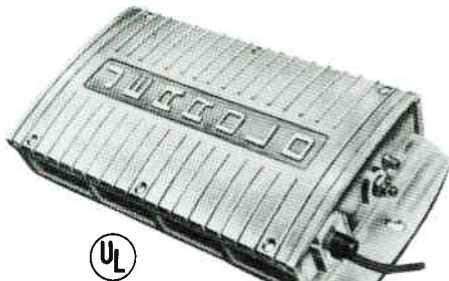
Same as T-6789, except individually display card packaged (12 cards per carton) with F-659 connector, 1082 ferrule, ET-659 expansion tool, plastic strap, and weatherboot. **\$5.69**

GENERAL INSTRUMENT CORP.

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TV SIGNAL DISTRIBUTION EQUIP.

INTERNAL DISTRIBUTION AMPLIFIER



MODEL IDA-45 35-CHANNEL, PUSH-PULL INTERNAL DISTRIBUTION AMPLIFIER, 2-WAY CAPABLE

FEATURES

- Die-cast aluminum housing
- Radiation-shielded design
- Input/output connectors compatible with CATV cables
- Surge-protected input terminal
- Meets or exceeds FCC technical requirements (Part 76)
- Fully adaptable to two-way communications
- Operates with any CATV service — flat, block tilt or sloped
- Compatible CATV/MATV interface
- Push-pull amplifier design for up to 35-channel service
- Integrated circuit design

Jerrold Model IDA-45 Internal Distribution Amplifier is a professional quality product meeting the most exacting specifications for RF distribution. Fully solid-state including integrated circuits, two-way capable with high gain, ultralinear broadband characteristics and excellent shielding, the IDA-45 is designed to interface CATV systems and internal distribution systems. However, input to the amplifier may also be from antennas or local origination. The amplifier is housed in a maximum heat dissipative, rugged, die-cast aluminum housing which provides shielding of 90 dB. Circuit design is based on the push-pull principle providing for amplification of up to 35 channels.

Gain and slope controls are accessible with the removal of the top cover. The amplifier provides the necessary plugs and adapters to accept a wide range of accessories including:

- SEE equalizers to compensate for cable tilt preceding the amplifier.
- JXP attenuators to compensate for excessive input signal level.
- IOC plug-in automatic overload control to compensate for input signal level fluctuations.
- IDF plug-in sub-channel splitting filters for two-way system applications.
- IRA plug-in sub-channel return amplifier for 5 to 30 MHz return signal amplification.

GIBRALTAR BROADBAND AMPLIFIERS



MODEL 3770 P-P WIDE BAND VHF PUSH-PULL AMPLIFIER

FEATURES

- Wide Band (40-300 MHz)
- Includes Entire Mid-Band (120-174 MHz) and Super Band (216 to 300 MHz)
- Push-Pull Design for 30-Channel Operation



- Ideal as MATV Distribution Amplifier with CATV Feed
- Heat-Dissipating Housing Design
- Input/Output Test Points

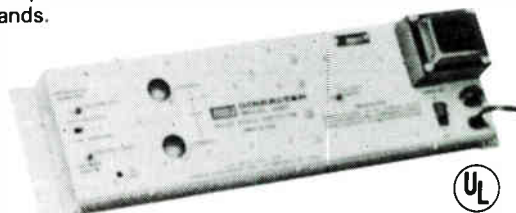
The 3770 P-P Push-pull design provides suppression of second order harmonics (-65 dB). Triple beat suppression is -70 dB. Slope is variable, 0 to 8 dB.

MODEL 3455 VHF/FM AMPLIFIER

FEATURES

- Solid State, Low Noise
- High Output Capability
- Diode Lightning Protection
- Tunable FM Trap

Jerrold's 3455 Gibraltar is a high gain (30 dB) broadband amplifier for medium-sized distribution systems. Accepts combined Hi Band and Lo Band VHF inputs and includes separate 10 dB gain controls for the Hi and Lo Bands.



MODEL 3880 VHF/FM AMPLIFIER

FEATURES

- Solid-State, Low Noise
- High Output Capability
- Diode Lightning Protection
- Tunable FM Trap

The Jerrold Model 3880 is a super-high gain (55 dB) and output +60 dBmV VHF-TV/FM, split-band, solid-state amplifier for use in large Master Antenna TV distribution systems.



MODEL 3662 VHF/FM BROADBAND AMPLIFIER WITH AUTOMATIC OVERLOAD CONTROL

FEATURES

- Automatic Control for Input Variations of Up to 20 dB
- Separate Lo and Hi Band Control
- Operates at Full Output Rating
- Switch Selectable AOC or MAN Operation
- Lightning Protected
- Universal Rack or Surface Mounting Bracket

Jerrold Model 3662 is the only broadband MATV amplifier with output signal levels automatically controlled. This exclusive AOC feature permits use of the full output capability of a broadband amplifier without fear of overload due to input signal fluctuations. Prevents overloading the amplifier when input levels increase. Increases amplifier gain to compensate for signal fades. Prevents system cross-modulation even if only one channel level increases or fades.

Prices and Specifications Subject to Change Without Notice.

VRF-55

GENERAL INSTRUMENT CORP

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4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

Model DC-()B Directional Couplers



Models DC-8B, DC-12B and DC-16B are a series of extended bandwidth directional couplers encased in radiation-proof cast housings. DC-12B and DC-16B are very efficient, back-matched and compact directional couplers covering the entire spectrum from 5 to 806 MHz. Model DC-8B fully covers the frequency range 5 to 300 MHz with reduced performance in the UHF range above 300 MHz. Three F-659's are supplied.

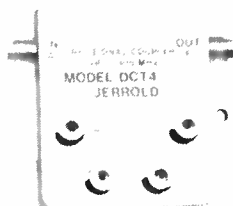
Specifications — DC-()B Series **\$22.40 ea.**

Model	DC-8B	DC-12B	DC-16B
Passband (MHz)	5-300	5-806	5-806
Insertion Loss (dB)	1.1	VHF 0.7 UHF 0.9	VHF 0.6 UHF 0.8
Tap Loss (dB)	8.5	VHF 12.5 UHF 12.0	VHF 16.2 UHF 15.5
Isolation (dB)	20	VHF 30 UHF 24	VHF 35 UHF 26
Match (all terminals dB)	22	VHF 20 UHF 18	VHF 20 UHF 18
Radiation (dB)	-80	-80	-80

Model DCT4-() Directional Coupler Taps UHF/VHF, 4-Way

Features

- Directional Coupler Design
- Two-Way Compatible
- 5 Values of Isolation
- Low Insertion Loss
- CATV Compatibility
- UHF Capability to 806 MHz
- Completely Shielded — more than 80 dB
- Back Matched
- AC Isolation



DCT4 Series of Directional Coupler Taps are broadband (5-806 MHz) low-loss, high isolation units designed for indoor use. Five models are available providing average attenuation values of 10, 14, 19, 24 and 30 dB. DCT-4's do not pass AC or DC power. The housing is a die cast alloy housing which provides a minimum of 80 dB RF shielding. The housing has a chromate conversion finish which deters Galvanic corrosion. "F" fittings are not supplied. DCTs are designed for surface mounting.

Specifications — DCT4 Series **\$29.40 ea.**

Model	DCT4-10	DCT4-14	DCT4-19	DCT4-24	DCT4-30
Frequency Range (MHz)	5-806	5-806	5-806	5-806	5-806
Tap Attenuation (dB)					
5-300 MHz	9.3-11.3	12.7-14.7	18.0-20.0	23.0-25.0	29.0-31.5
470-806 MHz	9.7-12.4	12.4-15.4	18.0-21.0	22.0-26.0	24.0-30.0
Insertion Loss (dB)					
5-300 MHz	3.7	1.9	0.9	0.7	0.5
470-806 MHz	4.4	3.2	1.7	1.2	1.2
Match (dB)					
5-300 MHz	13-17	14-16	14-17	14-17	14-17
470-806 MHz	14	14	14	14	14
Isolation (dB)					
Tap to Out 5-300 MHz	30	26	30	35	44
Between 5-300 MHz	30	30	30	30	30
Outlets 470-806 MHz	15	15	15	15	15
Shielding (dB)	80	80	80	80	80
Weight (oz.)	7	7	7	7	7
Dimensions	Units identical in size, 3 1/4" x 2 7/8" x 1 1/2" (8.26 cm x 7.30 cm x 3.81 cm)				

TV SIGNAL DISTRIBUTION EQUIPMENT

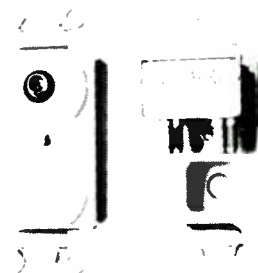
Model DCT1-() Directional Coupler Taps UHF/VHF



The DCT1-() series of in line taps are housed in compact aluminum die castings and are all channel (5-890 MHz) units. They are surface mounted directional coupler taps available in 5 values of isolation and are designed for indoor use.

Electrical Specifications — DCT1 Series **\$6.03 ea.**

Model	DCT1-10	DCT1-14	DCT1-19	DCT1-24	DCT1-30
Frequency Range	5-890 MHz	5-890 MHz	5-890 MHz	5-890 MHz	5-890 MHz
Isolation In to Tap					
5-400 MHz	10 dB ± 1	14 dB ± 1	19 dB ± 1	24 dB ± 1	30 dB ± 1
400-890 MHz					
Isolation Out to Tap					
5-400 MHz	> 30 dB	> 34 dB	> 39 dB	> 44 dB	> 46 dB
400-890 MHz	> 22 dB	> 26 dB	> 31 dB	> 36 dB	> 38 dB
Insertion Loss (max)					
5-400 MHz	1.5 dB	0.6 dB	0.4 dB	0.4 dB	0.4 dB
400-890 MHz	2.5 dB	1.4 dB	1.2 dB	1.2 dB	1.2 dB
Return Loss All Ports (75 Ω)	> 14 dB	> 14 dB	> 14 dB	> 14 dB	> 14 dB



Model DFT-Series Directional Coupler Flush Tap

DFT taps surpass the most stringent requirements of internal distribution systems in buildings, whether equipped with a CATV feed of MATV headend. For CATV internal distribution systems, DFTs are compatible with 30-channel, 2-way service and surpass cable TV technical requirements. For MATV, the DFT-Series is recommended for both VHF and VHF-UHF distribution.

The printed board directional coupler circuitry used in the DFT provides uniform tap isolation (7 dB, 13 dB, 19 dB, 25 dB, 31 dB) with directivity of 16 dB from 5 to 300 MHz. Therefore minimum isolation between outlets is 30 dB (2x tap isolation + 16 dB directivity). The 13, 19, and 31 dB taps are also recommended for all-channel MATV systems with typical directivity of 10 dB to 806 MHz.

The DFT installs easily in any standard single gang outlet box (2" minimum depth recommended), with CAC-59 or -6 coaxial cable. Where conduit and box size permit, CAC-11 may be used. May be used with standard electrical wall outlet plate or order matching ivory cover plate (213-353) separately. The output "F" connector accepts regular "F" or snap-fit "SF" cable connectors (not supplied).

Specifications — DFT Series **\$12.46 ea.**

Specifications	DFT-7	DFT-13	DFT-19	DFT-25	DFT-31
Frequency Range	5-300	5-806	5-806	5-806	5-806
Isolation 5-300 MHz	7.5	14.3	19.2	25.5	31.0
Insertion 5-300 MHz	1.7	0.8	0.5	0.5	0.5
Isolation 470-806 MHz	N.A.	13.0	17.5	23.5	28.0
Insertion 470-806 MHz	N.A.	1.0	0.7	0.7	0.7
Thru Match	18 dB minimum all models				
Back Match	14 dB minimum all models				
Shielding to Direct Pickup	80 dB minimum all models				
Isolation Between Taps	30 dB minimum any combination				

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

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PREPACKAGED COMMANDER HEADENDS FEATURES

- Includes all Commander units needed to provide the channel carriage you specify
- Commander units, combining devices, and accessories at your headend site installed in racks and fully wired
- Headend completely engineered, assembled, and tested to function as a reliable system
- Simplifies installing top quality headends, from the most basic to the most complex

All you need do to your custom demod system is provide Jerrold with a listing of channel carriage. Jerrold will design your system, considering any special functions such as channel switching, and carry the design through to installation of equipment in open frame relay racks, complete wiring of the equipment, and thorough system testing. If you prefer, units can be installed in closed cabinets instead of relay racks.

Each item of Jerrold equipment first passes through its quality control cycle to assure that it meets its published specifications. After system assembly, measurements of the following parameters are made on each channel at the combined output: spurious output level, frequency accuracy of video carriers, video carrier-to-noise ratio, video passband flatness, and system output return loss. The combined system output level is also set at this time.

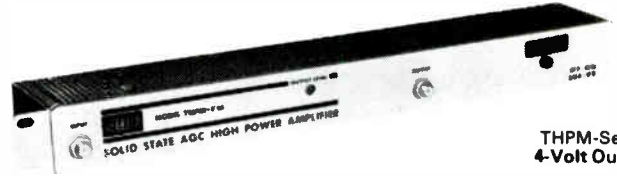
Your custom headend will be fully documented with "as-built" wiring and racking diagrams, and with the results of the system tests.

Talk to your Jerrold representative about price and delivery.

TV SIGNAL DEMODULATOR TV SIGNAL DISTRIBUTION EQUIP.



JHPM-Series 2-Volt Output



THPM-Series,
4-Volt Output



UHPM-Series,
4-Volt Output

SINGLE CHANNEL AGC Amplifiers for VHF-TV, UHF-TV and FM!

- Stable High Output
- Automatic Gain Control
- Matched Input and Output
- High Gain
- UL Listing
- Reversible Mounting Brackets

Jerrold's complete line of single-channel AGC amplifiers for VHF-TV, UHF-TV and the FM band comprises the JHPM, THPM and UHPM-Series: The JHPM-Series provides a rated 2-volt output (+66 dBmV) on any specified VHF channel (2 through 13) or +60 dBmV for each of three FM channels. A full 4-volt output (+72 dBmV) is supplied on any specified VHF channel (2 through 13) (also mid-band channel D) by the THPM-Series, or +60 dBmV for each of three FM channels. The UHPM-Series, or +60 dBmV for each of three FM channels. The UHPM-Series provides a full 4-volt output (+72 dBmV) on a specified standard UHF channel (14-70)

Specifications — Single Channel Amplifiers

	JHPM-*	JHPM-FM	THPM-*	THPM-FM	UHPM-†
CHANNEL	*TV 2-13	88-108 MHz	**TV 2-13	88-108 MHz	†TV 14-70
BANDWIDTH (Response)	6 MHz (±1.0 dB)	20 MHz -2 to -6 dB at 88 MHz 0.5 dB, 92 to 108 MHz	**Mid-Band A 1 6 MHz (±1.0 dB)	20 MHz -2 to -6 dB at 88 MHz 0.5 dB, 92 to 108 MHz	6 MHz (±1.0 dB)
OUTPUT CAPABILITY TV, 0.9 dB Max Sync Compression (FM, 3rd Order Repts., -60 dB Min.)	66 dBmV (2.6 V)	66 dBmV (1.0 V) each of 3 channels	72 dBmV (0.8 V)	66 dBmV (1.0 V) each of 3 channels	72 dBmV (0.8 V)
OUTPUT RANGE (Full AGC)	54 to 66 dBmV	48 to 66 dBmV	66 to 72 dBmV	48 to 66 dBmV (2 dB)	63 to 72 dBmV
Gain: Typical Full Scale Typ. Operational	56 dB 42 dB	48 dB 38 dB	58 dB 48 dB	48 dB 38 dB	60 dB
AGC Range SRT/Noise	40 dB min 1 dB out for 20 dB in	Manual (15 dB)	30 dB min 1 dB out for 20 dB in	Manual (15 dB)	30 dB min 1 dB out for 30 dB in
BRIEF SHARPNESS	-25 to -30 dB at ±9 MHz from channel center	-25 dB min. at 82 MHz	-24 to -30 dB at ±9 MHz from channel center	-25 dB min. at 82 MHz	-25 dB at 30 MHz from channel center
IMPEDANCE	75 Ω	75 Ω	75 Ω	75 Ω	75 Ω
MATCH (Return Loss) Input and Output (On-Chassis) Output (Off-Chassis)	Min. 14 dB Min. 18 dB	10 to 14 dB Min. 10 dB	Min. 14 dB Min. 18 dB	10 to 14 dB Min. 10 dB	Min. 8 dB Min. 10 dB
RECOMMENDED COLOR OPERATION Sync Compression 900 AC Beat Lower Adjacent Intermod. Product Upper Adjacent Intermod. Product (Test Condition: Aerial Carrier -10 dB; Color Subcarrier -17 dB)	63 dBmV 0 dB -55 dB -54 dB -60 dB	— — — — —	69 dBmV 0 dB -55 dB -54 dB -60 dB	— — — — —	69 dBmV — -50 dB — —
POWER REQUIREMENT	117 V, 60 Hz, 12 W	117 V, 60 Hz, 12 W	117 V, 60 Hz, 12 W	117 V, 60 Hz, 12 W	117 V, 60 Hz, 32 W
PANEL MOUNTING DIMENSIONS DEPTH (Reversible Mounting Brackets)	19" (48.3 cm) x 13 1/2" (4.4 cm) x 3 1/4" (8.2 cm)				
SHIPPING WEIGHT, lbs. (kg)	5 (2.27)				

Prices and Specifications Subject to Change Without Notice.

VRF-57

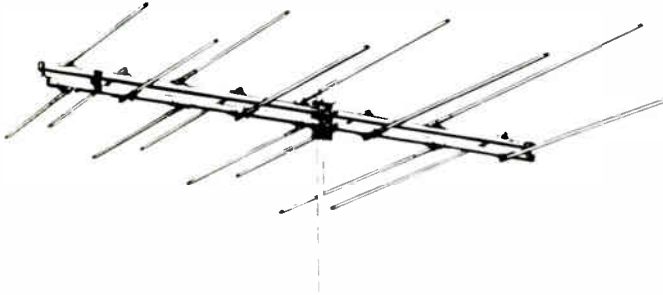
GENERAL INSTRUMENT CORP.

ANTENNAS

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

J-SERIES YAGI ANTENNAS. VHF-TV AND FM 75-OHM



MODEL J-55-LO

- Extra heavy-duty construction
- High gain performance
- Choice of models
- High reliability
- Low maintenance—Long life

J-Series Models are heavy-duty 75-ohm commercial quality master antennas for TV distribution systems. Available in both cut-to-channel yagi and broadband models. Single channel antennas feature sharp directivity for high gain, and excellent front-to-back ratios. All cut-to-channel models have a built-on silver-plated 75-ohm coaxial cable connector with a sealed capacitor-tuned gamma match network for optimum signal transfer. Broadband models are of true log-periodic design assuring extremely flat response and matched output over the entire band. Both types provide the finest reception of color, black-and-white, and FM.

J-Series antennas are of extra-heavy-duty construction from seamless chrome-aluminum tubing, end-sealed against entry of moisture, and have a special anti-corrosion finish, to assure a maintenance-free, weather-resistant installation. J-Series yagis are the answer to any system requirement where high reliability or long life is a must. Operational/survival wind velocity specification (ice-free) for J-Series Antennas is 125 mph.

ELECTRICAL SPECIFICATIONS

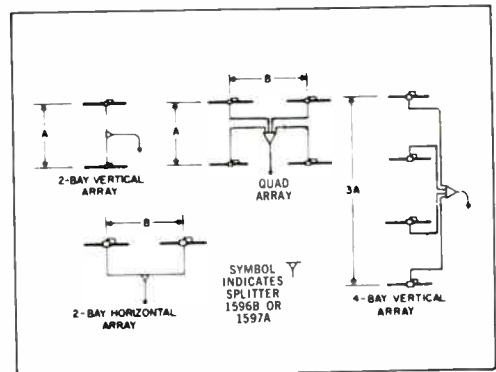
TYPE	MODEL NUMBER	CHANNEL	NUMBER OF ELEMENTS	GAIN (dB)*	FRONT-TO-BACK RATIO	BOOM L'GTH (in.)
Cut-to-Channel						
Lo-Band	J55-2	2	5	8	18	97
	J55-3	3				83.75
	J55-4	4				83
	J55-5	5				75
	J55-6	6				66
FM-Band	J55-FM	FM	5	6-7	18	74
Hi-Band	J105-7	7	10	10.5	20	92.75
	J105-8	8				92.75
	J105-9	9				92.75
	J105-10	10				86.00
	J105-11	11				86.00
	J105-12	12				79.62
	J105-13	13				77.38
Broadband						
Lo-Band	J55-Lo	2 thru 6	log-periodic	8	22	90
Hi-Band	J105-Hi	7 thru 13	log-periodic	8.5	22	101
IMPEDANCE (all models): 75 ohms. VSWR: Less than 1.5:1						
AVERAGE SHIPPING WEIGHT: Cut-to-Channel Models—10½ lbs. Broadband Models —14 lbs.						
*Relative to a tuned half-wave dipole.						

ELECTRICAL SPECIFICATIONS

J-Series Antennas may be stacked both vertically and horizontally for greater gain and directivity. For best results, strictly adhere to the array spacing given. (See the following figure and table.)

The gamma feeds of all antennas within the array must face in the same direction for proper polarity. Broadband models must be assembled exactly as described in the installation instructions, and all down leads must exit from the bottom of the crossarms to maintain proper phasing and polarity.

Splitting harnesses may be made from 75-ohm cable such as Jerrold CAC with Jerrold F-659 fittings. Harness legs should be as short as possible with direct routing and no sharp bends. Each cable length attached to the splitter must be of equal length for satisfactory results. Use Jerrold Model 1596B-Two-Way Splitter or 1597A Four-Way Splitter mounted in an indoor housing. Model HB-3.



ARRAY SPACING

Model (suffix indicates channel)	Dimension "A" (in inches)	Dimension "B" (in inches)
J55-2	140	208
J55-3	127	188
J55-4	116	172
J55-5	102	150
J55-6	94	140
J55-FM	80	120
J105-7	54	74
J105-8	52	72
J105-9	50	70
J105-10	48	67
J105-11	46	65
J105-12	45	63
J105-13	44	61

ARRAY SPACING

MODEL NUMBER	THRUST* (lbs.)		MODEL NUMBER	THRUST* (lbs.)	
	No Ice	¼" Ice		No Ice	¼" Ice
J55-2	52	80	J105-7	35	55
J55-3	46	72	J105-8	33.5	52.5
J55-4	40	66	J105-9	31.5	50
J55-5	36	60	J105-10	30	48.5
J55-6	32	54	J105-11	28.5	46.5
J55-FM	32	54	J105-12	27.5	44
			J105-13	26	42

*Thrust in pounds transferred to the supporting structure, based on 30 PSF.

THRUST DATA

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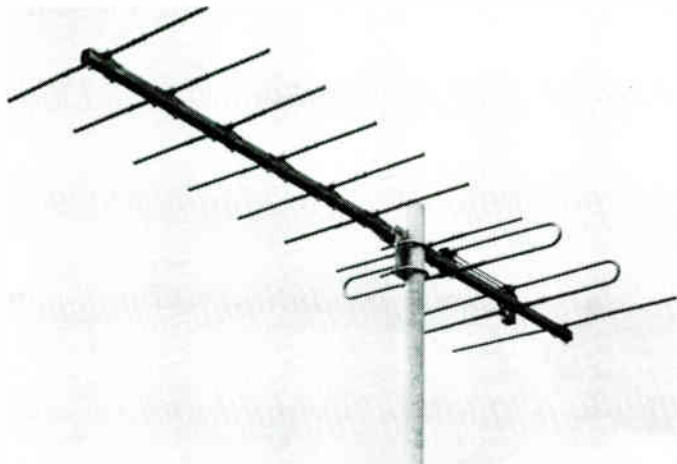
R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

ANTENNAS



10-ELEMENT YAGI ANTENNAS, MODEL Y-101, -103, -104

TEN-ELEMENT YAGI ANTENNAS

Y 101 SERIES

Triple-driven narrow-bandwidth models covering 60 to 108 MHz including TV channels 4, 5 and 6 and having 1-1/4 in. crossarms, 5/8 in. dia. elements and 3/4 in. dia. reinforcing sleeves.

Y 102 SERIES

Twin and triple-driven moderate-bandwidth models covering 108 to 163 MHz and having 1-1/4 in. crossarms, 5/8 in. dia. elements and 3/4 in. dia. reinforcing sleeves.

Y 103 SERIES

Twin-driven broad-bandwidth models covering 152 to 440 MHz including individual and combined TV channels 7 thru 13, and having 1-1/4 in. crossarms, 1/2 in. dia. elements and 5/8 in. dia. reinforcing sleeves.

Y 104 SERIES

Extra-rugged, twin-driven, narrow-bandwidth models covering 43 to 88 MHz including TV channels 2 thru 6, and having 2 in. crossarms, 3/4 in. dia. elements and 7/8 in. dia. reinforcing sleeves, for use in extreme ice and windloading environment.

Y-SERIES YAGI MOUNTING KITS

(For up to 4-1/2 in. O.D. masts or tower-legs, see Note below. Order masts separately from Accessory listing below).

MODEL DESCRIPTION

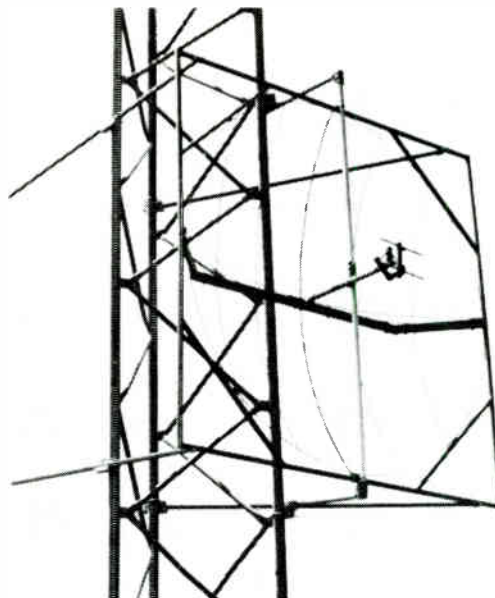
- Y-MB-4 Two, 4 ft. Y-B-4 booms, four Y-TC-1 tower-clamps, and two Y-MC-1 mast-clamps
- Y-MB-8 Two 8 ft. Y-B-8 booms, four Y-TC-1 tower-clamps, and two Y-MC-1 mast-clamps
- Y-MB-10 Two 10 ft. Y-B-10 booms, four Y-TC-1 tower-clamps, and two Y-MC-1 mast-clamps
- Y-MB-14 Two 14 ft. Y-B-14 booms, four Y-TC-1 tower-clamps, and two Y-MC-1 mast-clamps

NOTE: For tower-legs up to 7-1/2 in. O.D. specify Y-TC-2 tower-clamps when ordering.

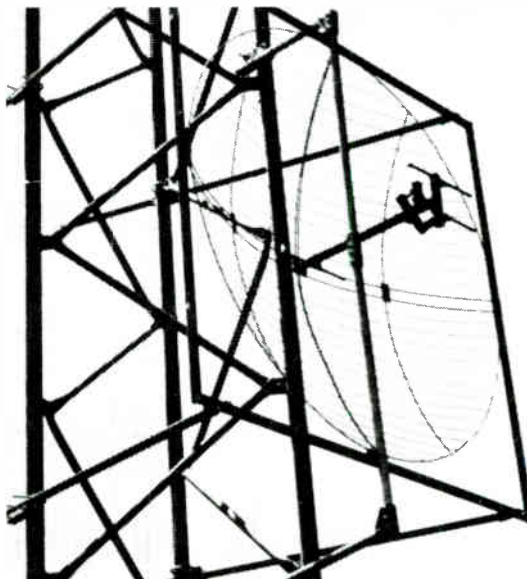
Y-SERIES MOUNTING ACCESSORIES

MODEL DESCRIPTION

- Y-B-4 4 ft. boom of 1-1/2 in. "U" channel
- Y-B-8 8 ft. boom of 1-1/2 in. "U" channel
- Y-B-10 10 ft. boom of 1-1/2 in. "U" channel
- Y-B-14 14 ft. boom of 1-1/2 in. "U" channel
- Y-MC-1 Mast-clamp for up to 2-3/4 in. O.D. masts
- Y-MM-6 6 ft. mast of 2-1/4 in. O.D. tubing
- Y-MM-8 8 ft. mast of 2-1/4 in. O.D. tubing
- Y-MM-12 12 ft. mast of 2-1/4 in. O.D. tubing
- Y-MM-18 18 ft. mast of 2-1/4 in. O.D. tubing
- Y-MM-20 20 ft. mast of 2-1/4 in. O.D. tubing
- Y-TC-1 Tower-clamp for up to 4-1/2 in. O.D. legs
- Y-TC-2 Tower-clamp for up to 7-1/2 in. O.D. legs
- 7943-13 Mast-coupling, undrilled and without hardware



Six-foot Diameter Reflector, PB-61-BB



Eight-foot Diameter Reflector, PB-81-BB

ELECTRICAL SPECIFICATIONS

Model	Channels	Gain* (dBi)		VSWR** Max.	HPBW (Deg. Nom.)		Return Loss Min. (dB)
		Min.	Max.		E-Plane (Horiz.)	H-Plane (Vert.)	
PB-61-BB	14 thru 83	15.0	19.8	1.6	20	17	12.7
PB-81-BB	14 thru 83	18.5	22.7	1.6	16	12	12.7
PB-62-BB	14 thru 83	17.5	22.2	1.6	7	17	12.7
PB-82-BB	14 thru 83	21.0	25.2	1.6	5	12	12.7

*Referenced to an Isotropic Source.

**75-ohm Impedance.

MECHANICAL SPECIFICATIONS

Model	Reflector		Height	Dimensions			Weight (lbs.)		Thrust (lbs.)**	
	Diam. (R.)	Qty.		Width	Depth*	Net	Shipping	No Ice	1/4" Ice	
PB-61-BB	6	1	72.5	75.5	13.0	70	120	187	402	
PB-81-BB	8	1	96.5	99.5	18.0	100	155	389	805	
PB-62-BB	6	2	72.5	150.5	13.0	95	145	355	764	
PB-82-BB	8	2	96.5	199.0	18.0	155	210	738	1530	

*Depth of Reflector Only.

**Thrust Exerted on Supporting Structure Resulting From 86 mph Wind.

Prices and Specifications Subject to Change Without Notice.

VRF-59

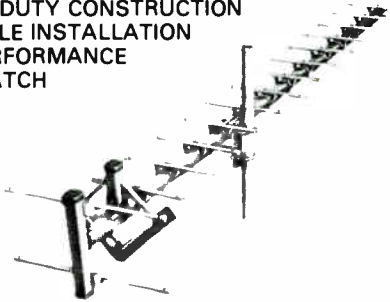
GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

J-SERIES YAGI ANTENNAS UHF, 75-OHM

- EXTRA HEAVY-DUTY CONSTRUCTION
- QUICK, RELIABLE INSTALLATION
- HIGH GAIN PERFORMANCE
- EXCELLENT MATCH



The Jerrold J-275D-* series of antennas are rugged UHF antennas designed to provide the finest reception of color as well as black and white signals for MATV systems.

Each Model J-275D-* consists of a wide-band, diamond-loop driver, two vertically spaced reflectors and 13 tuned directors. The diamond driver is an original Jerrold design providing a matched 75-ohm impedance throughout the UHF range. Dual reflectors increase both horizontal and vertical directivity of the driver and provides front-to-back ratios of 20 dB or better. Directors are tuned for specified channels to provide gain of 12 dB over a referenced dipole. See gain curves.

The J-275D-* can be used as a single-channel yagi (specify channel) or as a broadband (specify highest channel to be received). For example, where channels 17, 29 and 48 are to be received, specify J-275D-48.

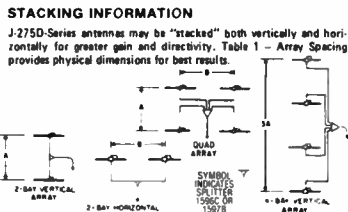
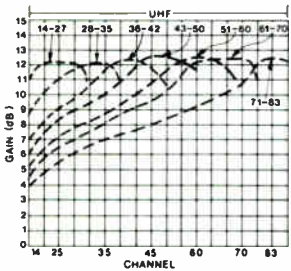


Table 1 — Array Spacing of "J Series" UHF

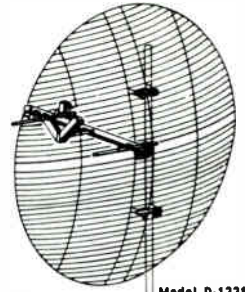
CHANNELS	14-27	28-35	36-42	43-50	51-60	61-70	71-83
DIMENSION "A" (Inches)	36"	32"	30"	28"	26"	24"	24"
"B" (Inches)	40"	35"	33"	31"	29"	27"	27"

Specifications — J-275D-* Antenna

CHANNELS	Any specified channel from 14 through 83
GAIN	See chart
IMPEDANCE	75 ohms VSWR: Less than 1.5:1
FRONT-TO-BACK RATIO	20 dB

Windload	Thrust (lbs.)	
	No Ice	1/4" Ice
85 mph	34	52
100 mph	46	71

ANTENNAS

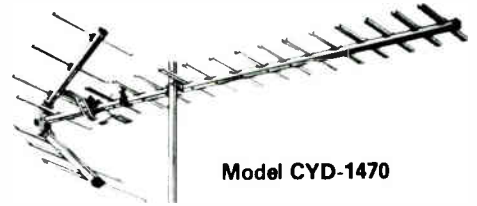


Model D-1338

PARABOLIC ANTENNAS

D-1338BB SERIES UHF ANTENNAS

Jerrold Model D-1338BB is a high-gain, ruggedized UHF antenna featuring a new broadband diamond-loop driver (patent applied for) which provides 14 dB of gain at 470 MHz rising to 17 dB at 890 MHz relative to an isotropic source. Front-to-back ratio is 15 dB or better. The 4-foot diameter reflector is made of 1/8 inch steel wires spaced only 1 inch apart and welded to 1/4 inch thick cross-members and outer ring. The entire antenna is protected with anti-oxide primer and vinyl alkyd paint. Each unit will withstand up to 125-mile-per-hour winds and adverse environment conditions. All models mount with a pair of clamp brackets designed for 1 1/2 to 4 1/2-inch mast or tower leg. Shipping weight is 25 pounds.



Model CYD-1470

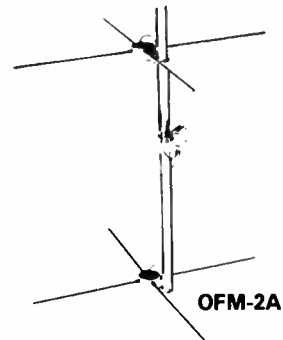
CORNER REFLECTOR YAGI CYD-SERIES, 300-OHM

Jerrold's new series of Sharpshooter Antennas are Corner Reflector Yagis designed to provide high gain and excellent color reception on UHF channels. The CYD-Series is comprised of four models with the model number indicating frequency range by channel designation. Any CYD* can be added on to an existing VHF antenna without a separate combiner required for a single download. DYD's are also Coloraxial Convertible with a separate STO-82 for single coaxial download.

Specifications

Model CYD	1430	1446	1470	7063
Gain (dB)	14-15	12-13 1/2	9-11 1/2	14-15
Impedance	300	300	300	300
VSWR	1.15	1.15	1.18	1.15
Beamwidth (degrees)	20-35	25-50	35-65	22-30
Diplex to VHF	Yes	Yes	Yes	No
STO Convertible	Yes	Yes	Yes	Yes
Length (inches)	79	79	79	70
Weight (lbs.)	2	2	2	2
Turning Radius (inches)	52	52	52	48
Elements	22	22	22	40

*Except the CYD-7083



OFM-2A

RUGGEDIZED OMNI-DIRECTIONAL FM ANTENNAS, OFM-SERIES

Jerrold Model OFM-1 is an extremely rugged, single, 75-ohm coaxial output antenna for receiving the entire FM band. Model OFM-2 is a dual-bay array of OFM-1s. The antenna is constructed of heavy-wall, tubular aluminum elements secured to a sealed aluminum casting which contains a matching network. The VSF-type output terminal accepts aluminum jacketed coaxial cable or may be adapted to an F-type fitting. Supplied with dual-bay array, Model OFM-2 is a low-loss, weatherproof combiner and an appropriate 75-ohm stacking harness. The integral mounting bracket fits two to three-inch-diameter tubular masts.

GENERAL INSTRUMENT CORP.

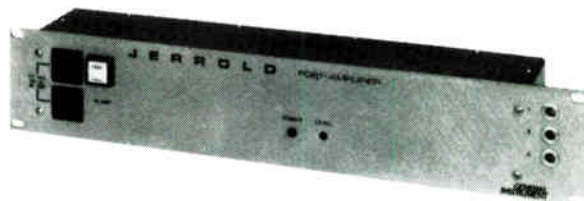
R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600

RECEIVERS/ HEADEND AMPLIFIERS



C4R

MODEL C4R

SATELLITE COMMANDER RECEIVER

Features

- 24 Channel Frequency Agile
- Used with a low noise block downconverter
- Multiple audio subcarriers
- Bar type Signal Strength Meter
- 1.75 inch rack height

The Jerrold Satellite Receiver is designed for use with a low noise block downconverter at the dish to eliminate the need for high cost cable from the dish to the headend. This system design also eliminates the costly duplication of downconverters in each receiver.

The Model C4R employs an input frequency of 950 to 1450 MHz, an industry standard designed to be compatible with the future 12 GHz satellite products. In addition, the 950-1450 MHz input range eliminates inband interference and interference from UHF band transmissions.

The Model C4R features electronically synthesized tuning and a digital channel display. The electronic tuning will not drift and does not require manual adjustments.

A bar meter is located on the front panel for a relative indication of the strength of the signal input.

The C4R provides a signal RF input and will tune either the 12 odd or the 12 even channels depending on whether the input is horizontally or vertically polarized. It also provides 300mA power for the C4LNB-120 or an LNA and separate block downconverter model BDC.

This receiver has two standard audio sub-carriers, 6.8 and 6.2 MHz. Alternate subcarriers may be ordered separately as ASUB-* (Special Order).

ASUB-* Plug-in audio subcarrier. Specify frequency 4.5 to 7.5 MHz.

MODEL HPAS HEADEND AMPLIFIER MODEL HPAS-8 HEADEND AMPLIFIER WITH 8-WAY COMBINER/SPLITTER

FEATURES

- Adjustable Level Control Level Trunks Independently
- Two -20dB Test Point Outputs use for "Test" and "Monitor"
- Simultaneous-Sweep Input Port Isolated for True "Flatness"
- Two Front Panel AC Outlets Power Test Equipment
- Available with Built-In 8-Way Combiner/Splitter—Excellent to Amplify and Distribute Phaselock Reference
- Full Bandwidth 50 to 450MHz

The HPAS Headend Amplifier is a rack mounted low gain amplifier designed to overcome the high combining losses in large headends. The amplifier provides from up to 14 dB of gain. A level control allows the amplifier output to be attenuated up to 6dB. Therefore, the adjustment range of the amplifier is 8 to 14dB.

SPECIFICATIONS: MODELS HPAS, HPAS-8

Bandwidth	50-450 MHz All Ports
Return Loss	
RF Input	16 dB min.
RF Output	18 dB min.
Sweep Input	18 dB min.
-20 dB Test	18 dB min.
Gain	
RF IN to RF OUT	14 dB min.
Loss	
RF IN to -20dB Test	20 · 1 dB below RF OUT
Sweep IN to RF OUT	10 · 2 dB
Flatness	
RF IN to RF OUT	· 0.5 dB max.
RF IN to -20 dB Test	· 0.5 dB max.
Sweep IN to RF OUT	· 0.25 dB max.
Gain Control Range	0-6 dB reduction, min.
Noise Figure	9.0 dB max.
Power	105 to 135 V, 50 to 60 Hz
Dimensions	19" rack mount, 3-1/2" height

RETURN CHANNEL DIPLEX FILTERS

TF-30DHE Subsplit (5-32/52-450MHz) Diplex Filter

TF-108DHE Midsplit (5-116/168-450MHz) Diplex Filter

TF-176-DHE High Midsplit (5-174/250-450MHz) Diplex Filter

FEATURES

- Low Insertion Loss nearly Transparent to System
- High 40dB Isolation Excellent Band Separation
- 450MHz Full Bandwidth Rating
- 1-3/4" Rack Mounted Space Saving

The TF series diplex filters are placed after the composite output of the headend. In two-way systems they are used to extract the return signals. In one-way systems they are installed to reduce noise ingress from the unused return band. Jerrold recommends the use of a diplex filter on each trunk output regardless of whether two-way operation is planned.

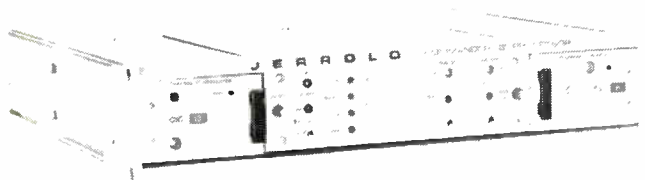
SPECIFICATIONS: MODEL TF-30DHE, TF-108DHE

MODEL	TF-30DHE	TF-108DHE
Passband	5-32MHz and 52-400MHz	5-116MHz and 168-400MHz
Max. Insertion Loss	0.6dB	0.6dB
Stopband	32-52MHz	116-168MHz
Stopband Attenuation	25dB min.	25dB min.
Isolation Between High-pass and Lowpass Ports	40dB min.	40dB min.
Terminal Match return loss, 75 ohm impedance (minimum)	20dB	20dB

Prices and Specifications Subject to Change Without Notice.

VRF-61

R.F. SYSTEMS DIVISION
 4229 S. Fremont Ave.
 Tucson, AZ 85714
 (602) 294-1600



COMMANDER PROCESSORS MODELS C4P SERIES

FEATURES

SAW Filter

- Attenuates adjacent channels for improved performance
- Eliminates more than 20 adjustable coils and trimmers to provide high mechanical and thermal stability
- Any number of equal level adjacent channels permitted

Built-in Features

- IF switching with loss-of-signal sensing and AGC for substitute signals
- Override alert switching
- Easy access front panel test points
- Standby for 30 Vdc backup power

The Commander processor takes signals from off-air channels, super trunks or return signals in a two-way system, amplifies them, filters out interfering signals, and converts the signals to any cable output channel.

Commander processors provide output in the non-phaselock, incremental phaselock, or harmonic phaselock modes.

The front end system employs a three-pole helical resonator input filter followed by a low-noise, high linearity pre-amplifier. This is followed by a double balanced mixer and a precision delayed AGC. This front end design ensures a combination of a low noise figure and excellent input overload performance. It eliminates the need for external filters even when adjacent signal levels are high.

The IF amplifier provides independent amplification and AGC for picture and sound. This enables the sound level to be adjusted and regulated independently of the picture level.

SPECIFICATIONS:

RF	
Input Channels	T7-T13, 2-13, 14I-61I* 2H-69H*, 14-83 *Special Order
Output Channels	T7-T13, 2-13, 14I-61I, 2H-69H
RF Input and Output Terminal Impedance	75 ohms
RF Input and Output Terminal Match	16 dB min. return loss (1:1.38 VSWR)
Input Level Range, Any Channel	-20 to +30 dBmV
Maximum Output Level	+60 dBmV
Output Level Range, Any Channel	10dB, continuously adjustable from +50 to +60 dBmV
Spurious Output	-60dB at +60 dBmV output
Frequency Conversion Accuracy	± 14 kHz, from 32° to 120°F
Noise Figure, at Full Gain	5 dB or better for sub and lo-band channels; 6 dB or better for mid, high and super-band channels; 9 to 12 dB or better for UHF channels

Carrier-to-Noise Ratio at +10 dBmV Input	60 dB or better at VHF, 57 dB or better at UHF
Sound Limiting	10 dB or better at -25 dBmV sound carrier input
Sound Carrier Level, Adjustable	-5 to -25 dB relative to output video carrier
IF Video Carrier	45.75 MHz
IF Sound Carrier	41.25 MHz
IF Output Level	+30 dBmV
IF Input Level	+23 to +37 dBmV, for ± 0.5 dB output change
AGC Stiffness	± 0.5 dB max. at +60 dBmV out for input changes from -20 to +30 dBmV
Adjacent Channel Rejection	60 dB or better
Band Edge Rejection	20 dB or better
Intermodulation (Overload) at Input	-80dB or better for equal level adjacent channels, each at +10 dBmV
Cross-Modulation at Input	-80 dB or better with any number of channels, each at +10 dBmV; -70 dB or better with any number of channels, each at +20 dBmV
Image Rejection	VHF, 60 dB or better. UHF 40 dB
Response Flatness	+0.5/-1.0 dB from -0.75 to +4.18 MHz relative to pix carrier
Group Delay	± 25ns video thru color sub-carrier; ± 75 ns, from -0.75 to +4.0 MHz
Chroma Delay	± 25 nanoseconds
K Factor	2% max
PHASELOCK	
Phaselock Capability	Off-the-air single-channel or comb generator
Reference Signal Level	+10 to +30 dBmV (CW); +20 to +30 dBmV (modulated carrier)
Capture Range	40 kHz minimum
GENERAL	
Standby Carrier Modes (Optional)	a. CW b. external video -1 V p-p for 87.5% mod. c. external 4.5 MHz sound
Standby Carrier Output Level	0 to -10 dB relative to normal video level
Standby Carrier Delay (Turn-on)	0, or 5, or 25 seconds (switchable)
AC Power Requirements	100 to 130 V, 50 to 60 Hz, 25 W
DC Power Requirements	23-30 V DC, 900 mA max.
Dimensions	19" wide, 3.5" high, 17" deep (48.26 cm, 8.89 cm, 43.18 cm)
Shipping Weight	21 lbs. (9.52 kg)
Mounting	19" standard Relay rack or cabinet
Operating Temperature Range	32° to 120°F (0° to 48.9°C)

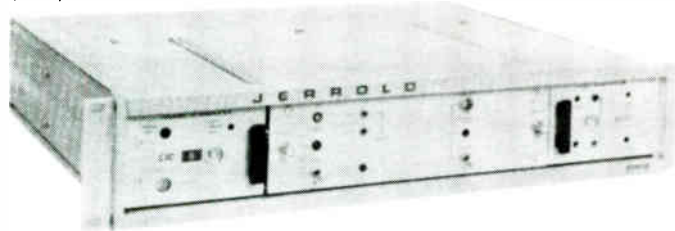
GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.

Tucson, AZ 85714

(602) 294-1600



COMMANDER DEMODULATOR

MODEL C4D DEMODULATOR

- True Nyquist response SAW FILTER

- Enhanced envelope detection circuit

- Automatic Video/Sound squelch

- Front panel adjustable chroma gain control

The C4D is the first CATV demodulator to have its waveform characteristics tested and guaranteed prior to shipment. The C4D will have a K-factor less than 2%, chroma delay less than ± 50 nsec, and multiburst flatness less than ± 1 dB.

Balanced and unbalanced (600 ohms) audio outputs are available from barrier-strip terminals or from a standard XLR broadcast audio connection.

The SAW filter also acts to reject signals from incoming adjacent channels. Any number of equal level adjacent channels are permitted. The C4D offers -80 dB intermodulation and cross modulation at 10 dBmV input levels. This enables a greater than 60 dB carrier-to-noise ratio at the demodulator output.

FEATURES

First true Nyquist response SAW filter in a CATV product.

- The Nyquist characteristic is required for accurate demodulation of the vestigial sideband signal to assure that timing is preserved and that distortions are not introduced.

- The precise Nyquist response is inherent to the SAW filter and will not change with time or temperature. This assures both long and short term stability.

- The single SAW filter improves maintenance because it reduces 30 adjustable components in our former demodulator to just five adjustments.

Enhanced envelope detection

- The C4D contains a specially enhanced envelope detection circuit. This circuit employs a complementary diode detector network in which a second diode corrects non-linear effects in the envelope detector. A standard envelope detector cannot adequately handle high depth of modulation—resulting in degraded differential phase and gain and degraded hue and color saturation in the picture. The C4D's enhanced envelope detector and synchronous detectors can handle an index of modulation up to video clamping without phase and gain losses.

- The enhanced envelope detector is inherently more reliable than synchronous detectors. Synchronous detectors cannot handle all signal conditions. Therefore, whenever a synchronous detector is used, sensing and switching circuits must be added to switch to a back-up envelope detector. The C4D avoids the reliability penalties of the sensing and switching circuits.

Automatic video/sound squelch

- The C4D provides automatic video/sound and subcarrier squelch so that noise will not enter the system if the input signal is lost.

DEMODULATOR

SPECIFICATIONS:

RF Input

Input Channels

T-7 thru T-13, 2 thru 13, 141 thru 431, or 02H thru 43H, 14-83 UHF

Input Impedance

75 Ohms

Input Return Loss

16 dB Minimum

Input Level Range

-20 to +30 dBmV

Noise Figure, Full Gain

5 dB Max Sub and VHF Low Ch
6 dB Max Mid High and Super
Band VHF Ch

9-12 dB Max UHF Ch

Carrier to Noise Ratio

60 dB Min—VHF

at +10 dBmV Input

57 dB Min—UHF

Image Rejection

60 dB Min, VHF, 40 dB Min UHF

Intermodulation at Input

-80 dB or better for Equal Level

Adjacent Channels at +10 dBmV

-80 dB or better for Equal Level

Adjacent Channels at +10 dBmV

Adjacent Channels at +20 dBmV

+30 dBmV

± 0.5 dB Max Change for Input

Variation from -20 to +30 dBmV

I.F. Output Level

AGC Regulation

Video

Output Type Rear Panel

Two 75 Ohm. Type "F"

Connectors

30 dB Min. All Outputs

Output Return Loss

Output Level at 87.5% Depth of

Modulation

1 Volt P-P Preset. Adjustable to

2 Volts P-P Min

± 1 dB Max. 30 Hz to 4 MHz

$\pm 2\%$ Max. 87.5% Depth of

Modulation, 10%-90% APL

± 0.5 Degrees Max., 87.5%

Depth of Modulation, 10%-90%

APL

2% Max.

± 50 ns.

1% Max.

56 dB VHF

53 dB UHF

K-Rating

12.5 T Pulse Chroma Delay

Field Square Wave Tilt

Video Signal to Noise Ratio

+10 dBmV RF Input Level

Residual 4.5 MHz, Non-Combined

Operation

-60 dB Max.

Audio

Output Type

Rear Panel

600 Ohm Balanced, Type "XLR"

Connector and screw terminals

600 Ohm Single Ended, screw

terminal Low Impedance, Tip

Jacks

Adjustable +6 dBm Max ± 25

kHz Deviation

1% Max. 50 Hz to 15,000 Hz ± 25

kHz Deviation, +6 dBm Output

Max

± 1 dB 50 Hz to 15,000 Hz,

Including 75 μ sec De-Emphasis

4.5 MHz

Outputs

a. Separate 75 Ohm Type "F"

Connector

b. Combined with 2nd Video

Output, Switch Provided for

Addition or Removal of 4.5 MHz

from Video Output No. 2 as

Required

Output Level

0.1V P-P Nominal, Adjustable to

0.5V P-P Max Combined and

Separated Outputs

General

AC Power Requirements

100 to 130 V, 50 to 60 Hz, 25 W

DC Power Requirements

23-30 Vdc 900 mA Max

Dimensions

19" wide 3.5" high 17" deep

Shipping Weight

21 lbs

Mounting

19" standard relay rack or cabinet

Operating Temp. Range

32° to 120°F (0 to 48.9°C)

Prices and Specifications Subject to Change Without Notice.

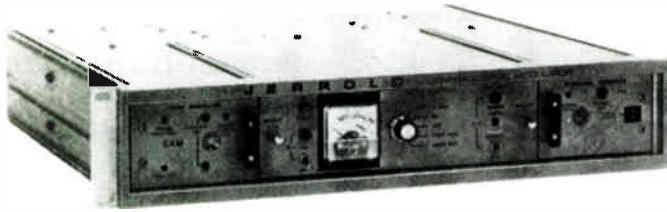
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MODULATOR



COMMANDER IV MODULATOR C4M

TV Signal Modulator for broadcast quality adjacent channel operation, monochrome or color

- Spurious outputs down -70 dB at +60 dBmV output
- Extremely low differential phase and gain
- Front-panel metering for video depth of modulation and audio deviation
- White-level limiter prevents over-modulation
- Front-panel test points
- No outboard filters required
- Automatic gain control
- Ease of maintenance—slide-out drawer allows maintenance without interrupting service
- Plug-in modular construction
- Crystal-controlled oscillator with new pulse-integrating AFC
- Complete override control for emergency alert
- Provides for maximum system reliability with external standby power
- Only 3 1/2" of rack space
- Optional phase lock: single channel or incremental

To complement the Commander IV heterodyne processor, Jerrold engineers designed the new modulator to provide comparable signal fidelity and compatible IF switching and output configurations.

The Commander IV modulator comprises five active modules, two of which are unique to the modulator. The other three, CAX, CPR, and ICC, are identical to those used in the Commander III heterodyne processor. (See processor information.)

The two unique modules are: Audio Modulator, Model CAM; and Video Modulator and Delay Predistorter, Model CVM.

The audio-modulator section provides a 4.5 MHz sub-carrier which is frequency-modulated by the audio wave-form, after standard pre-emphasis. The center frequency of the sub-carrier is stabilized to meet (or better) the +/- kHz FCC requirement. To accomplish this, a new pulse-integrating discriminator is employed in which a crystal oscillator is used to maintain constant pulse width. The result of the improved pulse-width control is greater precision and reliability in stabilizing the frequency.

Ordering Information

Commander IV modulator is designated CMM-. A Commander IV modulator equipped with phase lock is designated by Model No. CMMP-. When ordering, the model number and output channel must be specified. For example, a Commander IV modulator for channel 4 output must be specified as Model No. CMM-4. If phase lock is required the designation is CMMP-4. Refer to the price sheet for complete ordering information. Test kit, model COM IV-TK is available for test and maintenance.



MODEL HC-8F EIGHT-WAY COMBINER/SPLITTERS

The HC-8F is a full bandwidth 5 to 450MHz 8-way combiner/splitter. It may be used as a combiner to merge the signals from up to eight channels or as a splitter to distribute phaselock reference or emergency alert signals to multiple channels.

Jerrold employs a directional coupler circuitry in the HC-8F because this technique provides greater channel-to-channel isolation. High isolation provides protection for adjacent channel interference. Very high isolation such as the 35dB level offered in the HC-8F is critical for any application where signals are fed to an AML system.

The HC-8F input ports are balanced so that if the input signals have equal levels, they will remain equal when combined. Regardless of which input port is used a 16dB difference in level is maintained.

SPECIFICATIONS

Frequency Range: 5-450MHz. **Insertion Loss (min.):** 15.8dB. **Isolation (min.):** 30dB. **Impedance:** 75 ohms. **Match:** 20dB. **Dimensions:** 19"L x 1-3/4"W x 1-1/2"H. **Weight:** 1 lb. 13 oz.



VHF SINGLE-CHANNEL FILTERS, PBF-SERIES

Jerrold Model PBF-* filters are single-channel VHF, high-Q, pass-band devices which overcome many headend overload problems. They also may be used effectively on the output of headend equipment to eliminate spurious signals generated by the particular equipment.

These devices feature low insertion loss and have a high degree of selectivity. The next higher "SND" and next lower "PIX" frequencies of adjacent channels are attenuated by more than 30 dB. These filters are ultra stable; i.e., there is no perceptible frequency shift throughout a temperature range from -40°F to +140°F.

This filter, which features a helical resonator design, can be rack-mounted and requires only one and three-quarter inches of vertical rack space (one panel increment). PBF filters are available in any of the following channels: Sub-Band, T7 thru T13; Lo-VHF, 2 thru 6; Mid-Band, A thru I; Hi-VHF, 7 thru 13; Super Band, J thru W. Order Model PBF- and specify channel. Example: for channel 3, order Model PBF-3.

*Specify channel.

SPECIFICATIONS—PBF-SERIES

Center Frequency: Sub-, Mid-, Super, and Standard TV Channel Assignments. **Bandwidth:** At 0.5 dB pts. 5.5 MHz +/- 150 KHz. **Insertion Loss:** 1.0 dB Max. (Low Band), 1.6 dB Max. (High Band). **Impedance:** 75 ohms, 18 dB return loss Input/Output. **Skirt Selectivity:** Upper adjacent sound carrier—32 dB, Lower adjacent picture carrier—43 dB. **Environment:** -40°F to 140°F, 95% relative humidity. **Physical:** 19" rack mounting; 1 (one) EIA rack increment (1 1/4"). **Connectors:** F-61A (Female), **Chroma Delay:** 35 nsec. max (Ch. 2-R).

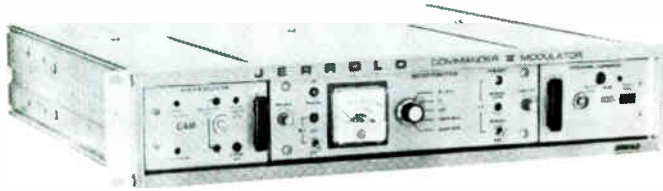
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MODULATOR

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
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SCRAMBLING COMPATIBLE, SAW FILTER MODULATOR



**C4MS MODULATOR
C4MPS PHASELOCK MODULATOR**

Scrambling compatible

- Compatible with both Jerrold RF and baseband encoders at no extra cost
- SAW filter eliminates adjacent channel interference
- IF loop-throughs provides separate video IF and sound IF to scrambler
- Scrambled video input for use with Jerrold baseband encoders

Built-in IF switching

- Loss-of-signal sensing provides program substitution when signal loss is detected
- Remote switching operates on external command as required for emergency override
- Alert ready. Built-in IF switch provides full video and audio override for emergency announcements
- Second switch option. First IF switch is standard. Second switch (CIS) is available to allow both timer-controlled programming changes and emergency override
- Optional video switching. Switch from one video input to another upon loss of signal or external command

Industry Best Performance

The C4MS and C4MPS offer these excellent performance standards:

- Depth of modulation To 95% without distortion
- Output level 60 dBmV
- Spurious output -60 dB at 60 dBmV
- K factor Less than 2%. The first CATV modulator to have its waveform guaranteed

Easy operation

- Built-in meter offers five functions. Unique circuit accurately measures depth of video modulation regardless of picture content. (Most other meters are content-sensitive.)
- White level limiter prevents over-modulation
- Front panel test points. More test points than competitive equipment
- Front panel controls provide ready access for signal adjustments
- Front panel status indicators show input signal, input power, B + power, and phaselock
- Center drawer slides out and tilts up to allow access to IF, AGC, and video modulator circuits without interrupting service
- Plug-in output module. Change to any channel using plug-in output converters
- Automatic gain control. Full AGC for IF input
- Standby power. Upon loss of AC power, the modulator will switch to a back-up 24-30 VDC power source
- Circuit isolators. Conveniently located push-in jumpers can be removed to isolate circuits for testing

C4MS Modulator from \$1500.00 to \$2125.00
C4MPS Phaselock Modulator from \$1900.00 to \$2365.00

RF

Output Channels	T-7 thru T-13, 2 thru 13, 14-61E and 2-68H
RF Output Terminal Impedance	75 ohms
RF Output Terminal Match	16 dB min. return loss (1:1.38 VSWR)
Recommended output Level	+60 dBmV max
Output Level Range	10 dB continuously adjustable from +50 to +60 dBmV
Spurious Output	-60 dB at +60 dBmV output
Output Frequency Accuracy	±14kHz from 32° to 120° F
Sound Carrier Level, Adjustable	-5 to 25 dB relative to output video carrier
IF Video Carrier	45.75 MHz
IF Sound Carrier	41.25 MHz
IF Output Level	+30 dBmV
IF Input Level	+23 to +37 dBmV, for ±0.5 dB output change
Overall Group Delay	conforms to FCC requirements for color broadcast
Vestigial Sideband Response	-20 dB at channel edge -40 dB at adjacent audio visual frequencies and all other frequencies

AUDIO

Audio Input Type	600 ohms balanced, Cannon XLR type connector
Audio Input Level	continuously adjustable, 250 mV rms min. for 25 kHz deviation, at 1 kHz or lower
Audio Frequency Response	within ±1 dB, 50 Hz to 15 kHz, including standard pre-emphasis
Harmonic Distortion	1% max. at ±25 kHz deviation, 50 Hz to 15 kHz
FM Hum and Noise	60 dB min. below ±25 kHz deviation, 50 Hz to 15 kHz
Inter-carrier Frequency	4.5 MHz, ±1 kHz

4.5 MHz AURAL

4.5 MHz Input Type	75 ohms, unbalanced
Input Terminal Match	15 dB min. return loss
4.5 MHz Input Level	3.16 mV rms (10 dBmV) min

METERING

Video Modulation	indicates peak percent depth of modulation, within ±3%, for any composite video waveform
Sound Modulation	indicates kHz deviation, within ±5% up to ±35 kHz deviation
AGC Voltage	indicates operating point of AUX IF AGC system, ±3%
B+	indicates power supply DC voltage
Phase Lock	indicates error voltage
PHASE LOCK	
Phase Lock Capability	Off-the-air single-channel or comb generator
Reference Signal Level	+10 to +30 dBmV (CW); +20 to +30 dBmV (modulated carrier)
Capture Range	-40 kHz minimum

GENERAL

Standby Carrier Modes (Optional)	a CW b external video -1 V p-p for 87.5% mod. c. external 4.5 MHz sound
Standby Carrier Output Level	0 to -10 dB relative to normal video level
Standby Carrier Delay (Turn-on)	0, or 5, or 25 seconds (switchable)
AC Power Requirements	100 to 130 V, 50 to 60 Hz, 25 W
DC Power Requirements	23-30 V DC, 900 mA max
Dimensions	19" wide, 3.5" high, 17" deep (48.26 cm, 8.89 cm, 43.18 cm)
Shipping Weight	21 lbs. (9.52 kg)
Mounting	19" standard relay rack or cabinet
Operating Temperature Range	32° to 120°F (0° to 48.9°C)

VIDEO

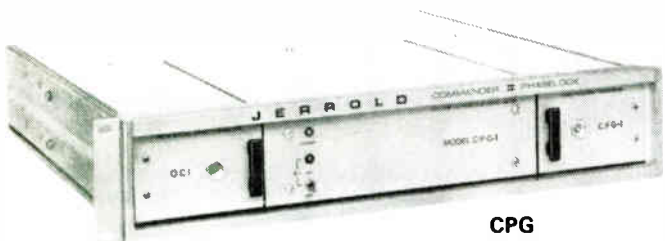
Video Input Level	0.5 V p-p for 87.5% mod.
Video Input Type	composite NTSC video, negative sync
Video Input Impedance	75 ohms
Video Input Match	30 dB min. return loss, 25 Hz to 6 MHz
Overall Amplitude Response	within ±1 dB, 25 Hz to 4.18 MHz
Differential Gain	±0.25 dB max. for 87.5% depth of modulation, 10% to 90% APL
Differential Phase	±0.5° max. for 87.5% depth of modulation, 10% to 90% APL
AM Hum and Noise	60 dB min. below 87.5% depth of modulation
Sync Compression	0.4 dB max. for 87.5% depth of modulation
Tilt or Sag of 60 Hz Square Wave	1% max.
Modulation Range	to 95%
White Level Limit, Adjustable	80% to 95% modulation depth
K factor	2% max

Prices and Specifications Subject to Change Without Notice.

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CPG

MODEL CPG PHASELOCK REFERENCE GENERATOR

FEATURES

- HRC or IRC Coherent Operation
- High Output Level

When multiple channels are carried on a cable system, distortion products result at harmonic multiples of the picture carrier frequencies and at mathematical sums and differences between carriers. Coherent operation controls carrier spacing so that the beats from one channel fall directly on the picture carrier of the other channels where they are overwhelmed by the strength of the carrier signal.

Two reference formats are available:

The HRC system (harmonically related carriers) offers the mathematically purest signal because it makes both second and third order beats invisible. On Jerrold's set-top converters 5H is the same as channel 55H; 6H, the same as 56H.

The IRC system (incrementally related carriers) eliminates third-order distortion. Because second order beats are not usually a limitation with push-pull amplifiers, the improvement is as good as with the HRC system. The advantage of IRC phaselock is that the traditional broadcast, mid and super channel assignments remain unchanged.

Therefore, IRC is compatible with existing set-top converters and may be employed in systems which have a no-converter tier of service. Broadcast channels 5 and 6 do not align with the IRC scheme and must be moved for phaselock operation to channels 551 and 561.

The phaselock circuitry available for Commander IV heterodyne processors and modulators has been designed for maximum reliability and flexibility of operation. To insure fault-free operation of the phaselock circuitry, a lock-in range of ± 40 KHz has been provided. Reliable operation is guaranteed regardless of: broadcast reference-signal offset and drift, comb-generator-frequency accuracy, or internal-oscillator drift. If the reference signal ever becomes unavailable, each Commander modulator and processor contains a back-up crystal oscillator.

CPG SPECIFICATIONS

Model	Output Frequency	Output Level Level
CPG-I-400	55.25-397.25 MHz 6.00 MHz spacing	34 dBmV, each of four outputs
CPG-H-450	54-450 MHz 6.00 MHz spacing	same as above

REFERENCE GENERATOR/ ALERT CONTROLLER



C4E

MODEL C4E COMMANDER ALERT OVERRIDE CONTROLLER

FEATURES

- Provides Override Switching Control Signal and Emergency Audio Signal Received over a Standard Telephone Line
- Includes User Programmed Security Code
- Provides Three Time Out Functions

Every Commander III and IV modulator and processor has an override capability built-in. This standard feature allows normal programming to be overridden at IF for emergency announcements.

The C4E emergency override controller consists of a telephone auto answer and tone detector in one unit. The C4E System consists of both the override controller and a modulator with high level output at IF.

A touch tone telephone supplies the necessary audio tone source to activate/-deactivate the override function. The C4E activates the override function upon correct input of a user-programmed multi-digit code which is entered on the telephone touch tone keypad. The high level output IF modulator supplies the telephone audio to all channels. An optional character generator or studio camera may be employed to provide a video message as well.

The override message may be terminated after a pre-determined time delay or after the star character on the telephone keypad is depressed for at least 3 seconds.

The IF signal is distributed to each channel by means of a splitting network which may consist of SWS-2, SWS-4 and HC-8F splitters.

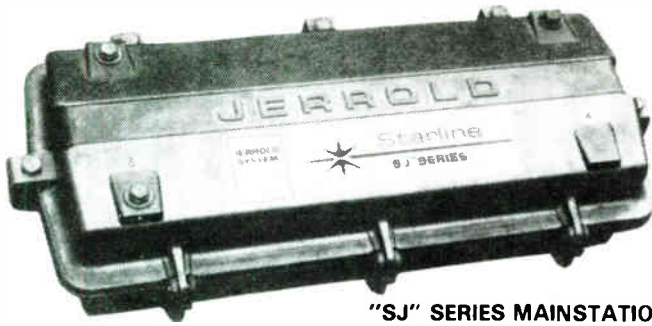
C4E SPECIFICATIONS

OUTPUTS: Override Alert AC Operate Audio Telephone Line	1 Form C contact @ 1 amp 1 Form C contact @ 1 amp 600 ohm output. Switched ON during override from phone line plus a 600 ohm phone line audio out Audible acknowledge tones for Auto Answer and Override	DIAL TONE DETECTOR—HIGH FREQUENCY Input Frequency Jumper enabled and retunable Input Level Twist Tolerance Response Time	600 Hz $\pm 2\%$ 040 to 0 50 VRMS 10 dB one second $\pm 20\%$
AUTO ANSWER: Ring Detector Ring Counter Line Sense Audio Coupler	Programmable for long (600 ms) or short (300 ms) ring pulses Programmable 1 to 7 rings Adjustable from 30 seconds to 90 seconds $\pm 10\%$ Registration AB3985-62455 PC-E and ringer equivalence 0.4 amp . 1.0 B	OVERRIDE DECODER Input Level Per Tone Voltage Low Range High Range Signaling Speed Signal Type Address Coding Interdigit Timing	Two tone DTMF signals at a High or Low Range High Range 10 to 10 0 VRMS Low Range 025 to 2 5 VRMS 10 PPS max DTMF 2 of 8 3 to 8 digits owner programmable Factory set for 2 secs and owner changeable to 270 ms 6 dB minimum 15 dB max with tones within $\pm 1.8\%$ frequency and per tone voltages within specs
CALL DOWN DECODER: DTMF Detector Input Level Twist Tolerance Response Time	Responds to two-tone simultaneous signal Per Tone Voltage High Range 10 to 10 0 VRMS Low Range 025 to 2 5 VRMS 15 dB max if tones are with $\pm 1.8\%$ of frequency and voltages are within specified input ranges 650 ms $\pm 20\%$	POWER: Power Supply Current Drain Standby Idling Operating Message Override Mode	12 to 16 5 VDC 120 or 240 VAC 50/60 Hz 16 ma at 13 6 VDC 40 ma RMS at 120 Vac 20 ma RMS at 240 VAC 44 ma RMS at 120 VAC 22 ma RMS at 240 VAC 400 ma at 13 6 VDC 78 ma RMS at 120 VAC 39 ma RMS at 240 VAC
DIAL TONE DETECTOR—LOW FREQUENCIES Input Frequencies Input Level Twist Tolerance Response Time	Simultaneous 350 Hz $\pm 1\%$ and 440 Hz $\pm 1\%$ Per Tone Voltage High Range 10 to 10 0 VRMS Low Range 025 to 2 5 VRMS 10 dB max with tone voltages within specification range 650 ms $\pm 20\%$	DIMENSIONS: TEMPERATURE RANGE Operating Storage	1 75" Hx19" Wx17" D 30°C to +70°C (-22°F to +158°F) 55°C to +85°C (-67°F to +185°F)

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TV SIGNAL DISTRIBUTION



"SJ" SERIES MAINSTATION

STARLINE "SJ" SERIES 20/450 PUSH-PULL MAINSTATIONS

The Starline "SJ" Series is the CATV industry's most widely used mainstation amplifier. The Starline "SJ" Series utilizes Jerrold's exclusive quad technology and is capable of 450 MHz performance. The Starline "SJ" Series is capable of amplifying 60 standard forward channels and by use of plug-in filters is capable of two-way subsplit (5-32 MHz return and 52-450 MHz forward passbands) or midsplit (5-108 MHz return and 172-450 MHz forward passbands) configuration.

FEATURES

- **60 Channel Capability**
Designed for all CATV markets
- All modules and accessories have been upgraded to 450 MHz performance
- **The Versatility of the Quad**
Jerrold's convenient amplifier circuit. The quad gives you a choice: greater cable spacing for new transportation or distribution systems...with fewer active electronics per mile; or traditional cable spacing for extensions or rebuilds...with fewer AGC amplifiers required
- **The Exclusivity of Total Level Compensation**
With variable equalizer, 8 dB gain control, independent slope control, and/or plug-in thermal compensation for the manual stations...allows cost-effective designs, easier installations, reduced maintenance and operating expenses
- Return feeder connect/disconnect option
- **Two-Way Upgradable:** Plug-in filters and return amplifiers make for easy upgrade to subsplit or midsplit systems
- Variable equalizers for 220, 270, 300, 330, 350, 400 or 450 MHz systems
- Rotatable feeder maker for 1 to 4 feeder outputs
- Circuit breaker protection on all feeder ports, model CB-5
- **Very Low Power Consumption**
Maximum of 31 watts per mainstation with SJSW power supplies
- Jerrold's new SJSW "Super Switcher" power pack: For ultra-dependable delivery of basic and premium-program services—at the lowest power cost possible!

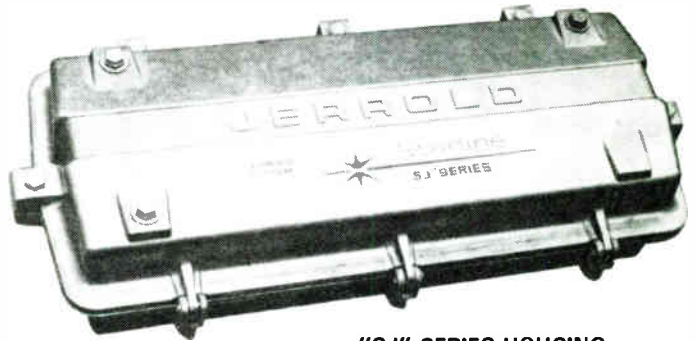
STARLINE "SJ" SERIES HOUSING AND POWER SUPPLY COMBINATIONS

HOUSING FEATURES

- 7 port aluminum housing
- RFI and weather gaskets
- Input and output test point apertures
- 120 dB radiation well at input and output connector ports
- Electronic packages can be removed without removing cables

POWER SUPPLY FEATURES

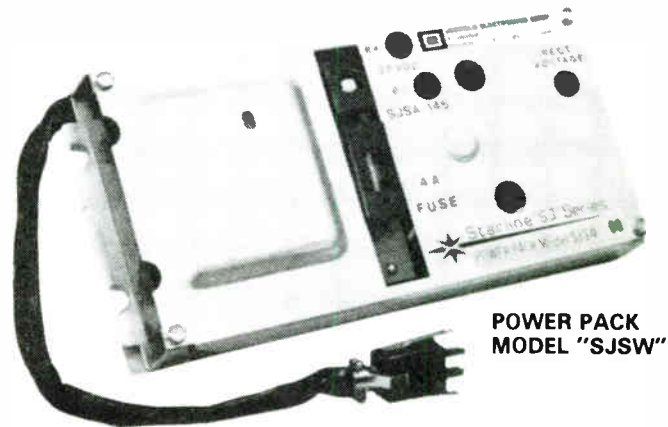
- SJSW "super switcher" provides high efficiency and lowest power cost possible
- Heavy duty surge arrester standard, model SJSA-145



"SJ" SERIES HOUSING

STARLINE "SJ" SERIES HOUSING

The Starline 20 housing, model SJAH is a 7 port aluminum housing designed for both trunk and trunk feeder/feeder applications. The housing includes separate RFI and weather gaskets. Input and output test point apertures eliminate the need to open the housing to measure forward and return levels. The input and output platforms are designed for high isolation, 120 dB radiation wells at input and output connector ports, and seizure of coaxial cable center conductors. This allows electronic packages to be installed or removed without removing coaxial cables.



POWER PACK
MODEL "SJSW"

STARLINE "SJ" SERIES POWER SUPPLIES

The primary design criteria for Jerrold power supplies is reliability. The SJSW-* incorporates heavy-duty components selected for long life and surge protection is standard (model SJSA-145). Choose either 30 volt or 60 volt.

Jerrold power supplies have an extended-voltage operating-range feature which allows the amplifier station to continue to operate during over voltage conditions, thus providing continuous service to subscribers. Current limiting circuitry and fuse assembly protect the power supply and amplifier modules. Easily accessible test points allow simple set-up and performance checks. Current limiting is insured by a current sensing and limiting circuit. When a load current exceeds a predetermined threshold, this unique circuit effectively "blocks" any excessive current from flowing through the power supply—without interrupting the "normal" current flow. When the excessive load condition causing the current is removed or abates, the circuit automatically returns to its quiescent state.

Prices and Specifications Subject to Change Without Notice.

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TV SIGNAL DISTRIBUTION

STARLINE "SJ" SERIES ELECTRONIC PACKAGES

There are "5" basic electronic package configurations of the Starline "SJ" Series to meet your system design requirements; trunk amplification, trunk and bridging, and trunk terminating or intermediate bridging with one to four bridging outputs; with automatic gain and slope control available for trunk amplification and trunk and bridging styles.

Feeder Disconnect

SJ-*S/E electronics packages are designed to accommodate an optional feeder connect/disconnect switch, model SEP-30S. This module has three positions: connect, disconnect, and remote. The SEP30-S may be remotely operated from an external controller (model STSM) when in the remote position.

Thermal Compensation

All trunk amplifier modules are equipped with thermal compensation to maintain optimal system performance over temperature swings from -40°F to +140°F.

AGC/ASC Trunk Amplifier With Bridging Amplifier

This electronic package provides amplification for trunk and bridging. The push-pull trunk amplifier module SJAS is a dual pilot gain and slope control amplifier. AGC and ASC can be turned on or off independently for ease of operational set-up and maintenance using a simple 5 step procedure which eliminates seasonal rebalancing. The push-pull bridger amplifier module SJBM utilizes manual gain and slope controls and has a plug-in pad (model JXP-*) facility.

The amplifier modules are mounted in a two-way connector chassis which provides up to 4 bridger outputs.

Mainstation Electronic Packages Model	Upper Freq. Design Spectrum	Return Feeder Disconnect Capability	Connector Chassis (Note 2)	Trunk Amplifier Module	Standard Pilot Carrier Channels	Bridger Amplifier Module
SJ 1SS*/450	300-450	Yes	SCD-F SS2	SJAS 450	4 and 36 (W)	SJBM 450
SJ 1SS/450	300-450	Yes	SCD-F SS2	SJAS-450*	NOTE 1	SJBM 450
SJS-1AS/E	220-300	Yes	SCD-2WDS	SJAS 400A	4 and 1	SJBM 400
SJS 1AS*/E	220-300	Yes	SCD-2WDS	SJAS 400A*	NOTE 1	SJBM 400
SJ 1SS/330	220-330	Yes	SCD-F SS2	SJAS 330	4 and 36 (W)	SJBM 330
SJ 1SS*/330	220-330	Yes	SCD-F SS2	SJAS 330*	NOTE 1	SJBM 330*

1. ASC/AGC module tuned to customer order.
2. Contains input, output and distribution filters, except 300 MHz models.

Manual Trunk Amplifier With Bridging Amplifier

This electronic package provides amplification for trunk and bridging. The push-pull trunk amplifier module SJMM utilizes manual gain control. This module is thermally controlled to compensate for changes in gain and for changes in attenuation and slope in 18 dB of cable preceding the amplifier due to environmental variations.

The SJBM bridger amplifier and the SCD connector chassis are used in these models.

Mainstation Electronic Packages Model	Upper Freq. Design Spectrum	Return Feeder Disconnect Capability	Connector Chassis (Note 1)	Trunk Amplifier Module	Standard Pilot Carrier Channels	Bridger Amplifier Module
SJ-2SS/450	300-450	Yes	SCD-F-SS1	SJMM-450	N/A	SJBM-450
SJ-2AS/E	220-300	Yes	SCD-2WDS	SJMM 400A	N/A	SJBM 400
SJ 2SS/330	220-330	Yes	SCD-F-SS1	SJMM-330	N/A	SJBM-330

1. Contains input, output and distribution filters, except 300 MHz models.

ASC/AGC Trunk Amplifier

This electronic package provides amplification for trunk only. It utilizes the AGC/ASC trunk module SJAS.

The amplifier module is mounted in a two-way connector chassis, model SCL. This connector chassis is for trunk only applications. The SCL-F-SS contains subsplit input and output filters, while the SCL-F-MS contains midsplit filters.

Mainstation Electronic Packages Model	Upper Frequency Design Spectrum	Return Feeder Disconnect	Connector Chassis (Note 2)	Trunk Amplifier Module Channels	Standard Pilot Carriers	Bridger Amplifier Module
SJ 3SS 450	300-450 MHz	N/A	SCL-F-SS	SJAS 450	4 and 36 (W)	N/A
SJ 3MS 450	300-450 MHz	N/A	SCL-F-MS2	SJAS 450*	NOTE 1	N/A
SJ 3SS* 450	300-450 MHz	N/A	SCL-F-SS/	SJAS 450*	NOTE 1	N/A
SJS 3A 1	220-300 MHz	N/A	SCL-F-MS2	SJAS 400A	4 and 1	N/A
SJS 3A* 1	220-300 MHz	N/A	SCL-2WD	SJAS 400A*	NOTE 1	N/A
SJ 3SS 330	220-330 MHz	N/A	SCL-F-SS	SJAS 330	4 and 36 (W)	N/A
SJ 3SS* 330	220-330 MHz	N/A	SCL-F-SS	SJAS 330*	NOTE 1	N/A

1. ASC/AGC module tuned to customer order. (Recommend 7 and 36 l for SJ-3MS*/450).
2. Contains input and output filters, except 300 MHz models.

Manual Gain Control Trunk Amplifiers

This electronic package provides amplification for trunk only. It utilizes the manual gain control trunk modules SJMM.

The amplifier module is mounted in a two-way connector chassis, model SCL. This connector chassis is for trunk only applications.

Mainstation Electronic Packages Model	Upper Frequency Design Spectrum	Return Feeder Disconnect	Connector Chassis (Note 1)	Trunk Amplifier Module Channels	Standard Pilot Carriers	Bridger Amplifier Module
SJ 4SS 450	300-450 MHz	N/A	SCL-F-SS	SJMM 450	N/A	N/A
SJ 4MS 450	300-450 MHz	N/A	SCL-F-MS1	SJMM 450	N/A	N/A
SJ 4SS 330	220-330 MHz	N/A	SCL-F-SS	SJMM 330	N/A	N/A

1. Contains input and output filters, except 300 MHz models.

Trunk Termination/Intermediate Trunk Bridging Amplifier

This electronic package provides amplification for bridging only. It utilizes a push-pull distribution amplifier module SJDL with manual gain and slope control. This module is thermally controlled to compensate for changes in gain and for changes in attenuation and slope in 20 dB of cable due to environmental variations.

For intermediate trunk bridging applications, an external directional coupler, model STC-8F or STC-12F is required.

Mainstation Electronic Packages Model	Upper Frequency Design Spectrum	Return Feeder Disconnect	Connector Chassis (Note 1)	Trunk Amplifier Module Channels	Standard Pilot Carriers	Bridger Amplifier Module
SJ 4SS/450	220-450 MHz	Yes	SCD-F-SS	N/A	N/A	SJDL 450
SJS 5S 1	220-300 MHz	Yes	SCD-2WDS	N/A	N/A	SJDL 400
SJ 4SS 330	220-330 MHz	Yes	SCD-F-SS	N/A	N/A	SJDL 330

1. Contains input and distribution filter; output filter included but not required.

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

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(602) 294-1600

TV SIGNAL DISTRIBUTION

System Performance Specifications: SJS 300 Basic Mainstations—Operating to 300 MHz

STATION FUNCTION	TR. AMP. W/ASC BR. AMP.	TR. AMP. BR. AMP.	TR. AMP. W/ASC —	TR. AMP. —	TERM./INT. TR. BR. AMP.
STATION MODEL NUMBER	SJS-1AS	SJS-2AS	SJS-3A	SJS-4A	SJS-5AS
PASSBAND	40 to 300 MHz, all stations				
RESPONSE FLATNESS (See Note 1) Trunk Amplifier	± 0.15 dB	± 0.15 dB	± 0.15 dB	± 0.15 dB	—
Bridger or Distribution Amplifier	± 0.4 dB	± 0.4 dB	—	—	± 0.5 dB
MINIMUM FULL GAIN, without equalizers (See Note 2) Trunk Amplifier	26 dB	26 dB	26.5 dB	26.5 dB	—
Bridger or Distribution Amplifier	47 dB	47 dB	—	—	42 dB
RECOMMENDED OPERATING GAIN at 300 MHz, without equalizer Trunk IN to Trunk OUT	25 dB	25 dB	25 dB	25 dB	—
Trunk IN to Bridger (Distribution) OUT	42 dB	42 dB	—	—	40 dB
TYPICAL OPERATING LEVELS for 35 channels, with equalizers Trunk IN	9 dBmV	9 dBmV	9 dBmV	9 dBmV	11 dBmV
Trunk OUT	32 dBmV	32 dBmV	32 dBmV	32 dBmV	—
Bridger (Distribution) OUT	49 dBmV	49 dBmV	—	—	49 dBmV
DISTORTION CHARACTERISTICS (typical for op. levels)					
2nd Order Beats, Chs. 2, 20(G), 13 Trunk Amplifier	82 dB	82 dB	83 dB	83 dB	—
Bridger or Distribution Amplifier	70 dB	70 dB	—	—	70 dB
Composite Triple Beat* Trunk Amplifier	92 dB	92 dB	94 dB	94 dB	—
Bridger or Distribution Amplifier	66 dB	66 dB	—	—	66 dB
HUM MODULATION (by 60 Hz line)	70 dB, all stations				
MAXIMUM NDI SE FIGURE, without equalizers at 54 MHz	7 dB	7 dB	7 dB	7 dB	8.5 dB
at 300 MHz	7 dB	7 dB	7 dB	7 dB	9 dB
MANUAL GAIN CONTROL RANGE, minimum Trunk Amplifier	8 dB	8 dB	8 dB	8 dB	—
Bridger or Distribution Amplifier	9 dB	9 dB	—	—	8 dB
OPTIONAL INPUT LEVEL PADDING	by SXP-* in chassis, SXP-0 factory inserted				
MANUAL SLOPE CONTROL RANGE, minimum in Bridger or Distribution Amplifier (Ch. 2/36)	3-6 dB	3-6 dB	—	—	3-6 dB
AUTOMATIC SLOPE AND GAIN CONTROL: For changes in cable (ref. to 300 MHz) and/or changes in input level of Amplifier output at pilot frequency holds at	+ 3/- 4 dB + 5/- 2 dB ± 0.5 dB	— — —	+ 3/- 4 dB + 5/- 2 dB ± 0.5 dB	— — —	— — —
CONTROL CARRIERS AGC factory-tuned to Ch. retunable in the field to Ch. Operating Level, minimum/maximum dBmV ASC factory-tuned to Ch. retunable in the field to Ch. Operating Level, minimum/maximum dBmV	4 2 or 3 27/40 11 10 or 12 29/40	— — — — — —	4 2 or 3 26/40 11 10 or 12 28/40	— — — — — —	— — — — — —
THERMAL COMPENSATION for ambient changes in amplifier over °F and in cable span of: Trunk output holds within:	— — —	— 18 dB ± 0.75 dB	— — —	— 18 dB ± 0.75 dB	— 20 dB ± 1.5 dB
TERMINAL MATCH at 75 ohm impedance	16 dB minimum return loss, all terminals				
POWER REQUIREMENT (in Station Housing)		SJSW	SJSW	SJSW	SJSW
60 V System	Watts	30.3	27.4	16.7	13.7
	Amps	0.55	0.5	0.3	0.25
30 V System	Watts	31.3	28.4	17.2	14.2
	Amps	1.22	1.1	0.67	0.55
DC OPERATING VOLTAGE	-27V, all stations				
AC BYPASS CAPABILITY, maximum					
Trunk, each way	8A	8A	8A	8A	—
Feeders, each	5A	5A	—	—	5A
OVERALL DIMENSIONS	18 3/4" L x 5 1/4" D x 8 7/8" W, 476x133x225 mm				
SHIPPING WEIGHT	22 lbs.				

*C.W. signals and spectrum analyzer.

- NOTES:**
1. Trunk amplifier specifications are for flat response and flat output levels.
 2. Bridger and distribution specifications are for 6 dB slope (Ch. 2 to Ch. 36) for response and output levels referenced to Ch. 36.
 3. For 21 channels, composite triple beat rating increases 3 dBm V (ref. 35 channels composite triple beat).
 4. For 12 channels, composite triple beat rating increases 6 dBm V (ref. 35 channels composite triple beat).
 5. Manual slope control on SJS-1AS/E and SJS-3A/E is factory set to -3 dB at 300 MHz.

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GENERAL INSTRUMENT CORP.

TV SIGNAL DISTRIBUTION

R.F. SYSTEMS DIVISION
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(602) 294-1600

System Performance Specifications: SJ 330 High Gain Mainstations—Operating to 330 MHz

STATION FUNCTION	TR. AMP. W/ASC. BR. AMP.	TR. AMP. — BR. AMP.	TR. AMP. W/ASC. —	TR. AMP. — —	TERM./INT. TR. BR. AMP.
STATION MODEL NUMBER	SJ-1SS/330	SJ-2SS/330	SJ-3SS/330	SJ-4SS/330	SJ-5SS/330
PASSBAND	52 to 330 MHz, all stations				
RESPONSE FLATNESS (See Note 1) Trunk Amplifier	±0.25 dB	±0.25 dB	±0.25 dB	±0.25 dB	—
Bridger or Distribution Amplifier	±0.6 dB	±0.6 dB	—	—	±0.6 dB
MINIMUM FULL GAIN, without equalizers (See Note 2) Trunk Amplifier	31 dB	31 dB	31 dB	31 dB	—
Bridger or Distribution Amplifier	47 dB	47 dB	—	—	47 dB
RECOMMENDED OPERATING GAIN at 330 MHz, without equalizer Trunk IN to Trunk OUT	29 dB	29 dB	29 dB	29 dB	—
Trunk IN to Bridger (Distribution) OUT	45 dB	45 dB	—	—	42 dB
TYPICAL OPERATING LEVELS for 40 channels, with equalizers Trunk IN	7 dBmV	7 dBmV	7 dBmV	7 dBmV	9.5 dBmV
Trunk OUT	34 dBmV	34 dBmV	34 dBmV	34 dBmV	—
Bridger (Distribution) OUT	43/50 dBmV	43/50 dBmV	—	—	43/50 dBmV
DISTORTION CHARACTERISTICS (typical for op. levels)					
2nd Order Beats, Chs. 2, 20(g), 13 Trunk Amplifier	82 dB	82 dB	82 dB	82 dB	—
Bridger or Distribution Amplifier	69 dB	69 dB	—	—	69 dB
Composite Triple Beat Trunk Amplifier	88 dB	90 dB	90 dB	92 dB	—
Bridger or Distribution Amplifier	63 dB	63 dB	—	—	63 dB
Cross Modulation Trunk	85 dB	87 dB	87 dB	89 dB	—
Bridger	59 dB	59 dB	—	—	59 dB
HUM MODULATION (by 60 Hz line)	70 dB, all stations				
MAXIMUM NOISE FIGURE, without equalizers at 54 MHz	7.5 dB	7.5 dB	7.5 dB	7.5 dB	11.0 dB
at 330 MHz	8.5 dB	8.5 dB	8.5 dB	8.5 dB	9.0 dB
MANUAL GAIN CONTROL RANGE, minimum Trunk Amplifier	0-8 dB	0-8 dB	0-8 dB	0-8 dB	—
Bridger or Distribution Amplifier	0-9 dB	0-9 dB	—	—	0-8 dB
OPTIONAL INPUT LEVEL PADDING	by SXP* in chassis, SXP-0 factory inserted				
MANUAL SLOPE CONTROL RANGE, minimum in Bridger or Distribution Amplifier (Ch. 2/36)	0-8 dB	0-8 dB	—	—	0-8 dB
AUTOMATIC SLOPE AND GAIN CONTROL: For changes in cable (ref. to 330 MHz) and/or changes in input level of Amplifier output at pilot frequency holds at	+3/-4 dB +5/-2 dB ±0.5 dB	—	-3/-4 dB +5/-2 dB ±0.5 dB	—	—
CONTROL CARRIERS AGC factory-tuned to Ch.	4	—	4	—	—
retunable in the field to Ch.	2 or 3	—	2 or 3	—	—
Operating Level, minimum/maximum dBmV	27/40	—	27/40	—	—
ASC factory-tuned to Ch.	36	—	36	—	—
retunable in the field to Ch.	35-37	—	35-37	—	—
Operating Level, minimum/maximum dBmV	29/40	—	28/40	—	—
THERMAL COMPENSATION for ambient changes in amplifier over °F and in cable span of: Trunk output holds within:	— — —	-40/ +140 18 dB ±0.75 dB	— — —	-40/ +140 18 dB ±0.75 dB	-40/ +140 20 dB ±1.5 dB
TERMINAL MATCH at 75 ohm impedance	16 dB minimum return loss, all terminals				
POWER REQUIREMENT (in Station Housing)	SJSW	SJSW	SJSW	SJSW	SJSW
60 V System Watts	38	37	20	19	19
Amps	0.65	0.62	0.33	0.32	0.32
30 V System Watts	42.9	40.9	21.78	21.12	21.12
Amps	1.30	1.24	.66	.64	.64
DC OPERATING VOLTAGE	-27V, all stations				
AC BYPASS CAPABILITY, maximum					
Trunk, each way	8A	8A	8A	8A	—
Feeders, each	5A	5A	—	—	5A
OVERALL DIMENSIONS	18 3/4" L x 5 1/4" D x 8 3/8" W, 476x133x225 mm				
SHIPPING WEIGHT	22 lbs.				

- NOTES: 1. Trunk amplifier specifications are for flat response and flat output levels.
2. Bridger and distribution specifications are for 7 dB slope (Ch. 2 to Ch. 41 for response and output levels referenced to Ch. 41).
3. Manual slope control in SJ-1-330 and SJ-3-330 is factory set to -3 dB at 330 MHz.

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Prices and Specifications Subject to Change Without Notice.

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

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TV SIGNAL DISTRIBUTION

System Performance Specifications: SJ 450 Basic Mainstations—Operating to 450 MHz

STATION FUNCTION	TR. AMP. W/ASC BR. AMP.	TR. AMP. BR. AMP.	TR. AMP. W/ASC —	TERM./INT. —	TR. BR. AMP.
STATION MODEL NUMBER	SJ-1SS/450	SJ-2SS/450	SJ-3SS/450	SJ-4SS/450	SJ-5SS/450
PASSBAND	40 to 450 MHz, all stations				
RESPONSE FLATNESS (See Note 1) Trunk Amplifier	± 0.25 dB	± 0.25 dB	± 0.25 dB	± 0.25 dB	—
Bridger or Distribution Amplifier	± 0.6 dB	± 0.6 dB	—	—	± 0.6 dB
MINIMUM FULL GAIN, without equalizers Trunk Amplifier (See Note 3)	26 dB	26 dB	26.5 dB	26.5 dB	—
Bridger or Distribution Amplifier (See Note 2)	47 dB	47 dB	—	—	39 dB
RECOMMENDED OPERATING GAIN at 450 MHz, without equalizer Trunk IN to Trunk OUT	25 dB	25 dB	25 dB	25 dB	—
Trunk IN to Bridger (Distribution) OUT	40 dB	40 dB	—	—	37 dB
TYPICAL OPERATING LEVELS for 60 channels, with equalizers Trunk IN	9 dBmV	9 dBmV	9 dBmV	9 dBmV	12 dBmV
Trunk OUT	32 dBmV	32 dBmV	32 dBmV	32 dBmV	—
Bridger (Distribution) OUT	47 dBmV	47 dBmV	—	—	47 dBmV
DISTORTION CHARACTERISTICS (for typical op. levels)					
2nd Order Beats, Chs. 2, 20, 13 Trunk Amplifier	82 dB	82 dB	83 dB	83 dB	—
Bridger or Distribution Amplifier	70 dB	70 dB	—	—	70 dB
Composite Triple Beat Trunk Amplifier	80 dB	82 dB	82 dB	84 dB	—
Bridger or Distribution Amplifier	59 dB	59 dB	—	—	59 dB
Cross Modulation Trunk	86 dB	88 dB	88 dB	90 dB	—
Bridger	58 dB	58 dB	—	—	58 dB
HUM MODULATION (by 60 Hz line)	70 dB, all stations				
MAXIMUM NOISE FIGURE, without equalizers at 54 MHz	7.5 dB	7.5 dB	7.5 dB	7.5 dB	13 dB
at 450 MHz	8.5 dB	8.5 dB	8.5 dB	8.5 dB	10 dB
MANUAL GAIN CONTROL RANGE, minimum Trunk Amplifier	8 dB	8 dB	8 dB	8 dB	—
Bridger or Distribution Amplifier	9 dB	9 dB	—	—	8 dB
OPTIONAL INPUT LEVEL PADDING	by SXP-* in chassis, SXP-0 factory inserted				
MANUAL SLOPE CONTROL RANGE, minimum in Bridger or Distribution Amplifier (Ch. 2/61)	3-9 dB	3-9 dB	—	—	3-9 dB
AUTOMATIC SLOPE AND GAIN CONTROL: For changes in cable (ref. to 450 MHz) and/or changes in input level of Amplifier output at pilot frequency holds at	+2/-4 dB +5/-2 dB ± 0.5 dB	— — —	-2/-4 dB +5/-2 dB ± 0.5 dB	— — —	— — —
CONTROL CARRIERS AGC factory-tuned to Ch. retunable in the field to Ch.	4 2 or 3	— —	4 2 or 3	— —	— —
Operating Level, minimum/maximum dBmV ASC factory-tuned to Ch. retunable in the field to Ch.	27/40 36 I (W) 35 I-37 I	— — —	26/40 36 I (W) 35 I-37 I	— — —	— — —
Operating Level, minimum/maximum dBmV	29/40	—	28/40	—	—
THERMAL COMPENSATION for ambient changes in amplifier over °F and in cable span of: Trunk output holds within:	— — —	-40/+140 18 dB ± 0.75 dB	— — —	-40/+140 18 dB ± 0.75 dB	-40/+140 20 dB ± 1.5 dB
TERMINAL MATCH at 75 ohm impedance	16 dB minimum return loss, all terminals				
POWER REQUIREMENT (in Station Housing)	SJSW	SJSW	SJSW	SJSW	SJSW
60 V System Watts	30.3	27.4	16.7	13.7	15.2
Amps	0.55	0.5	0.3	0.25	0.28
30 V System Watts	31.3	28.4	17.28	14.2	15.7
Amps	1.22	1.1	0.67	0.55	.61
DC OPERATING VOLTAGE	-27V, all stations				
AC BYPASS CAPABILITY, maximum					
Trunk, each way	8A	8A	8A	8A	—
Feeders, each	5A	5A	—	—	5A
OVERALL DIMENSIONS	18¾" L x 5¼" D x 8¾" W, 476x133x225 mm				
SHIPPING WEIGHT	22 lbs.				

Notes: 1. Trunk amplifier specifications are for flat response and flat output levels.

2. Bridger and distribution specifications are for 9 dB slope (Ch. 2 to Ch. 61 for response and output levels referenced to Ch. 61).

3. Manual slope control in SJ-1SS/450 and SJ-3SS/450 is factory set to -2 dB at 450 MHz.

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R.F. SYSTEMS DIVISION
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TV SIGNAL DISTRIBUTION

CABLE EQUALIZERS FOR MAINSTATIONS

Forward Equalizers

The forward cable equalizers used in all Starline "SJ" mainstations include fourteen sub-series: SEP-224*, SEP-225*, SEP-274*, SEP-275*, SEP-304*, SEP-305*, SEP-334*, SEP-335*, SEP-354*, SEP-355*, SEP-404*, SEP-405*, SEP-454* and SEP-455*. These equalizers plug into connector chassis model SCD-2WD, SCD-2WDS, SCL-2WD, and SCD-2WFS. Specific functions are described below.

Model SEP-224 Series—For 220MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-220MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters.

MODEL	SEP-224TL	SEP-224L	SEP-224H	SEP-224ST
Passband	40-220 MHz	40-220 MHz	40-220 MHz	40-220 MHz
Response Flatness	±0.15 dB	±0.1 dB	±0.1 dB	±0.15 dB
Max. Insertion Loss	2.3 dB	1 dB	1.2 dB	1.5 dB
Variable Equalization Range at 260 MHz	2-11 dB	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 Ω impedance (minimum)	16 dB	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-225 Series—For 220MHz Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-220MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-225L	SEP-225H	SEP-225ST
Passband	52-220 MHz	52-220 MHz	52-220 MHz
Response Flatness	+0.1 dB	±0.1 dB	±0.15 dB
Max. Insertion Loss	1 dB	1.2 dB	2 dB
Variable Equalization Range at 260 MHz	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss 75 Ω impedance (minimum)	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-274 Series—For 270MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-270MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters. (For midsplit mainstations use this equalizer series.)

MODEL	SEP-274TL	SEP-274L	SEP-274H	SEP-274ST
Passband	40-270 MHz	40-270 MHz	40-270 MHz	40-270 MHz
Response Flatness	±0.15 dB	±0.1 dB	±0.1 dB	±0.15 dB
Max. Insertion Loss	2.6 dB	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 270 MHz	2-11 dB	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 Ω impedance (minimum)	15 dB	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-275 Series—For 270MHz

Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-270MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-275L	SEP-275H	SEP-275ST
Passband	52-270 MHz	52-270 MHz	52-270 MHz
Response Flatness	±0.1 dB	±0.1 dB	±0.15 dB
Max. Insertion Loss	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 270 MHz	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 Ω impedance (minimum)	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-304 Series—For 300MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-300MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters. (For midsplit mainstations use this equalizer series.)

MODEL	SEP-304TL	SEP-304L	SEP-304H	SEP-304ST
Passband	40-300 MHz	40-300 MHz	40-300 MHz	40-300 MHz
Response Flatness	±0.15 dB	±0.1 dB	±0.1 dB	±0.15 dB
Maximum Insertion Loss	2.5 dB	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 300 MHz	2-11 dB	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	15 dB	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-305 Series—For 300MHz Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-300MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-305L	SEP-305H	SEP-305ST
Passband	52-300 MHz	52-300 MHz	52-300 MHz
Response Flatness	±0.10 dB	±0.10 dB	±0.15 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.5 dB
Variable Equalization Range at 300 MHz	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-334 Series—For 330MHz Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 330MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-334L	SEP-334H	SEP-334ST
Passband	40-330 MHz	40-330 MHz	40-330 MHz
Response Flatness	±0.15 dB	±0.15 dB	±0.15 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.7 dB
Variable Equalization Range at 350 MHz	10-16 dB	15-22 dB	19-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

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R.F. SYSTEMS DIVISION

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FORWARD EQUALIZERS (Cont'd.)

Model SEP-335 Series — For 330MHz

Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-330MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-335L	SEP-335H	SEP-335ST
Passband	54-330 MHz	54-330 MHz	54-330 MHz
Response Flatness	± 0.15 dB	± 0.15 dB	± 0.2 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.7 dB
Variable Equalization Range at 400 MHz	10-16 dB	15-20 dB	20-28 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-354 Series — For 350MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-350MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters. (For midsplit mainstations use this equalizer series.)

MODEL	SEP-354TL	SEP-354L	SEP-354H	SEP-354ST
Passband	40-350 MHz	40-350 MHz	40-350 MHz	40-350 MHz
Response Flatness	± 2 dB	± 1.5 dB	± 1.5 dB	± 2 dB
Maximum Insertion Loss	2.0 dB	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 300 MHz	5-11 dB	10-16 dB	15-20 dB	20-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-355 Series — For 350MHz

Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-350MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-355L	SEP-355H	SEP-355ST
Passband	52-350 MHz	52-350 MHz	52-350 MHz
Response Flatness	± .15 dB	± .15 dB	± .2 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 300 MHz	10-16 dB	15-20 dB	20-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	18 dB	18 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-404 Series — For 400MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-400MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters. (For midsplit mainstations use this equalizer series.)

MODEL	SEP-404TL	SEP-404L	SEP-404H	SEP-404ST
Passband	40-400 MHz	40-400 MHz	40-400 MHz	40-400 MHz
Response Flatness	± 0.2 dB	± 0.15 dB	± 0.15 dB	± 0.2 dB
Maximum Insertion Loss	2.0 dB	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 400 MHz	5-11 dB	10-16 dB	15-20 dB	20-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-405 Series — For 400MHz

Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-400MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-405L	SEP-405H	SEP-405ST
Passband	52-400 MHz	52-400 MHz	52-400 MHz
Response Flatness	± 0.15 dB	± 0.15 dB	± 0.15 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 400 MHz	10-16 dB	15-20 dB	20-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB	16 dB	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-454 Series — For 450MHz One-Way Applications

This series of variable cable equalizers operates within a passband of 40-450MHz and is utilized in one-way mainstations that do not use model TF-30/TF-30F trunk filters. (For midsplit stations use the following equalizer series.)

MODEL	SEP-454TL
Passband	40-450 MHz
Response Flatness	± 0.2 dB
Maximum Insertion Loss	2.0 dB
Variable Equalization Range at 450 MHz	5-11 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

Model SEP-455 Series — For 450MHz

Two-Way Mainstations (With Filters)

This series of variable cable equalizers operates within a passband of 52-450MHz and is utilized in two-way mainstations that use model TF-30/TF-30F trunk filters.

MODEL	SEP-455-L	SEP-455-H	SEP-455-ST
Passband	52-450 MHz	52-450 MHz	52-450 MHz
Response Flatness	± 5 dB	± 15 dB	± 15 dB
Maximum Insertion Loss	1.3 dB	1.3 dB	1.6 dB
Variable Equalization Range at 450 MHz	10-16 dB	15-20 dB	20-26 dB
Terminal Match, return loss, 75 ohm impedance (minimum)	16 dB	16 dB	16 dB

GENERAL INSTRUMENT CORP.

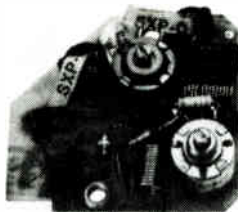
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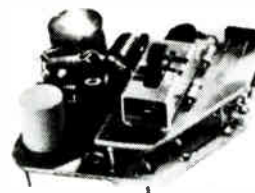
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RETURN EQUALIZERS



RETURN FEEDER DISCONNECT SWITCH AND EQUALIZER

RETURN EQUALIZERS

Trunk return cable equalizers used in all standard Starline "SJ" mainstations include two sub-series: SEP-30C3 and SEP-108*.

These equalizers couple and attenuate the return trunk and feeder signals before amplification by the trunk return amplifier. Two facilities for plug-in pads, model SXP-*, provide for the additional attenuation to the trunk return amplifier. These equalizers plug into connector chassis model SCD-2WDS, SCD-2WFS or SCL-2WD. Specific functions are described below.

MODEL SEP-30C3—FOR TWO-WAY SUBSPLIT MAINSTATIONS

This variable cable equalizer operates within a passband of 5-32MHz and is utilized in two-way subsplit mainstations that use model TRA-30M or TRA-30A trunk return amplifiers.

MODEL	SEP-30C3
Passband	5-32 MHz
Response Flatness	±0.2 dB
Max. Insertion Loss at 30 MHz	Trunk: 4.5 dB Feeder: 3.5 dB, ±0.2 dB max.
Variable Equalizer Range at 30 MHz (equivalent forward spacing at 300 MHz)	3-7 dB (10-24 dB)
Isolation Between Trunk and Feeder Inputs	30 dB min.
Terminal Match, return loss, 75 Ω impedance (minimum)	18 dB
Return Signal Attenuation Facilities	SXP-* plug-in facilities for both trunk and feeder return path; SXP-0 units factory-inserted. Note: Where feeder coupler section is not used, insert SXP-15

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

MODEL SEP-108*C SERIES—FOR TWO-WAY MIDSPLIT MAINSTATIONS

This series of variable cable equalizers operates within a passband of 5-116MHz and is utilized in two-way midsplit mainstations that use model TRM-110 or TRA-108A trunk return amplifiers.

MODEL	SEP-108LC	SEP-108HC
Passband	5-116 MHz	5-116 MHz
Response Flatness	±0.2 dB	±0.2 dB
Max. Insertion Loss, at 108 MHz	Trunk: 3.1 dB Feeder: 8.8±0.5 dB	Trunk: 3.8 dB Feeder: 8.8±0.5 dB
Variable Equalizer Range at 108 MHz (equivalent forward spacing at 300 MHz)	5-11 dB (9-19 dB)	10-14 dB (18-25 dB)
Isolation Between Trunk and Feeder Inputs	35 dB min.	
Terminal Match, return loss, 75 Ω impedance (minimum)	18 dB	
Return Signal Attenuation Facilities	SXP-* plug-in facility for both trunk and feeder return path; SXP-0 units factory inserted. Note: Where feeder coupler section is not used, insert SXP-15	

All equalizers are designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

VRF-74

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RETURN FEEDER DISCONNECT SWITCH AND EQUALIZER

Model SEP-30S incorporates a diode switch in the reverse feeder path, a reverse trunk and feeder combiner, and a sub-split reverse trunk equalizer. Trunk and feeder paths are provided with SXP, plug-in pad, facilities.

Local control of the feeder switch is provided by a 3 position slide switch; with "on", "remote", or "off" positions. In the "on" position, the return feeders are connected to the return trunk path. In the "off" position, the return feeder path is disconnected and terminated in 75 ohms. In the "remote" position, the switch is controlled by a TTL compatible logic signal supplied thru the seventh port of the starting twenty housing. The SEP-30S must be used in conjunction with the SCD-2WDS/SCD-2WFS connector chassis, which is wired to provide the proper inputs.

To order Starline "SJ" Series electronics with SCD-2WDS/SCD-2WFS connector chassis for feeder disconnect, order SJ-450-*S/E for 300-450MHz systems, SJS-*S/E for 300 or 400MHz systems for SJS-*AS/E for 220, 270, or 300MHz systems.

MODEL	SEP-30S
Passband	5-32 MHz
Response Flatness	0.2 dB
Max. Insertion Loss	Trunk: 4.5 dB Feeder Connected: 5 dB
Variable Equalizer Range at 30 MHz (equivalent forward spacing at 300 MHz)	3-7 dB (10-24 dB)
Isolation Between Trunk and Disconnected Feeder	50 dB
Terminal Match, Return Loss, 75 Ω impedance (minimum)	18 dB
Return Signal Attenuation Facilities	SXP-* plug-in facility for both trunk and feeder return path; SXP-0 units factory-inserted. Note: Where feeder coupler section is not used, insert SXP-15
Remote Switch Control Input	TTL Compatible
DC Operating Voltage	-27V at 0.01 A

Equalizer is designed for 0.5 inch outer diameter, aluminum sheathed, foam dielectric, coaxial cable.

GENERAL INSTRUMENT CORP.

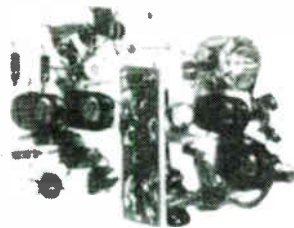
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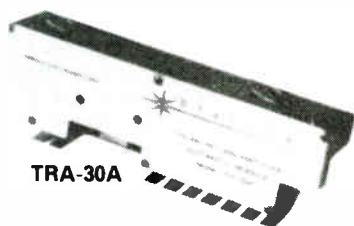
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TRA-30M



TRA-30A

TRUNK RETURN AMPLIFIERS

The trunk return amplifiers used in all Starline "SJ" Series mainstations include four models: TRA-30M-TRA-30A, TRA-108M and TRA-108A. Specific functions are described below:

MODEL TRA-30M—FOR SUBSPLIT MAINSTATIONS

The model TRA-30M trunk return amplifier with manual gain control, for all "SJ" Series mainstations, will amplify 4 channels in the 5-32 MHz band. This push-pull amplifier is thermally controlled to compensate for changes in amplifier gain and for changes in attenuation and slope in 18 dB of cable due to environmental variations. The TRA-30 M trunk return amplifier plugs into the manual return trunk compartment of connector chassis model SCL-2WD, SCD-2WD and SCD-F-SS and SCL-F-SS. Each unit is shipped with jumper cable ST-RJC.

MODEL TRA-30A—FOR SUBSPLIT MAINSTATIONS

The model TRA-30A trunk return amplifier with AGC for models "SJ"-2 and "SJ"-4 mainstations, will amplify 4 channels in the 5-30 MHz band. This push-pull amplifier utilizes a pilot-control carrier at 31.5 MHz to operate the AGC. The AGC can be turned on or off for ease of operational set-up and maintenance.

The model TRA-30A trunk return amplifier plugs into connector chassis model SCL-2WD, SCD-2WDS and SCD-F-SS and SCL-F-SS. Each unit is shipped with jumper board ST-RJB.

MODEL TRM-110—MANUAL GAIN CONTROL TRUNK RETURN AMPLIFIER FOR MIDSPLIT MAINSTATIONS

The model TRM-110 trunk return amplifier with manual gain control for all "SJ" Series mainstations, will amplify 12 channels in the 5-116 MHz band. This push-pull amplifier is thermally controlled to compensate for changes in gain and for changes in attenuation and slope in 18 dB of cable due to environmental variations. The TRM-110 trunk return plugs into the manual return trunk compartment of connector chassis model SCL-2WD, SCD-F-SS and SCL-F-SS and SCD-2WDS. Each unit is shipped with jumper cable ST-RJC.

MODEL TRA-108A AGC TRUNK RETURN AMPLIFIER FOR MIDSPLIT MAINSTATIONS

The model TRA-108A trunk return amplifier with AGC, for models "SJ"-2 and "SJ"-4 mainstations, will amplify 12 channels within a 5-116 MHz passband. This push-pull amplifier utilizes a pilot-control carrier at 115 MHz to operate the AGC. The AGC can be turned on or off for ease of operational set-up and maintenance. The TRA-108A trunk return amplifier plugs into connector chassis model SCL-2WD, SCD-2WDS and SCD-F-SS and SCL-F-SS. Each unit is shipped with a jumper board ST-RJB.

RETURN CARRIER GENERATORS

The return carrier generators used with Starline Series mainstations with installed AGC trunk return amplifiers include three models; RCPG-1-31.5, RCPG-1-115 and RCPG-2-48/180.

The return carrier generator produces a noise band centered about a specified frequency to serve as a reference for the AGC circuitry in the trunk return amplifiers. The noise band can be attenuated by a 3 dB output level control and by plug-in pads SXP-*. Each trunk cable branch that has one or more mainstations containing an automatic return amplifier requires a generator at the extremity of the cable. Model RCF-*N, return carrier filters are required in selected mainstations with automatic trunk return amplifiers.

MODEL RCPG-1-31.5 FOR SUBSPLIT SYSTEMS

The model RCPG-1-31.5 return carrier generator for subsplit Starline Series mainstations with automatic trunk return amplifiers, will produce a pilot signal centered at 31.5 MHz. This pilot signal serves as a reference for the AGC circuitry in the trunk return amplifier.

MODEL RCPG-1-115—FOR MIDSPLIT SYSTEMS

The RCPG-1-115 return carrier generator for midsplit Starline Series mainstations with automatic trunk return amplifiers, will produce a pilot signal centered at 115 MHz. This pilot signal serves as a reference for the AGC circuitry in the trunk return amplifier.

MODEL RCPG-2-48/180—FOR HIGH SPLIT MIDSPLIT SYSTEMS

The RCPG-2-48/180 return carrier generator used with Starline Series mainstations with automatic trunk return amplifiers, will produce two pilot signals; one at 48 MHz and another at 180 MHz.



RCF-31.5N

RETURN CARRIER FILTERS

The return carrier filters used in Starline "SJ" mainstations include two models: RCF-31.5N and RCF-115N.

These filters attenuate the return AGC pilot signal in selected mainstations to prevent a buildup of pilot levels on the return path to the headend.

Model RCF-*N filters are utilized at points in the return trunk signal path where two or more branches of the trunk combine. These filters are installed in the mainstation(s), with the AGC trunk return amplifier, model TRA-*A, closest to the combination point in each branch leaving one branch without the filter for passing the return carrier to operate the succeeding AGC return amplifiers.

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RETURN CARRIER FILTERS (cont'd)

The Model RCF-* return carrier filter installs in the manual trunk return compartment of connector chassis model SCD-2WDS, SCL-F-SS, SCL-F-MS, SCD-F-SS.

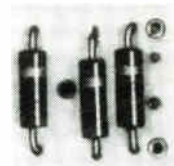
Specific functions are described below:

MODEL RCF-31.5N—FOR SUBSPLIT MAINSTATIONS

The Model RCF-31.5N return carrier filter for subsplit mainstation electronics, "SJ" Styles 2 and 4 will pass return trunk signals within a band of 5-30MHz while attenuating the return pilot carrier 3dB. The number of filters required for a system depends upon the trunk branching design of the specific system.

MODEL RCF-115N—FOR MIDSPLIT MAINSTATIONS

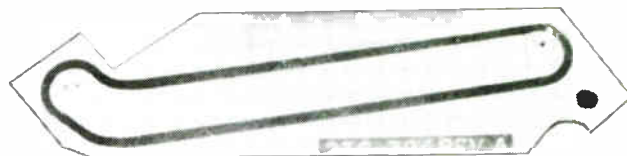
The Model RCF-115N return carrier filter for midsplit mainstation electronics, "SJ" Styles 2 and 4 will pass return trunk signals within a band of 5-108MHz, while attenuating the return pilot carrier 3dB. The number of filters required for a system depends on the trunk branching design for the specific system.



FRP-6

MODEL FRP-6—JUMPER BOARD FOR SUBSPLIT MAINSTATIONS

The model FRP-6 jumper board with 6dB attenuation for subsplit mainstations, "SJ" Style 5 with installed trunk return amplifier model TRA-30M, is required to attenuate signals to the trunk return amplifier. This jumper board plugs into model TRA-30M.



ST-RJB

MODEL ST-RJB—JUMPER BOARD FOR TWO-WAY MAINSTATIONS

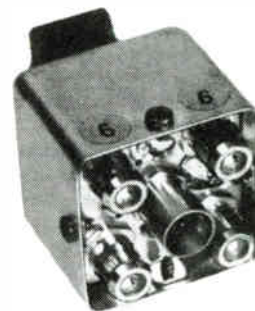
The ST-RJB jumper board for two-way Starline "SJ" mainstations is required when trunk return amplifiers, TRA-30A and TRA-108A, are installed. This jumper board, shipped with those trunk return amplifiers, is installed in connector chassis models SCD-F-SS, SCL-F-SS, SCL-F-MS, SCD-2WDS, SCL-2WD, SCD-2W, and SCL-2W.



FRB-108

MODEL FRB-108—JUMPER BOARD FOR SUBSPLIT AND MIDSPLIT MAINSTATION ELECTRONICS

The Model FRB-108 jumper board with SXP-* facility for subsplit and midsplit mainstation electronics, model "SJ" 5 Station with installed trunk return amplifier, model TRA-30M or TRM-110, is required to provide return path continuity and additional attenuation to the return trunk amplifier. This jumper board plugs into the return equalizer compartment of connector chassis SCD-2WFS, SCD-2WDS or SCD-2W. (Shipped with SXP-0 installed.)



FEEDERMAKERS FOR MAINSTATIONS

MODEL FM-*F

FM-*F feeder makers are rotatable. They provide a choice of which feederline ports will be active.

The two-way feeder makers used in all Starline "SJ" Series mainstations include four models. These plug-in feeder makers create 1 to 4 feederline outputs at any distribution amplifier location equipped with connector chassis model SCD-2WD, SCD-F-SS and SCD-F-MS.

Model	FM 1F	FM 2F		FM 3F		FM 4F	
Pass Band	5-450 MHz						
Insertion Loss	5-450 MHz 0.3 dB max	5-300 3.5 dB + 0.5 dB	300-450 3.7 dB + 0.5 dB	5-300 6.7 dB + 0.5 dB	300-450 7.4 + 0.5 dB 3.7 + 0.5 dB	5-300 6.7 dB + 0.5 dB	300-450 7.0 + 0.5 dB
Isolation		20 dB	20 dB	20 dB	20 dB	20 dB	20 dB
Terminal Match	20 dB	18 dB	18 dB	18 dB	18 dB	18 dB	18 dB

MODEL ST-RJC—JUMPER CABLE FOR TWO-WAY MAINSTATIONS

The ST-RJC coaxial jumper cable for two-way Starline "SJ" mainstations is required when trunk return amplifiers, TRA-30M and TRM-110, are installed. This coaxial jumper, shipped with those trunk return amplifiers, is installed in connector chassis models SCD-F-SS, SCL-F-SS, SCL-F-MS, SCD-2WDS, SCL-2WD, SCD-2W, and SCL-2W.



ST-RJC

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MODEL SXP-T — FOR SXP- PADS

This tool makes it a simple task to install or remove SXP-pads.



PLUG-IN PADS FOR MAINSTATIONS AND LINE EXTENDERS

MODEL SXP — FOR STARLINE "SJ" AND "SLR" SERIES

This series of fixed value plug-in pads provides additional flat attenuation within a passband of 5-450MHz. These pads plug into model SCD-2WD, SCL-F-SS and SCL-F-MS, SCD-F-SS, SEP-30S, SEP-30C3, SEP-108 - series, LPF-30, DF-30F-UH, FRB-108 and SLR-series. Installation facilitated by using an SXP-T tool.

MODEL JXP — FOR STARLINE "JN", "SJ" AND "JLE" MODULES

This series of fixed value plug-in pads provides additional flat attenuation within a passband of 5-450MHz. These pads plug into models SJBM and SJDL.



CB-5

CIRCUIT BREAKERS FOR MAINSTATIONS

MODEL CB-5 — AMP CIRCUIT BREAKER

The model CB-5 circuit breaker used in the SCD-2WD, SCD-2WDS and SCD-F-SS connector chassis is required for each operating feederline that is powered. This circuit breaker plugs into the socket provided on the SCD-2WD, SCD-2WDS and SCD-F-SS connector chassis.



TF-108F



DF-30F



DF-30F-UH

FILTERS FOR MAINSTATIONS

MODEL TF-30F — FOR SUBSPLIT MAINSTATIONS

The model TF-30F trunk filter, for sub-split mainstations, will pass forward trunk signals within a band of 52-450MHz and pass return trunk signals within a band of 5-32MHz. Model TF-30F trunk filters plug into the input and output filter sections of connector chassis model SCD-2WD, SCL-2WD, SCD-2WDS. Two are required for each station; except for "SJ" Style 5. The SCD-F-SS and SCL-F-SS connector chassis are shipped with two of these installed.

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MODEL TF-108F — FOR MIDSPLIT MAINSTATIONS

The model TF-108F trunk filter, for mid-split mainstations, will pass forward trunk signals within a band of 168-450MHz and pass return trunk signals within a band of 5-116MHz. Model TF-108F trunk filters plug into the input and output filter sections of connector chassis model SCD-2WD, SCD-2WDS and SCL-2WD. Two are required for each station. The SCL-F-MS is shipped with two of these filters installed.

MODEL DF-30F — FOR TWO-WAY DISTRIBUTION MAINSTATIONS

The model DF-30F distribution filter for two-way mainstations will pass forward signals within a band of 52-450MHz and return feeder signals within a band of 5-32MHz. The DF-30F two-way distribution filter plugs into the bottom of connector chassis model SCD-2WD and SCD-2WDS. The SCD-F-SS is shipped with one of these filters installed.

MODEL DF-30F-UH — FOR DUAL CABLE CROSSOVER APPLICATIONS

The model DF-30F-UH distribution filter in a Starline utility housing is used in a dual trunk single feeder mid-split system at crossover between mainstation.



MODEL SJSA-145



MODEL SSA-145

SURGE ARRESTORS

FOR SJSW-30 OR SJSW-60 POWER PACKS, MODEL SJSA-145

Replacement surge arrester for SJSW-() increases protection to 20,000 amp surge discharge currents (80 amps for 1/2 wave 60Hz) without interruption of service.

FOR STARLINE "SJ" MAINSTATIONS WITHOUT SJSW-() POWER SUPPLY

Provides same excellent surge protection as the SJSA-145. The SSA-145 is mounted in the SCD-2W, SCD-2WDS, SCD-2W-FS and SCL-2W connector chassis.

FOR 30 AND 60V JLE LINE EXTENDERS, MODEL A0-36

JLE housings provide receptacles at main input and output for optional insertion of A0-36—useable for protection against line voltage surges in both 30V and 60V systems. Supplied 2 per package.

FOR 60V STARLINE TWENTY MAINSTATIONS, MODEL A0-6

Model A0-6 surge arrester for 60V stations protects the electronics against surge voltages and AC transients on trunk and feeder-lines. This surge arrester fits into the seized center conductor locations in the Starline "SJ" housing and is recommended to be used on all feeder ports.

FOR 30V MAINSTATIONS, MODEL A0-3

Model A0-3 surge arrester is similar in function and location to model A0-6, except it is designed for 30V stations.

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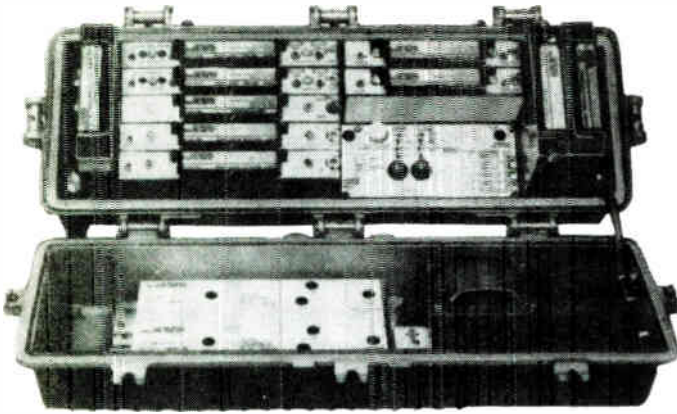
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STARLINE X SERIES AMPLIFIERS

The Starline X Series is the only mainstation amplifier that cost effectively meets today's modern system needs and provides future growth capabilities. The Starline X Series has been designed to utilize all amplifier technologies and provide more basic features related to reliability, installation ease, and maintenance. In addition, the X-Series offers more advanced features than any other mainstation amplifier ever available. The Starline X allows you to optimize the tradeoffs between system performance, desired system features, and cost, so that you can customize your system to meet your objectives of cost and performance optimization.

FEATURES

Reliability

- Redundancy options
 - Power supply
 - Forward trunk amplifier
 - Return trunk amplifier
 - Bridger amplifier
- Complete station bypass
- Return feeder ingress control
- Return trunk ingress control
- Advanced status monitoring (System Commander)
- Superior heat sinking
- Heavy duty surge protector (80 ampere follow-on current)

Large system size

- Power doubled X-1500 increases cascadeability

High channel capacity

- 80 channel, 550 MHz
- 60 channel, 450 MHz
- Dual cable, single housing X-2000

Institutional systems

- High split forward 234-450 MHz and return 5-174 MHz
- Trunk and feeder capability
- Dual pilot return amplifier
- Capable of uninterruptible data communications path
- Unequaled system reliability (see above)

Ease of installation and reduced maintenance

- Right angle housing entry ports
- 30 dB directional coupler test points
- Modular design
- Double hinged housing
- Redundancy minimizes emergency maintenance
- Replaceable surge protectors
- Advanced status monitoring (System Commander)

Future growth capabilities

- Start with the basics, expand to advanced capabilities, as required, by simply plugging in the appropriate modules
- Power doubling modules
- Feedforward modules
- Return data traffic controller

STARLINE X SERIES HOUSING AND POWER SUPPLY COMBINATIONS

HOUSING

Installation Features

- Right angle entry ports
- Double-hinged cover
- Bolt-on rotatable brackets
- Large, well spaced ports
- Direct AC powering port
- Test point accessible through housing
- Visual inspection of center conductor seizure

Reliability Features

- Made from corrosion resistant 360 aluminum to insure long life
- 120 dB of port-to-port isolation
- Separate R.F.I. and weather gasket
- RF port surge arrester facilities
- Large heat sink areas
- Large ground contact areas for chassis, insures extended system stability
- Large fins for maximum heat dissipation

The all new Starline X-Series housing was designed with the cable system operator in mind. Extreme care was taken to produce a housing that would save time and money when being installed and, at the same time, insure an extended lifetime of high reliability.

In addition to the right angle entry ports, which simplify pedestal mounting, the double-hinged housing, bolt-on surface mounting brackets, well spaced ports and visual inspection of center conductor seizure are features that were specifically designed to ease equipment installation.

Long-term reliability is insured by built-in features like the large heat dissipating fins, expanded heat sink surface areas, separate R.F.I. and weather gaskets, corrosion resistant 360 aluminum alloy and improved ground contact areas for chassis-housing interface.

POWER SUPPLY COMBINATIONS

FEATURES

- Redundant DC power packs provide the utmost in reliability
- High efficiency switching circuit cuts power bills
- Status indicator lights on XNPD-60R
- Status monitoring available to report power pack status to headend

The Starline X Series power supply was designed with reliability in mind. This was achieved in two ways: by designing a rugged power supply and then adding a back-up power supply in case the primary supply should fail.

The standard Starline X Series power supply, Model XNPA-60, consists of a heavy duty transformer, a DC regulator and fused AC inputs.

The redundant Starline X Series power supply, Model XNPA-60R consists of the same heavy duty transformer and DC regulator plus an additional DC regulator module. The redundant DC regulator module contains a relay that switches to the back-up supply when failure of the primary supply is sensed. The primary module has a pilot light to indicate when the back-up supply is operating. When used in conjunction with the Starline Status Monitor, the operating status of the D.C. supply is reported back to the headend. The XNPA-60R, therefore, provides uninterrupted service, while indicating a failure which can be scheduled for maintenance at a later time.

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Starline X-1000—450 MHz System Performance Specifications

Station Description		Notes	AGC/ASC Tr. Amp. with Br.	Man. Tr. Amp. with Br.	AGC/ASC Tr. Amp.	Man. Tr. Amp.	Intermediate Terminating Bridger
Passband (Forward)	MHz	A	50-450 MHz	50-450 MHz	50-450 MHz	50-450 MHz	50-450 MHz
Response Flatness:							
— Trunk Amplifier	± dB	B	0.4	0.4	0.4	0.4	—
— Bridger or Distribution Amplifier			0.75	0.75	—	—	0.75
Minimum Full Gain:							
— Trunk Amplifier	dB	C	26	26	26	26	—
— Bridger or Distribution Amplifier			45	45	—	—	45
Gain Control Range:							
— Trunk Amplifier	dB	D	0-8	0-8	0-8	0-8	—
— Bridger or Distribution Amplifier			0-9	0-9	—	—	0-9
Slope Control Range @ 450 MHz:							
— Trunk Amplifier	dB		2-8	2-8	2-8	2-8	—
— Bridger or Distribution Amplifier			2-8	2-8	—	—	3-9
Control Accuracy	± dB	E, F	0.5	0.75	0.5	0.75	0.75
Control Pilots							
— ASC: Tuned to Channel			4 I	—	4 I	—	—
— Tuneable to Channels			2 or 3	—	2 or 3	—	—
— Operating Range Min/Max	dB		21/29	—	21/29	—	—
— AGC: Tuned to Channel			36 I	—	36 I	—	—
— Tuneable to Channels			35 I or 37 I	—	35 I or 37 I	—	—
— Operating Range Min/Max	dB		27/35	—	27/35	—	—
Return Loss, at 75 ohm Impedance	dB		16	16	16	16	16
Noise Figure	dB	G	7.5	7.5	7.5	7.5	7.5
Rec. Oper. Levels, w/Equalizers:	dBmV						
— Trunk In			9	9	9	9	9
— Trunk Out			25/31	25/31	25/31	25/31	—
— Bridger or Dist. Amp Out			39/47	39/47	—	—	39/47
Distortion Char. at Rec. Oper. Level (60 Channels)							
— Composite Triple Beat	—dB	H, I					
: Trunk			87	89	89	90	—
: Bridger or Distribution Amplifier			57	57	—	—	57
— Cross Modulation	—dB	H					
: Trunk			85	87	87	88	—
: Bridger or Distribution Amplifier			57	57	—	—	57
— Second Order	—dB	H, I, J					
: Trunk			85	85.5	85.5	86	—
: Bridger or Distribution Amplifier			69	69	—	—	69
Hum Modulation, by 60 Hz Line	—dB		70	70	70	70	70
Chroma Delay	n sec						
: CH-2			6	6	6	6	
: CH-3			4	4	4	4	
: T-7			8	8	8	8	
: T-10			6	6	6	6	
: Other Channels			2	2	2	2	
Station Powering:							
— At 60 Volts A.C. Input	Watts		30.3	27.9	17.7	15.3	18.5
	Amperes		0.60	0.56	0.38	0.33	0.39
— Operating Range	Vrms		44-60	44-60	44-60	44-60	44-60
— A.C. Bypass Capability, Maximum							
: Trunk, each Port	Amperes		10	10	10	10	10
: Feeder, each Port	Amperes		5	5	—	—	5

NOTES:

- A. For return amplifier specifications refer to the appropriate return amplifier.
- B. Single station measures at recommended operating gain, with slope compensated by cable. Trunk system flatness is N/10 + 1 typical at balance temperature.
- C. Measured from trunk input to trunk output or single bridger output at 450 MHz without equalizer.
- D. Range is referenced from minimum full gain.
- E. AGC/ASC trunk amplifier output level accuracy, at pilots, for -3 dB, +4 dB of input level change at 50 MHz and 450 MHz.
- F. Manual trunk amplifier output level accuracy, at 450 MHz, from ambient over the range of -40°C to +60°C for 18 dB cable spans.
- G. Measured in station without equalizer at maximum gain, flat slope.
- H. Standard channels, flat, per NCTA test methods, or sloped where indicated by dual levels.
- I. Measured with C.W. signals and spectrum analyzer.
- J. Any combination of channels 2, 20 (g), and 13.

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Starline X-1500—550 MHz System Performance Specifications

Station Description		Notes	AGC/ASC Tr. Amp. with Br.	Man. Tr. Amp. with Br.	AGC/ASC Tr. Amp.	Man. Tr. Amp.
Passband (Forward)	MHz	A	50-550	50-550	50-550	50-550
Response Flatness:						
— Trunk Amplifier	± dB	B	0.3	3	0.3	0.3
— Bridger or Distribution Amplifier			0.60	0.60	—	—
Minimum Full Gain:						
— Trunk Amplifier	dB	C	25	25	25	25
— Bridger or Distribution Amplifier			41	41	—	—
Gain Control Range:						
— Trunk Amplifier	dB	D	0-8	0-8	0-8	0-8
— Bridger or Distribution Amplifier			0-6	0-6	—	—
Slope Control Range @ 550 MHz:						
— Trunk Amplifier	dB		2-8	2-8	2-8	2-8
— Bridger or Distribution Amplifier			2-8	2-8	—	—
Control Accuracy	± dB		0.5	0.75	0.5	0.75
Control Pilots		E, F				
— ASC: Tuned to Channel			4 I		4 I	
— Tuneable to Channels			2 or 3		2 or 3	
— Operating Range Min/Max	dB		21/29		21/29	
— AGC: Tuned to Channel			62 I		62 I	
— Tuneable to Channels			N/A		N/A	
— Operating Range Min/Max	dB		27/35		27/35	
Return Loss, at 75 ohm Impedance	dB		16	16	16	16
Noise Figure	dB	G	9	9	9	9
Rec. Oper. Levels, w/Equalizers:	dBmV					
— Trunk In			10	10	10	10
— Trunk Out			25/31	25/31	25/31	25/31
— Bridger or Dist. Amp Out			35/45	35/45	—	—
Distortion Char. at Rec. Oper. Level (77 Channels)						
— Composite Triple Beat	— dB					
: Trunk		H, I	87	89	89	90
: Bridger			64	64	—	—
— Cross Modulation	— dB					
: Trunk		H	89	91	91	92
: Bridger			66	66	—	—
— Second Order	— dB					
: Trunk		H, I, J	86	86.5	86.5	87
: Bridger or Distribution Amplifier			73	73	—	—
Hum Modulation, by 60 Hz Line	— dB		70	70	70	70
Chroma Delay	n sec					
: CH-2			6	6	6	6
: CH-3			4	4	4	4
: T-7			8	8	8	8
: T-10			6	6	6	6
: Other Channels			2	2	2	2
Station Powering:						
— At 60 Volts A.C. Input	Watts		43.8	41.8	24.5	22.4
	Amperes		0.84	0.80	0.50	0.45
— Operating Range	Vrms		44-60	44-60	44-60	44-60
— A.C. Bypass Capability, Maximum						
: Trunk, each Port	Amperes		10	10	10	10
: Feeder, each Port	Amperes		5	5	—	—

- NOTES:**
- For return amplifier specifications refer to the appropriate return amplifier.
 - Single station measured at recommended operating gain, with slope compensated by cable. Trunk system flatness is $N/10 + 1$ typical at balance temperature.
 - Measured from trunk input to trunk output or single bridger output at 550 MHz without equalizer.
 - Range is referenced from minimum full gain.
 - AGC/ASC trunk amplifier output level accuracy, at pilots, for -3 dB, $+4$ dB of input level change at 50 MHz and 550 MHz.
 - Manual trunk amplifier output level accuracy, at 550 MHz, from ambient over the range of -40°C to $+60^{\circ}\text{C}$ for 18 dB cable spans.
 - Measured in station without equalizer at maximum gain, flat slope.
 - Standard channels, flat, per NCTA test methods, or sloped where indicated by dual levels.
 - Measured with C.W. signals and spectrum analyzer.
 - Any combination of channels 2, 20 (g), and 13.

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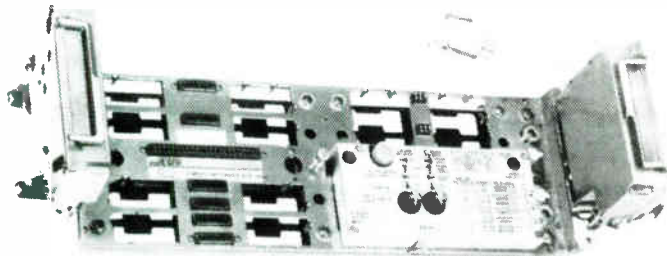
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DISTRIBUTION EQUIPMENT



SINGLE CABLE CONNECTOR CHASSIS

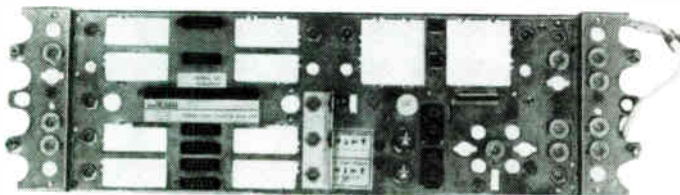
STARLINE X-SERIES SINGLE CABLE CONNECTOR CHASSIS

FEATURES

- Tested to 600 MHz
- 30 dB directional coupler test points insure accurate measurements
- MG connectors insure high reliability and response consistency
- Dedicated trunk input and output filters available in subsplit and highsplit
- Complete station bypass (optional)
- Heavy duty 80 amp. follow on surge protection
- Separate trunk and feeder power disposition switches
- Built-in Feedermaker for 1 to 3 outputs
- Standard chassis shipped with thermal breakers on all feeder lines

Jerrold's new Starline X single cable chassis offers the latest in state-of-the-art amplifier design. The dedicated input and output filters are tested for 600 MHz operation (subsplit: 5-33/50-600 and highsplit: 5-174/234-600 MHz available). 30 dB directional coupler test points provide accurate readings regardless of system passive location, and the new feedermaker system is shipped with all the components required for 1, 2 or 3 outputs (XFM-3 can be ordered to configure a 4 output station).

The new Starline X-Series single cable chassis can be ordered with Jerrold's exclusive complete station bypass feature. This valuable, optional feature provides the ultimate in system reliability by insuring an uninterrupted path for video and data signals.



DUAL CABLE CONNECTOR CHASSIS

STARLINE X-SERIES DUAL CABLE CONNECTOR CHASSIS AND INPUT/OUTPUT FILTERS

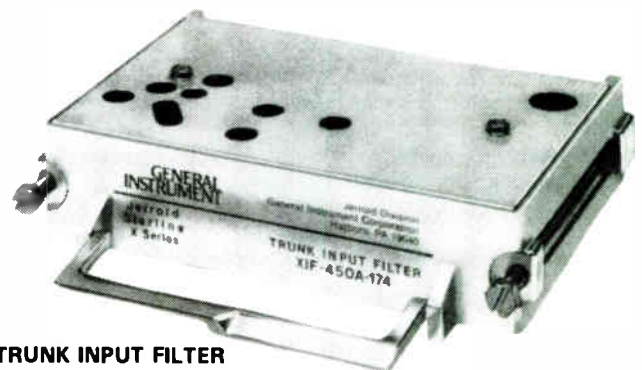
CHASSIS FEATURES

- All modules plug-in
- Totally passive for reliability
- Standard heavy duty surge protector

- Return amplifiers may be installed in the forward direction for ease of system alignment
- Separate trunk and feeder power disposition switches
- Fuse holders for feeder lines
- MG connectors insure high reliability

The dual cable connector chassis of the Starline "X" Series Mainstation provides plug-in facilities for all modules. The connector chassis is highly reliable since it contains only passive electrical components; wiring interconnections, holders for feeder fuses, and power direction plugs. All chassis types provide wiring interconnections for the optional status monitor module.

The Starline X-Series dual cable chassis provides the ultimate in flexibility for system design.



TRUNK INPUT FILTER

DUAL CABLE CONNECTOR CHASSIS AND INPUT/OUTPUT FILTERS

INPUT/OUTPUT FILTER FEATURES

- AC filter circuit
- Diplex filters for subsplit, midsplit and highsplit return
- Plug-in variable equalizers for slope adjustment
- Plug-in pads to attenuate level
- Plug-in notch filters for return carrier channels

The input and output modules extract the AC voltage from the trunk input, control the passband of each trunk, and accept plug-in attenuators. The output module includes a directional coupler which provides the input to the bridger amplifier.

The "A" cable usually carries both RF signals and AC to power the mainstation. When AC is entering the mainstation, an AC filter circuit in the input or output module separates the AC voltage from the RF signals. When the AC is leaving the mainstream, the outgoing AC is recombined with the trunk RF signals. Both the input and output modules contain an identical AC filter circuit.

Passband control is provided by diplex filters. Jumper modules without filters allow the full passband through. Modules with filters split the signals for two-way transmission. Subsplit, midsplit and highsplit modules are available.

The XIF input filter provides facilities for plug-in equalizers and pads.

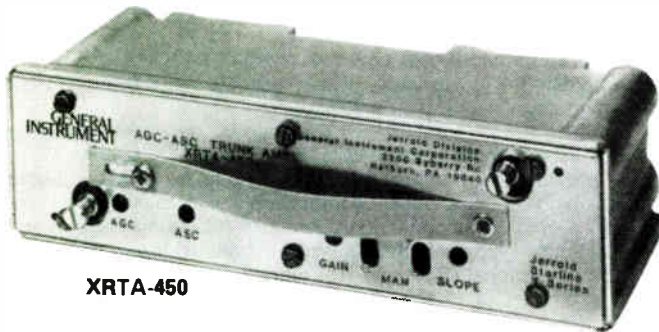
The XOF output filter module has facilities for plug-in return carrier filters which are used to attenuate the return carrier when two return branches combine into one.

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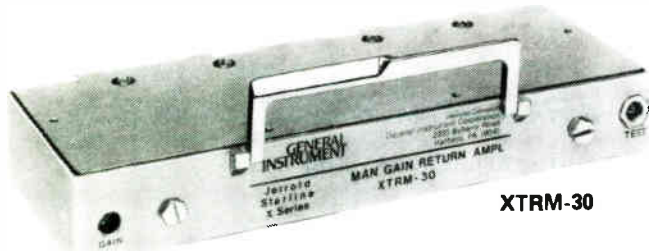
XRTA-450

STARLINE X-SERIES POWER DOUBLING AMPLIFIER MODULES (450 and 550 MHz)

Jerrold power doubling amplifier modules are designed with parallel output integrated circuit gain blocks which provide a 5 dB improvement in distortion performance in addition to increased reliability.

The 550 MHz amplifier modules provide the industry's widest bandwidth with performance characteristics comparable to 450 MHz products.

All power doubling amplifier modules offer superior heat sinking in the newly designed double-width modules.



XTRM-30

STARLINE X-SERIES RETURN AMPLIFIERS

Jerrold offers the widest selection of return amplifiers in the CATV industry. Amplifiers for subsplit, midsplit and highsplit upstream systems are available in both automatic and manual models.

The XTRA-30 has automatic gain control and thermistor adjusted slope control for subsplit systems (5-33 MHz). The XTRM-33 is the manual amplifier (manual gain control and thermistor adjusted slope control) for subsplit systems.

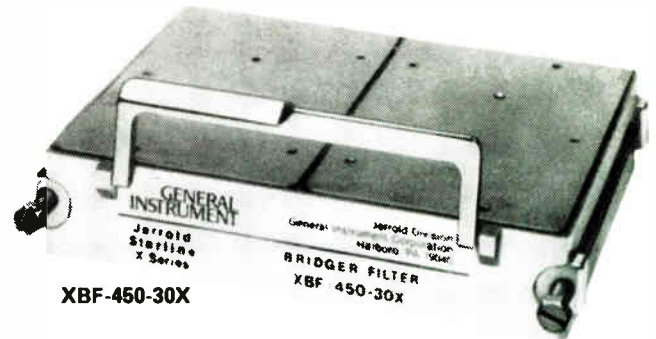
Midsplit systems (5-110 MHz) use the XTRA-110 and XTRM-110 return amplifiers. The XTRA-110 has automatic slope control and manual gain control and the XTRM-110, manual gain and thermistor-adjusted slope control.

Jerrold offers two different automatic slope and gain control return amplifiers for highsplit (5-174 MHz) systems. The XTRA-174A is used with X-1000 and X-1500 highsplit mainstations, and has control pilots at 51 and 176 MHz. The XTRA-174 has control pilots at 48 and 180 MHz for use with X-2000 mainstations. The XTRM-174 is the manual return amplifier for all highsplit applications.

All return amplifiers can also be ordered with fail-safe (FS) or fail-safe and bypass (TFS) options. The fail-safe option provides a bypass around the return amplifier, in case of failure or loss of voltage. The "TFS" option offers bypass in addition to return trunk shut-off.

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XBF-450-30X

STARLINE X-SERIES BRIDGER FILTER MODULES

The bridger filter controls the directional flow of signals and contains diode switches which control the insertion into the return trunk of signals from the feeder lines. The diode switches are controlled by the status monitor module.

The bridger filter receives forward signals from the bridger amplifier and directs them to the feederline. It receives return signals from the feederline and directs them through a return feeder disconnect switch and combines them with the return trunk.

The XBF-450-30X, XBF-30X and XBF-174X Bridger Filters have a three position switch which can open, close or route the feeder return signals through a 6 dB attenuator. Use of the 6 dB attenuated path offers filtering of ingress without data interruption.

The XBF-450-30W has a single switch which controls the entire 5 to 32 MHz bandwidth. The XBF-450-30W can be used in both subsplit and X-2000 midsplit applications. The XBF-450-30S provides two return signal paths, 5-15 MHz for data, and 18-30 MHz for two video channels, and each return path has an independent control switch. The XBF-450-30S can be used in subsplit system applications only.

Both the XBF-450-30X and XBF-450-30W couple signals generated by the status monitor into the return path. They also couple return signals from the trunk with the return signals from the feeder. For trunk only, X-2000 status monitoring applications, the signals generated by the status monitor are coupled into the return trunk by using the bridger coupler, Model XBC-12, instead of a bridge filter.



RETURN CARRIER FILTER

STARLINE X-SERIES RETURN CARRIER FILTERS

The Return Carrier Filters used in the Starline X and JN Series mainstations are available for three system architectures: Subsplit, Midsplit and Highsplit. XCF-* (used in X-2000 applications) and XRPF-* (used in X-1000 or X-1500 applications) are used to maintain the return pilot carrier at the desired signal level in the first mainstation after combining points in the return system, where the two branches utilize automatically controlled return amplifiers. If only one branch utilizes automatically controlled return amplifiers, an XCF-* or XRPF-* are not required. The return carrier filter plugs into the output filter module of the Starline X Series mainstation.

To closely estimate the quantity required, determine the number of return pilot generators used in a particular trunk design and subtract one from that quantity.

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STARLINE X-SERIES FORWARD AND RETURN EQUALIZERS

The Starline X-Series of fixed and variable equalizers are designed to compensate for slope variations due to cable attenuation at the input of a trunk amplifier. Both forward and return equalizers plug into the input filter of the amplifier station.

SPECIFICATIONS: XFE Series Fixed Forward Trunk Equalizers for Tilt Trunk Operation

PASSBAND	EQUALIZATION							
	0	3	6	9	12	15	18	21
52 400 MHz Model	XFE 0	XFE 404 3	XFE 404 6	XFE 404 9	XFE 404 12	XFE 404 15	XFE 404 18	XFE 404 21
Loss	0.5	1.5	1.2	1.8	2.0	2.0	2.0	2.0
Fullness	+0.5	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15
Match	18	18	18	18	18	18	18	18
52 450 MHz Model	XFE 0	XFE 454 3	XFE 454 6	XFE 454 9	XFE 454 12	XFE 454 15	XFE 454 18	XFE 454 21
Loss	0.5	1.5	1.2	1.8	2.0	2.0	2.0	2.0
Fullness	+0.5	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15
Match	18	18	18	18	18	18	18	18
52 550 MHz Model	XFE 0	XFE 554 3	XFE 554 6	XFE 554 9	XFE 554 12	XFE 554 15	XFE 554 18	XFE 554 21
Loss	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Fullness	+0.5	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15	+0.15
Match	18	18	18	18	18	18	18	18

SPECIFICATIONS: XE Series Variable Forward Trunk Equalizers for Flat Trunk Operation

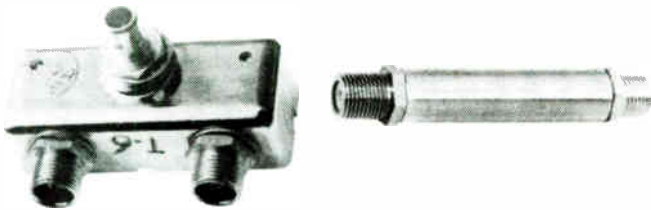
PASSBAND	Model	Range	Loss	Fullness	Match	EQUALIZATION				
						Tap Lag	Low	Medium	High	Super Trunk
40 330 MHz	XE 334T	5.11	2.0	+0.15	15	XE 334L	XE 334M	XE 334H	XE 334S	NOT AVAILABLE
						10.15	13.19	17.21	21.26	
						1.2	1.2	1.2	1.6	
						+0.15	+0.15	+0.15	+0.15	
						18	18	18	18	
52 330 MHz	USE XE 334T	5.11	2.0	+0.15	15	XE 335L	XE 335M	XE 335H	NOT AVAILABLE	
						10.15	13.19	17.21	21.26	
						1.2	1.2	1.2	1.6	
						+0.15	+0.15	+0.15	+0.15	
						18	18	18	18	
40 400 MHz	XE 404T	5.11	2.0	+0.15	16	XE 404L	XE 404M	XE 404H	XE 404ST	
						10.16	13.19	17.22	21.26	
						1.2	1.2	1.6	1.6	
						+0.15	+0.15	+0.2	+0.2	
						18	18	18	18	
52 400 MHz	USE XE 404T	5.11	2.0	+0.15	16	XE 405L	XE 405M	XE 405H	XE 405ST	
						10.16	13.19	17.22	21.26	
						1.2	1.2	1.6	1.6	
						+0.15	+0.15	+0.2	+0.2	
						18	18	18	18	
40 450 MHz	XE 454T	5.11	2.0	+0.15	16	XE 454L	XE 454M	XE 454H	XE 454ST	
						10.16	13.19	17.22	21.26	
						1.2	1.2	2.4	2.4	
						+0.15	+0.15	+0.2	+0.2	
						18	18	18	18	
52 450 MHz	USE XE 454T	5.11	2.0	+0.15	16	XE 455L	XE 455M	XE 455H	XE 455ST	
						10.16	13.19	17.22	21.26	
						1.2	1.2	2.4	2.4	
						+0.15	+0.15	+0.2	+0.2	
						18	18	18	18	

SPECIFICATIONS: Return Equalizers

APPLICATION	HIGH SPLIT		CONVENTIONAL MIDSPLIT		SUBSPLIT	
	Model	Passband	Model	Passband	Model	Passband
Equalizer	XRE 174L	5.174 MHz	XRE 174M	5.174 MHz	XRE 110L	5.110 MHz
Range Relative @ 450/400 MHz	11.5 20dB	18.5 26dB	11.5 20dB	18.5 26dB	11.5 26dB	11.5 26dB
To Forward @ 330 MHz	10.5 19dB	17.24dB	10.5 19dB	17.24dB	10.5 24dB	10.23dB
Amplifier @ 300 MHz	10.18dB	16.32dB	10.18dB	16.23dB	10.23dB	10.23dB
Spacing	1.6dB	1.6dB	1.6dB	1.6dB	1.20B	1.26B
Insertion Loss (Min)	+0.1dB	+0.1dB	+0.1dB	+0.1dB	+0.1dB	+0.1dB
Response Fullness	18dB	18dB	18dB	18dB	18dB	18dB
Terminal Match (Min)	75					

NOTE: Use the XRE-30B instead of the XRE-30 in the XIF-450 A-B Filter Module
N/A = Not applicable

STARLINE X-SERIES ACCESSORIES



Redundancy Splitter

Redundancy Splitter, Model XRS-SPL, is used on the input and output of amplifier modules when operating in the redundant mode (not required when using XRTA-* or XRBA-* modules). The XRS-SPL is bolted into the Starline X Connector chassis.

Test Probe Adaptor

MODEL XTP-30F: Female F to female MG test probe adaptor with 30 dB attenuation built-in. Test probe to connect field strength meter to test points on Starline X-2000 & JN Series Mainstations.

MODEL XTP-0F: Female F to female MG test probe adaptor with 0 dB of attenuation. Test probe to connect field strength meter to test points of Starline X Single Cable Chassis mainstations.

STARLINE X-SERIES FEEDERMAKERS SINGLE CABLE CHASSIS (X-1000 or X-1500 Mainstations)

Jerrold's new single cable connector chassis is designed with a revolutionary new feeder maker system. Simplicity of use and low cost are the key factors of the product's design. All mainstation electronic packages are configured with a three (3) output feeder maker (two forward and one back). From this configuration, through the various placements of the jumper (XFM-0) and splitter (XFM-3), a total of six (6) different feeder maker arrangements can be constructed without having to order any additional feeder maker components. Only when a four (4) output feeder maker is required (typically less than 20% of the overall requirements) is it necessary to order additional components. In the case of a four (4) output feeder maker, a splitter (XFM-3) must be ordered in addition to the mainstation electronic package.

The terminal match, at 75 ohms impedance, at the input to the feeder maker circuitry or any utilized output port is 18 dB or better. The minimum isolation between any two output ports is 21 dB or better.



DUAL CABLE CHASSIS (X-2000 Mainstation)

XFM feeder makers receive the output of the bridger or distribution amplifier and create from one to four feeder lines. The feeder maker also inserts AC power on the lines.

The feeder maker is symmetrical and plugs into its socket in any of four positions. The position of the feeder maker governs which feeder ports will receive the output signals.

Each feeder line has a thermal circuit breaker which limits the AC current to 5 amperes. The breaker resets automatically.

XFM Feeder makers can be used as JFM-* replacements for JN Series mainstations.

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STARLINE "JLE" SERIES LINE EXTENDERS

TWO WAY MODELS

Line Extender Model JLE-7-†-2W
Mini-Bridger Model JLE-6-†-2W
Mini-Bridger Model JLE-5-6P-2W

FEATURES

- Low noise figure
- High output capability
- Very low power consumption
- Reliable operation during over voltage conditions
- Current limiting circuitry protects the power supply
- DC over voltage sensing protects the amplifier module
- Interchangeable accessories and modules

The JLE-7 and JLE-6 utilize quad technology. The JLE-7 is intended for use as a typical feeder line extender, and the JLE-6 is ideally suited for short haul minibridger applications or for 'stretched feeder' situations. Both the JLE-7 and JLE-6 have increased gain for more economical system design.

The JLE-5 station has very high gain (48dB) making it exceptionally suitable for use as a very economical trunk-terminating bridging amplifier in 300MHz or lower bandwidth systems. It can be the source of a very long feeder line before a conventional line extender is needed or, through an external splitter of the SSP-* type, several feeder lines can be established.

All three models are characterized by high output capability, well-filtered 2-way circuitry, and 60 or 30 volt AC operation capability via a slide switch factory-set for 60 V. This switch together with the LOCAL/REMOTE switch allows application of any one of four AC input ranges as specified. Bypass circuitry for up to 5 amperes rms together with a circuit breaker Model CBJ-5, factory-inserted in the "5" model, optional for the "6" and "7" models, allows powering of additional line extenders. The power supply is protected by current-limiting circuitry and the RF module by an over-voltage sensing circuit. A 0.75 fuse gives protection against high current drain. Additional protection against line voltage surges is provided by insertion of surge arrestor Models AO-36 in the input of the line extender.

Optional, high or low gain sub-channel amplifiers Models JRA-30H and JRA-30L are available and can be plugged into the main module in either direction.

The amplifier housing is designed for maximum heat dissipation, has a woven wire gasket between body and lid for efficient ground continuity and RF shielding, and a silicone rubber gasket for weather protection. Two clamp and bolt assemblies are provided on the housing for strand-mounting and additional tapped holes permit the installation of auxiliary brackets for surface mounting. The input and output ports have extrusions for the secure interfacing of cable connectors with heat-shrunk tubing or sealing tape. The ports are protected by factory-inserted plastic cap plugs, to be discarded when installing the cable connectors. The input and output terminal platforms have special receptacles for surge arrestors. R.F. input and output test fittings, accessible through plug-sealed ports in the housing cover, and accept Jerrold standard test adaptor Model SPD-30F for signal measurements without having to open the housing. O-rings on the test port plugs prevent ingress of moisture and dirt. A station data card is provided in the housing cover for the recording of signal parameters measured and optional accessories installed.

The amplifier module can be plugged into the housing in either direction as required by signal flow and hence provides easy access and maintenance from the street side, away from private property. Module covers have access holes for the gain and slope controls, the Local/Remote slide switch, B+ and Rectifier Test points, and the two RF test terminals. Thru-holes in the module allow closing of terminal screws on the center conductors of the input and output cables, without having to remove the module.

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System Performance Specifications: JLE Line Extenders—Operating to 450 MHz

MODEL	JLE-6-450-2W	JLE-7-450-2W
PASSBANDS	52-450 MHz 5-32 MHz	
RESPONSE FLATNESS	±0.75 dB, all Models.	
MIN. FULL GAIN, at 450 MHz with 9 dB slope; see Note 2.	41 dB	33 dB
TYPICAL OPERATING GAIN, see Note 3.	37 dB	29 dB
MANUAL GAIN CONTROL RANGE (JXP-O is factory-inserted.)	6 dB min., all Models additional gain reduction by optional Models JXP-*	
MANUAL SLOPE CONTROL RANGE	0 to 9 dB referenced to 450 MHz additional compensation for attenuation vs. frequency by optional equalizer Models SEE-*, and vs. temperature by optional compensator Models CTF-*	
NOISE FIGURE, with JXP-O and without equalizer, at 450 MHz Min. Full Gain Referenced to Highest Channel.	10 dB Ref. to Ch. 61	9 dB Ref. to Ch. 61
DISTORTION CHARACTERISTICS with 9 dB slope (see Note 4) without equalizer, with typical output level of: 2nd Order Beats, Chs. 2, 20 (G), 13 Composite Triple Beat, for 60 chs.	47 dBmV 72 dB 59 dB	47 dBmV 72 dB 59 dB
MAX. CHROMA DELAY	Ch. 2: 7ns; Ch. 3: 4ns; Ch. 4: 2ns; all other forward channels less than 1ns.	
	Return Ch. T7 and T8: 4ns; Ch. T9: 7.5ns; Ch. T10: 15ns.	
HUM MODULATION, by 60 Hz source	60 dB or better, all Models	
OPERATING AMBIENT TEMPERATURE RANGE	-40° to +60°C, all Models	
TERMINAL MATCH, at 75 impedance, input and output	16 dB min. return loss	
A.C. INPUT RANGE, switchable by slide switches to 30 or 60 V and to LOCAL or REMOTE: factory-set to 60 V and LOCAL, all models	60V LOCAL 60V REMOTE 30V LOCAL 30V REMOTE	52-60 V 44-52 V 26-30 V 22-26 V all Models
POWER REQUIREMENTS (Power Factor = 0.95) 60-V, Local 52 V min. input	Watts Amperes	17.2 .348
Remote 44 V min. input:	Watts Amperes	17.2 .485
30-V, Local 26 V min. input:	Watts Amperes	17.2 .82
Remote 22 V min. input:	Watts Amperes	17.2 .97
A.C. BYPASS CAPABILITY	5A continuously, all Models	
A.C. DISPOSITION STOP or THRU, by Model CBJ-5	optional	
SURGE PROTECTORS, optional by Models A0-36	145V d.c. (striking) ±20%, usable in all Models.	
D.C. OUTPUT OF BUILT-IN POWER PACK	27 to 27.5 V, all Models.	
HOUSING: Model JLE-HSG	Die-cast Aluminum, all Models.	
	Overall Dimensions, 12.5 × 8 × 5 inches, all Models.	
	Mounting Stand, Pedestal, or Wall; all Models	
NET WEIGHT	12 lbs. all Models.	

Order equalizer SEE-* per system requirements. Order JRA-30 return amplifiers per system requirements.

NOTES:

- Specifications apply to module installed in housing.
- Min. Full Gain Specification is referenced to use without optional Models SEE-* or optional temperature compensator Models CTF-*; for relevant insertion losses see pertinent catalog sheets.
- Typical Operating Gain is referenced to use with equalizer and temperature compensator and with factory-inserted JXP-O.
- 9 dB Slope implies Channel 2 level operated 9 dB below Channel 61.

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System Performance Specifications: JLE Line Extenders—Operating to 450 MHz

MODEL	JLE-7-452-2W	JLE-7-452 HS-2W
PASSBANDS	5-30 MHz 52-450 MHz	5-176 MHz 250-450 MHz
RESPONSE FLATNESS	± 0.75 dB, all Models.	
MIN. FULL GAIN, at 450 MHz, see Note, 2	9 dB slope	33 dB 3 dB slope
TYPICAL OPERATING GAIN, see Note 3.	28 dB	
MANUAL GAIN CONTROL RANGE (JXP-0 is factory-inserted.)	6 dB min., all Models additional gain reduction by optional Models JXP-*	
MANUAL SLOPE CONTROL RANGE	0 to 9 dB referenced to 450 MHz additional compensation for attenuation vs. frequency by optional equalizer Models SEE-*, and vs. temperature by optional compensator Models CTF-*	
NOISE FIGURE: with JXP-0 and without equalizer. at 450 MHz Min. Full Gain Referenced to Highest Channel.	13 dB Ref. to Ch. 61	13 dB Ref. to Ch. 61
DISTORTION CHARACTERISTICS without equalizer, with typical output level of: see Note 4 2nd Order Beats, Chs. 2, 20 (g), 13 Composite Triple Beat Cross Modulation	9 dB slope 47 dBmV 71 dB 59 dB (60 Chs.) 56 dB (60 Chs.)	3 dB slope 47 dBmV N.A. 61 dB (33 Chs.) 61 dB (33 Chs.)
MAX. CHROMA DELAY	Forward	3 ns or less
	Return	3 ns or less
HUM MODULATION, by 60 Hz source	60 dB or better, all Models	
OPERATING AMBIENT TEMPERATURE RANGE	-40° to ± 60°C, all Models	
TERMINAL MATCH, at 75 ohm impedance, input and output	16 dB min. return loss	
A.C. INPUT RANGE, switchable by slide switches to 30 or 60 V and to LOCAL or REMOTE: factory-set to 60 V and LOCAL, all Models	60V LOCAL 60V REMOTE 30V LOCAL 30V REMOTE	52-60 V 44-52 V 26-30 V 22-26 V all Models
POWER REQUIREMENTS (Power Factor = 0.95) 60-V, Local 52 V min. input:	Watts	13.2
	Amperes	0.27
Remote 44 V min. input:	Watts	13.2
	Amperes	0.315
30-V, Local 26 V min. input:	Watts	13.2
	Amperes	0.54
Remote 22 V min. input:	Watts	13.2
	Amperes	0.63
A.C. BYPASS CAPABILITY	5A continuously, all Models	
A.C. DISPOSITION: STOP or THRU, by model CBJ-5	optional	
SURGE PROTECTORS, optional by Models AO-36	145V d.c. (striking) ± 20%, usable in all models.	
D.C. OUTPUT OF BUILT-IN POWER PACK	24 V to 24.5 V, all Models.	
HOUSING: Model JLE-HSG	Type:	Die-cast Aluminum, all Models.
	Overall Dimensions:	12.5x8x5 inches, all Models.
	Mounting	Strand, Pedestal, or Wall; all Models
NET WEIGHT	12 lbs., all Models.	

Order equalizer SEE-* per system requirements. Order JRA-30 return amplifiers per system requirements.

NOTES:

- Specifications apply to module installed in housing.
- Min. Full Gain Specification is referenced to use without optional Models SEE-* or optional temperature compensator Models CTF-*; for relevant insertion losses see pertinent catalog sheets.
- Typical Operating Gain is referenced to use with equalizer and temperature compensator and with factory-inserted JXP-0.
- 9 dB Slope implies Channel 2 level operated 9 dB below Channel 61, and 3 dB Slope implies Channel 29 level operated 3 dB below Channel 61.

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System Performance Specifications: XRLE Line Extenders — Operating to 550 MHz

MODEL	XRLE-7-450-2W	XRLE-7-550-2W
PASSBANDS	5-30 MHz 52-450 MHz	5-30 MHz 52-550 MHz
RESPONSE FLATNESS	± .5	± .75
MIN. FULL GAIN, with 9 dB slope; see Note 2.	32 dB	31 dB
TYPICAL OPERATING GAIN, see Note 3.	28 dB	27 dB
MANUAL GAIN CONTROL RANGE (JXP-0 is factory-inserted.)	6 dB min., all Models additional gain reduction by optional Models JXP-*	
MANUAL SLOPE CONTROL RANGE	0 to 9 dB referenced to 450 MHz and 550 MHz additional compensation for attenuation vs. frequency by optional equalizer Models SEE-*, and vs. temperature by optional compensator Models CTF-*	
NOISE FIGURE: with JXP-0 and without equalizer. at 450 MHz Min. Full Gain Referenced to Highest Channel.	10 dB Ref. to 450 MHz	10 dB Ref. to 550 MHz
DISTORTION CHARACTERISTICS with 9 dB slope (see Note 4) without equalizer, with typical output level of: 2nd Order Beats, Chs. 2, 20 (G), 13 Composite Triple Beat, for 60 Chs. and 77 Chs. Cross Modulation, for 60 Chs. and 77 Chs.	47 dBmV 71.5 dB 65 dB 66 dB	45 dBmV 73 dB 65 dB 66 dB
MAX. CHROMA DELAY	Forward	Ch. 2: 7ns; Ch. 3: 4ns; Ch. 4: 2ns; all other forward channels less than 1ns.
	Return	Ch. T7 and T8: 4ns; Ch. T9: 7.5 ns; Ch. T10: 15ns.
HUM MODULATION, by 60 Hz source	60 dB or better, all Models	
OPERATING AMBIENT TEMPERATURE RANGE	-40° to ±60°C, all Models	
TERMINAL MATCH, at 75 ohm impedance, input and output	16 dB min. return loss	
A.C. INPUT RANGE, switchable by slide switches	60V LOCAL 60V REMOTE	42-60 RMS 35-48 RMS
POWER REQUIREMENTS		
Local 60 V input: Watts	26.2	26.2
Amperes	0.44	0.44
Remote 48 V input: Watts	26.2	26.2
Amperes	0.55	0.55
A.C. BYPASS CAPABILITY	5A continuously, all Models	
A.C. DISPOSITION: STOP or THRU, by model CBJ-5	optional	
SURGE PROTECTORS, optional by Models A0-36	145V d.c. (striking) ± 20%, usable in all models.	
D.C. OUTPUT OF XESW-60 POWER PACK	+ 24 V, all Models.	
HOUSING: Model XRLE-HSG	Type:	Die-cast Aluminum, all Models.
	Overall Dimensions:	14 1/8 x 8 3/4 x 4 1/8 inches, all Models.
	Mounting	Strand, Pedestal, or Wall; all Models
NET WEIGHT	15 lbs., all Models.	

Order equalizer XEE-* per system requirements. Order JRA-30 return amplifiers per system requirements.

NOTES:

1. Specifications apply to module installed in housing.
2. Min. Full Gain Specification is referenced to use without optional Models XEE-* for relevant insertion losses see pertinent catalog sheets.
3. Typical Operating Gain is referenced to use with equalizer and temperature compensator and with factory-inserted JXP-0.
4. 9 dB Slope implies Channel 2 level operated 9 dB below Highest Channel.

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TV SIGNAL DISTRIBUTION

CABLE EQUALIZERS FOR LINE EXTENDER, MODELS JLE AND SLR

The fixed cable equalizers, used in all JLE amplifiers and SLR-series line extenders, include seven sub-series. These equalizers plug into line extender amplifier modules. Specific functions are described below:

Model SEE-0—FOR ALL LINE EXTENDERS

The model SEE-0 is a shorting bus factory-inserted in all SLR-series line extenders.

Model SEE-174—FOR 174 MHz RETURN AMPLIFIER

This series of fixed cable equalizers operates within a passband of 5-174 MHz.

MODEL	SEE-174-4	SEE-174-8	SEE-174-12	SEE-174-16
Passband	5-174 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	4 ± 0.5 dB	8 ± 0.5 dB	12 ± 0.5 dB	16 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	18 dB	18 dB	18 dB	18 dB

Model SEE-220 SERIES—FOR 220 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-220 MHz.

MODEL	SEE-220-6	SEE-220-12	SEE-220-18	SEE-220-24
Passband	40-220 MHz			
Maximum Insertion Loss	1.5 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 220 MHz through 0.412 inch coaxial cable.

Model SEE-270 SERIES—FOR 270 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-270 MHz.

MODEL	SEE-270-6	SEE-270-12	SEE-270-18	SEE-270-24
Passband	40-270 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 270 MHz through 0.412 inch coaxial cable.

Model SEE-300 SERIES—FOR 300 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-300 MHz.

MODEL	SEE-300-6	SEE-300-12	SEE-300-18	SEE-300-24
Passband	40-300 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 300 MHz through 0.500 inch coaxial cable.

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Model SEE-350 SERIES—FOR 350 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-350 MHz.

MODEL	SEE-350-6	SEE-350-12	SEE-350-18	SEE-350-24
Passband	40-350 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 350 MHz through 0.500 inch coaxial cable.

Model SEE-400 SERIES—FOR 350 and 400 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-400 MHz.

MODEL	SEE-400-6	SEE-400-12	SEE-400-18	SEE-400-24
Passband	40-400 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 400 MHz through 0.500 inch coaxial cable.

Model SEE-450 SERIES—FOR 450 MHz LINE EXTENDERS

This series of fixed equalizers operates within a passband of 40-450 MHz.

MODEL	SEE-450-6	SEE-450-12	SEE-450-18	SEE-450-24
Passband	40-450 MHz			
Maximum Insertion Loss	1 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 450 MHz through 0.500 inch coaxial cable.

Model XEE-450 SERIES—FOR 450 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-450 MHz.

MODEL	XEE-450-6	XEE-450-12	XEE-450-18	XEE-450-24
Passband	40-450 MHz			
Maximum Insertion Loss	1.5 dB	1 dB	1 dB	1 dB
Fixed Equalization at 174 MHz	6 ± 0.5 dB	12 ± 0.5 dB	18 ± 0.5 dB	24 ± 0.5 dB
Terminal Match return loss, 75 ohm impedance (Minimum)	16 dB	16 dB	16 dB	16 dB

*Measured at 450 MHz through 0.500 inch coaxial cable.

Model XEE-550 SERIES—FOR 550 MHz LINE EXTENDERS

This series of fixed cable equalizers operates within a passband of 40-550 MHz. The chart for this series is identical to that for the XEE-450 series except for the passband range, and maximum insertion loss on the XEE-550-6 is 1 dB. Note: Substitute 550 for 450 on the model numbers in above chart.

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STARLINE MODELS JLE AND SLR ACCESSORIES THERMAL EQUALIZER FOR LINE EXTENDERS

Model CTF-*

Thermal Equalizers for Manual Gain Control JLE Amplifiers and SLR Line Extenders.

There are now four thermal equalizers available: The CTF-11A, CTF-20, CTF-20B and CTF-30. These thermal equalizers are designed to compensate for attenuation changes in cable due to environmental variations.

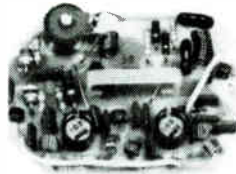
MODEL	CTF-11A	CTF-20	CTF-30	CTF-20B**
Passband	40-450 MHz			
Nominal Attenuation, at MHz				
at +25°C ambient	3.0 dB	3.0 dB	5.0 dB	3.5 dB
at -40°C ambient	5.0 dB	7.0 dB	9.8 dB	6.8 dB
at +60°C ambient	2.0 dB	2.0 dB	3.1 dB	2.3 dB
Slope from 40 to MHz at +25°C	0.7 dB	0.7 dB	1.0 dB	0.7 dB
Flatness	± .25 dB	± .25 dB	± .25 dB	± .25 dB
Thermal Compensation	11 dB of tap-loaded cable*	20 dB of trunk cable 0.5**	30 dB of tap-loaded cable*	20 dB of trunk cable 0.5**
Thermal Match, at 75 ohms	20 dB minimum	18 dB minimum	18 dB minimum	18 dB minimum

* 0.412 inch outer diameter aluminum sheathed cable

** For use with JLE-7-452.



DRA-30



JRA-30H

DISTRIBUTION RETURN AMPLIFIERS FOR LINE EXTENDERS

DRA and JRA amplifier models plug into their respective line extender main amplifier modules and amplify the 5 to 32 MHz subchannel band.

Model Number	JLE-2W SERIES		SLR-2W SERIES	
	JRA-30L	JRA-30H	DRA-30	DRA-30L
Passband	5-32 MHz		5-32 MHz	
Minimum Full Gain	15 dB	24 dB	22 dB	10 dB
Rated Output Cross-Mod (-57 dB or better) for 2 channels for 4 channels	55 dBmV per channel 50 dBmV per channel		55 dBmV per channel 50 dBmV per channel	
2nd Order Beats (-70 dB or better)	46 dBmV			
Triple Beat (-70 dB or better)			48 dBmV	46.5 dBmV
Hum Modulation (by 60 Hz line)	-68 dB		-80 dB	-70 dB
Maximum Noise Figure, without equalizers at 30 MHz	7 dB	6 dB	6 dB	7 dB
Input Level Padding or gain control	9 dB gain control		by SXP-() (SXP-0 factory-inserted)	
Slope, rising from 5 to 30 MHz	+3 dB fixed		+2 dB fixed	flat
Terminal Match, return loss, 75Ω impedance (minimum)	18 dB		20 dB	
DC Operating Voltage	24.0 to 24.5 V		24.3V, 60 mA	
Power Requirements	Switch selection 30V local or remote. 2.6 Watts		Tapped primary, 3.0 Watts	
Ambient Temperature Range	-40°F to +140°F		-40°F to +140°F	

"SSP" SERIES SPLITTERS AND DIRECTIONAL COUPLERS



SSP-Series splitters and directional couplers for Starline Distribution Systems include six models: SSP-3, SSP-7, SSP-9, SSP-12, SSP-16, and SSP-3-636. These AC power passing, two-way devices operate within an r.f. passband of 5-600 MHz and are enclosed in die cast 360 aluminum alloy housings that are equipped for strand, pole, and pedestal mounting. The SSP-Series employs a swivel center conductor seizure mechanism and a rotatable faceplate to insure the units can be configured in a wide variety of input/output and RF/AC combinations including: strand mount, reverse strand mount, pole mount, and pedestal mount. These features allow for flexible installation and reduce the necessity for "cable loops." Each leg is fused for 15 amps with the user afforded the option of fusing the system passives for individual layout requirements.

Model SSP-3—Hybrid Splitter

Model SSP-3 is a hybrid splitter used to create two outputs, each 5.0 dB lower than the input.

Model SSP-7—Directional Coupler

Model SSP-7 is a directional coupler used to create two outputs, 3.1 dB and 8.0 dB lower than the input.

Model SSP-9—Directional Coupler

Model SSP-9 is a directional coupler used to create two outputs, 2.5 dB and 10.2 dB lower than the input.

Model SSP-12—Directional Coupler

Model SSP-12 is a directional coupler used to create two outputs, 2.0 dB and 13.2 dB lower than the input.

Model SSP-16—Directional Coupler

Model SSP-16 is a directional coupler used to create two outputs, 1.6 dB and 16.5 dB lower than the input.

Model SSP-3-636—Dual Hybrid Splitter

Model SSP-3-636 is a dual hybrid splitter used to create three outputs, two 9.0 dB and the other 4.8 dB lower than the input.

MODEL	SSP-3	SSP-7	SSP-9	SSP-12	SSP-16	SSP-3-636
DESCRIPTION	2 way Splitter	Directional Coupler	Directional Coupler	Directional Coupler	Directional Coupler	3 way Splitter
PASSBAND	5-600 MHz					
MAXIMUM TAP LOSS (db)	5 4.4	4.50 5.0	5 7.8	4.50 8.0	5 10.2	4.50 13.2
MAXIMUM INSERTION LOSS (db)	4.4	5.0	7.5	3.1	1.8	2.5
ISOLATION	20 dB MINIMUM					
TERMINAL MATCH	18 dB MINIMUM					
CURRENT CAPACITY	10 AMPS EACH LEG					
FUSING	15 AMPS EACH LEG					

* TWO LEGS

Prices and Specifications Subject to Change Without Notice.

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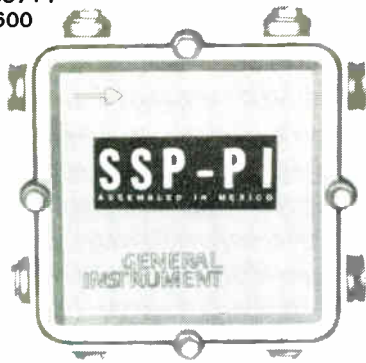
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MODEL SSP-PI

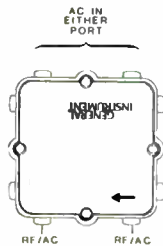
"SSP" SERIES POWER INSERTER

Model SSP-PI is a fuse-equipped network for combining RF with AC power from power supplies JSPS-* or STPS-60 to coaxial cable. The unit can be used for 30V and 60V powered systems. Model SSP-PI installs on the coaxial cable and passes up to 10 amps in each direction; a total of 14 amps common - with each direction fused for 15 amps. The user can choose optional fuse values as determined by the individual system configuration. Model SSP-PI is housed in a die cast aluminum alloy housing designed to provide maximum installation flexibility. Swivel center conductor seizure mechanisms and a rotatable faceplate insure the SSP-PI can be configured in a wide variety of input/output and RF/AC combinations including strand mount, reverse strand mount, and pedestal mount. This increased versatility allows for easier installation and reduces the necessity for "cable loops".

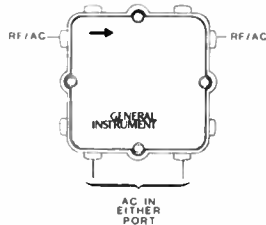
MODEL	SSP-PI	
PASSBAND	5-600 MHz	
MAX. INSERTION LOSS	5-450 MHz 0.5 dB	450-600 MHz 0.7 dB
TERMINAL MATCH (min.)	20 dB	
RF/AC ISOLATION	> 70 dB	> 60 dB
AC POWERING CAPABILITY	10 amps each leg 14 amps total	
FUSING	15 amps each leg	

MODEL SSP-PI PORT CONFIGURATION OPTIONS

PEDESTAL MOUNT



STRAND MOUNT



FEEDERLINE EQUALIZERS FOR STARLINE DISTRIBUTION SYSTEMS

Model FFE-8-* is a coaxial cable equalizer designed to compensate for feeder cable tilt, and thus provide improved "window" specifications. The equalizer circuit is contained in the same type of housing assembly as an FFT type tap, less the house drop fittings. Five models are available for 260, 300, 400, 450, and 550 MHz systems.

MODEL	FFE-8-260	FFE-8-300	FFE-8-401	FFE-8-450	FFE-8-550
PASSBAND	5-260 MHz				
Maximum Insertion Loss	5-30 MHz 0.5 dB	5-300 MHz 0.5 dB	5-400 MHz 0.5 dB	5-450 MHz 0.5 dB	5-550 MHz 0.5 dB
Equalization Slope (measured at 75 ohm at input)	260 MHz 300 MHz 400 MHz 450 MHz 550 MHz	5 dB	5 dB	5 dB	5 dB
Terminal match (75 ohm at input)	20 dB				
Current Carrying Capacity (Max)	5 amps. continuous				

STPS-60 60 VOLT STAND-BY POWER SUPPLY

STANDARD FEATURES:

- "Cycle Charge" low maintenance battery charging system
- Plug-in modular construction
- Auxiliary AC input facility
- Status Monitor capability
- Input/Output surge arrestors
- Circuit breaker protection
- RFI Filter - Provides minimum of 40 dB RF isolation
- Built-in load current meter
- Synchronized, time variable "delay back to line"
- AC convenience outlet
- External status indicator lamp
- Adjustable battery voltage

Operating from a 120 volt commercial AC power source, or for up to three hours from self-contained batteries, the Jerrold Model STPS-60 stand-by power supply provides constant square wave voltage to power CATV Distribution Systems. The STPS-60 has been designed for optimum reliability utilizing a field proven inverter to drive a ferro-resonant transformer during commercial power outages. In the normal mode power is derived directly from the ferroresonant transformer.

Options: Jerrold JTSM Status Monitoring system • Pedestal mount for surface mount applications • Spare modules • Battery heater

STARLINE A.C. POWER SUPPLY

Power supplies for Starline distribution systems include two models, JSPS-30 and JSPS-60. These constant-voltage, square-wave power sources are especially designed for CATV systems where coaxial cables have to carry both RF energy and AC power.

This series of power supplies has a constant-voltage power transformer, a secondary voltage external indicator light, a U/L listed circuit-breaker assembly, a self-healing, gas-filled surge protector at the input, an AC test point, and a 115 V AC auxiliary socket. Housed in weatherproof, sheet-aluminum, louvered cabinet which has a padlock facility and is equipped with appropriate mounting brackets, the power supply can be mounted on a utility pole or cross-arm, or on any surface where a 115 V, 60 Hz, 3-wire source is available.

An optional 200 msec. time-delay relay, Model PDT 30/60, is available for installation to protect the cable system from turn-on transients, after power company outages.

An optional lightning arrester can be installed in the JSPS-*, it will protect the unit against line surges.

MODEL	JSPS-30	JSPS-60
Primary	95-130 V, 60 Hz 450 W	95-130 V, 60 Hz 1050 W
Secondary (For 115 V ac Primary)	30 v rms, ± 2%, at 12A	60 V rms, ± 2%, at 14A
Line Regulation	30 V rms, 95-130 V input	60 V rms, ± 2% 95-130 V input
Line Regulation	+ 2-0%, 12 to 4A Load	+ 2-0%, 14 to 4A Load
Surge Protection, Breakdown Voltage	145 V dc, ± 12%, non-polarized	
RF/AC Isolation	> 40 dB	

STARLINE POWER SUPPLY ACCESSORIES

Model PDT-30/60-Time Delay Relay

The Model PDT-30/60 is a 200 msec. time delay relay for use in Starline power supply models JSPS-30 and JSPS-60.

It will protect the cable system from turn-on transients of the regulating transformer, after power company outages.

It must not be used in a power supply that is mounted on a pedestal.

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

TAPS AND CONNECTORS



SPECIFICATIONS: FFT*-F, 5-450 MHz FFT8-*G, 5-600 MHz

Model No.	Nominal Tap Value	INSERTION LOSS (dB)												Nominal Tap to Out Isolation (dB)			
		5 MHz		50 MHz		300 MHz		400 MHz		450 MHz		10-50 MHz	50-400 MHz	400-450 MHz			
		Nom.	Max.	Nom.	Max.	Nom.	Max.	Nom.	Max.	Nom.	Max.						
FFT2																	
-4TF	3.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-7F	6.8	2.90	3.60	3.00	3.40	3.50	3.90	3.80	4.10	4.10	4.20	4.10	4.20	23	23	23	
-8.5F	8.4	1.90	2.60	2.00	2.40	2.40	2.70	2.50	2.90	2.70	3.10	2.70	3.10	23	23	25	
-10F	9.7	1.50	1.80	3.00	1.50	1.60	1.80	1.70	1.90	1.80	2.00	2.00	2.5	25	25	25	
-12F	11.5	1.00	1.30	0.80	1.10	1.10	1.40	1.20	1.50	1.30	1.60	2.5	25	25	25	25	
-14F	14.3	0.75	0.80	0.70	0.70	0.90	1.00	0.90	1.10	1.00	1.20	2.5	25	25	25	25	
-17F	16.5	0.50	0.50	0.30	0.50	0.40	0.70	0.50	0.80	0.70	0.90	35	35	35	35	35	
-20F	19.0	0.40	0.40	0.40	0.30	0.40	0.50	0.45	0.60	0.50	0.70	36	42	36	42	36	
-23F	22.5	0.30	0.40	0.20	0.30	0.30	0.40	0.35	0.50	0.40	0.60	40	43	40	43	40	
-26F	25.5	0.30	0.50	0.20	0.40	0.30	0.40	0.30	0.50	0.40	0.60	40	45	40	45	40	
-29F	29.3	0.35	0.40	0.30	0.30	0.40	0.40	0.40	0.50	0.40	0.60	45	50	45	50	45	
-32F	32.0	0.35	0.40	0.30	0.30	0.40	0.40	0.40	0.50	0.40	0.60	50	50	50	50	50	
-35F	34.5	0.35	0.40	0.20	0.30	0.30	0.40	0.40	0.50	0.40	0.60	50	50	50	50	50	
-38F	37.5	0.30	0.30	0.25	0.30	0.35	0.40	0.40	0.50	0.40	0.60	50	50	50	50	50	
-41F	40.6	0.30	0.30	0.30	0.30	0.40	0.40	0.40	0.50	0.40	0.60	50	50	50	50	50	
FFT4																	
-7TF	6.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-10F	10.3	3.30	3.70	3.10	3.40	3.40	3.70	3.60	3.70	3.60	3.80	23	23	23	23	23	
-12F	11.5	2.10	2.50	2.10	2.30	2.30	2.60	2.60	2.80	2.60	3.00	27	25	25	25	25	
-14F	14.0	1.60	1.60	1.30	1.50	1.50	1.60	1.60	1.70	1.70	1.90	27	25	25	25	25	
-15.5F	15.4	1.00	1.10	1.00	1.00	1.20	1.30	1.40	1.50	1.50	1.70	27	25	25	25	25	
-17F	17.0	0.90	1.00	0.70	0.90	0.90	1.00	1.10	1.20	1.20	1.40	28	30	30	30	30	
-20F	19.5	0.70	0.70	0.50	0.60	0.60	0.70	0.70	0.80	0.80	1.00	30	35	35	35	35	
-23F	22.5	0.30	0.50	0.20	0.30	0.30	0.50	0.50	0.70	0.70	0.90	40	40	40	40	40	
-26F	26.0	0.20	0.40	0.20	0.30	0.30	0.40	0.30	0.60	0.40	0.70	43	45	45	45	45	
-29F	29.2	0.20	0.30	0.15	0.30	0.20	0.40	0.30	0.50	0.40	0.60	40	45	45	45	45	
-32F	31.5	0.20	0.30	0.15	0.30	0.25	0.40	0.30	0.50	0.40	0.60	45	50	45	50	45	
-35F	35.1	0.30	0.30	0.20	0.30	0.30	0.40	0.45	0.50	0.50	0.60	50	50	50	50	50	
-38F	38.0	0.20	0.30	0.15	0.30	0.25	0.40	0.35	0.50	0.35	0.60	50	50	50	50	50	
-41F	40.0	0.30	0.30	0.20	0.30	0.30	0.40	0.40	0.50	0.40	0.60	50	50	50	50	50	
FFT8																	
10TG	10.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14G	14.2	4.70	5.00	3.50	3.70	3.80	4.00	4.10	4.30	4.40	4.70	26	32	26	32	26	
17G	18.6	1.90	1.90	1.30	1.40	1.40	1.60	1.60	1.80	2.00	2.20	28	36	30	30	30	
20G	20.0	0.90	0.70	0.90	0.90	1.00	1.00	1.00	1.20	1.30	1.50	40	40	38	40	38	
23G	22.5	0.80	1.00	0.70	0.90	0.70	0.90	0.80	1.00	1.10	1.30	40	40	35	40	35	
26G	26.1	0.80	1.00	0.70	0.90	0.70	0.90	0.80	1.00	1.00	1.50	45	45	40	45	40	
29G	29.2	0.80	1.00	0.70	0.90	0.70	0.90	0.80	1.00	1.00	1.50	50	45	40	45	40	
32G	32.2	0.80	1.00	0.70	0.90	0.70	0.90	0.80	1.00	1.00	1.50	50	45	40	45	40	
35G	34.7	0.80	1.00	0.70	0.90	0.70	0.90	0.80	1.00	1.00	1.50	50	45	40	45	40	

DIRECTIONAL-COUPLER-TYPE, TOTAL TWO-WAY CAPABILITY

FFT-G Series600MHz
FFT-F Series450MHz

FEATURES

- Strand or pedestal mounting
- Swivel center conductor
- Seizure mechanism
- Weather seal gasket
- Separate RF gasket
- Umbrella-type cover design

Tap-To-Tap Isolation (Nominal)
10-50MHz 28dB "F" Series
5-600MHz 20dB (min) "G" Series
Return Loss (In, Out, Taps)
10-400 MHz 20 dB min. "F & G"
400-450 MHz 18 dB min. Series
Current Capacity
7 amps continuous

Hum Modulation
at 7 amps, 60 volts
Square wave supply—
70dB below signal

Net Weight
1 lb. (453gm) for FFT2 and FFT4
1 lb. 1 oz. (481.9gm) for FFT8

All specifications applicable—
-40 to +140°F
(-40 to +60°C)

External Dimensions
5-5/8" L x 4-1/32" W x 2-7/8" H
(14.28cm x 10.24cm x 7.3cm)



SPECIFICATIONS: 5-600 MHz

Model No.	Nominal Tap Value	INSERTION LOSS (dB)												Tap to Out Isolation (dB)			
		5 MHz		50 MHz		300 MHz		450 MHz		600 MHz		10-50 MHz	50-450 MHz	450-600 MHz			
		Nom.	Max.	Nom.	Max.	Nom.	Max.	Nom.	Max.	Nom.	Max.						
SPT2																	
4T	4.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	7.2	2.8	3.0	3.0	3.2	3.2	3.4	4.1	4.3	4.8	5.0	23	23	23	23	23	
10	10.3	1.6	1.8	1.7	1.9	1.9	2.1	2.2	2.4	2.5	2.7	23	23	23	23	23	
12	12.2	1.4	1.5	1.0	1.3	1.2	1.4	1.5	1.7	1.8	2.0	25	25	25	25	25	
14	13.8	0.6	0.7	0.5	0.6	0.7	0.8	0.8	0.9	1.1	1.3	25	30	30	30	30	
17	16.9	0.6	0.7	0.5	0.6	0.7	0.8	0.7	0.8	0.8	1.0	30	40	35	40	35	
20	20.0	0.7	1.0	0.4	0.5	0.5	0.6	0.5	0.7	0.6	0.8	40	45	40	45	40	
23	23.3	0.3	0.5	0.3	0.4	0.4	0.6	0.5	0.7	0.6	0.8	40	45	40	45	40	
26	26.6	0.3	0.5	0.2	0.3	0.3	0.5	0.4	0.6	0.6	0.8	45	50	45	50	45	
29	29.2	0.7	1.0	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	50	50	45	50	45	
32	32.2	0.7	1.0	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	50	50	50	50	50	
35	35.0	0.7	1.0	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	50	50	50	50	50	
SPT4																	
7T	7.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	10.2	3.0	3.1	3.2	3.2	3.5	3.7	4.3	4.5	4.9	5.1	23	23	23	23	23	
14	14.3	1.4	1.5	1.4	1.6	1.5	1.7	1.7	1.9	2.2	2.4	27	25	25	25	25	
-15.5	15.3	1.2	1.4	1.4	1.5	1.4	1.6	1.4	1.6	1.8	2.0	27	25	25	25	25	
17	17.3	0.7	0.9	0.5	0.7	0.6	0.8	1.0	1.2	1.1	1.3	28	30	30	30	30	
20	20.1	0.7	1.0	0.4	0.5	0.5	0.7	0.8	1.0	0.9	1.1	30	35	35	35	35	
23	23.3	0.7	1.0	0.4	0.5	0.5	0.7	0.7	0.9	0.8	1.0	40	40	40	40	40	
26	26.6	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.7	0.6	0.8	40	45	40	45	40	
29	29.6	0.5	0.6	0.3	0.4	0.4	0.5	0.5	0.7	0.6	0.8	45	45	40	45	40	
32	32.5	0.7	1.0	0.3	0.4	0.4	0.5	0.5	0.7	0.6	0.8	50	50	50	50	50	
35	35.0	0.7	1.0	0.3	0.4	0.4	0.5	0.5	0.7	0.6	0.8	50	50	50	50	50	

SPT-SERIES TAPS (2 & 4 Port.600MHz)

- 23 different models to accommodate system design needs and lower construction costs.
SPT2-* 12 values 4-35dB
SPT4-* 11 values 7-35dB

- Minimal insertion loss to decrease active electronics requirements and further cut costs.
- Strand or 4" pedestal mounting. Strand mounting clamp is provided with unit.
- Sw

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

CONNECTORS FOR 0.412-INCH AND 0.500-INCH DIAMETER CABLES



Cable-to-Equipment-Housing Connectors with Intra-Shield®

FEED-THROUGH TYPE

Model VSF-412S—For .412" \pm .008" OD Cable with .022/.025" Wall Thickness

Model VSF-500S—For .500" \pm .010" OD Cable with .025/.030" Wall Thickness

Cable center conductor is fed through connector and seized inside the equipment housing. Integral radiation sleeve. Use model CPT-412 or CPT-500, as appropriate, to prepare cable end.



STINGER TYPE

Model VSF-412SS—For .412" \pm .008" OD Cable with .075-.095" CC and .022/.025" Wall Thickness

Model VSF-500SS—For .500" \pm .010" OD Cable with .098-.119" CC and .025/.030" Wall Thickness

Cable center conductors are seized by the fitting. Integral radiation sleeves. Use model CPT-412 or CPT-500, as appropriate, to prepare cable end.



Cable-to-Cable Splice Connectors with Intra-Shield®

Model SC-412SS—For .412" \pm .008" OD Cable with .075-.095" CC and .022/.025" Wall Thickness

Model SC-500SS—For .500" \pm .010" OD Cable with .098-.119" CC and .025/.030" Wall Thickness

Cable center conductor is seized by the fitting. Pin is 0.075" dia., length 1-1/4". Integral radiation sleeve. Use model CPT-412 or CPT-500, as appropriate, to prepare cable ends.



Cable-to-"F" Adaptors with Intra-Shield®

Model F-412SS—For .412" \pm .008" OD Cable with .075-.095" CC and .022/.025" Wall Thickness

Model F-500SS—For .500" \pm .010" OD Cable with .098-.119" CC and .025/.030" Wall Thickness

Cable center conductor is seized by the fitting. Integral radiation sleeve. Use model CPT-412 or CPT-500 to prepare cable end.

CONNECTORS

CONNECTORS FOR 0.750-INCH DIAMETER ALUMINUM CABLE



Cable-to-Equipment-Housing Connectors with Intra-Shield®

FEED-THROUGH TYPE

Reducer pin is crimped to center conductor. Pin is fed through the connector and seized inside the equipment housing. Integral radiation sleeve. Use model CPT-750 to prepare cable end.

Model VSF-1750S (Silver Colored)—For .750" \pm .010" OD Cable with Shield I.D. of 0.67" or greater.

Model VSF-1750S is shipped with two reducer pins, a silver one for high density polyethylene and a gold one for polystyrene/fused disc cables.

Model VSF-2750S (Gold Colored)—For .750" \pm .010" OD Cable with Shield I.D. less than 0.67". Model VSF-2750S is shipped with one gold pin.



STINGER TYPE

Cable center conductor is seized by the fitting. Pin is 0.075" dia., length 1-1/4". Integral radiation sleeve. Use model CPT-750 to prepare cable end.

Model VSF-1750SS (Silver Colored) — For .750" \pm .010" OD Cable with 0.150-0.179" CC and with Shield I.D. less than 0.67" or greater.

Model VSF-2750SS (Gold Colored)—For .750" \pm .010" OD Cable with 0.150-0.179" CC and Shield I.D. less than 0.67".



Cable-to-Cable Splice Connectors with Intra-Shield®

Cable conductors are seized by the fitting. Integral radiation sleeve. Use model CPT-750 to prepare cable ends.

Model SC-1750SS (Silver Colored)—For .750" \pm .010" OD Cable with 0.150-0.179" CC and with Shield I.D. of 0.67" or greater.

Model SC-2750SS (Gold Colored)—For .750" \pm .010" OD Cable with 0.150-0.179" CC and with Shield I.D. less than 0.67".



Cable-to-"F" Adaptors with Intra-Shield®

Cable center conductor is seized by the fitting. Integral radiation sleeve. Use model CPT-750 to prepare cable end.

Model F-1750SS (Silver Colored)—For .750" \pm .010" OD Cable with 0.150-0.179" CC and with Shield I.D. of 0.67" or greater.

Model F-2750SS (Gold Colored)—For .750" \pm .010" OD Cable with 0.150-0.179" CC and with Shield I.D. less than 0.67".

GENERAL INSTRUMENT CORP.

R.F. SYSTEMS DIVISION

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TERMINATORS

STR-75D AC BLOCKING TERMINATOR

A VSF-style 70-ohm terminator that can be inserted directly into an unused mainstation or line extender port with both RF and AC present. Completely weatherproof. Pin length is 1-1/8" with breakpoint at 3/4".



TR-75-FCW AC BLOCKING TERMINATOR

A 75-ohm terminator designed to mate with a female-F fitting that is carrying RF and AC. Completely weatherproof.

ADAPTORS

VHH-1

Male coupling connector for joining two equipment housings. Eliminates need for jumper cable. Provides a completely weather-and radiation-proof connection. Pin length is 1-5/8", each end.



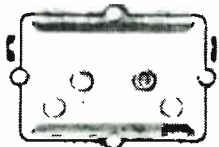
VSF-59A

Male-VSF to female-F adaptor. Allows connection of RG-59/U or RG-6/U cable with F-fitting to distribution equipment housing. Pin length is 1-1/16".



PBA—SERIES 4

Universal splice connector utilizing FFT tap housing. Accepts any two cables equipped with VSF-type connectors. Allows 90° or 180° splicing. Facilitates splicing of different size cables. Can be used as a dummy tap.



VSL

Male-VSF to female-VSF 90° adaptor. Used where space restrictions make right angle connections between cable and equipment desirable, such as in pedestal installations. Female end accepts any male-VSF fitting. Center conductor is seized by tightening hex-plug on the end of the VSL. VSL pin length is 3/4".



MODEL VSL-M

Male-G to female-VSF 90° adaptor. Used in 7th-port Starline 20 series mainstation applications, such as above AK-7 situations.



AK-7A

"A" cable 7th port adaptor kit. Used in dual trunk midsplit systems to adapt "A" cable Starline 20-Series mainstation for crossover to "B" cable.



AK-7B

"B" cables 7th port adaptor kit. Used in dual trunk midsplit systems to adapt "B" cable Starline 20-Series mainstation to receive crossover signals from "A" cable.

CONNECTORS/ ADAPTORS/TOOLS

F, G, MG ADAPTORS AND WEATHER BOOTS

PMG-61 CHASSIS ADAPTOR

Male-MG chassis-mount fitting. Accepts female-MG connectors. Mounts in 3/8" diameter hole.



PGL ADAPTOR

Right-angle adaptor, female-F to male-G.

GFA ADAPTOR

Female-G to female-F adaptor. This is an elongated version of the GF-81 and is used as a test probe of Starline 20 distribution amplifiers and Channel Commander II headend equipment.



PMG-61F ADAPTOR

Male-MG to female-F adaptor adapts a female-MG to accept a male-F connector. Used as a test probe for Starline 300 mainstations and Commander IV headend processors.



MG-61F ADAPTOR

Female-MG to female-F adaptor. Couples a male-MG to a male-F fitting. Used as a test probe for Starline 300 mainstations and Commander IV headend processors.



SMG-61 CHASSIS ADAPTOR

Female-MG chassis-mount fitting. Accepts male-MG connectors. Mounts in 3/8" diameter hole.



PGF ADAPTOR

Female-F to male-G adaptor, elongated for use as a test probe for Starline 20 distribution amplifiers and Channel Commander II headend processors.



DS-56

Used to provide weather seal over "F" connectors installed on RG-59/U, RG-6/U and CAC-6 cables.



TOOLS

CPT-412, CPT-500, CPT-750 CORING TOOLS

These cable coring tools are designed to remove polyethylene and polystyrene foam dielectrics from 0.412", 0.500" and 0.750" diameter aluminum cables, respectively, without harming center conductor or sheath. This allows proper assembly of Jerrold's Intra-Shield® connectors to the cable for maximum RFI integrity. The tools may be hand-operated or the handle may be removed, exposing a triangular shaft which may be inserted in any drill with a 3/8" chuck.



CT-412, CT-500, CT-750 CUTTING TIPS

Replacement cutting tips for the CPT-412, CPT-500 and CPT-750.

PL-602H CRIMPING TOOL

A high quality tool for crimping ferrules 1026, 1051 and 1082. Also used for integral ferrule connectors. Models F-59A and F-56A.

Prices and Specifications Subject to Change Without Notice.

VRF-93

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R.F. SYSTEMS DIVISION
4229 S. Fremont Ave.
Tucson, AZ 85714
(602) 294-1600

CHANNEL CONVERTERS



STARCOM[®] 450

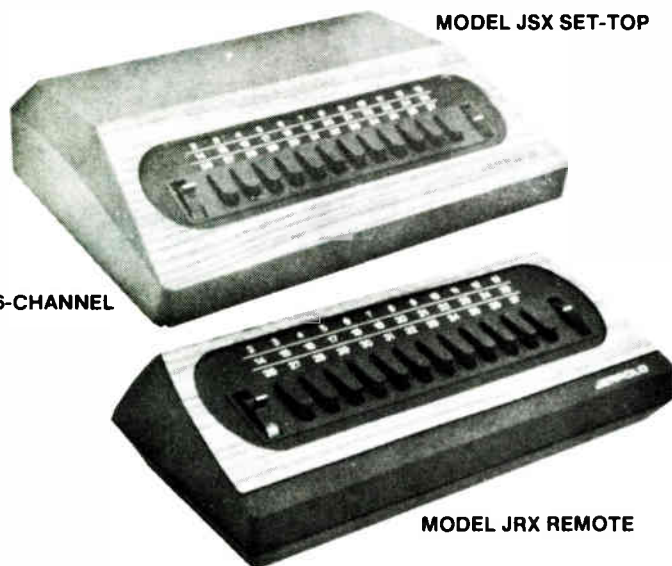
9-CHANNEL
MODEL JSM SET-TOP



MODEL DRZ



MODEL DRC



MODEL JSX SET-TOP

36-CHANNEL

MODEL JRX REMOTE

MODEL JSM 9-CHANNEL MIDBAND CONVERTER FEATURES

- Reliability
- Economically Priced
- Modular Construction
- Easy Installation
- Quality Performance
- Attractive Styling
- Pushbutton Selection

MODELS JSX/JRX 36-CHANNEL CONVERTERS FEATURES

- Reliability
- Economically Priced
- Modular Construction
- Easy Installation
- Quality Performance
- Attractive Styling
- Corded Remote Option
- TV On/Off Option

MODEL DRZ 66-CHANNEL CONVERTER W/ CORDLESS REMOTE CONTROL MODEL DRC FEATURES

- 450 MHz Capacity
- Digital Reliability
- Revenue Generating Cordless Remote Option
- A/B Switch Option
- Field Selectable HRC/IRC Assignment
- Quality Performance
- Automatic Fine Tuning
- Attractive Styling



MODEL DRZ/DIC

MODEL DRZ/DIC 66-CHANNEL CONVERTER/ DESCRAMBLER W/MODEL DRC REMOTE CONTROL FEATURES

- Digital Reliability
- Incremental Revenue Opportunities
- Signal Security
- Automatic Fine Tuning
- Video and Audio Suppression
- Cordless Remote Option
- Parental Keylock Option

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R.F. SYSTEMS DIVISION
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Tucson, AZ 85714
(602) 294-1600

HOUSE DROP EQUIPMENT

MODEL DRZ-A 66-CHANNEL ADDRESSABLE CONVERTER W/MODEL DRC REMOTE CONTROL

FEATURES

- Optimum system security
- Product line flexibility and upgradability
- Increased revenue opportunities
- Growth capabilities
- Enhanced parental control

MODELS JSX-DIC/JRX-DIC/JSM-DIC 9-CHANNEL and 36-CHANNEL MIDBAND CONVERTER DESCRAMBLERS

FEATURES

- Reliability
- Economy
- Signal security
- Quality performance
- Attractive styling
- Parental keylock operation

MODELS JSX-A/JRX-A/JSM-A 36-CHANNEL ADDRESSABLE CONVERTERS

FEATURES

- Proven reliable
- Economical
- Lower costs for service and operation
- Growth capability
- Additional revenue possibilities
- Security for signal and converter
- Attractive styling
- Parental control option

MODEL SV IMPULSE PAY-PER-VIEW TRANSMITTER W/MODEL DRC REMOTE CONTROL

FEATURES

- Impulse pay-per-view
- Unique subscriber authorization
- Field upgradable
- Event charge indicator
- Ultimate security
- Increased revenue opportunities

MODEL DS/E DIGITAL SCRAMBLER/ENCODER

FEATURES

- Multiple scrambling levels
- Random scrambling modes
- Digital circuitry throughout
- Fold down front panel
- Thumbwheel switch settings
- Local or remote control

MODEL PR-A ADDRESSABLE PROM PROGRAMMER

FEATURES

- User friendly
- Flexibility
- Auto increment
- PROM (Programmable Read Only Memory) chip coded
- Unique identification code
- Converter operation/Parental control modes
- Time-out interval
- Dedicated modular personality cards
- 5" CRT display and simple interactive keyboard components (hardware)



STARBASE®



MODEL SBD-A ADDRESSABLE DESCRAMBLER

FEATURES

- Add-on addressability
- Encapsulation of sensitive circuitry
- Dynamic scrambling
- Self-powered
- Parental control option

MODEL SB-200 ADD-ON DESCRAMBLER

FEATURES

- Add-on multi-level pay programming
- Upgrades non-scrambled CATV systems
- Preserves existing converter base
- Self-powered
- Encapsulated circuitry
- Parental control option



915 Washington Street
 P.O. Box 8346
 Reading, PA 19603
 (215) 378-9198

REMOTE VIDEO SYSTEM

Two-Way Telecommunication In A Portable Package

Now, with a minimum of expense and training, full motion color video conferencing is within reach.



IRIS RM-1. A totally self-contained, live origination/videoconferencing module, designed for use on cable and broadband local area network systems. Wherever there is a need for frequent face-to-face contact between people from different sites, IRIS provides the solution. Without the downtime and expense of employee travel **\$9725.00**

And, there is no need for exotic operator training. The applications are almost limitless:

- School Districts
Telecourses
- Medical Facilities
Consultation
Video-Visiting
- Businesses with Multiple Locations
Administration
Training
- Campus Based Institutions
- Government Facilities
- Municipal and County Governments

Specifications

RM-1 Module

Single tube, color camera
 Tripod
 Microphones (4)
 Weight 52 lbs.
 Height 13.5"
 Width 20.0"
 Depth 12.7"
 (16.7" when closed
 for transportation)

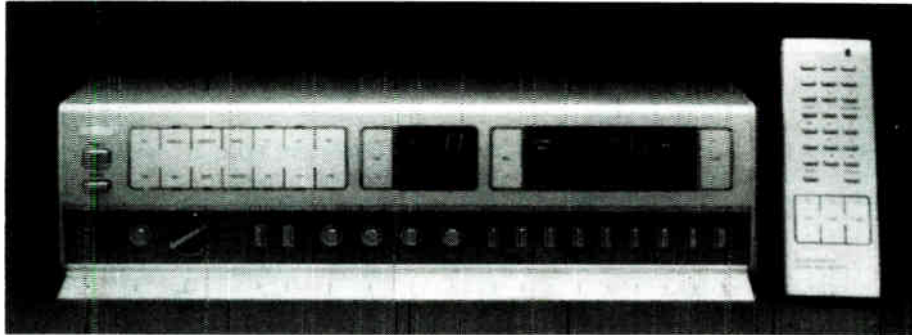
Inputs

Video-1.0v pp NTSC composite/75 ohms
 Audio-4 microphones, 25-600 ohms
 or
 3 microphones, 25-600 ohms
 1 line, switchable 600 ohms/less than 10k ohms
 RF-broadband RF cable input

Outputs

Video-baseband, 1.0v pp NTSC composite/75 ohms
 Audio-600 ohm, line output
 or
 RF-modulated 6 MhZ audio/video frequency in
 sub, low, high, mid bands (channel specified by users)
 Level - +40 dBm V to +54 dBm V

4136 North United Parkway
Schiller Park, IL 6017E
(312) 671-5680 (800) 323-0707



AVS-1500ST

AVS-1500ST AUDIO & VIDEO RECEIVER

Features

- High accuracy frequency synthesis tuners for AM, FM and TV broadcast and cable TV
- Micro-touch controls for all audio and video functions
- Full complement of audio and video functions allows control of all media: broadcast, disc, and tape
- "Last function" memory returns to previous channel, function and volume when power switch is engaged; memory continues for 1 day when unit is unplugged
- Direct access wireless remote control for all primary functions
- Adjustable DNR™, stereo synthesis, and acoustic enhance signal processing allows optimum audio performance with all media

Surprisingly simple in appearance, the AVS-1500ST is essentially four components in one: a digitally synthesized AM/FM tuner; a 50 watt per channel high performance integrated amplifier; an advanced technology, cable ready digitally synthesized, 133 channel video tuner; and a micro-processor controlled input/output switcher. Added to this is the convenience of a direct-access wireless remote control for all primary audio and video functions.

Far from simply combining audio and video, the AVS-1500ST adds signal processing capabilities which afford the user the opportunity to optimize every aspect of the home entertainment experience. Features such as the adjustable DNR™ Dynamic Noise Reduction System to provide high performance, low noise audio from standard videocassettes. Simulcast, a unique feature which allows simultaneous operation of both the audio and video tuners for easy reception of simulcast broadcasts. A special stereo synthesis circuit permits standard television broadcasts and monaural videocassettes to be experienced with much of the enjoyment of true stereo. The acoustic enhance function enables the user to simulate the acoustic experience of a concert hall environment.

The headphone control system of the AVS-1500ST further expands its usefulness in a unique fashion. Separate amplifiers and switching circuitry combine to permit the enjoyment of audio functions through headphones at the

same time that the main outputs are being used for broadcast TV or video.

The AVS-1500ST is the beginning of the ultimate home entertainment system.

SPECIFICATIONS

Continuous Power Output, RMS, both channels driven into 8 ohms, less than .05%
 THD 50 W
 Audio Signal to Noise Ratio:
 Phono (MM) 86 dB
 Tape 90 dB
 Video 1, Video 2 90 dB
 Audio Output Level/Impedance:
 Tape, Video 1, Video 2 150 mV/10 k-ohm
 Video Input Level/Impedance:
 Video 1, Video 2 1.0V/75 ohm
 Video Output Level/Impedance:
 Video 1, Monitor 1.0V/75 ohm
 RF Output Switchable CH3-4

Tuner Section

FM:

Type ... Frequency Synthesized, PLL Signal to Noise Ratio at 65 dBf:
 Stereo 74 dB
 THD at 65 dBf, 1.0 kHz:

 Stereo 0.15%
 Stereo Separation at 1.0 kHz 45 dB

AM Suppression Ratio 60 dB
 Capture Ratio 1.0 dB

Antenna Input:

 Balanced 300 ohms
 Unbalanced 75 ohms

AM:

Type ... Frequency Synthesized, PLL Signal to Noise Ratio at 50 dB
 TV:

Type Digital Frequency Synthesized System, NTSC American Standard

Tuning Range VHF CH 2-13, UHF CH 14-83, CATV CH A-WW
 Audio Bandpass 65 Hz-15 kHz

Antenna Input

 VHF/CATV 75 ohm
 UHF 300 ohm

General

Power Requirements AC 120V 60 Hz
 Power Consumption 150W
 Dimensions 17"W x 4-5/8"H x 18"D
 Weight 27 lbs.

An accessory kit containing a broad range of adaptors and connectors is included.

AVS-1500ST **\$1050.00**



KEYSTONE

ELECTRONICS CORPORATION

246 East 2nd Street
Plainfield, NJ 07060
(201) 753-4400

ENGINEERS & MANUFACTURERS OF CO-AXIAL COMMUNICATION PRODUCTS

KEYSTONE ELECTRONICS CORPORATION is an engineering and manufacturing firm serving cable television, SMATV, mini-cable, private cable, closed circuit television and telecommunications industries.

In our 9th year of servicing, we continue to provide:

PRODUCTS:

- Pay TV security traps
- Key lock traps (video & sound)
- Audio carrier only traps
- Band pass & band reject filters
- High pass & low pass & band pass filters
- Diplex filters
- Indoor tap with gain in FM band
- Cable isolator
- Ground blocks with/without cable isolator or high pass filter

ENGINEERING FOR:

- Feasibility studies
- System design
- Auditing & technical evaluation
- System engineering
- Reliability engineering

All our products are designed for outdoor and indoor applications. For outdoor, our products are housed in zinc housing for maximum protection against corrosion. Airtight sealing of housing eliminates all probability of water leakage or moisture condensation. Our competition cannot make this claim.

We are the leading manufacturer for keylock traps, tier traps, band-pass and band reject filters, and in-line audio carrier traps for outdoor installation. These traps prevent objectionable programming language going into subscriber home.

We can custom design a product to meet your specific requirements. Please give us a call. At Keystone, we worry about you.

MODEL 106 OUTDOOR SUBSCRIBER CHANNEL TRAP

The Series 106 trap circuits remove video signal. (Sound traps available on special order.) Weatherproof housing, pre-assembled, one end has 'F' fitting attached, other end has short double shielded (foil and braid) 59U cable 'F' fitting eliminating need for a jumper cable. Simply insert channel trap into existing 59U drop line. (Fits standard indoor moldings.) No splices.

SPECIFICATIONS

- Trap Attenuation Bandwidth at 50dB (min.): 10 kHz
- Return Loss: ± 10 MHz from Trap: 18dB
- Insertion Loss: 450 MHz: 0.25 dB; ± 6 MHz from trap Freq.: 1.5dB
- Temperature Stable: -40 F to + 140 F
- AC-DC: Burnout Protected
- Connectors: Female 'F' connector case; Male 'F' connector on 59U cable

SERIES 106

Mechanical:

- Zinc Diecast Housing
- Zinc Plate — Yellow irridite finish
- Stable: -40 to + 140 F, Jumper cable with 'F' Fitting attached

Model 106/Channel No., Single/Multi-Channel Trap

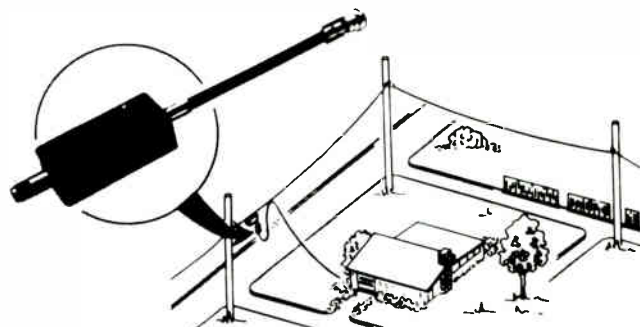
- Applicable for any 2, 3 or 4, 5 or 6 channels in any band (50-450 MHz)

Model 106/LP, Low-Pass Filter

- Passes 2 thru 6, Rejects all other channels

Model 106/HP, High-Pass Filter

- Passes 7 thru 13, 175.25-216 MHz, Rejects all other channels



SERIES 106

Model 106/S, Super-Band Trap

Channels	Rejection
217.25-300 MHz	
J	-30 dB
K thru W	-50 dB

Model 106/M, Mid-Band Trap

Channels	Rejection
120-156 MHz	
A thru G	-50 dB
H	-45 dB
I	-35 dB
7	-3 dB

Pass all other channels.

246 East 2nd Street
Plainfield, NJ 07060
(201) 753-4400

**PARENTAL CONTROL MULTI-CHANNEL
KEY-LOCK PROGRAM SWITCHES**

KE/501VS

VIDEO AND AUDIO

The Model KE/501VS is designed with a Key-Lock to permit parental programming control. When the Key is removed, pay channel is trapped. The KE/501VS Multi-Channel Trap series removes Video and Audio, and is available for Chs. 2-6, Midband and Chs. 7-EE. The KE/501VS is equipped with female "F" fittings on each side and 2 mounting ears for screw attachment. Size 2-1/2" L x 2" W x 1-1/2" D.

MODEL KE/500V

VIDEO ONLY

The Model KE/500V, similar to the KE/501VS, is also designed with a Key-Lock to permit parental programming control. The basic difference between the KE/501VS and KE/500V is that this Multi-Channel Trap series removes Video only.

The KE/501VS and KE/500V are also available in any combination of four channels, combining Lowband, Midband, Highband or Superband chs. with no adjacent channel problems.

Going Into Pay-Cable? Keystone designs and mass produces traps and filters for control of per-channel pay-cable TV. Traps are designed to remove Chs. 2 through 6, Mid-Band and 7 through EE. Filters pass signals in the same range. Keystone supplies pay-cable traps and filters in subscriber configurations, and also in trunk/distribution housings. Subscriber models include outdoor video traps for drop cable attachment; and indoor traps that feature key-locks, two-way splitting, or removal of audio and video for parental control.

Trunk/Distribution Channel Traps. 12 Amp AC power passing for system marketing prior to pay TV turn-on and individual subscriber trapping. Model 502 Trunk/Distribution Traps are capable of trapping out any Channel between 2-5, Mid-Band and 7 through EE. This series permits master control of pay-cable programs in your trunk or distribution networks. The Model 502 circuits are contained in an RFI shielded cast aluminum housing suitable for standard fitting installations. Size: 7-3/4" L x 6" W x 3" D.

SUBSCRIBER DROP PROTECTION DEVICES

Keystone has designed additional protection features in conventional grounding blocks. These features are: cable isolator and elimination of CB ingress into the system. The cable isolating feature breaks the physical continuity of inner and outer sheaths of the drop cable at the ground-block. This prevents travel of low frequency surges and power line disturbances to subscriber terminals. Catastrophic failure of expensive subscriber terminals is minimized.

Another version of ground-block has a high-pass filter, 50-450MHz and rejecting 0.5 to 35 MHz signals. This eliminates ingress of CB interference into the subscriber drop. Unnecessary service calls are eliminated.

A third version of ground-blocks has incorporated a surge protector to prevent surge reaching the TV set — or backward to the line extender.

The construction is of zinc die-cast with yellow irridite finish and machined "F" type connectors with weatherproofing.

When ordering specify

- KE-700 CI Cable isolator only
- KE-701 GBLA Ground block with lightning arrestor
- KE-702 HPF Ground block with high pass filter
- KE-703 CGH Ground block with cable isolator, high pass filter



KE/500V



KE/501VS



525ST



KE-700CI

MODEL 525ST

TWO-WAY SPLITTER TRAP

Keystone's Model 525ST is available for Chs. 2 through 6, Mid-Band and Chs. 7 through EE. Output 'S' provides all programs on the cable, including the pay-cable channel. Output 'T' passes all programming less the pay channel. Insertion Loss: 3.5dB. The Model 525ST is equipped with female 'F' type fittings and two mounting ears. Size: 2" square x 1-1/2" D.

MODEL 526, FM SPLITTER

Our Model 526 is a special splitter with a trap for FM band in one output (To TV Set) and a bandpass filter for FM band in other output (To FM Receiver). TV and FM bands are isolated by 55dB. TV signal pickup by FM receiver and FM signals pickup by TV receiver are thus prevented from interfering with each other. This splitter is of great value where video carriers are HRC frequencies and FM stations are off frequencies on cable spectrum. This also prevents overloading of FM tuner by video carriers. This splitter also provides 2.5dB higher signals in all bands. Ch. 6, A & B excepted. Conventional 2-way splitter has 3.5dB loss.

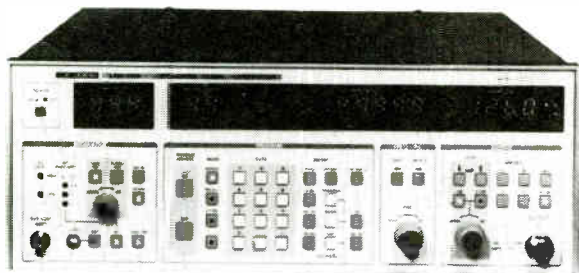
**MODEL KE FM MXX 75/300 OHM MATCHING TRANSFORMER
WITH FM BAND PASS ONLY**

This matching transformer is designed for FM receivers. The bandpass filter prevents TV signal pickup to travel back to the television set. It only permits FM signals to FM receiver, preventing tuner overloading.

LEADER INSTRUMENTS CORP.

380 Oser Avenue
Hauppauge, NY 11788
(516) 231-6900 TWX 510-227-9669

CATV/MATV TEST INSTRUMENTS



LSG-202



LFC-945B

LSG-202 SYNTHESIZED AM/FM SIGNAL GENERATOR

An all-purpose wide-band Signal Generator, the LSG-202 combines easy entry of operating parameters with storage of up to 100 test setups. Frequency and attenuation are set by keypad entry or increment-decrement control of individual digits, making it easy to enter parameters and make changes. Setting resolution is 100 Hz for frequency and 0.1 dB for attenuation.

All parameters can be preset and recalled from the front panel keypad. AM (0-90%) and FM (0-100 kHz) modulation is available by external signals or internal signals at 300 Hz, 400 Hz, 1 kHz or 3 kHz. Battery backup of memory prevents accidental loss of programmed data. And for communication operations, the reverse power protection feature prevents damage by an accidentally keyed transmitter.

All front panel programming operations can be remotely controlled. This type of control speeds lab routines by reducing setup time. It also adapts the unit to production-line and inspection routines

LSG-202 \$4995.00

LFC-944B VHF/UHF FIELD STRENGTH METER

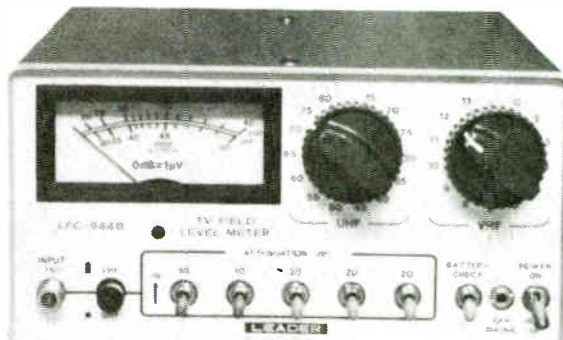
The LFC-944B is a portable battery operated field strength meter designed for testing and measuring the performance of CATV and MATV systems. It provides for measuring levels of -40 to +60 dBmV on VHF channels and -30 to +40 dBmV on UHF channels. The meter scale is also calibrated to make measurements in microvolts. An accurate attenuator provides up to 70 dB attenuation in 10 dB steps. Accurate detent tuning is provided for VHF channels and UHF tuning for channels 14 to 83 is with a continuous control. The LFC-944B is supplied with a sturdy carrying case.

LFC-944B \$525.00

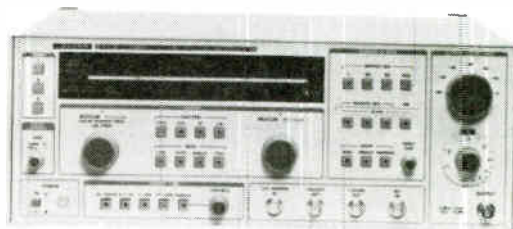
LFC-945B CATV LEVEL METER

The LFC-945B CATV Level Meter is a rugged, accurate instrument for measuring signal levels in CATV and MATV Systems. It covers the two frequency ranges 40 to 300 MHz and 470 to 890 MHz with accuracies of +/- 1.5 dB and +/- 2 dB respectively. Tuning of individual channels is facilitated by large dials marked with both frequency and channel, an electronic fine tuning control and a built-in sound amplifier and a loudspeaker which enables separate field strength measurements of the audio and video signals.

VRF-100



LFC-944B



LSW-359

Three 20 dB switchable attenuators and a 25 dB meter scale provide an input signal range of -35 to +60 dBm (0 dBm = 1mV).

The LFC-945B will also measure AC voltages on the cable system from 0 to 50 VAC with an accuracy of +/- 5% f.s.

Power is supplied by rechargeable NiCad cells and the power switch is automatically set to off when the protective cover is closed.

The LFC-945B weighs just 8.8 lbs. and is supplied with a battery charger, rechargeable batteries, 300:75 ohm balun and nylon web carrying/operation strap.

LFC-945B \$775.00

LSW-359 1.5 GHz SWEEP GENERATOR

A wide band Sweep Generator, the LSW-359 covers the frequency range of 1 MHz to 1.5 GHz in three bands. It features four modes to select the range of swept frequencies:

Full Band: In which the entire band is swept. For example, 450 MHz to 1 GHz for band 2.

Start/Stop: Two controls determine the starting and ending frequencies for the range swept. Frequencies are indicated on a slide-rule dial.

Delta F Sweep: One control sets the center frequency, another sets the sweep width centered on that frequency. Sweep width is variable from 200 kHz to 500 MHz.

CW: The generator operates as a CW signal source with calibrated output frequency and optional 1-kHz sine wave amplitude modulation.

A unique marker system offers a pulse-type marker in full-band operation. The frequency of the marker is read off the slide-rule dial. In addition, harmonic comb-type birdy markers are available in all modes of frequency selection. The birdies are spaced at 1, 10, 50 and/or 100 MHz and are staggered in amplitude for ease in identification. All markers are bypassed (post-detector injected) so that marker amplitude is independent of the characteristics of the device under test.

Attenuation is 60 dB in 10 dB increments augmented by a 17 dB DC voltage controlled attenuator.

Sweep rates are continuously variable from 10 mS to 100 S and can be automatically triggered, synchronized from the power line, or triggered manually for single-sweep operation. In the single-sweep mode, a pen lift contact closure permits operation with X-Y plotters. All major functions can be remote-controlled to make the LSW-359 an extremely versatile sweeper for lab and production uses.

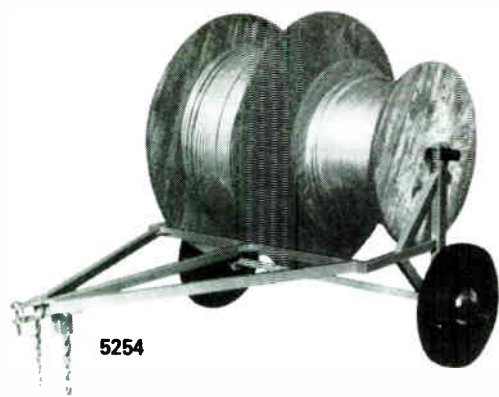
LSW-359 \$3995.00

Prices and Specifications Subject to Change Without Notice.

LEMCO TOOL CORPORATION

R.D. #2
 Box 330A
 Cogan Station, PA 17728
 (717) 494-0620

CABLE REEL TRAILERS



5254



6566KD

MODEL 6566KD KNOCK DOWN TRAILER

When disassembled, several trailers can be transported in a pick-up truck, or be stored in a small area. Supplied with a reversible mechanism that accepts either a 2" ball coupler or pintle eye. Standard equipment includes license plate bracket, safety chains, light group, and high visibility orange finish. Assembly instructions and operating procedures supplied.

MODEL	6566KD	6366	6372
Reel Capacity (Dia. x Width) (Inches)	66 x 65	66 x 63	72 x 63
Overall Dimensions (L X W X H) (Inches)	120 x 96 x 49	107 x 89 x 46	107 x 89 x 52
Tires	E-78-14, Class B	E-78-14	E-78-14
Gross Vehicle Weight Rating (Pounds)	(not included)		
	3,000	2,240	2,240
Shpg. Wt. (Pounds)	450	390	405

MODEL NO. 6366 TRAILER

MODEL	HITCH TYPE
6366P	Adjustable Pintle Eye
6366B	2" Ball Coupler

MODEL NO. 6372 TRAILER

MODEL	HITCH TYPE
6372P	Adjustable Pintle Eye
6372B	2" Ball Coupler

Standard equipment on both Model Nos. 6366 and 6372:

- License Plate Bracket
- Safety Chains
- Adjustable Pintle Ring
- Leaf Springs
- Reflectors
- Light Group
- Primed and Painted High-Visibility Orange



6354

CABLE REEL TRAILERS

Standard Equipment

- License Plate Bracket
- Safety Chains
- 1-7/8" Ball Coupler
- Reflectors
- Primed and Painted High-Visibility Orange
- Light Group

Drop Axle and Springs Provide

- Lower Center of Gravity
- Smoother Cable Transport

MODEL	5254	6354
Reel Capacity (Dia. x Width) (Inches)	54 x 56	57 x 63
Overall Dimensions (L x W x H) (Inches)	96 x 70 x 44	107 x 89 x 40
Tires	B78-13	E78-14
Gross Vehicle Weight Rating (Pounds)	2000	2240
Shipping Weight (Pounds)	200	375

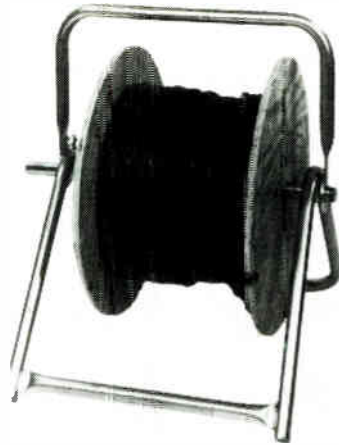
LEMCO TOOL CORPORATION

R.D. #2
 Box 330A
 Cogan Station, PA 17728
 (717) 494-0620

CABLE CADDIES/ REEL ACCESSORIES



T-255



T-254



T-253



1220 REEL BUCK

Will easily handle 18" and 22" diameter reels of strand and cable reel diameters from 36" to 54". Foot and handle design hold main frame up and away from irregular surfaces.

Fabricated of steel tubing. Wt. 70 lbs. Primed and painted.

Rugged — Truly designed for construction site usage.

Safe — Arbor sleeves slip over arbor, keeping the handles in control

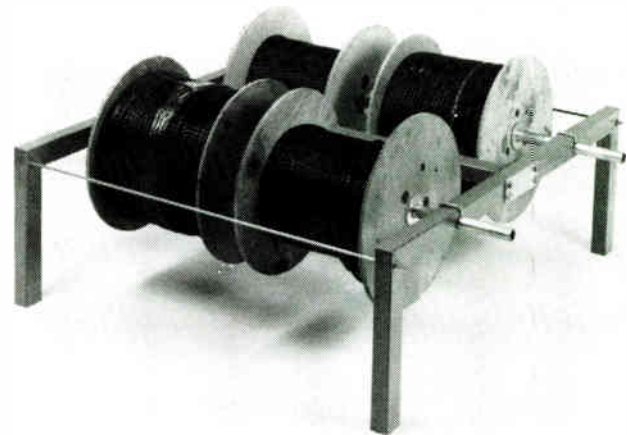
- Use on Ground, Truck or Warehouse
- Collapsible for easy Storage
- Labor Saving Lifetime Tool

The Reel Buck is 35" high and 64" in length.

REEL HANDLING DEVICES

The Cable Caddies shown here are for use in paying-out Drop Cable during customer installations. They can be carried (rolled) to walk-off cable or placed and cable can be pulled out.

Drop Cable Manufacturers recommend that when paying-out cable the spool should rotate. Cable damage will result if the cable is pulled off from a dead spool or over an end of a spool. The resulting damage may be hidden. Do not twist or jerk the cable. Fabricated of sturdy steel tubing and painted utility orange these devices will yield years of service. Three sizes are made available to meet your requirements.



T-256 DROP REEL JACK

The Drop Reel Jack supports up to four reels of drop cable and is used in multiple wiring installations, i.e. — apartment buildings. The unit is supplied with springs which serve as a braking device to avoid inadvertent pay-out. Maximum reel size is 18-inch diameter and 16-inch width. The unit is fabricated of steel tubing and painted. Assembly instructions are supplied. Wt. 33 lbs.

MODEL NO.	MAXIMUM REEL SIZE (Dia.) x (Width)	CAPACITY (Lbs.)	WT. (Lbs.)
T-253	14" x 12"	225	5-3/4
T-254	18" x 16"	200	9
T-255	26" x 15"	170	10

LRC ELECTRONICS, INC.

901 South Avenue, Box 111
Horseheads, NY 14845
(607) 739-3844

CONNECTORS/ TERMINATORS

One Piece Drop-Cable Connectors For RG-59/U Cable

F-59CH



General usage for foil-braid cable
Attached Crimp Ring
Hex Tool-CT601

F-59QS



General usage for foil-braid,
foil-braid cable
Hex Tool-CT601

FS-59



Sealed Unit Seals to Jacket and to
female F Use on standard 242 O D
Hex Tool-CT601

F59CD



Special design for large double braid cable
Hex Tool-CT601

FS-59QS



Sealed Unit Seals to Jacket and to female F
Use on foil-braid, foil-braid cable

F59CDB



Special design for large double braid cable
Hex Tool-CT601

One Piece Drop-Cable Connectors For RG-6/U Cable

F-56CH



General usage for foil-braid cable
Attached Crimp Ring
Hex Tool-CT601

F-56QS



General usage on foil-braid,
foil braid cable
Hex Tool-HCT-6QS

FS-56



Sealed Unit Seals to Jacket and to
Female F Use on standard 280 O D
Hex Tool-CT601

FS-56QS



Sealed Unit Seals to Jacket and to
Female F Use on foil-braid, foil-braid cable
Hex Tool-CT601

F56C



General usage with attached Crimp Ring
Tool-CT603

MISC. "F" CONNECTORS

GROUNDING DEVICES

Accepts 18-22-AWG
Center Conductors

GB-81	DGB-81	GL-81

SPLICE

Accepts 18-24 AWG
Center Conductors

F-81	F-81 59 WCR250	F-81 59L WCR550
	TOOL CT603	TOOL CT601

QUICK DISCONNECT

ADAPTOR
Push-on-accepts 18-24 AWG
connectors

PF-59	F-56P	F-59P	PF-59S

ADAPTORS

Male to "F" Female
Accepts 18-24 AWG conductor

BNC-FF	RA-659

MISCELLANEOUS

Male "F"

F-11 WCR11	F-60 WCR125
TOOL CT603	TOOL CT425

ATTENUATORS

DC-300 MHz usable to 1 GHz
Accuracy 5% or ± 5 db
Impedance 75 ohms in and out
Return Loss: 20 db min

Applies directly, without the use of
a F-71 or a Jumper
Solid construction

AP-3FM AP-6FM	AP-10FM AP-20FM	AP-3FF AP-6FF	AP-10FF AP-20FF
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TERMINATORS, SECURITY DEVICES

GENERAL TERMINATORS

TRF		"F" port termination
TRFSM		"F" port termination - used with security shield - available without resistor as TRF SMP

LOCKING TERMINATORS

TRLF		"F" port termination - brass body - available without resistor as CLF
TRLFA		"F" port termination - aluminum body available without resistor as CLFA
LTF		installation tool for locking terminators

SECURITY SHIELD*

Patent #4 168 921

		ATTACHMENT	MATERIAL ¹	"A"	"B"
FCS-3S		slp-on	steel	750	080
FCS-3S-P		-	iron	750	080
FCS-9S		-	steel	1 025	080
FCS-9S-P		-	iron	1 025	080
FCS-5T		threaded-on	steel	750	092
FCS-5T-P		-	iron	750	080
FCS-9T		-	steel	1 075	138
FCS-9T-P		-	iron	1 075	120

SECURITY SHIELD TOOL

SST-59-U		use to install "F" style connectors and general terminators into security shields
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Prices and Specifications Subject to Change Without Notice.

VRF-103

LRC ELECTRONICS, INC.

901 South Avenue
Box 111, Horseheads, NY 14845
(607) 739-3844

TAPS AND CONNECTORS

MISC. ALUMINUM CONNECTORS

F625E
(Aluminum)



$\frac{5}{16}$ "-24 ENTRY TO F FEMALE
1- $\frac{1}{4}$ " pin fits most amplifiers, taps, etc.
For 2" pin, add suffix - TC

ETE625



$\frac{5}{16}$ " ENTRY TO ENTRY
For direct coupling of housings.
For 2" pin, add suffix - TC

ETE625-R



$\frac{5}{16}$ " ENTRY TO ENTRY
With rotating coupler.
For 2" pin, add suffix - TC

625TRB



$\frac{5}{16}$ " ENTRY TERMINATOR
AC Blocking
1- $\frac{1}{4}$ " Terminal pin fits most amplifiers,
taps, etc.
For 2" pin, add suffix - TC

TRB-F



TERMINATOR-AC-BLOCKING
Sealed construction mates with F625 E and
cable to F series

625-P



PORT PLUG
thd. $\frac{5}{16}$ "-24

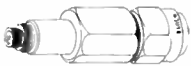
KS625



ENTRY ADAPTER
Stainless steel insert prevents
seizing of Aluminum connectors
OD $1\frac{1}{16}$ "-20 ID $\frac{5}{16}$ "-24

MISC. CABLE ADAPTORS

Cable To FF



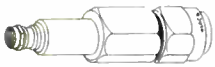
female "F" accepts 18-22 AWG conductors

Cable To Bulk Head FF



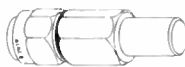
bulkhead mount
female "F" accepts 18-22 AWG conductors
shipped with two mounting nuts

Cable To FM



male "F" mates with F-61 and F-81 fittings

Cable To Terminator



AC blocking

Cable To "N" Male



75 ohm "N"
also available in 50 ohm

Cable To "N" Female



75 ohm "N"
Also available in 50 ohm

Cable To "UHF" Male



mates with UHF female
Also available in the M series. (modified UHF, 75 ohm)

Cable To "UHF" Female



mates with UHF male
Also available in the M series. (modified UHF, 75 ohm)

SPLICE BLOCK AND UNIVERSAL CONNECTORS

HSB



HOUSING SPLICE BLOCK

Female splice adapter: splices any two chassis mounting connectors with standard $\frac{5}{16}$ "-24 threads; enables the joining of one size cable to another size or type cable. Facilitates a thru splice of 90° or 180° splice. Accepts center conductor up to .185 diameter.

TSB



THROUGH SPLICE BLOCK

Female splice adapter: splices any two chassis mounting connectors with standard $\frac{5}{16}$ "-24 threads; enables the joining of one size cable to another size or type cable. Facilitates a thru splice only. Accepts center conductor up to .185 diameter.

EU-90



ENTRY UNIVERSAL - 90°

Right angle entry designed for use in a pedestal or in tight spaces where cable cannot be bent. Can be used with any chassis mount fitting with standard $\frac{5}{16}$ "-24 threads. Use two together for 180° entry or EU-90-3.0 or EU-90 4.5 to extend away from the housing. Accepts center conductor up to .185 diameter.

EU-90 3



ENTRY UNIVERSAL, - 90° - 3"

Same as EU-90 except with a longer body to extend away from the housing. Use with one EU-90 for 180° entry with a center conductor 3 inches: center to center. Accepts center conductor up to .185 diameter.

EU-90 4-5



ENTRY UNIVERSAL, - 90° - 4.5"

Same as EU-90 except with a longer body to extend away from the housing. Use with one EU-90 for 180° entry with a center conductor 4.5 inches: center to center. Accepts center conductor up to .185 diameter.

B SERIES INTEGRAL MANDREL CONNECTORS FEATURES

The design of the LRC EI series connector incorporates an internal mechanism which seizes both the center conductor and the aluminum sheath in one operation by the tightening of a single nut, thus making installation easier and faster.

The electrical parameters of this connector series make them more than adequate for today's and tomorrow's cable system.



ENTRY CONNECTOR
feed thru



ENTRY CONNECTOR
pin type
U.S. Patent No. 4,346,958



SPLICE CONNECTOR
U.S. Patent No. 4,346,958



ENTRY CONNECTOR
extension
U.S. Patent No. 4,346,958

VRF-104

Prices and Specifications Subject to Change Without Notice.

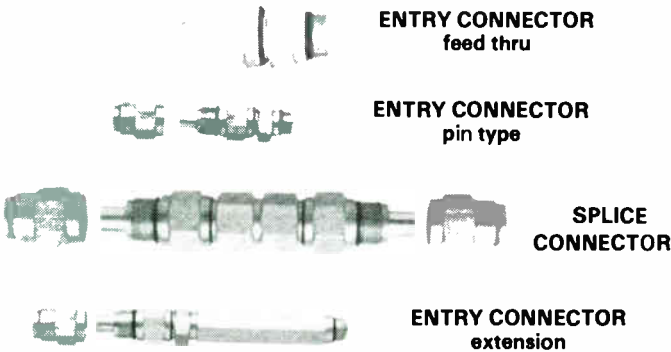
901 South Avenue, Box 111
Horseheads, NY 14845
(607) 739-3844

W SERIES INTEGRAL MANDREL

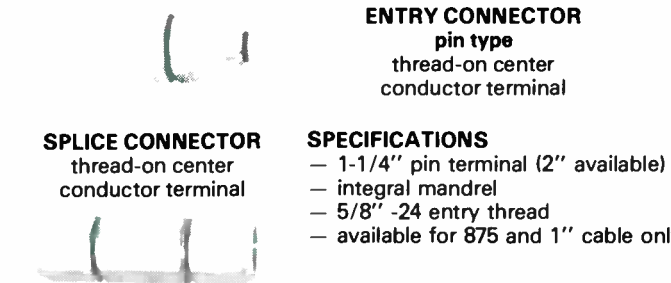
FEATURES

The same mechanical features that made the LRC EFI series one of the most used connectors in CATV are retained in the present design, which now incorporates electrical parameters that make these connectors usable to 500 MHz and beyond.

This series uses a separate seizing mechanism for the center conductor and the shield.



These pin type entry connectors are unique in the industry in that they have a threaded center conductor pin which affords maximum pull strength for the center conductor. The stresses of the center conductor are absorbed in the connector itself and none is transferred to the equipment that the connector is used on.



- SPECIFICATIONS**
- 1-1/4" pin terminal (2" available)
 - integral mandrel
 - 5/8" -24 entry thread
 - available for 875 and 1" cable only

K SERIES INTEGRAL MANDREL

FEATURES

The feed thru connector in the "K" Series offers a 30 dB minimum return loss from 0-850 MHz (LRC will supply test data.)

Identifying part numbers are stamped permanently on the main body of each connector for easy identification.

- ENTRY CONNECTOR feed thru**
- SPECIFICATIONS**
- integral mandrel
 - sealed unit with proper cable preparation
 - 5/8" - 24 entry thread
 - not available for .750, .875, 1.000 application, not practical. Please consult LRC Engineering

- ENTRY CONNECTOR extension**
- SPECIFICATIONS**
- nominal 3" extension
 - 2" pin terminal standard
 - auto seized center conductor
 - integral mandrel
 - 5/8" - 24 entry thread

MC² SERIES CONNECTORS

For General Cables MC² Series Cables

FEATURES

- LRC patented seizing mechanism U.S. Patent No. 4,346,958
- Time proven positive stops
- 2" pin terminal (standard)
- Identifying part number stamped permanently on connector

MATERIALS

- Connector body: 6262 aluminum for maximum corrosion resistance
- Connector finish; clear iridite
- Mandrel: cadmium plated steel
- Terminal: silver plated brass for excellent RF contact



MC2 SERIES	440	500	650	750	1000
FEED THRU	EM1-440 MC2	EM1-500 MC2	EM1-650 MC2		
ENTRY PIN TYPE	E1-440 MC2	E1-500 MC2	E1-650 MC2	E1-750 MC2	E1-1000 MC2
ENTRY EXTENSION	E1-440 MC2LB	E1-500 MC2LB	E1-650 MC2LB	E1-750 MC2LB	E1-1000 MC2LB
SPLICE	S1-440 MC2	S1-500 MC2	S1-650 MC2	S1-750 MC2	S1-1000 MC2
FF	A1-440 FF MC2	A1-500 FF MC2	A1-650 FF MC2	A1-750 FF MC2	A1-1000 FF MC2
FF BULKHEAD	B1-440 FF MC2	B1-500 FF MC2	B1-650 FF MC2	B1-750 FF MC2	B1-1000 FF MC2
FM	A1-440 FM MC2	A1-500 FM MC2	A1-650 FM MC2	A1-750 FM MC2	A1-1000 FM MC2
TERMINATOR	A1-440 TRB MC2	A1-500 TRB MC2	A1-650 TRB MC2	A1-750 TRB MC2	A1-1000 TRB MC2
N MALE	A1-440 NM MC2	A1-500 NM MC2	A1-650 NM MC2	A1-750 NM MC2	A1-1000 NM MC2
N FEMALE	A1-440 NF MC2	A1-500 NF MC2	A1-650 NF MC2	A1-750 NF MC2	A1-1000 NF MC2
UHF MALE	A1-440 UHF MC2	A1-500 UHF MC2	A1-650 UHF MC2	A1-750 UHF MC2	A1-1000 UHF MC2
UHF FEMALE	A1-440 UHF F MC2	A1-500 UHF F MC2	A1-650 UHF F MC2	A1-750 UHF F MC2	A1-1000 UHF F MC2

QR SERIES CONNECTORS

for Comm/Scope QR Series Cable

FEATURES

- Positive stops
- Positive grounding to outside of cable sheath
- Integral mandrel
- Auto seized center conductor
- Silver plated terminal



QR SERIES	500	860	1125
FEED THRU	EM1-500-QR		
ENTRY PIN TYPE	E1-500-QR	E1-860-QR	E1-1125-QR
ENTRY EXTENSION	E1-500-QR/LB	E1-860-QR/LB	E1-1125-QR/LB
SPLICE	S1-500-QR	S1-860-QR	S1-1125-QR
FF	A1-500-FF-QR	A1-860-FF-QR	A1-1125-FF-QR
FF BULKHEAD	B1-500-FF-QR	B1-860-FF-QR	B1-1125-FF-QR
FM	A1-500-FM-QR	A1-860-FM-QR	A1-1125-FM-QR
TERMINATOR	A1-500-TRB-QR	A1-860-TRB-QR	A1-1125-TRB-QR
N MALE	A1-500-NM-QR	A1-860-NM-QR	A1-1125-NM-QR
N FEMALE	A1-500-NF-QR	A1-860-NF-QR	A1-1125-NF-QR
UHF MALE	A1-500-UHF-QR	A1-860-UHF-QR	A1-1125-UHF-QR
UHF FEMALE	A1-500-UHF F-QR	A1-860-UHF F-QR	A1-1125-UHF F-QR

*Feed thru connector is not a practical application in this size

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TAPS AND CONNECTORS

CABLE GROUP A

CCS HATFIELD: GID I, CHEMA FOAM
CERRO: GX*, POLYETHYLENE*
COMM/SCOPE: PARAMETER I, ALUMAGARD
SYSTEMS: 11 & 12, 21 & 22
TIMES: ALUMIFOAM*, ALUMIFOAM II

* NOT IN CURRENT PRODUCTION

B SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-B	EMI-500-B		EMI-750-B		
ENTRY, PIN TYPE	EI-412-B	EI-500-B		EI-750-B		
ENTRY EXTENSION	EI-412-B-LB	EI-500-B-LB		EI-750-B-LB		
SPLICE	SI-412-B	SI-500-B		SI-750-B		
FF	AI-412-FF-B	AI-500-FF-B		AI-750-FF-B		
FF BULKHEAD	BI-412-FF-B	BI-500-FF-B		BI-750-FF-B		
FM	AI-412-FM-B	AI-500-FM-B		AI-750-FM-B		
TERMINATOR	AI-412-TRB-B	AI-500-TRB-B		AI-750-TRB-B		
N MALE	AI-412-NM-B	AI-500-NM-B		AI-750-NM-B		
N FEMALE	AI-412-NF-B	AI-500-NF-B		AI-750-NF-B		
UHF MALE	AI-412-UHFM-B	AI-500-UHFM-B		AI-750-UHFM-B		
UHF FEMALE	AI-412-UHFF-B	AI-500-UHFF-B		AI-750-UHFF-B		

W SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-W	EMI-500-W		EMI-750-W		
ENTRY, PIN TYPE	EFI-412P-W	EFI-500P-W		EFI-750P-W		EFI-1000P-W
ENTRY EXTENSION	EFI-412PW-LB	EFI-500PW-LB		EFI-750PW-LB		
SPLICE	SFI-412-W	SFI-500-W		SFI-750-W		SFI-1000-W
FF	AI-412-FF-W	AI-500-FF-W		AI-750-FF-W		AI-1000-FF-W
FF BULKHEAD	BAI-412-FF-W	BAI-500-FF-W		BAI-750-FF-W		BAI-1000-FF-W
FM	AI-412-FM-W	AI-500-FM-W		AI-750-FM-W		AI-1000-FM-W
TERMINATOR	AI-412-TRB-W	AI-500-TRB-W		AI-750-TRB-W		

B SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-B3					
ENTRY, PIN TYPE	EI-412-B3					
ENTRY EXTENSION	EI-412-B3-LB					
SPLICE	SI-412-B3					
FF	AI-412-FF-B3					
FF BULKHEAD	BI-412-FF-B3					
FM	AI-412-FM-B3					
TERMINATOR	AI-412-TRB-B3					
N MALE	AI-412-NM-B3					
N FEMALE	AI-412-NF-B3					
UHF MALE	AI-412-UHFM-B3					
UHF FEMALE	AI-412-UHFF-B3					

W SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-SW	EMI-500-SW		EMI-750-SW		
ENTRY, PIN TYPE	EFI-412P-SW	EFI-500P-SW		EFI-750P-SW		EFI-1000P-SW
ENTRY EXTENSION	EFI-412P-SW-LB	EFI-500P-SW-LB		EFI-750P-SW-LB		
SPLICE	SFI-412-SW	SFI-500-SW		SFI-750-SW		SFI-1000-SW
FF	AI-412-FF-SW	AI-500-FF-SW		AI-750-FF-SW		AI-1000-FF-SW
FF BULKHEAD	BAI-412-FF-SW	BAI-500-FF-SW		BAI-750-FF-SW		BAI-1000-FF-SW
FM	AI-412-FM-SW	AI-500-FM-SW		AI-750-FM-SW		AI-1000-FM-SW
TERMINATOR	AI-412-TRB-SW	AI-500-TRB-SW		AI-750-TRB-SW		

CABLE GROUP B

CERRO: CERROFOAM*
COMM SCOPE: CELL-O-AIR*
TIMES: DYNAPLUS*, DYNAPLUS*

* NOT IN CURRENT PRODUCTION

FUSED DISC	412	500	625	750	875	1000
FEED THRU	EMI-412-FD W	EMI-500-FD W		EMI-750-FD W		
ENTRY, PIN TYPE	EFI-412P-FD W	EFI-500P-FD W		EFI-750P-FD W		EFI-1000P-FD W
ENTRY EXTENSION	EFI-412P-FD W-LB	EFI-500P-FD W-LB		EFI-750P-FD W-LB		
SPLICE	SFI-412-FD W	SFI-500-FD W		SFI-750-FD W		SFI-1000-FD W
FF	AI-412-FF-FD W	AI-500-FF-FD W		AI-750-FF-FD W		AI-1000-FF-FD W
FF BULKHEAD	BAI-412-FF-FD W	BAI-500-FF-FD W		BAI-750-FF-FD W		BAI-1000-FF-FD W
FM	AI-412-FM-FD W	AI-500-FM-FD W		AI-750-FM-FD W		AI-1000-FM-FD W
TERMINATOR	AI-412-TRB-FD W	AI-500-TRB-FD W		AI-750-TRB-FD W		
N MALE	AI-412-NM-FD W	AI-500-NM-FD W		AI-750-NM-FD W		AI-1000-NM-FD W
N FEMALE	AI-412-NF-FD W	AI-500-NF-FD W		AI-750-NF-FD W		AI-1000-NF-FD W
UHF MALE	AI-412-UHFM-FD W	AI-500-UHFM-FD W		AI-750-UHFM-FD W		AI-1000-UHFM-FD W
UHF FEMALE	AI-412-UHFF-FD W	AI-500-UHFF-FD W		AI-750-UHFF-FD W		AI-1000-UHFF-FD W

CABLE GROUP C

GENERAL CABLE: FUSED DISC*
FUSED DISC III
FUSED DISC M III

* NOT IN CURRENT PRODUCTION

FUSED DISC III	412	500	625	750	875	1000
FEED THRU	EMI-412-FD B	EMI-500-FD B3		EMI-750-FD B3		
ENTRY, PIN TYPE	EI-412-B3	EI-500-B3		EI-750-B3		EFI-1000P-FD W
ENTRY EXTENSION	EI-412-B3-LB	EI-500-B3-LB		EI-750-B3-LB		
SPLICE	SI-412-B3	SI-500-B3		SI-750-B3		SFI-1000-FD W
FF	AI-412-FF-B3	AI-500-FF-B3		AI-750-FF-B3		AI-1000-FF-FD W
FF BULKHEAD	BI-412-FF-B3	BI-500-FF-B3		BI-750-FF-B3		BAI-1000-FF-FD W
FM	AI-412-FM-B3	AI-500-FM-B3		AI-750-FM-B3		AI-1000-FM-FD W
TERMINATOR	AI-412-TRB-B3	AI-500-TRB-B3		AI-750-TRB-B3		
N MALE	AI-412-NM-B3	AI-500-NM-B3		AI-750-NM-B3		AI-1000-NM-FD W
N FEMALE	AI-412-NF-B3	AI-500-NF-B3		AI-750-NF-B3		AI-1000-NF-FD W
UHF MALE	AI-412-UHFM-B3	AI-500-UHFM-B3		AI-750-UHFM-B3		AI-1000-UHFM-FD W
UHF FEMALE	AI-412-UHFF-B3	AI-500-UHFF-B3		AI-750-UHFF-B3		AI-1000-UHFF-FD W

FUSED DISC III	11.8mm	13.8mm	14.8mm	16.8mm	18.8mm	20.8mm
FEED THRU	EMI-11 5-B	EMI-13 0-B	EMI-14 5-B	EMI-16 5-B	EMI-19 0-B	
ENTRY, PIN TYPE	EI-11 5-B	EI-13 0-B	EI-14 5-B	EI-16 5-B	EI-19 0-B	EFI-1000P-FD W
ENTRY EXTENSION	EI-11 5-B-LB	EI-13 0-B-LB	EI-14 5-B-LB	EI-16 5-B-LB	EI-19 0-B-LB	
SPLICE	SI-11 5-B	SI-13 0-B	SI-14 5-B	SI-16 5-B	SI-19 0-B	SFI-1000-FD W
FF	AI-11 5-FF-B	AI-13 0-FF-B	AI-14 5-FF-B	AI-16 5-FF-B	AI-19 0-FF-B	AI-1000-FF-FD W
FF BULKHEAD	BI-11 5-FF-B	BI-13 0-FF-B	BI-14 5-FF-B	BI-16 5-FF-B	BI-19 0-FF-B	BAI-1000-FF-FD W
FM	AI-11 5-FM-B	AI-13 0-FM-B	AI-14 5-FM-B	AI-16 5-FM-B	AI-19 0-FM-B	AI-1000-FM-FD W
TERMINATOR	AI-11 5-TRB-B	AI-13 0-TRB-B	AI-14 5-TRB-B	AI-16 5-TRB-B	AI-19 0-TRB-B	
N MALE	AI-11 5-NM-B	AI-13 0-NM-B	AI-14 5-NM-B	AI-16 5-NM-B	AI-19 0-NM-B	AI-1000-NM-FD W
N FEMALE	AI-11 5-NF-B	AI-13 0-NF-B	AI-14 5-NF-B	AI-16 5-NF-B	AI-19 0-NF-B	AI-1000-NF-FD W
UHF MALE	AI-11 5-UHFM-B	AI-13 0-UHFM-B	AI-14 5-UHFM-B	AI-16 5-UHFM-B	AI-19 0-UHFM-B	AI-1000-UHFM-FD W
UHF FEMALE	AI-11 5-UHFF-B	AI-13 0-UHFF-B	AI-14 5-UHFF-B	AI-16 5-UHFF-B	AI-19 0-UHFF-B	AI-1000-UHFF-FD W

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TAPS AND CONNECTORS

CABLE GROUP D

COMM.SCOPE: PARAMETER II*
* NOT IN CURRENT PRODUCTION

B SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-B3					
ENTRY, PIN TYPE	EI-412-B3					
ENTRY EXTENSION	EI-412-B3/LB					
SPLICE	SI-412-B3					
FF	AI-412-FF-B3					
FF BULKHEAD	BI-412-FF-B3					
FM	AI-412-FM-B3					
TERMINATOR	AI-412-TRB-B3					
N MALE	AI-412-NM-B3					
N FEMALE	AI-412-NF-B3					
UHF MALE	AI-412-UHFM-B3					
UHF FEMALE	AI-412-UHFF-B3					

W SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-W2	EMI-500-W2		EMI-750-W2		
ENTRY, PIN TYPE	EFI-412P-W2	EFI-500P-W2		EFI-750P-W2		EFI-1000P-W2
ENTRY EXTENSION	EFI-412P-W2/LB	EFI-500P-W2/LB		EFI-750P-W2/LB		
SPLICE	SFI-412-W2	SFI-500-W2		SFI-750-W2		SFI-1000-W2
FF	AI-412-FF-W2	AI-500-FF-W2		AI-750-FF-W2		AI-1000-FF-W2
FF BULKHEAD	BAI-412-FF-W2	BAI-500-FF-W2		BAI-750-FF-W2		BAI-1000-FF-W2
FM	AI-412-FM-W2	AI-500-FM-W2		AI-750-FM-W2		AI-1000-FM-W2
TERMINATOR	AI-412-TRB-W2	AI-500-TRB-W2		AI-750-TRB-W2		

CABLE GROUP E

CCS HATFIELD: GID III
CERRO: GXX*
COMM.SCOPE: PARAMETER III
SCIENTIFIC ATLANTA: GID III
SYSTEMS: 31 & 32
TIMES: LUMIFOAM III & T-4
CAPSCAN: 4
* NOT IN CURRENT PRODUCTION

B SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-B3	EMI-500-B3	EMI-625-B3	EMI-750-B3	EMI-875-B3	
ENTRY, PIN TYPE	EI-412-B3	EI-500-B3	EI-625-B3	EI-750-B3	EI-875-B3	
ENTRY EXTENSION	EI-412-B3/LB	EI-500-B3/LB	EI-625-B3/LB	EI-750-B3/LB	EI-875-B3/LB	
SPLICE	SI-412-B3	SI-500-B3	SI-625-B3	SI-750-B3	SI-875-B3	
FF	AI-412-FF-B3	AI-500-FF-B3	AI-625-FF-B3	AI-750-FF-B3	AI-875-FF-B3	
FF BULKHEAD	BI-412-FF-B3	BI-500-FF-B3	BI-625-FF-B3	BI-750-FF-B3	BI-875-FF-B3	
FM	AI-412-FM-B3	AI-500-FM-B3	AI-625-FM-B3	AI-750-FM-B3	AI-875-FM-B3	
TERMINATOR	AI-412-TRB-B3	AI-500-TRB-B3	AI-625-TRB-B3	AI-750-TRB-B3	AI-875-TRB-B3	
N MALE	AI-412-NM-B3	AI-500-NM-B3	AI-625-NM-B3	AI-750-NM-B3	AI-875-NM-B3	
N FEMALE	AI-412-NF-B3	AI-500-NF-B3	AI-625-NF-B3	AI-750-NF-B3	AI-875-NF-B3	
UHF MALE	AI-412-UHFM-B3	AI-500-UHFM-B3	AI-625-UHFM-B3	AI-750-UHFM-B3	AI-875-UHFM-B3	
UHF FEMALE	AI-412-UHFF-B3	AI-500-UHFF-B3	AI-625-UHFF-B3	AI-750-UHFF-B3	AI-875-UHFF-B3	

W SERIES	412	500	625	750	875	1000
FEED THRU	EMI-412-W3	EMI-500-W3		EMI-750-W3		
ENTRY, PIN TYPE	EFI-412P-W3	EFI-500P-W3		EFI-750P-W3		EFI-1000P-W3
ENTRY EXTENSION	EFI-412P-W3/LB	EFI-500P-W3/LB		EFI-750P-W3/LB		
SPLICE	SFI-412-W3	SFI-500-W3		SFI-750-W3		SFI-1000-W3
FF	AI-412-FF-W3	AI-500-FF-W3		AI-750-FF-W3		AI-1000-FF-W3
FF BULKHEAD	BAI-412-FF-W3	BAI-500-FF-W3		BAI-750-FF-W3		BAI-1000-FF-W3
FM	AI-412-FM-W3	AI-500-FM-W3		AI-750-FM-W3		AI-1000-FM-W3
TERMINATOR	AI-412-TRB-W3	AI-500-TRB-W3		AI-750-TRB-W3		

K SERIES

CABLE GROUP A

CCS HATFIELD: GID I, CHEMA FOAM
CERRO: GX** POLYETHYLENE**
COMM.SCOPE: PARAMETER I, ALUMAGARD**
SYSTEMS: 11 & 12, 21 & 22
TIMES: ALUMIFOAM**, ALUMIFOAM II
** NOT IN CURRENT PRODUCTION

K SERIES	500	750	1000
FEED THRU	EMI-500-K		
ENTRY, PIN TYPE	EI-500-K	EI-750-K	EI-1000-K
ENTRY EXTENSION	EI-500-K/LB	EI-750-K/LB	EI-1000-K/LB
SPLICE	SI-500-K	SI-750-K	SI-1000-K
FF	AI-500-FF-K	AI-750-FF-K	AI-1000-FF-K
FF BULKHEAD	BI-500-FF-K	BI-750-FF-K	BI-1000-FF-K
FM	AI-500-FM-K	AI-750-FM-K	AI-1000-FM-K
TERMINATOR	AI-500-TRB-K	AI-750-TRB-K	AI-1000-TRB-K
N MALE	AI-500-NM-K	AI-750-NM-K	AI-1000-NM-K
N FEMALE	AI-500-NF-K	AI-750-NF-K	AI-1000-NF-K
UHF MALE	AI-500-UHFM-K	AI-750-UHFM-K	AI-1000-UHFM-K
UHF FEMALE	AI-500-UHFF-K	AI-750-UHFF-K	AI-1000-UHFF-K

CABLE GROUP E

CCS HATFIELD: GID III
CERRO: GXX**
COMM.SCOPE: PARAMETER III
SCIENTIFIC ATLANTA: GID III
SYSTEMS 31 & 32
TIMES: LUMIFOAM III & T-4
CAPSCAN: 4
* NOT IN CURRENT PRODUCTION

K SERIES	412	500	625	750	875	1000
FEED THRU		EMI-500-K3	EMI-625-K3			
ENTRY, PIN TYPE		EI-500-K3	EI-625-K3	EI-750-K3	EI-875-K3	EI-1000-K3
ENTRY EXTENSION		EI-500-K3/LB	EI-625-K3/LB	EI-750-K3/LB	EI-875-K3/LB	EI-1000-K3/LB
SPLICE		SI-500-K3	SI-625-K3	SI-750-K3	SI-875-K3	SI-1000-K3
FF		AI-500-FF-K3	AI-625-FF-K3	AI-750-FF-K3	AI-875-FF-K3	AI-1000-FF-K3
FF BULKHEAD		BI-500-FF-K3	BI-625-FF-K3	BI-750-FF-K3	BI-875-FF-K3	BI-1000-FF-K3
FM		AI-500-FM-K3	AI-625-FM-K3	AI-750-FM-K3	AI-875-FM-K3	AI-1000-FM-K3
TERMINATOR		AI-500-TRB-K3	AI-625-TRB-K3	AI-750-TRB-K3	AI-875-TRB-K3	AI-1000-TRB-K3
N MALE		AI-500-NM-K3	AI-625-NM-K3	AI-750-NM-K3	AI-875-NM-K3	AI-1000-NM-K3
N FEMALE		AI-500-NF-K3	AI-625-NF-K3	AI-750-NF-K3	AI-875-NF-K3	AI-1000-NF-K3
UHF MALE		AI-500-UHFM-K3	AI-625-UHFM-K3	AI-750-UHFM-K3	AI-875-UHFM-K3	AI-1000-UHFM-K3
UHF FEMALE		AI-500-UHFF-K3	AI-625-UHFF-K3	AI-750-UHFF-K3	AI-875-UHFF-K3	AI-1000-UHFF-K3

* Feed thru connector is not a practical application in this size
Please consult LRC Engineering
All K Series connectors come with 2 pins

Prices and Specifications Subject to Change Without Notice.

VRF-107

METROTECH CORPORATION

P.O. Box 7201
Mountain View, CA 94039
(415) 965-9208 Telex 171408

TEST EQUIPMENT



MODEL 810 LINE TRACER

FEATURES

- Significantly improved line identification
- Push button depth indication
- Left/right guiding system
- Digital signal strength indicator
- Automatic sensitivity control
- Human engineered for convenient operation

Pipe and cable locating and tracing is not an exact science, therefore, most instrument operators must learn certain skills to properly locate and trace underground utilities. Metrotech's Model 810 Line Tracer narrows the gap between required skill and technology to provide you with an automatic instrument that will yield easier, more accurate traces than obtainable from any other device, even on the first time out, with training time reduced by 50-80%. The LCD Signal Strength Indicator greatly improves the operator's ability to trace targeted conductors in congested underground areas.

The 810 has no drift electronics to provide long term frequency stability for perfect tracking with low susceptibility to external noise interference. The system also has high rejection to all power line frequencies and harmonics. Also, at the touch of a button, the 810's computing circuits will give you depth readings from a full standing position, without the need for 45 degree angular measurements. The instrument is human engineered to offer you convenience, safety, and accuracy.

Metrotech Model 810 is the most complete underground line tracer for. . .

Electrical

- Traces in service lines using the Metroclamp or inductively
- Traces both base and jacketed concentric neutral
- Cable identification in congested areas

Telephone

- Cable ID in congested areas
- Digital depth indication
- Excellent tracing distance

Gas

- Easily traces large and small diameter lines
- Digital depth indication
- No 60Hz interference
- Structure identification in congested areas

Water

- Structure identification in congested areas
- Human engineered—no bend, no squat, no stoop
- Automatic guidance for easier tracing

VRF-108

TECHNICAL SPECIFICATIONS

Note to Communication Users The Model 810, as with all Metrotech instruments, will not introduce noises or false tones into active circuits being traced. A combination of frequency, waveform, and low power of the unique signal assures that no noises will be induced into communication lines.

Transmitter

Nominal Output Power: 250 mw. Inductive; 250 mw. Direct (2.7k ohms-A, or 50 ohms-B)
Mode Switching: Automatic
Output Frequency: 83.075 kHz, unmodulated
Frequency Tolerance: .002%
Self Testing: Battery & Output power, Inductive & Direct modes
Battery Type: 6 NEDA 13F "D" cells, alkaline
Size, H-W-L: 7.5x3x8.5 in. (19.1x7.6x21.6 cm.)
Weight:** 3.875 lbs (1.76 kg.)

Receiver

Nominal Sensitivity: 0.15 microvolts, AUX Input, to assure lock-in.
Noise Sensitivity: Zero when locked
Sensitivity Controls: Fully Automatic
Function Switching: 4-position selector: OFF, BATT TEST, OPERATE (incl. DEPTH mode), AUX (provides continuous digital reading either with internal signal field sensor or Model 4820 Metroclamp when attached to AUX jack on rear panel).

Visual Readout Provisions: Left-Right indicator shows centerline and highly compressed left-right responses. Digital Depth/Aux display is 3-digit, high contrast LCD. .5" (1.27 cm) height, with internal in./cm. selector strapping.

Audio Output: Internal speaker provides proportional audio 650 Hz, 76 dB average level (at 3 ft. (.9m). Steady signal corresponds to Right indications and pulsed signal for Left. Jack provided for alternate audio to earphones (nom. 500-2K ohms).

Accuracy, Location:* 1-3% of depth. Note: Left-Right sensitivity is approx. .04 in. (1mm) at 18" depth.

Accuracy, Depth:* ± 10% good conditions, ± 20% poor conditions.

Depth Range: 13 ft. (4 m) min., with automatic overrange indication.

Battery Type: 4 NEDA 1604A alkaline (typical 9V alkaline transistor batteries).

Battery Test: Range included on Left-Right indicator
Size H-W-L: Probe 32.25x6x12.38 in. (81.92x15.2x31.4 cm.)
Extended Weight:** 4.125 lbs (1.87 kg.)

Overall Unit

Temperature Range, Operating: -13° to 117°F (-25° to 65° C)

Battery Life: 100-125 operating hours, nominal

Shipping Weight (Gross Wt.): 19.5 lbs (8.85 kg.); deduct 1.5 (.68 kg.) without clamp

Case Dimensions, H-W-L: 8x16x23 in. (20.3x40.6x58.4 cm.)

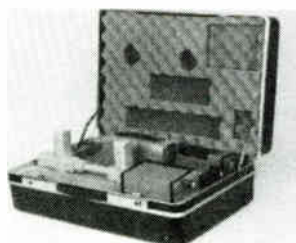
Shipping Carton, H-W-L: 17.25x10.5x24.25 in. (43.8x26.7x61.6 cm.)

*Actual performance may be affected by improper signal drive method, concentration of utilities, and poor ground conditions such as moist or highly conductive soil.

**All weights include batteries.

Ordering Information

The Model 810 comes complete with transmitter (including internal inductive coil), receiver, direct connect cable with ground plate, padded carrying case and batteries. Optional Metroclamp and headphones are available.

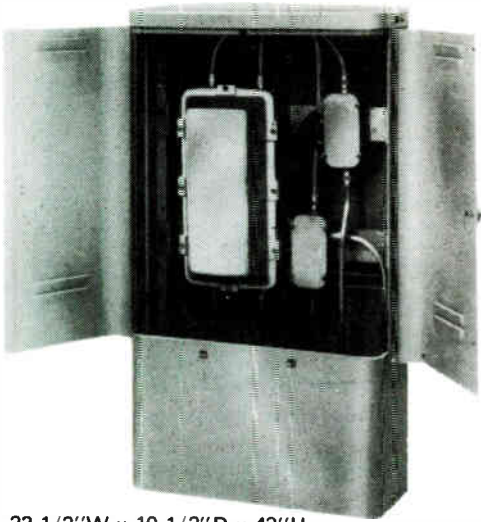


Prices and Specifications Subject to Change Without Notice.

PYRAMID INDUSTRIES, INC.

P.O. Box 23169
Phoenix, AZ 85063
(602) 269-6431

UNDERGROUND MATERIALS



CATV 1500

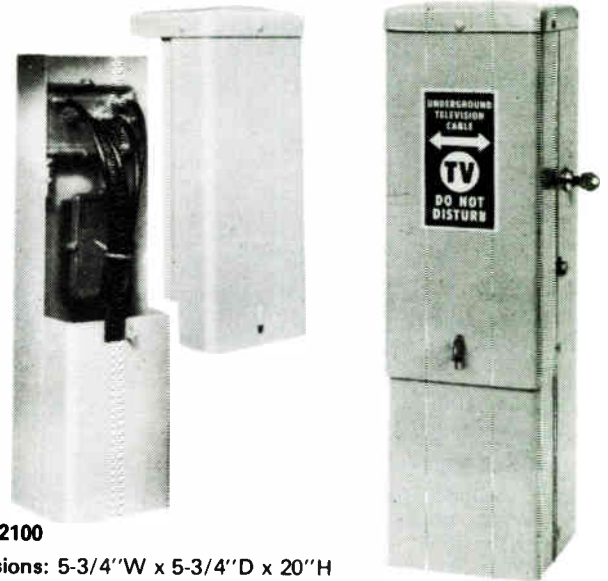
Dimensions: 23-1/2"W x 10-1/2"D x 43"H

Components: Closure will house a maximum number of electronic components: Amplifiers, thermal equalizers, splitters, directional couplers, line extenders or power supply.

Features: Each closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating. Split front and back covers permit 360 degrees accessibility. Hinges are stainless steel "piano" type and run the full length of the covers. Each set of doors has a locking hasp and louvers for ventilation.

Closure Mounting Hardware: Furnished with 42-inch anchor posts and hardware.

Finish: Phosphatized; green, baked-on enamel.



CATV 2100

Dimensions: 5-3/4"W x 5-3/4"D x 20"H

Components: Designed to house a variety of smaller modern equipment.

Features: Low silhouette design ideal for front-lot installations. Furnished with padlock hasp. Closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating. Closure provided with knockout for installation of optional cylinder lock with dust cover.

Closure Mounting Hardware: Can be used with 24-inch or 42-inch-long anchor post (optional), depending on local soil conditions. Also available with pole mounting kit.

Finish: Phosphatized; green, baked-on enamel.



Mounting Bracket No. 9235-1000

Dimensions: 22"W x 3.0"H x 2.0"D
Standard package - 2 pair per carton
(Includes screws and nuts.)

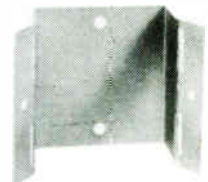


Mounting Bracket No. 9431-1000

Dimensions: 1.0"W x 2-1/2"H x 2-1/2"D Angle
Standard package - 10 per carton
(Includes screws and nuts.)

Pole Mounting Kit No. 9832-0000

(w/mounting hardware)
Dimensions: 5.0"W x 5-3/4"H x 2.0"D
Standard package - 2 per carton
(Includes screws and nuts.)



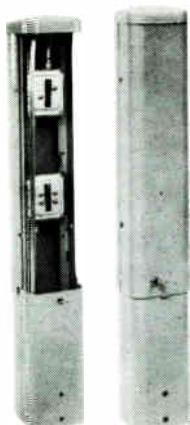
Mounting Bracket No. 9431-2000

Dimensions: 4-1/8"W x 3-1/2"H x 3/8"D
Standard package - 10 per carton
(Includes screws and nuts.)

PYRAMID INDUSTRIES, INC.

P.O. Box 23169
Phoenix, AZ 85063
(602) 269-6431

UNDERGROUND MATERIALS



CATV 1001

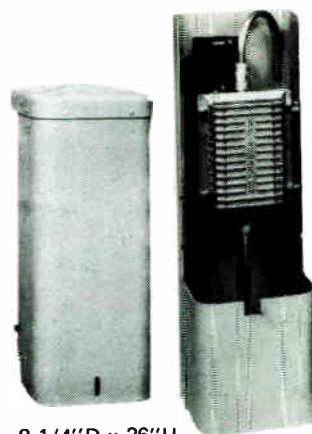
Dimensions: 6-1/2"W x 6-1/2"D x 42"H

Components: Multi-tap, splitter, line extender.

Features: Easily accessible from either side. Designed for self-supporting field installation. Made of heavy gauge steel, with extra-heavy mill-galvanized coating. Front cover provided with knockout for installation of optional cylinder lock with dust cover.

Closure Mounting Hardware: Furnished with one 42-inch anchor post and mounting hardware.

Finish: Phosphatized; green baked-on enamel.



CATV 1100

Dimensions: 8-1/4"W x 8-1/4"D x 26"H

Components: Designed to accept line extenders, splitters or couplers.

Features: Low silhouette design ideal for front-lot installations. Furnished with padlock hasp. Closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating. Closure provided with knockout for installation of optional cylinder lock with dust cover.

Closure Mounting Hardware: Can be used with 24", 32" and 42" anchor post (optional), depending on local soil conditions. Also available with pole mounting kit.

Finish: Phosphatized, green baked-on enamel.

Mounting Plate No. 9361-2000

Dimensions: 9-3/4"W x 5-1/2"H
Standard package - 3 per carton
(Includes screws and nuts.)



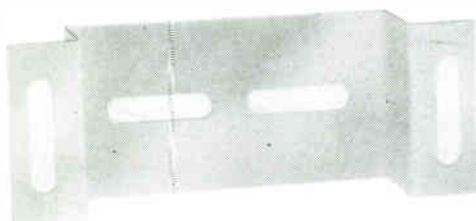
Mounting Bracket No. 9362-0000 (Optional)

Dimensions: 3"W x 13-7/8"H x 1-3/4"D
Standard package - 6 per carton
(Includes screws and nuts.)



Mounting Bracket No. 9351-2000

Dimensions: 5-1/2"W x 1.0"H x 1.0"D Angle
Standard package - 5 per carton
(Includes screws and nuts.)



Mounting Bracket No. 9351-3000

Dimensions: 5-1/2"W x 2.0"H x 1.0"D
Standard package - 5 per carton
(Includes screws and nuts.)

CATV 2400

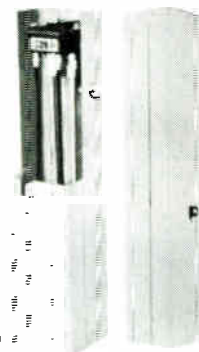
Dimensions: 4-1/2"W x 4-1/2"D x 20"H

Components: Designed to house miniaturized equipment. (Complete listing on adjacent page.)

Features: Low silhouette design ideal for front-lot installations. Furnished with padlock hasp. Closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating. Closure provided with knockout for installation of optional cylinder lock with dust cover.

Closure Mounting Hardware: Can be used with 24-inch or 42-inch-long anchor post (optional), depending on soil conditions. Also available with pole mounting kit.

Finish: Phosphatized; green, baked-on enamel.



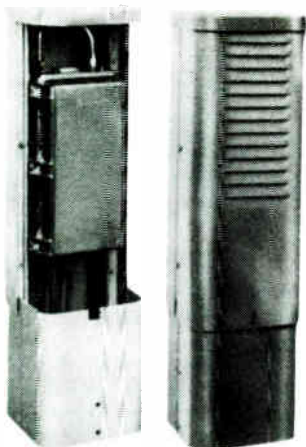
Mounting Bracket No. 9431-1000

Dimensions: 1.0"W x 2-1/2"H x 2-1/2"D Angle
Standard package - 10 per carton
(Includes screws and nuts.)

PYRAMID INDUSTRIES, INC.

P.O. Box 23169
Phoenix, AZ 85063
(602) 269-6431

UNDERGROUND MATERIALS



CATV 1205

Dimensions: 10-1/2"W x 10-1/2"D x 39"H.

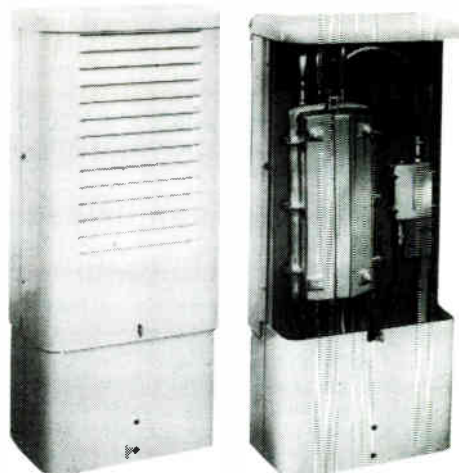
Components: Trunk and bridging amplifier, power supply unit, or combination of line extender, directional coupler and multi-tap unit.

Features: CATV 1205—Designed for self-supporting field installation. Cover is removable to permit 360 degrees access. The closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating.

Closure Mounting Hardware: Furnished with two anchor posts, hardware and padlock hasp.

Finish: Phosphatized; green, baked-on enamel.

CATV 1200—less covers



CATV 1305

Dimensions: 16-3/4"W x 10-1/2"D x 39"H

Components: Closure will house the maximum number of electronic components that might be required at one mounting station: Trunk and bridging amplifier, line extender, thermal equalizer, splitter and directional coupler.

Features: CATV 1305—Designed for self-supporting field installation. Cover is removable to permit 360 degrees accessibility, for ease of installation and service. The closure is made of heavy-gauge steel, with extra-heavy mill-galvanized coating.

Closure Mounting Hardware: Furnished with two anchor posts, hardware, and padlock hasp.

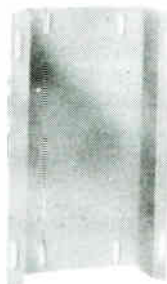
Finish: Phosphatized; green, baked-on enamel.

CATV-1300—less covers



Mounting Bracket No. 9381-1000

Dimensions: 9-3/8"W x 16"H
Standard package - 5 per carton
(Includes screws and nuts.)



Mounting Bracket No. 9371-0000

Dimensions: 9-3/8"W x 16.0"H x 2-1/2"D
Standard package - 1 per carton
(Includes screws and nuts.)



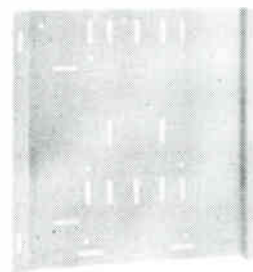
Mounting Bracket No. 9361-4000

Dimensions: 9-3/8"W x 16.0"H x 1-1/4"D
Standard package - 2 per carton
(Includes screws and nuts.)



Mounting Plate No. 9381-2000

Dimensions: 9-3/8"W x 2.0"H
Standard package - 3 Pair per carton
(Includes screws and nuts.)



Mounting Bracket No. 9412-0000

Dimensions: 15-3/8"W x 16.0"H x 1-1/4"D
Standard package - 2 per carton
(Includes screws and nuts.)



Mounting Bracket No. 9411-1000

Dimensions: 15-3/8"W x 3.0"H x 2-1/2"D
2 pair per carton (Includes screws and nuts.)



Mounting Bracket No. 9421-1000

Dimensions: 15-3/8"W x 3.0"H x 3-1/2"D
2 pair per carton supplied (Includes screws and nuts.)

Prices and Specifications Subject to Change Without Notice.

VRF-111

PYRAMID INDUSTRIES, INC.

P.O. Box 23169
Phoenix, AZ 85063
(602) 269-6431

UNDERGROUND MATERIALS

CATV 3011/3111/3200

Dimensions: CATV 3100 21-1/4"L x 10-3/4"W x 10"D (ID). CATV 3111 44-3/4"L x 12"W x 10"D (ID). CATV 3200 12"L x 9"W x 10"D (ID).

Components: CATV 3011 — Directional-coupler, multi-tap, or line extender, and trunkline coupler. CATV 3111 — Trunkline or bridging trunkline coupler. CATV 3200 — Directional-coupler or multi-tap.

Features: Below ground installation with easy top access. Excellent for front-lot locations where traffic is moderate.

All units equipped with rugged steel cover plates. Durable bell-jar-type interior housing protects equipment from flooding and water damage. Multi-purpose inner-security bracket for fastening cover plate to closure, securing inner housing and for attaching Tamper-Lock.

Heavy-gauge steel, with mill-galvanized coating. Internal housing thermal-formed ABS.

Mounting Plate/Bracket: Furnished with bracket and necessary screws and nuts, stainless steel 300 series grade. (CATV 3200 supplied less bracket.)

Closure Mounting Hardware: Available with anchor posts (optional) and additional mounting brackets.

Finish: Phosphatized; cover plate, green baked-on enamel; housing, black, with CT-1 coating.

CATV 3011 Mounting Bracket No. 9881-1100

Dimensions: 2-1/2"W x 7-3/8"H
Standard package - 5 per carton
(Includes screws and nuts.)

CATV 3111 Mounting Bracket No. 9884-1000

Dimensions:
11-3/4"W x 4.0"H x 1-1/4"D
Standard package - 1 Pair per carton
(Includes screws and nuts.)

CATV 3200 Mounting Bracket No. 9311-1000

Dimensions:
2-1/2"W x 4-3/8"H
Standard Package - 5 per carton
(Includes screws and nuts.)



ANCHOR POSTS

For use with CATV Closures

Order No. 9831-0000 for 42" Anchor Posts

Order No. 9836-1000 for 32" Anchor Posts

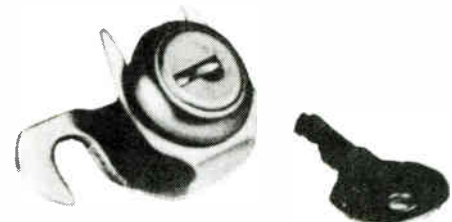
Order No. 9833-1000 for 24" Anchor Posts

Two galvanized and painted anchor posts, plus mounting hardware for use when extra stability is desired.



CATV 3011 Mounting Bracket No. 9881-2000

Dimensions: 10-1/2"W x 3.0"H x 1-3/4"D
Standard package - 1 Pair/ctn.
(Includes screws and nuts.)



CYLINDER LOCK ASSEMBLY WITH STAINLESS STEEL DUST COVER

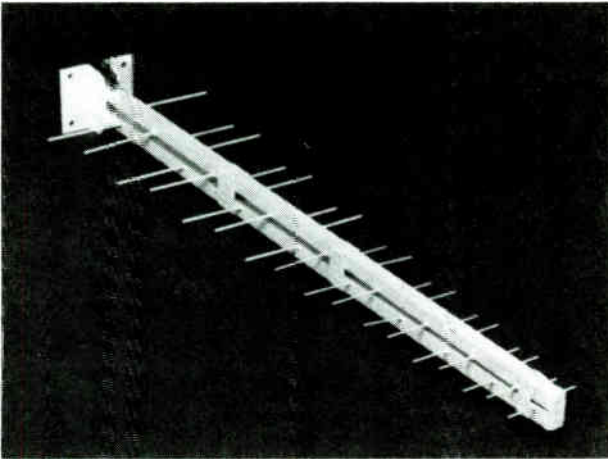
Lock: Order No. 9881-4100

Key: Order No. 9881-4110

Spring clip furnished for quick, easy mounting. Cam lock is interchangeable with all makes of CATV Closures.

(One key is supplied per 10 locks ordered.)

Box 105600
 One Technology Parkway
 Atlanta, GA 30348
 (404) 441-4000
 TWX 810-766-4912 Telex 0542898



SINGLE ANTENNAS, SERIES QCA

For installations that require a moderately narrow beamwidth antenna, one of the Series QCA Single Antennas will provide superior reception through its excellent front-to-back ratio and sidelobe suppression. The wide bandwidth of this antenna permits all VHF channels to be covered by only three antennas.

Mounting hardware is available to permit no-drilling, single point mounting on round or angle tower sections or on wooden poles. No bracing or other supports are required.

SPECIFICATIONS

- Minimum Front-to-Back Ratio: 25 dB (all models)
- Minimum Sidelobe Suppression: QCA-UHF; 30 dB, All Others; 25 dB
- Output Connector: Type-N Male
- Output Impedance: 50 ohms unbalanced
- Wind Survival at 0°C (+ 32°F) Air Temperature, No Ice: 160 km/h (100 mi/h) 25mm (1 in.) Radial Ice: 113 km (70 mi/h)

Antenna Separation

- QCD-2/-2-6: 3556mm (140 in.)
- QCD-4: 2667mm (105 in.)
- QCD-7: 1143mm (45 in.)

TWO-ANTENNA ARRAY, SERIES QCD

The Series QCD combines two Series QCA antennas in a precision horizontal array. For an installation where co-channel interference can be a problem using the single Series QCA antenna, the narrower bandwidth and better co-channel performance of the Series QCD makes it the ideal antenna for this condition.

Included with the Series QCD Array is a two-way power combiner, all necessary assembly and mounting hardware and instruction.

SPECIFICATIONS

- Max VSWR: 1.5:1
- Min Front-to-Back Ratio: 25 dB
- Min Sidelobe Suppression: 18 dB
- Output Connector (Power Combiner): Type-F female
- Output Impedance: 75 ohms unbalanced
- Wind Survival at 0°C (+ 32°F) Air Temperature, No Ice: 160 km/h (100 mi/h), 25mm (1 in.) Radial Ice: 113 km/h (70 mi/h)

ANTENNA MODEL

	QCA-2-6	QCA-2	QCA-4
Channel	2-6	2-3	4-6
Max VSWR	1.5:1	1.5:1	1.5:1
Min Gain (dBi)	8.5	9.5	9.5
Beamwidth - H	70°	60°	60°
Beamwidth - V	95°	95°	95°

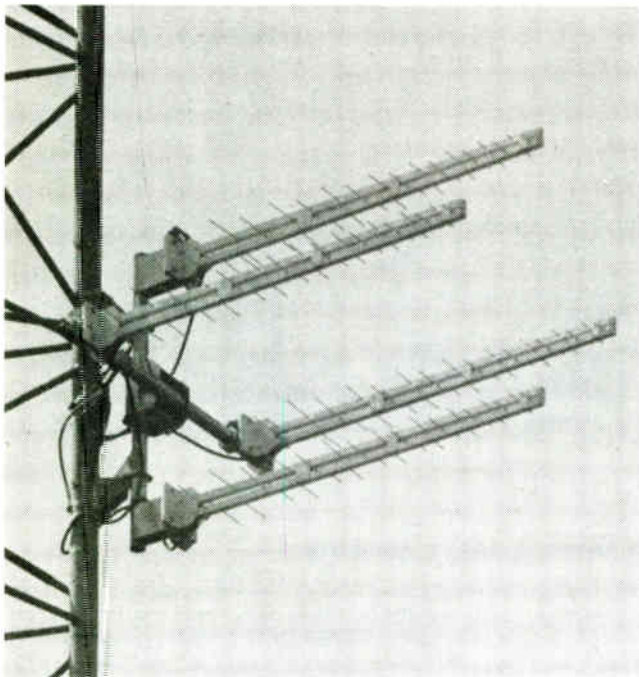
	QCA-7	QCA-UHF	QCA-FM
Channel	7-13	14-83	FM
Max VSWR	1.5:1	1.25:1	1.5:1
Min Gain (dBi)	11.5	12.5	9.5
Beamwidth - H	50°	50°	60°
Beamwidth - V	65°	65°	95°

	QCD-2-6	QCD-2	QCD-4	QCD-7
Channel	2-6	2-3	4-6	7-13
Min. Gain (dBi)	10.5	11.5	11.5	13.5
Beamwidth - H	36°	34°	34°	32°
Beamwidth - V	95°	95°	95°	95°

SCIENTIFIC-ATLANTA, INC.

Box 105600
 One Technology Parkway
 Atlanta, GA 30348
 (404) 441-4000
 TWX 810-766-4912 Telex 0542898

ANTENNAS/RECEIVER



FOUR-ANTENNA ARRAY, SERIES QCS

Production of co-channel interference through very narrow beamwidth and high sidelobe suppression makes the Series QCS Four-Antenna Array the superior "problem-area" antenna. Four models receive channels in the VHF television band, while one model is available to receive all UHF television channels.

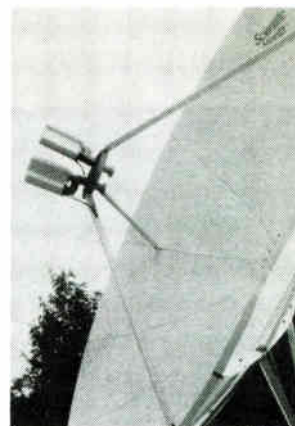
The QCS Array consists of four Series QCA antennas arranged in a diamond-shaped array that exhibits very narrow beamwidth, high sidelobe suppression, and high gain. A precision high-strength backing structure positions and supports each of four antennas for optimum performance. A four-way power combiner is supplied with the array, as are all hardware and mounting clamps.

SPECIFICATIONS

- Max VSWR: 1.5:1
- Min Front-to-Back Ratio: 25 dB
- Min Sidelobe Suppression: QCS-UHF: 13 dB, All Others: 25 dB
- Output Connector (Power Combiner): Type-F Female
- Output Impedance: 75 ohms unbalanced
- Wind Survival at 0°C (+ 32°F) Air Temperature, No Ice: 160 km/h (100 mi/h), 25mm (1 in.) Radial Ice: 113 km/h (70 mi/h)

ANTENNA MODEL

	QCS-2-6	QCS-2	QCS-4
Channel	2-6	2-3	4-6
Min. Gain (dBi)	14	15	15
Beamwidth — H	28°	25°	25°
Beamwidth — V	30°	30°	30°
	QCS-7	QCS-UHF	
Channel	7-13	14-83	
Min. Gain (dBi)	17	17	
Beamwidth — H	20°	25° (Ch 14) 17° (Ch 70)	
Beamwidth — V	22°	28° (Ch 14) 20° (Ch 70)	

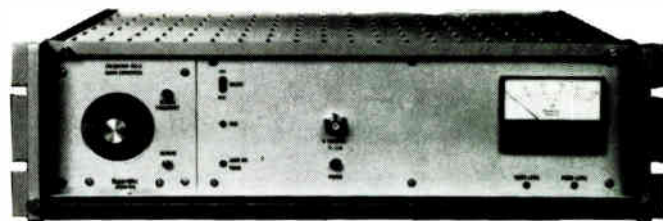


DUAL-BEAM FEED ANTENNAS

Scientific-Atlanta's dual-beam feed for 4.6-, 5-, and 7-meter earth station antennas eliminates the need to purchase a complete receiving system to expand program offerings. An easy-to-install retrofit kit is also available for antennas now in the field. The feed enables simultaneous reception of two adjacent domestic C-band satellites separated by 3° to 4° of geosynchronous arc, without compromising current 32-25 log θ sidelobe specifications.* Because of this special design consideration, existing licensed sites are assured contained protection from terrestrial interference.

Each feed is equipped with dual-polarization adjustments. Molded plastic enclosures for standard LNAs or Scientific-Atlanta's LNCs provide important protection against environmental corrosion and insect damage.

*3° spacing only for 7-meter antenna.

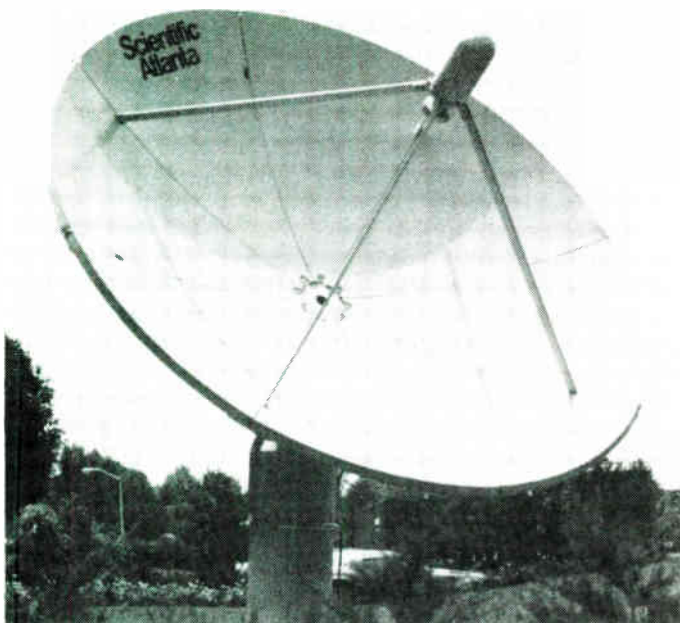


MODEL 6602 VIDEO RECEIVER

Features

- Frequency Agility provides selection of any one of 24 channels with one receiver
- Automatic Polarization Switching for any selected frequency with Optional Coaxial Replay
- Internally programmable for single line selection of one of any six frequencies. Remote Code access to any one of 24 transponder frequencies when interfaced with Scientific-Atlanta 1:N video protection switch or compatible equipment
- Threshold Extension Demodulation provides enhanced picture quality at lower signal levels for reduced system cost
- Easy-access plug-in downconverter
- Adaptable for microwave applications
- Optional Audio Demodulators for future audio services
- Solid-state reliability

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SERIES 9000 2, 8 and 3.2 METER ANTENNAS

FEATURES

- Ku-band Compatible
- Side-lobe Performance Meets FCC Proposed Regulations for 2° Satellite Spacing
- Interchangeable Reflector Panels
- Reflector Edge Feed Rotation Panels
- Full Arc Coverage
- Simplified Alignment and Pointing
- Independent of Foundation Alignment
- Meets AISC Building Code Standards

The Series 9000, 2.8- and 3.2-meter earth station antennas represent an advancement in the design and manufacture of high-performance, low-cost antennas for audio, video, and digital receive-only applications at 4 and 12 GHz. These antennas, used in conjunction with the appropriate LNA or LNC, will provide high-quality signals for many applications throughout the United States.

The 2.8-meter antenna consists of eight interchangeable reflector panels and can be expanded to 3.2 meters by adding sixteen extender panels. The 3.2-meter antenna offers 1.6 dB additional gain. Panels are manufactured using an improved die-stamping technique that produces an extremely precise surface tolerance, yielding high efficiency even at Ku-band. Excellent side-lobe performance meets FCC regulations for 2° satellite spacing.

No special tools, panel alignment, or testing are required for installation, maintenance, or repair. The feed rotation design allows polarization to be accurately aligned from the edge of the dish, preventing RF blockage from a technician working on the assembly.

Simplified and reduced-cost installation is another advantage of the Series 9000 design. No crane or handling equipment is necessary, and an innovative foundation assembly reduces both excavation and concrete requirements.

Two mounts have been developed for the 2.8- and 3.2-meter reflectors. Both the elevation-over-azimuth (el/az) and the polar mount configurations provide structural integrity, full arc coverage, and simplified alignment and pointing, in addition to being totally independent of foundation alignment. For versatility, the Series 9000 reflector and hub are common to both the el/az and motorized polar mount bases.

4.6-METER ANTENNA, MODEL 8346PF/8346CS/8346DF

FEATURES

- Prime Focus for Minimum System Cost
- El/Az Mount Permits Low Cost Installation
- Optional Cassegrain Feed for high efficiency RF Performance
- Protected Environment for LNAs
- Designed for Minimum Maintenance
- Stamped Aluminum Reflector Panels for Consistent Surface Accuracy
- Designed for Minimum Shipping and Installation Costs
- No Panel Alignment or Testing Required
- Minimum Site Preparation required
- Optional Cast Pier Foundation
- Optional Dual Beam Feed

For receive-only applications in the 3.7 to 4.2 GHz range, Scientific-Atlanta's Model 8346, 4.6-Meter earth station antenna can be easily installed in a wide variety of locations with a minimum of site preparation. This antenna system is especially suited to the needs of the CATV operator receiving video programming from domestic satellites. Sidelobe performance meets FCC specifications for 2° satellite spacing. For higher gain requirements, an optional Cassegrain feed is available. Both of these feed systems, furnished for receive-only operation, provide for dual polarization capability in the 3.7 to 4.2 GHz range, and may be manually rotated to any position. Receive/transmit operation can also be provided with a special feed.

The reflector, parabolic in shape, is made up of 12 interchangeable aluminum panels, precisely die-stamped for consistent surface accuracy. This factory-produced accuracy guarantees complete interchangeability, and the concept of modularity provides benefits in handling ease, lower shipping cost, and ease of installation. Two men can install this antenna easily in less than one day.

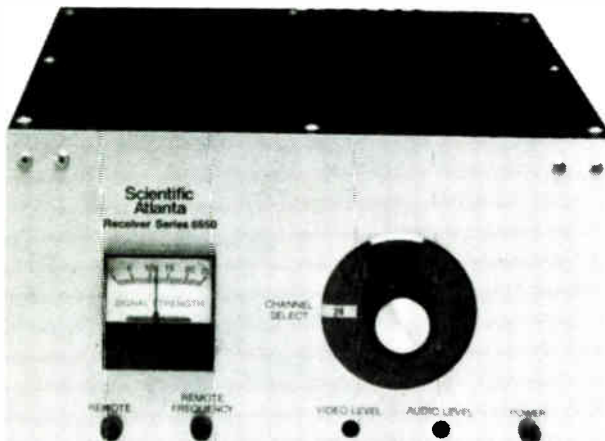
For reception of two adjacent satellites that are 3°-4° apart on the geosynchronous arc, Scientific-Atlanta provides a dual beam feed option for the Model 8346 antenna.

A cast pier foundation kit is available as an optional mounting arrangement. Each foundation kit consists of three cast pier inserts. A steel framework bolts these three inserts into a triangular shape which is then lowered into three augered holes to be filled with concrete.

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HEADEND EQUIPMENT



VIDEO RECEIVER, MODEL 6650

The Model 6650 Video Receiver is a low cost, high performance satellite television receiver, designed for use with the Scientific-Atlanta Series 360 Low Noise Converter (LNC). The LNC converts the entire 500 MHz satellite band to UHF frequencies between 270 - 770 MHz at the antenna feed. This eliminates the need for microwave components in the receiver design, resulting in significant cost reduction for multiple receiver applications.

The Model 6650 uses Phase-Locked Demodulation (PLD) to enhance video and audio quality at low signal levels. Techniques employed in designing PLD for the Model 6650 have substantially improved receiver performance, even in the presence of multiple subcarriers. Impulse noise in the video signal is reduced near the threshold level, and high picture quality is extended to considerably lower operating signal levels than with conventional demodulation.

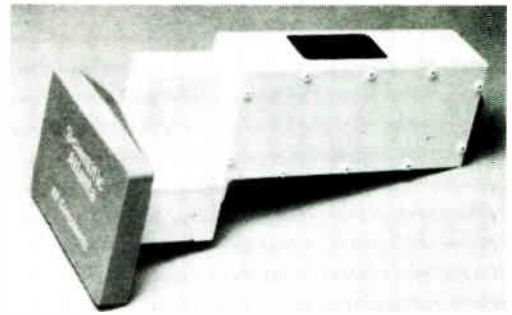
The Model 6650 allows for selection of any one of 24 satellite channels simply by turning a single dial on the front panel. For remote operation, the Model 6650 is 6 or 24 channel programmable with optional Logic Interface Board. Compatible interface equipment is available for use with cue tones or timing devices. Because of its modular design, the Model 6650 Video Receiver includes provisions to accept optional plug-in subcarrier printed wiring boards for a variety of system applications, including terrestrial microwave interface.

The power supply has adequate capacity to provide power to a Series 360 Low Noise Converter via the center conductor of the coaxial cable or with a twisted pair.

The carefully selected down conversion frequency permits the use of long lengths of coaxial cables for applications where the antenna and receiver need to be separated.



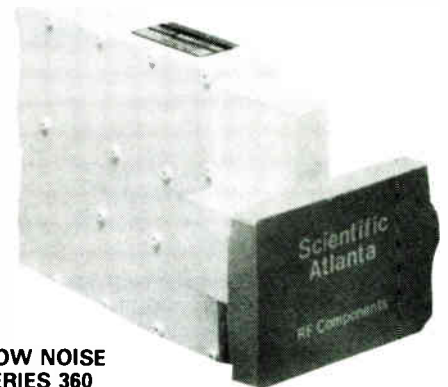
RACK ADAPTOR FOR MODEL 6650



3.7 to 4.2 GHz LOW NOISE AMPLIFIER, SERIES 300

Scientific-Atlanta has developed a series of Low Noise Amplifiers for Satellite earth stations. These amplifiers are designed using GaAs FET technology for optimum noise performance. These amplifiers have noise temperatures of 80 to 120K with 50 dB gain and operate over the 3.7 - 4.2 GHz frequency band. Low Noise Amplifiers with 60 dB gain are also available on request.

All units come with integral isolator to protect against antenna mismatch, as well as having internal output isolation. Standard units come with regulated power supply permitting dc voltage to vary from +15 V to +25V dc without performance degradation, and are powered through the center conductor of the RF cable. All units are fully weatherproofed to assure long operation outdoors and have waveguide pressurization capability.



3.7 to 4.2 GHz LOW NOISE CONVERTER, SERIES 360

The Series 360 Low Noise Converter (LNC) is designed for use with the Series 6650 Video Receiver to provide low cost, high performance satellite television reception. The LNC is a combination of a low noise GaAs FET amplifier and a microwave down-converter for optimum noise performance.

The Series 360 LNC converts the entire 500 MHz satellite band to UHF from 270 to 770 MHz at the antenna feed, eliminating the need for expensive microwave components in the receiver and allowing the use of low-cost UHF coaxial cable from the antenna to the headend. The result is a low-cost earth station electronics sub-system.

The LNC combines a low-noise GaAs FET amplifier with the block downconversion process for optimum noise performance. Internal output isolation and an integral isolator protect against antenna mismatch.

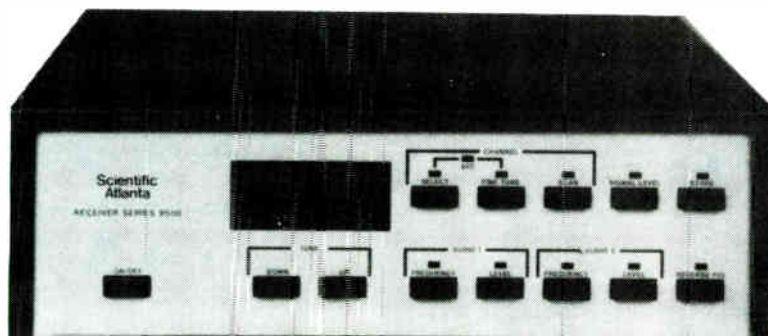
The amplifier, a microwave oscillator, microwave filters and a power supply regulator are arranged within a precision-cast housing that provides extra protection against the elements.

The LNC is powered from the headend through its external connectors or through the center conductor of the coaxial cable. The Series 360 is available in 80K, 90K, 100K and 120K noise temperature ranges. The Series 361 LNC is available for use with Ku-Band satellite systems.

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RECEIVER/ COMBINING NETWORK



MODEL 9530/9530A SATELLITE RECEIVER

FEATURES

- Microprocessor Controlled
- Block Downconverter System
- Front Panel/Pushbutton Frequency and Level Controls
- LED Readout For: Relative RF Signal Level, Transponder Number, Fine Tuning, and Audio Frequency and Relative Audio Level Display
- Volatile and Non-Volatile Memory for Set-Up Instructions
- Tunable Audio
- Single or Dual LNC Select Switch
- Front Panel Reverse Polarization Switch
- AFC LED Indicator
- U.L. Listed
- Composite and Baseband Outputs
- Built-In Infra-Red Detector for Remote Control (9530A only)
- Soft Touch Front Panel Pushbuttons
- Fine Tuning to minimize Terrestrial Interference
- Video Inversion Switch
- Compact size

- 70 MHz IF Monitor Port
- 70 MHz IF Loop-Thru for Terrestrial Interference Traps
- Built-In Power Inserter on each RF Input

The Model 9530 is a rack mounted receiver requiring only 3/4 of standard (3.5 x 12.5 inches) rack space. This compactness is achieved through the use of microchips which control all receiver functions, thereby alleviating the need for independent circuits and larger circuit boards. The 9530A is a table top model affording the same compact 3.5 x 12.5 inch size. The 9530A table-top receiver is packaged with a decorative cover and surface-protecting rubber feet.

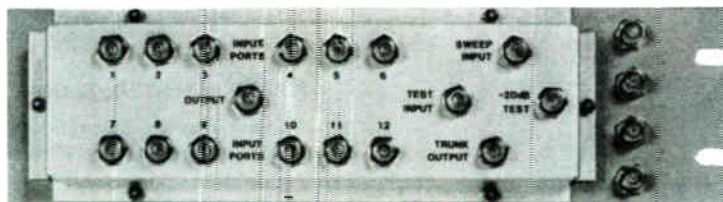
OPTIONS

9530/9530A

- Second Tunable Audio
- 18, 25, or 30 MHz IF Filters (30 MHz Std.)
- Threshold Extension

9530A

- Auxiliary AC On/Off Relay and Convenience Outlet
- Infra-Red Remote Control Transmitter
- TV Modulator (Switch-Selectable CH 3 or 4)



MODEL 68-12/68-12TS COMBINING NETWORK

Both Model 68-12 and Model 68-12TS combining networks provide the means to combine twelve separate signal sources, such as signal processors, modulators, etc., into one signal source. The Model 68-12TS combining network provides four front panel and four rear panel test connectors. These front panel connectors can be used for test connections, monitoring points, sweep inputs, or as needed to satisfy a station or system configuration.

SPECIFICATIONS

Frequency Range: 50-440MHz. Input Return Loss: 17dB. Output Return Loss: 16dB. Isolation between ports: 30dB. Impedance: 75 ohms unbalanced. Test Point (68-12TS only): -20dB \pm 1dB. Dimensions: Standard 19"W x 3.5"H x 0.5"D. Weight: Net 1.8 lb. Shipping: 2.5 lb.

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HEADEND EQUIPMENT



COAXIAL CABLE, 50-OHM

Coaxial cable provides the 4 GHz output signals from the low noise amplifier to the receiver input with minimum attenuation and distortion.

The 50-ohm cable provides rugged strength and flexibility in addition to superior electrical performance. The design includes a copper-clad aluminum center conductor, corrugated copper outer conductor, and a protective black polyethylene jacket. Both extruded spiral polyethylene and high density polyethylene tube design are offered as dielectric insulators.

In addition for short cable runs where additional flexibility may be required, cellular polyethylene dielectric foam filled cable is available.

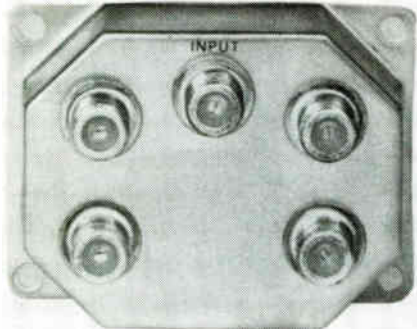
CABLE CONNECTORS

Both Type-N male and Type-N female connectors are available with spiral polyethylene and high-density tube polyethylene 50-ohm dielectric coaxial cable. All connectors are furnished with a 3.2mm (1/8 in.) pipe-threaded pressurizing port sealed with a pipe plug and gasket. The pipe plug may be removed to allow installation of valves, pressure gauges, etc.

SPECIFICATIONS

• 7/8", 50-ohm Dielectric: Nominal size: 22.2mm (9.875 in.) • Impedance: 50 ohms • Propagation Velocity: 85-91.5% • Attenuation: 2.96dB/30m (100 ft.) • Bend Radius: 3m (10 ft.) • Weight (Net): 0.74 kg/m (0.5 lb/ft.)

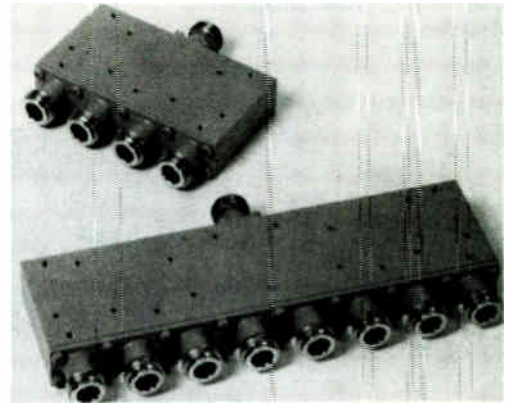
• 1/2" Foam Dielectric • Nominal Size: 12.7mm (0.5 in.) • Impedance: 50 ohms • Propagation Velocity: 80% • Attenuation: 8.0 dB/30m (100ft.) • Bend Radius(127mm (5 in.) • Weight (Net): 0.25 kg/m (0.17 lb/ft.)



A range of VHF/UHF power splitters is available for use with the LNC and 6650, 6651 receiver systems.

SPECIFICATIONS

• Frequency Range: 270 - 770 MHz • RF Input: Type-F female • RF Output: Type-F female • Input/Output Impedance: 75 ohms unbalanced • Insertion Loss: 1.5 + 10 log N dB (N = number of ports) • Number of Ports: 2 or 4

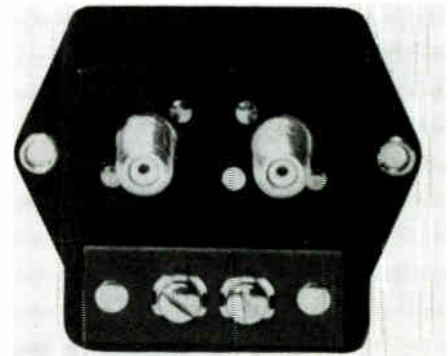


POWER DIVIDERS

Power dividers are used to provide input signals to several receivers from one antenna/LNA combination and are specifically designed for the 3.7 to 4.2 GHz frequency range. The input is divided across a pair of quarter-wavelength lines etched on copper-coated board. Internal termination provides port-to-port isolation.

SPECIFICATIONS

• Frequency Range: 3.7 to 4.2 GHz • RF Input: Type-N female • RF Output: Type-N female • Input/Output Impedance: 50 ohms unbalanced • Insertion Loss: 1.5 + 10 log N dB (N = number of ports) • Number of Ports: 4, 8, or 16



POWER INSERTER, 75-OHM

A power inserter, Scientific-Atlanta Part No. 233967, is available for powering the LNC over the coaxial cable.

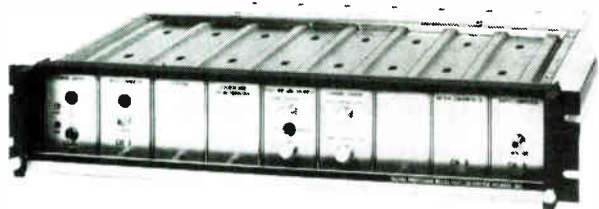
SPECIFICATIONS

• Frequency Range: 270 - 770 MHz • Insertion Loss: 0.5 dB maximum • VSWR: 1.3 maximum • RF Impedance: 75 ohms • DC Current: 1A maximum • Connectors: Type-F for RF screw terminals for dc

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HEADEND EQUIPMENT



MODEL 6150

MODEL 6150 SIGNAL PROCESSOR

FEATURES

- Fully modular
- All solid-state
- Low power consumption
- Converter modules for all standard channels
- Battery operation optional
- Extensive list of optional switching and processing modules

Completely modular in construction, the Model 6150 signal processor represents the ultimate in headend signal-processor technology, convenience, and reliability.

Spurious outputs from the processor are virtually eliminated from 5 to 450 MHz through the use of double balanced mixers and hybrid amplifiers. Double notches at each of the nearest adjacent channel carriers (upper adjacent picture carrier) lower adjacent sound carrier, and lower adjacent color subcarrier, increase adjacent channel rejection to at least 60 dB.

An all-pass phase equalizer in the video IF amplifier holds group delay to a minimum.

The standby carrier oscillator has several modes of operation including CW, internally modulated with a 15 kHz keying pulse, and an external mode. The external mode greatly facilitates emergency audio override for community alert requirements. It also allows the operator to utilize his headend as a source of modulated signals with which to measure the cross modulation in the distribution system.

Output frequencies from sublow through hyperband are standard. A plug-in UHF to IF input converter is also standard, eliminating the need for separate UHF-VHF converters in most instances.

Several options to the basic Model 6150 signal processor are available that will permit automatic switching, spectrum inversion, signal phase-locking, DC power operation, etc.



Four Model 6130 signal processors rack mounted in a standard 19" rack

MODEL 6130 SIGNAL PROCESSOR

FEATURES

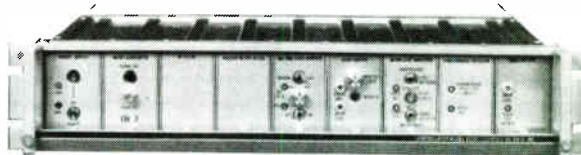
- Cable quality
- Compact package may stand alone or be rack mounted
- SAW filter
- For use in CATV, MATV, and ETV systems
- VHF, UHF, midband, and superband input channels available

- VHF, midband, and superband output channels available
- Crystal controlled frequency accuracy
- Output Power: +50 to +60 dBmV
- Spurious Output: -60dB (relative to video carrier at +60dBmV)
- Front panel monitor/test point
- Front panel output level control
- Input signal and power status monitoring
- Built-in high-level IF switch

Developed primarily for mini-cable applications,* the Model 6130 signal processor offers the advantages of heterodyne signal processing in a low-cost and compact unit. Due to its unique design, up to four processors may be mounted in a standard 19" rack width.

Through the use of double-balanced mixers and hybrid circuits, spurious outputs are virtually eliminated from 5 MHz to 450 MHz.

*The Model 6130 signal processor is not modular and does not offer many of the options available in the Model 6150 processor.



MODEL 6250

MODEL 6250 TELEVISION DEMODULATOR

FEATURES

- Fully modular
- All solid-state
- Low power consumption
- Operates with all standard channels
- Battery operation optional
- Synchronous detector optional
- Performance options available

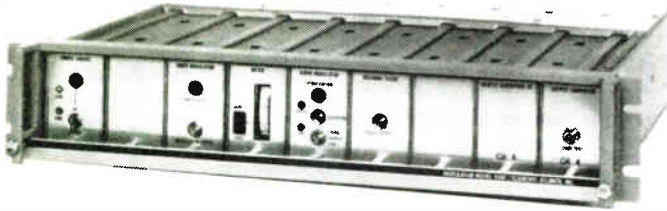
Precision demodulation of any standard VHF, UHF, sublow, midband or superband television channel is provided by the Model 6250 television demodulator. Outputs are baseband, video, audio, and an aural subcarrier.

Video delay characteristics match those of the average home television receiver as defined by the FCC, thereby permitting demodulation of signals transmitted with standard group delay predistortion. Audio output is a very high quality balanced line for use by subsequent amplifiers. In addition, a front-panel audio monitor jack with level control is furnished.

In applications such as microwave retransmission of the received television signal, an aural subcarrier can be added to the video output. The sound signal will then be at a frequency above the spectrum occupied by the video signal.

Envelope detection is used in the standard version of the demodulator. An optional synchronous detector is available to essentially eliminate the quadrature distortion found in all vestigial sideband envelope detectors. Thus unsymmetrical ringing and smear as well as crosstalk between video sideband components are removed from the resultant demodulated signal.

Most of the demodulator circuits, including power supply, are contained in easily accessible solid-state plug-in modules. Some are interchangeable with those of the Model 6150 signal processor and Model 6350 television modulator, thereby reducing spares inventory requirements.



MODEL 6350 TELEVISION MODULATOR

FEATURES

- All Solid State
- SAW Filter Technology
- Low Power Consumption
- Covers All Standard and Non-Standard Television Channels
- Many Options Available
- Monitor/Test Connector
- Fully Modular

The Model 6350 television modulator generates a high quality vestigial sideband TV signal. Advanced circuit design results in unexcelled picture and sound fidelity from color or black and white video inputs and from either audio or 4.5 MHz subcarrier inputs. Scientific Atlanta's pioneering application of the SAW* filter results in unequalled vestigial sideband response characteristics. The SAW filter provides superior adjacent channel performance while retaining excellent group delay characteristics. Vestigial sideband filter adjustments are virtually eliminated and temperature stability is excellent.

A delay predistortion network is provided to conform with the standard FCC predistortion requirements.

Most of the modulator circuits (including power supply) are contained in solid-state plug-in modules, easily accessible from the front panel. Some of the modules are interchangeable with those of the Model 6150 signal processor and Model 6250 television demodulator, thereby reducing inventory requirements for spare parts.

*Surface Acoustic Wave

OPTIONS

Phase Lock — permits phase-locking the modulator output to an interfering local off-air station.

Video Switching — allows automatic switchover to a secondary video source when primary video is lost.

Audio Switching — permits switchover to an alternate audio source. An additional switch input is provided to permit switching emergency override audio.

Audio Modulation Limiter — limits sound deviation to 25 kHz on all audio inputs.

High-Level IF Switching — An alternate high-level IF signal can be switched into the modulator output converter with option HIFS.

Video AGC — provides a constant output level of 1V p-p with input level variations of 0.5 to 2V p-p.

Video Switch/AGC — provides a constant output level of 1V p-p from either the primary or alternate video input signal.

IF Automatic Gain Control — With IFAGC installed, amplification and automatic gain control of an external High Level IF input is provided. This option is used with the HIFS option.

IF Loopthrough — furnishes a composite IF output signal for processing by a scrambler.

DIFLA — furnishes separate audio and video IF signals prior to the vestigial sideband filter for use with pulse-sync suppression scrambler systems.

DIFLB — provides separate audio and video IF signals after the vestigial sideband filter for use with sinewave suppressed scrambler systems.

Standby Battery — permits a standby negative ground 24V DC battery to be automatically connected as the power source upon loss of AC power.

DC Operation — permits modulator operation from a DC source of positive ground 19V to 32V. Operation from the AC line is not possible with this option, and there is no standby protection.

Spectrum Inversion — inverts the video and audio carriers, with the video carrier 4.5 MHz above the audio at RF.

Signal, Voltage Metering — installs a metering module in the front panel of the modulator.



MODEL 6330 TELEVISION MODULATOR

FEATURES

- Cable-Quality Modulator
- Low Cost
- For Use in Mini-Cable and CATV
- Ideal for Private Television Earth Stations
- Standard VHF, Midband, Superband Channels Available
- Minimum Rack Space Requirements
- Monitor/Test Port Standard
- Composite IF Loop-Through (SIFL) Standard

The Model 6330 television modulator offers exceptional performance on all VHF, midband, and superband channels at a very low price. Its compact size allows for a cost effective approach to configuring headend racks since up to four 6330s can be mounted in a standard 19" rack width. The modulator is ideally suited for mini-cable and CATV applications.*

The 6330 modulator employs extensive use of integrated circuit technology to ensure state-of-the-art performance and reliability. A surface acoustic wave (SAW) vestigial sideband filter as well as a composite IF loop-through are provided as standard features. Optional features include dual IF loopthrough (DIFL) and Spectrum Inversion (SI).

The 6330 provides excellent differential gain and phase response. It meets FCC predistortion requirements and offers excellent group delay characteristics. Front panel features include audio over-deviation and white clip indicators, video carrier output level control and a -20dB test point.

*The Model 6330 modulator is not modular and does not offer many of the options available on the Model 6350 modulator.

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TV SIGNAL DISTRIBUTION

TRUNK STATIONS

ELECTRICAL FEATURES

- Switching Regulated Power Supply with Automatic Transient Protection, Overvoltage Protection, and Current Limiting. Operates at 30V or 60V ac
- -20 dB Directional Coupler Test Points Throughout
- CW or Modulated Carrier Pilot Channels are Totally Immune to Adjacent Channel Variations
- Absolute Automatic Level and Slope Compensation
- Plug-In Hybrids
- Stepped Pad and Equalizer to Prevent Unauthorized Adjustments

MECHANICAL FEATURES

- Compatible with Push-Pull/Feedforward Electronics
- No Motherboard—All Controls and Functional Components are Located Within the Plug-In Modules
- A360 Aluminum Die-Cast Housing
- Positive Cable Seizures Optimize Return Loss and Do Not Damage Cable Center Conductor or Connector Pin
- Optional Housing Protective Coating
- Housing Reversible for Tandem Mounting and Street Side Access

TRUNK AMPLIFIERS

Scientific-Atlanta offers a complete line of 300, 400, 450, and 550 MHz trunk stations in either a conventional push-pull configuration or the distortion improving feedforward configuration. Designed to plug into a standard trunk housing, amplifier modules can be simply exchanged to obtain increased channel capacity or upgrade to feedforward. This upward compatible design combined with reverse options, results in our ability to accommodate the most demanding of system requirements while not limiting the stations to any particular configuration. Status Monitoring and/or Reverse Switching features can be added quite simply whenever the need arises. The same is true of reverse electronics.

MODULE FLEXIBILITY

Standard trunk amplifier modules are equipped with a built-in thermal slope and gain compensator that can be augmented with an automatic control module. Status monitoring/reverse switching and reverse options are compatible with forward modules allowing future upgrades without obsoleting existing equipment. Diplex filters plug in, as do the stepped pads/equalizers, and accessories.

PERFORMANCE

As a leader in the cable industry, Scientific-Atlanta's charter is to set system performance standards that provide each system with the utmost in signal quality while constantly improving overall system reliability.

SIMPLIFIED INSTALLATION AND SET-UP

An accurate switch selectable built-in thermal slope and gain compensating network provides a continuous reference for pad and equalizer selection. Plug-in trim networks facilitate selective adjustment of the system frequency response without altering the basic amplifier module alignment.

TRUNK STATION CONFIGURATIONS

One advantage of modular station design is the flexibility it provides the system planner. With the modular concept employed in Scientific-Atlanta's 6500 series trunk station, the system planner may select from a broad range of standard modules in configuring a particular trunk station to a specific need. The system frequency range; need for automatic slope and gain control; reverse and bridging requirements are representative functions which dictate trunk station configuration.

Once the trunk station has been configured, it assumes a model number which aids in the identification of its function in the completed system. It will be helpful to the system operator to become familiar with these model numbers; familiarity will be an asset as model numbers become the language of system employees.

All amplifier station model numbers carry a suffix preceded by a slash (/) i.e., 6540A/400. This suffix designates the upper frequency limit of the forward system.

TRUNK STATION MODEL NO. DESIGNATOR

DESIGNATOR	DESCRIPTION
6540	This model number pertains to all standard trunk stations having a lower forward frequency limit of 54 MHz. (Sub-Split)
6560	This model number pertains to all standard trunk stations having a lower forward frequency limit of 174 MHz. (Mid-Split)
6570	This model number pertains to all standard trunk stations having a lower forward frequency limit of 234 MHz. (High-Split)
6840	This model number pertains to feedforward trunk stations having a lower forward frequency limit of 54 MHz.
A	Designates that the forward amplifier employs automatic pilot operated slope and gain control.
M	Designates that the forward amplifier is thermal in operation. (Thermal is built into all trunk amplifier modules.)
B	Designates that the station utilizes a bridger module.
R	Designates that the station is equipped with a reverse trunk module.*
G	Designates that the station automatically controls gain in the reverse trunk module. Used only in 6560 station models.*
S	Designates that the station automatically controls slope in the reverse trunk module. Used only in 6560 station models.*
T	Designates that station is a terminating trunk.

Prices and Specifications Subject to Change Without Notice.

VRF-121

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TRUNK STATIONS (Cont'd)

- P** Designates that a reverse pilot generator module is used.
- X** Designates that a status monitor/reverse switching transponder module is utilized.

TRUNK STATION MODEL 6540M (Specify Forward Upper Frequency)

6540M/***) is the most basic of trunk station models. It is composed of the trunk station housing which comes fitted with internal wiring harness, power transformer, a trunk amplifier module, and a switching regulated power supply.

Operational gain is 22 dB with all losses included. Plug-in pad and equalizer are used for output level and tilt adjustment. Thermal gain and tilt compensation is standard.

TRUNK STATION MODEL 6540A (Specify Forward Upper Frequency)

6540A/***) is comprised of the same station components of the 6540M, plus the addition of the Automatic Control Module. Trunk gain and tilt are automatically controlled by continuous monitoring of two pilot channels. Thermal gain and tilt compensation is standard.

TRUNK STATION MODEL 6540B (Specify Forward Upper Frequency)

6540B/***) provides additional bridging along trunk routes in locations which are between standard trunk amplifier locations. The 6540B/***) may be used as a terminating trunk (6540TB) at standard 22 dB spacing. In the latter configuration, the trunk is terminated within the station and signal is fed directly to the bridger module. The station is comprised of the trunk station housing which comes fitted with internal wiring harness and power transformer, an intermediate/terminating trunk module, a bridger module, and a regulated power supply. Tilt and output level adjustments in both I/T trunk and bridger modules are accomplished with separate plug-in pads and equalizers for each module.

TRUNK STATION MODEL 6540MB (Specify Forward Upper Frequency)

6540MB/***) is the most basic of trunk/bridger station models. It is comprised of the trunk station housing which comes fitted with internal wiring harness and power transformer, a trunk amplifier module, a bridger module, and a regulated power supply. The high level bridger provides up to four feeder output ports by means of plug-in feeder makers. Operational gain in the trunk is 22 dB with plug-in pad and equalizer used for output level and tilt adjustment. Bridger output level and tilt adjustments are likewise accomplished with separate plug-in pad and equalizer. Thermal gain and tilt compensation is standard.

TRUNK STATION MODEL 6540AB (Specify Forward Upper Frequency)

6540AB/***) is comprised of the same station components as the 6540MB, plus the addition of the Automatic Control Module. Trunk gain and tilt are automatically controlled by continuous monitoring of dual pilot channels. Thermal gain and tilt compensation is standard; pilot channel operation is switch selected.

Series 6500 Distribution Sub-Split Trunk Stations		Forward Trunk Amplifier Intermediate/Terminating Trunk Amplifier	Bridging Amplifier	Automatic Control	Reverse Trunk Amplifier 30 MHz	Reverse Intermediate Trunk Amplifier	Diplex Filters, Sub-Split
Model	Description						
6540M	Thermal Trunk Amplifier	1					
6540A	Automatic Trunk Amplifier	1		1			
6540B	Intermediate/Terminating Amplifier with High Level Bridger		1	1			
6540MB	Thermal Trunk Amplifier with High Level Bridger	1	1				
6540AB	Automatic Trunk Amplifier with High Level Bridger	1	1	1			
6540MR	Thermal Trunk Amplifier with Thermal Reverse Amplifier and Diplex Filters	1			1		2
6540AR	Automatic Trunk Amplifier with Thermal Reverse Amplifier and Diplex Filters	1			1	1	2
6540MBR	Thermal Trunk Amplifier with High Level Bridger, Thermal Reverse Amplifier and Diplex Filters	1	1		1		3
6540ABR	Automatic Trunk Amplifier with High Level Bridger, Thermal Reverse Amplifier and Diplex Filters	1	1	1	1		3
6540BR	Intermediate Trunk Amplifier with High Level Bridger, Reverse Intermediate Trunk Amplifier and Diplex Filters		1	1			1 3
6540TBR	Terminating Trunk Amplifier with High Level Bridger Thermal Reverse Amplifier and Diplex Filters		1	1		1	2

SUB-SPLIT GUIDE

The addition and activation of sub-split reverse (5-30 MHz) is easily accomplished with the modular convenience of reverse amplifiers and accessories. Even in cases where the forward system is in place and operating, activation of the reverse path may be accomplished with minimal disturbance to the active, forward signal path. To add sub-split reverse to any 6500 series trunk station, add the equipment listed after each station model which is to be upgraded (refer to Figures 1 and 2 for module and accessory locations). An "R" suffix added to the trunk station model number specifies that reverse trunk amplifier module and diplex filters are to be included. Plug-in pads and equalizers must be called out separately. To add sub-split reverse to any 6500 line extender, refer to Line Extender Reverse Kit.

- 6540M** Becomes 6540MR with addition of reverse equipment. Install as follows:
 1—233180 Reverse Trunk Module
 2—DFS30 Diplex Filters
 1—EQ30T(*) Reverse Equalizer
 1—PP(*) Plug-In Pad
- 6540A** Becomes 6540AR with addition of reverse equipment. Install as follows:
 1—233180 Reverse Trunk Module
 2—DFS30 Diplex Filters
 1—EQ30T(*) Reverse Equalizer
 1—PP(*) Plug-In Pad
- 6540MB** Becomes 6540MBR with addition of reverse equipment. Install as follows:
 1—233180 Reverse Trunk Module
 3—DFS30 Diplex Filters
 1—EQ30T(*) Reverse Equalizer
 1—PP(*) Plug-In Pad
- 6540AB** Becomes 6540ABR with addition of reverse equipment. Install as follows:
 1—233180 Reverse Trunk Module
 3—DFS30 Diplex Filters
 1—EQ30T(*) Reverse Equalizer
 2—PP(*) Plug-In Pads
- 6540B** Becomes 6540BR with addition of reverse equipment. When used as a terminating trunk (6540TBR), install as follows:
 1—233180 Reverse Trunk Module
 2—DFS30 Diplex Filters
 1—EQ30T(*) Reverse Equalizer
 2—PP(*) Plug-In Pads

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TRUNK STATIONS (cont'd)

—OR—

When used as an intermediate trunk:
 1—232470 Reverse Intermediate Trunk Module
 3—DFS30 Diplex Filters
 1—EQ30T (*) Reverse Equalizer
 2—PP (*) Plug-In Pads

*The reverse equalizer and plug-in pads are required to complete the trunk station; however, they are not shipped with the reverse modules. The appropriate value must be specified when ordering.

The 6540BR may be used as an intermediate trunk without reverse path amplification in those locations where reverse feeder is not required. To accomplish this, install reverse through cable RC-100 in place of the sub-split intermediate trunk module 232470.

300 MHz Specifications

	Forward Trunk	Forward Trunk and Bridger	Reverse Trunk	Reverse Feeder
Frequency Response	54-300 MHz ± 25 dB	54-300 MHz ± 5 dB (5)	5-30 MHz ± 25 dB	5-30 MHz ± 5 dB (5)
Minimum Full Gain (1)	25 dB	46 dB (4)	14 dB (11)	14 dB (5) (11)
Operational Gain (1) (2)	22 dB	38 dB (4)	—	—
Gain Control Range				
Selectable (8)	0 to 15 dB	0 to 15 dB	0 to 15 dB	0 to 15 dB
Equalization Range (3)				
Selectable (9)	30 to 24 dB	—	0 to 15 dB	—
Output Tilt Range (9)	—	4.0 to 10 dB	—	—
Automatic Slope and Gain	± 4 dB	± 4 dB	—	—
Internal Equalization	5.5 dB at 300 MHz	5.5 dB at 300 MHz	—	—
Nominal Tilt (13) (15)	In Equal	In Equal	-1.0 dB	—
Noise Figure (2) (13) (22)	8 dB	9.5 dB (20) (21)	9 dB	9 dB (5)
Thermal Compensation (3)	22 dB	22 dB	5 dB	5 dB
Hum Modulation (12)	70 dB	70 dB	70 dB	70 dB
Return Loss	16 dB	16 dB	16 dB	16 dB
Maximum AC Thru Current	10A	4A	—	—
Current Requirements at 24V dc	39A	62A (14)	82A (1a)	—
Test Point	-20 ± 1 dB	-20 ± 1 dB	-20 ± 1 dB	—

330 MHz Specifications

	Forward Trunk	Forward Trunk and Bridger	Reverse Trunk and Feeder Specifications Same as 300 MHz
Frequency Response 54-330 MHz	± 0.3 dB	± 0.5 dB (5)	
Minimum Full Gain (1)	25 dB (4)	42 dB (11)	
Typical Operating Gain (1) (2)	22 dB (4)	36 dB	
Gain Control Range			
Selectable (8)	0 to 20 dB	0 to 20 dB	
Equalization Range (3)			
Selectable (9)	0 to 24 dB	—	
Output Tilt Range (9)	—	4.0 to 10 dB	
Automatic Slope and Gain (10)	± 2.7 dB	± 2.7 dB	
Nominal Tilt (13) (15)	0 dB	0 dB	
Noise Figure (2) (13) (22)	9 dB	12 dB	
Thermal Compensation (3)	22 dB	22 dB	
Hum Modulation (12)	70 dB	70 dB	
Output Level	+32 dBmV	+46 dBmV	
Recommended Tilt	3 dB True Tilt	7 dB True Tilt	
Return Loss	16 dB	16 dB	
Maximum AC Thru Current	10A	4A	
Current Requirements at 24V dc	39A	62A	
Test Point	-20 ± 1 dB	-20 ± 1 dB	

300/330 MHz Notes

- Includes all losses with amplifiers in normal operating configuration.
- At 20°C (68°F).
- Cable equivalent at upper frequency.
- Gain specifications with forward trunk in normal operating configuration.
- Single feeder output.
- In 1 dB steps.
- 1.5 upper frequency cable equivalent steps dB of cable change at upper frequency.
- Gain for reverse trunk or feeder only is 3 dB greater.
- Carrier to distortion ratio.
- With 0 dB equalizer installed in forward trunk or forward interterm trunk module.
- Includes forward trunk and bridger.
- Cable shape: - for cable (down tilt), + for equalization (up tilt).
- Thermal AGC/ASC.
- 12 dB spacing.
- 22 dB spacing.
- Does not include 3 dB loss for optional plug-in thermal network.
- Includes bridger equalizer for 7 dB tilt.
- Includes bridger pad for typical operating gain.
- Includes diplex filter loss.

400 MHz Specifications

	Forward Trunk	Forward Trunk and Bridger	Reverse Trunk	Reverse Feeder
Frequency Response	54-400 MHz ± 25 dB	54-400 MHz ± 75 dB	5-30 MHz ± 25 dB	5-30 MHz ± 5 dB
Minimum Full Gain (1)	25 dB	42 dB	14 dB	14 dB
Typical Operating Gain(1) (2)	22 dB	35 dB	—	—
Gain Control Range				
Selectable (8)	0 to 20 dB	0 to 20 dB	0 to 14 dB	0 to 14 dB
Equalization Range (3)				
Selectable (9)	0 to 24 dB	—	0 to 15 dB	0 to 15 dB
Auto Slope and Gain (10)	± 3 dB	± 3 dB	—	—
Nominal Tilt	0 dB	+2 dB	-1.5 dB	-1.5 dB
Output Tilt Range (9)	—	4.0 to 10 dB	—	—
Noise Figure (2) (13) (22)	11 dB	13 dB	9 dB	9 dB
Thermal Compensation (3)	22 dB	22 dB	5.5 dB	5.5 dB
Return Loss	16 dB	16 dB	16 dB	16 dB
Maximum AC Thru Current	10A	5A	—	—
Current Requirements at 24V dc	43A	76A	10A	—
Test Point	-20 dB ± 1 dB	-20 dB ± 1 dB	-20 dB ± 1 dB	—

NOTES:

- Includes all losses with amplifiers in normal operating configuration
- At 20°C (68°F)
- Cable equivalent at upper frequency
- 3 dB true tilt
- 7 dB true tilt
- Carrier-to-average composite triple beat, unmodulated carriers, falling on any channel
- Any I, ± I_f falling on any channel
- In 1 dB steps
- 1.5 dB upper frequency cable equivalent steps
- 11 Gain for reverse trunk or feeder only is 3 dB greater
- 0 dB pad installed
- Carrier to distortion ratio
- Tilt with 0 dB equalizers installed
- Includes forward trunk and bridger
- Cable shape - for cable (down tilt), + for equalization (up tilt)
- Thermal AGC/ASC
- 12 dB spacing
- 22 dB spacing
- Optional for thermal use 3 value higher equalizer and 3 dB lower pad value

450 MHz Specifications

	Forward Trunk	Forward Trunk and Bridger	Reverse Trunk	Reverse Feeder
Frequency Response	54-450 MHz ± 2 dB	54-450 MHz ± 5 dB (5)	5-30 MHz ± 25 dB	5-30 MHz ± 5 dB (5)
Minimum Full Gain (1) (2)	26 dB	43 dB	14 dB	14 dB
Operational Gain (1) (2)	22 dB	35 dB	—	—
Gain Control Range				
Selectable (8)	0 to 20 dB	0 to 20 dB	0 to 14 dB	0 to 14 dB
Equalization Range (3)				
Selectable (9)	0 to 24 dB	—	0 to 15 dB	0 to 15 dB
Automatic Slope and Gain (10)	± 4 dB	± 4 dB	—	—
Nominal Tilt (13) (15)	-1 dB	0 dB	-1.5 dB	1.5 dB
Output Tilt Range (9)	—	4 to 10 dB	—	—
Noise Figure (2) (13) (22)	9 dB	9 dB	9 dB	9 dB
Thermal Compensation (3)	18 dB	18 dB	5.5 dB	5.5 dB
Hum Modulation (12)	70 dB	70 dB	70 dB	70 dB
Return Loss	16 dB	16 dB	16 dB	16 dB
Maximum AC Thru Current	10A	6A	—	—
Current Requirements at 24V dc	45A	75A	98A	—
Test Point	-20 ± 1 dB	-20 ± 1 dB	-20 ± 1 dB	—

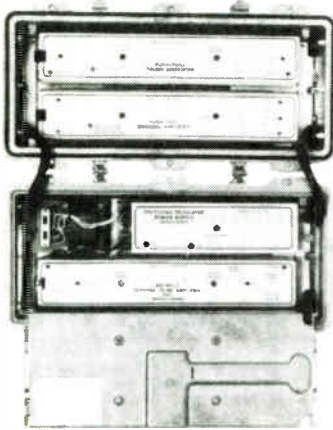
550 MHz Specifications

	Forward Trunk	Forward Trunk and Bridger	Reverse Trunk	Reverse Feeder
Frequency Response	54-550 MHz ± 2 dB	54-550 MHz ± 5 dB	5-30 MHz ± 25 dB	5-30 MHz ± 5 dB
Minimum Full Gain (1)	26 dB	43 dB	14 dB	14 dB
Operational Gain (1) (2)	22 dB	35 dB	—	—
Gain Control Range				
Selectable (8)	0 to 20 dB	0 to 20 dB	0 to 14 dB	0 to 14 dB
Equalization Range (3)				
Selectable (9)	0 to 24 dB	—	0 to 15 dB	0 to 15 dB
Automatic Slope and Gain (10)	± 4 dB	± 4 dB	—	—
Nominal Tilt (13) (15)	-1 dB	0 dB	-1.5 dB	-1.5 dB
Output Tilt Range (9)	—	4 to 10 dB	—	—
Noise Figure (2) (13) (22)	8 dB	9.5 dB	9 dB	9 dB
Thermal Compensation (3)	18 dB	18 dB	5.5 dB	5.5 dB
Hum Modulation (12)	70 dB	70 dB	70 dB	70 dB
Return Loss	16 dB	16 dB	16 dB	16 dB
Maximum AC Thru Current	10A	8A	—	—
Current Requirements at 24V dc	5A	85A	11A	—
Test Point	-20 ± 1 dB	-20 ± 1 dB	-20 ± 1 dB	—

450/550 MHz Notes

- Includes all losses with amplifiers in normal operating configuration
- At 20°C (68°F)
- Cable equivalent at upper frequency
- Gain specifications with forward trunk in normal operating configuration
- Single feeder output
- In 1 dB steps
- 1.5 dB upper frequency cable equivalent steps dB of cable change at upper frequency
- Gain for reverse trunk or feeder only is 3 dB greater
- Carrier to distortion ratio
- With 0 dB equalizer installed in forward trunk or forward interterm trunk module
- Includes forward trunk and bridger
- Cable shape - for cable (down tilt), + for equalization (up tilt)
- Thermal AGC/ASC
- 12 dB spacing
- 22 dB spacing
- Does not include 3 dB loss for optional plug-in thermal network
- Includes bridger equalizer for 7 dB tilt
- Includes bridger pad for typical operating gain
- Includes diplex filter loss
- Includes forward interterm trunk module
- Noise figure is 3 dB lower for reverse trunk or feeder only

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SERIES 6560 MID-SPLIT SYSTEM

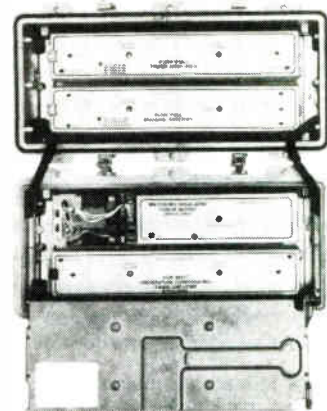
The Mid-Split System provides increased channel capacity in the reverse direction (5-108 MHz) and fewer channels in the forward direction (174 MHz-upper frequency).

As in sub-split, each mid-split station model is suggestive of its function in the system. In ordering, the "(***)" in station model number is replaced by the appropriate upper frequency limit in the forward direction: 300 MHz, 330 MHz, 400 MHz, 450 MHz, or 550 MHz.

Series 6560 Distribution Mid-Split Trunk Stations		Forward Trunk Amplifier	Reverse Trunk Amplifier	Bridge	Automatic Control	Reverse Trunk Amplifier 5-108 MHz	Reverse Trunk Amplifier 5-108 MHz	Reverse Trunk Amplifier 5-108 MHz	Reverse Trunk Amplifier 5-108 MHz	High Power Filter 108-174 MHz only
Model	Description									
6560MG	Thermal Forward with Reverse Automatic Gain and Mid-Split Diplex Filters	1								
6560AG	Automatic Forward with Reverse Automatic Gain and Mid-Split Diplex Filters	1			1					
6560MS	Thermal Forward with Reverse Automatic Slope and Mid-Split Diplex Filters	1				1				
6560AS	Automatic Forward with Reverse Automatic Slope and Mid-Split Diplex Filters	1			1	1				
6560MGB	Thermal Forward with High Level Bridger, Reverse Automatic Gain, and Mid-Split Diplex Filters	1	1						3	1
6560AGB	Automatic Forward with High Level Bridger, Reverse Automatic Gain, and Mid-Split Diplex Filters	1	1	1					3	1
6560MSB	Thermal Forward with High Level Bridger, Reverse Automatic Slope, and Mid-Split Diplex Filters	1	1	1					3	1
6560ASB	Automatic Forward with High Level Bridger, Reverse Automatic Slope, and Mid-Split Diplex Filters	1	1	1					3	1
6560IB	Intermediate Trunk with High Level Bridger, Reverse Intermediate Trunk, and Mid-Split Diplex Filters		1	1					1	3
6560TBP	Terminating Trunk with High Level Bridger, Pilot Carrier Generator, and Mid-Split Diplex Filters		1	1					1	2
6560MBP	Thermal Forward with High Level Bridger, Pilot Carrier Generator, and Mid-Split Diplex Filters	1	1						1	2
6560ABP	Automatic Forward with High Level Bridger, Pilot Carrier Generator, and Mid-Split Diplex Filters	1	1	1					1	2

BRIDGERS

Any standard mid-split trunk station may be equipped with bridging capability with the addition of a bridger module. The station model number is added with "B"; that is a 6560AS becomes 6560ASB when bridging is added.



SERIES 6570 HIGH-SPLIT SYSTEM

Available in 450 and 550 MHz, high-split offers a reverse bandwidth of 5-174 MHz and a forward bandwidth of 234 MHz up to 550 MHz.

Series 6500/450 Distribution High-Split 450 MHz Trunk Stations*		Forward Trunk Amplifier	Reverse Trunk Amplifier	Bridge	Automatic Control	Reverse Trunk Amplifier	Reverse In Term Trunk Amplifier	Diplex Filters, High-Split
Model	Description							
6570MR450	Thermal Forward Trunk with Temperature Compensating Reverse Trunk and High-Split Diplex Filters	1						2
6570AR450	Automatic Forward Trunk with Temperature Compensating Reverse Trunk and High-Split Diplex Filters	1			1			2
6570MBR450	Thermal Forward Trunk with High Level Bridger, Temperature Compensating Reverse Trunk and High-Split Diplex Filters	1	1					3
6570ABR450	Automatic Forward Trunk with High Level Bridger, Temperature Compensating Reverse Trunk and High-Split Diplex Filters	1	1	1				3
6570IBR450	Intermediate Forward Trunk with High Level Bridger, Reverse Intermediate Trunk and High-Split Diplex Filters		1	1				3
6570TBR450	Terminating Forward Trunk and High-Split Diplex Filters		1	1				2

*High-split may be used for 400 MHz systems by equalizing the 450 MHz stations to 400 MHz.

**Requires a slope and gain driver, refer to Accessories for selection.

High-Split Trunk Station With Temperature Compensating Reverse

450 MHz Specifications

	Forward Trunk 234 MHz-450 MHz	Forward Trunk and Bridger 234-450 MHz	Reverse Trunk 5 MHz-174 MHz	Reverse Feeder 5 MHz-174 MHz
Frequency Response	± 0.2 dB	± 0.7 dB (5)	± 35 dB	± 0.5 dB
Minimum Full Gain (1)	26 dB	44 dB	20 dB	20 dB
Operational Gain (1) (2)	22 dB	35 dB (5)	17 dB (11)	17 dB (5) (11)
Gain Control Range	0 to 20 dB	0 to 20 dB	0 to 17 dB	0 to 17 dB
Selectable (8)				
Equalization Range (3)	0 to 24 dB	3 to 24 dB	3 to 18 dB	3 to 18 dB
Selectable (9)				
Auto Slope and Gain				
dB Cable Change at High End	± 4 dB	± 4 dB	—	—
Normal Station Tilt (1) (2)	-5 dB	0 dB	-15 dB	-15 dB
Noise Figure (2) (13) (22)	8 dB	9.5 dB (20) (21)	11.0 dB	11.0 dB (5)
Thermal Compensation (3)	18 dB	18 dB	(25) (26)	(25) (26)
Hum Modulation (12)	70 dB	70 dB	70 dB	70 dB
Return Loss	16 dB	16 dB	16 dB	16 dB
Maximum AC Thru Current	10A	6A	—	—
Current Requirements at 24V dc	5 (16)	85A (14) (16)	17A (14) (16)	—
Test Ports				
Magnitude	-20 ± 1 dB	-20 ± 1 dB	-20 ± 1 dB	-24 ± 1 dB (27)
Frequency Response	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB

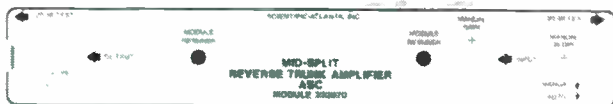
NOTES:

- Includes all losses with amplifiers in normal operating configuration.
- At 20°C (68°F).
- Cable equivalent at upper frequency.
- Gain specifications with forward trunk in normal operating configuration.
- Single feeder output.
- In 1 dB steps.
- 1.5 dB upper frequency cable equivalent steps.
- dB of cable change at upper frequency.
- Gain for reverse trunk- or feeder-only is 3 dB greater.
- Carrier to distortion ratio.
- With 0 dB equalizer installed in forward trunk or forward intermediate/terminating trunk module.
- Includes forward trunk and bridger.
- Cable shape. - for cable (down tilt). * for equalization (up tilt).
- Thermal AGC/ASC for forward amplifier.
- 12 dB spacing.
- 22 dB spacing.
- Does not include 3 dB loss for optional plug-in thermal network.
- Includes bridger equalizer for 7 dB tilt.
- Includes bridger pad for typical operating gain.
- Includes diplex filter loss.
- Includes forward intermediate/terminating trunk module.
- Noise figure is 3 dB lower for reverse trunk- or feeder-only.
- Reverse thermal compensation is selectable by plug-in drivers. Drivers are available for 6 dB, 12 dB, 18 dB, 24 dB, and 30 dB of cable at 174 MHz.
- Requires reverse injection test probe (Part No 276982).

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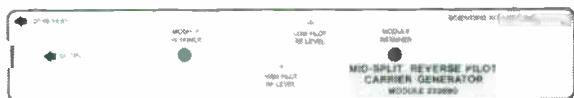
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TV SIGNAL DISTRIBUTION



AGC OR ASC MID-SPLIT REVERSE TRUNK AMPLIFIER MODULES 232660/232670

The Model 232660 and 232670 Reverse Trunk Amplifiers are complementing reverse transmission amplifiers for the 5-108 MHz mid-split system. Each model is designed to compensate for losses introduced by coaxial cable spans while introducing minimum levels of noise and non-linear distortion. The amplifiers install in a standard trunk housing and interface with forward trunk and bridger modules. Inputs are provided to accept 5-108 MHz reverse signals from both trunk and feeder. Circuitry for automatic gain control (AGC) is included in the Model 232660 and circuitry for automatic slope control (ASC) is included in Model 232670. In the AGC module the slope is thermally controlled and in the ASC module gain is thermally controlled. The two amplifier models are designed to be alternated in cascaded stations throughout the system. Both AGC and ASC versions operate from pilots generated in the first reverse station of a cascade.



MID-SPLIT REVERSE PILOT CARRIER GENERATOR MODULE 232690

The Model 232690 Reverse Pilot Carrier Generator Module is used in the 5-108 MHz mid-split system to generate low and high pilots for automatic slope and gain correction. The reverse pilot carrier generator module also serves as the first reverse amplifier in the upstream cascade. The module generates, filters, and sums two stable pilot carriers which are combined with 5-108 MHz inputs from the feeder. After the pilots are combined with the 5-108 MHz feeder inputs, the combined signals are amplified and routed through a pad and equalizer to the output of the module. The plug-in equalizer and plug-in pad are installed at the output of the module to allow optimum set-up where trunk splits occur. A range of plug-in equalizers permit precise cable equalization and a range of plug-in pads permit proper output adjustment. A separate plug-in pad in the feeder path permits feeder-trunk match-up. Potentiometers are provided to permit individual pilot level adjustment.



HIGH-SPLIT REVERSE TRUNK AMPLIFIER WITH THERMAL COMPENSATION MODULE 234600

The Model 234600 High-Split Reverse Amplifier with Thermal Compensation Module serves as a primary reverse amplifier for single cable 5-174 MHz trunk operation. The reverse amplifier installs in a standard trunk housing and provides gain for reverse trunk transportation and origination of feeder signals. Plug-in drivers allow thermal slope and gain compensation for various lengths of cable. The design accuracy of the thermal networks and use of reverse trunk amplifiers in every forward amplifier station provide accurate level control over long cascades.



SUB-SPLIT REVERSE INTERMEDIATE BRIDGING AMPLIFIER MODULE 232470

The Model 232470 Sub-Split Reverse Intermediate Bridging Amplifier module is designed to be used with the Forward Intermediate Trunk Module. The reverse intermediate module provides no reverse transmission gain, but completes the reverse trunk path with a minimum of insertion loss. In addition, the module accepts an input from the feeder and couples the feeder signal into the trunk path through a directional coupler; a plug-in hybrid amplifier in the feeder input provides gain to overcome loss of the directional coupler. A plug-in pad in the feeder allows feeder levels to be matched to those of the trunk. Provision for a plug-in feeder disconnect switch makes the module compatible with computer-operated systems.

Prices and Specifications Subject to Change Without Notice.

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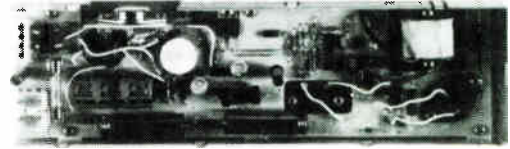
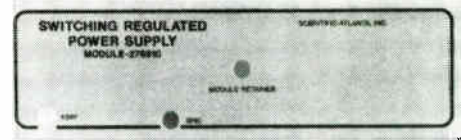
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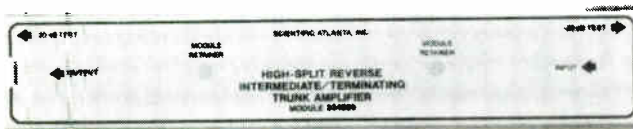
MID-SPLIT REVERSE INTERMEDIATE/TERMINATING TRUNK AMPLIFIER MODULE 232680

The Model 232680 Mid-Split Reverse Intermediate/Terminating Trunk Amplifier Module is used with the Forward Intermediate/Terminating Trunk Module. When used in an intermediate station, the module provides no reverse trunk transmission gain, but completes the reverse trunk path with a minimum of insertion loss. In addition, the module accepts an input from the feeder and couples the feeder signal into the trunk path through a directional coupler; a plug-in hybrid amplifier in the feeder input provides gain to overcome loss of the directional coupler. A mid-split terminating station typically requires a pilot carrier generator be used as the first reverse module of the upstream cascade. However, in the case where a short sub-trunk (not more than two cascaded stations) exists, the mid-split reverse intermediate/terminating module may be used instead.



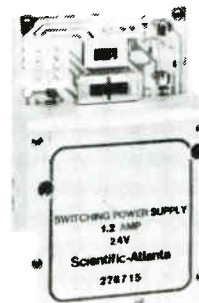
POWER SUPPLY MODULE 276910

The Model 276910 Switching Regulated Power Supply Module is used in all Scientific-Atlanta trunk stations to convert station ac input voltage to a well-regulated dc voltage for station module powering. The switching regulated supply provides improved efficiency over a linear power supply which results in cost savings in both equipment and operating expense. The switching regulated supply is a constant power device, meaning that it automatically adjusts its internal operating parameters for most efficient use of different levels of voltage and current within a system. The switching regulated supply automatically determines load power requirements and adjusts its operation so that only that amount of power is provided.



HIGH-SPLIT REVERSE INTERMEDIATE/TERMINATING AMPLIFIER MODULE 234620

The Model 234620 High-Split Reverse Intermediate/Terminating Amplifier Module is used with the Forward Intermediate/Terminating Trunk Module. When used in an intermediate station, the module provides no reverse trunk gain, but completes the reverse trunk path with a minimum of insertion loss. In addition, the module accepts an input from the feeder and couples the feeder signal into the trunk path through a plug-in combiner; a plug-in hybrid amplifier in the feeder input provides gain to overcome loss of the combiner. When the high-split reverse intermediate/terminating amplifier module is used in a terminating station where trunk input is not required, the plug-in combiner can be replaced with a jumper and signal from the feeder is routed through the hybrid amplifier directly into the trunk path.



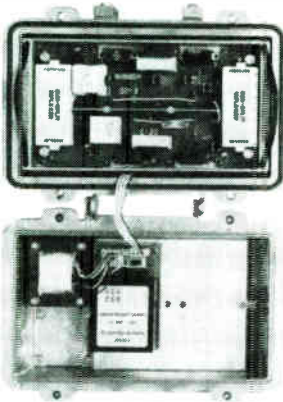
6501/6502 POWER SUPPLY MODULES 276705 and 276715

Power supply modules 276705 and 276715 are used in the 6501/6502 distribution amplifier station to convert station ac input voltage to a well-regulated dc voltage for station powering. The switching regulated supply (276715) provides improved efficiency over the standard linear power supply (276705) which results in cost savings in operating expense. The switching regulated supply is a constant power device, meaning that it automatically adjusts its internal operating parameters for most efficient use of different levels of voltage and current within a system. The switching regulated supply automatically determines load power requirements and adjusts its operation so that only that amount of power is provided.

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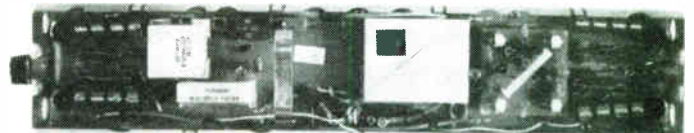
DISTRIBUTION AMPLIFIER, MODELS 6501 and 6502 FEATURES

- Upgradable to Bi-directional With the Installation of a Sub-Split Reverse Amplifier Printed-Circuit Board, Diplex Filters, Pad, and Equalizer
- Simplified Setup Procedure
- Plug-In Forward Hybrids
- Selectable Transformer Taps and Built-in Voltage Indicator
- 30- or 60-Volt Operation
- Plug-In Transient Protectors
- Symmetrical Module and Housing Permits Mounting for Easy Maintenance
- Field Replaceable Power Supply Module
- Flat-20 dB Directional Coupler Test Points
- Reverse Injection Test Point
- Optional Switching Regulated Power Supply Module
- Plug-In DC Powered Thermal Network
- Plug-In Frequency Response Trim Networks
- Innovative Cable Seizures Provide Positive Connection and Ensure Good Return Loss



HIGH-GAIN UPGRADE TRUNK AMPLIFIER MODULES 232840 (330 MHz) AND 280200 (450 MHz)

Designed to drop into existing trunk station locations, the high gain amplifier features 28 dB of forward gain, permitting fast and inexpensive system upgrades from 216 MHz to 330 or 300 MHz to 450 MHz. Circuitry for automatic gain and slope operations is included and is driven from switch-selectable built-in thermal networks or a separate carrier level operated Automatic Control Module. The trunk module is designed to compensate for losses introduced by coaxial cable spans while introducing minimum levels of noise and non-linear distortion. Plug-in diplex filters for the input and output provide signal routing for split frequency two-way operation.



BRIDGING AMPLIFIER MODULE 276990 (300, 330 MHz) 234290 (400 MHz) 233170 (450 MHz) 344000 (550 MHz)

The Model 276990, 234290, 233170, and 344000 are the bridging amplifiers for the Series 6500 trunk station in the frequency ranges of 300-550 MHz.

The bridger module is designed to provide gain and isolation between trunk and feeder systems in a common station. Four symmetrical plug-in feeder makers permit feeder activation from all or a combination of four ports—two on either end of the station housing. Feeder ports can be independently powered through plug-in fuses. A single plug-in diplex filter before the feeder maker provides signal routing for sub-split, two-way operation. A single output test point before the feeder maker permits consistent set-up regardless of the number of feeders activated.

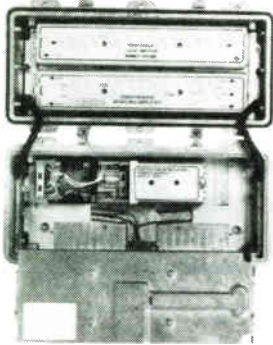
Model	Description	MODULE Forward Amplifier	High Gain Forward Amplifier	Automatic Control	5-30 MHz Low Gain Reverse Amplifier	5-30 MHz High Gain Reverse Amplifier	5-108 MHz Reverse Amplifier	5-174 MHz Reverse Amplifier	5-108 MHz Diplex Filter	5-174 MHz Diplex Filter	5-30 MHz Low Pass Filter	5-108 MHz Low Pass Filter	5-174 MHz Low Pass Filter	54-450 MHz High Pass Filter	174-450 MHz High Pass Filter	234-450 MHz High Pass Filter
6501M	Manual Forward Amplifier	1														
6501MS	Manual Forward Amplifier with 5-30 MHz High Gain Reverse Amplifier and Diplex Filter	1			1			2								
6501MM	Manual Forward Amplifier with 5-108 MHz Reverse Amplifier and Diplex Filter	1				1			2							
6501MH	Manual Forward Amplifier with 5-174 MHz Reverse Amplifier and Diplex Filters	1					1			2			1			1
6502M	High Gain Manual Forward Amplifier	1														
6502MS	High Gain Manual Forward Amplifier with 5-30 MHz Reverse Amplifier and Diplex Filters	1		1					2							
6502MM	High Gain Manual Forward Amplifier with 5-108 MHz Reverse Amplifier and Diplex Filters	1								2						1
6502MH	High Gain Manual Forward Amplifier with 5-174 MHz Reverse Amplifier and Diplex Filters	1										2		1		1
6502A	High Gain Automatic Amplifier	1	1													
6502AS	High Gain Automatic Forward Amplifier with 5-30 MHz Reverse Amplifier and Diplex Filters	1	1	1						2						1
6502AM	High Gain Automatic Forward Amplifier with 5-108 MHz Reverse Amplifier and Diplex Filters	1	1										2			1
6502AH	High Gain Automatic Forward Amplifier with 5-174 MHz Reverse Amplifier and Diplex Filters	1			1									2		1
6501ML	Manual Forward Amplifier with 5-30 MHz Low Gain Reverse Amplifier and Diplex Filter	1		1						2						1
6502ML	High Gain Manual Forward Amplifier with 5-30 MHz Low Gain Reverse Amplifier and Diplex Filters	1		1												2
6502AL	High Gain Automatic Forward Amplifier with 5-30 MHz Low Gain Reverse Amplifier and Diplex Filters	1	1	1												2
6822	110V AC power — plus any of above 6502 features.															

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SERIES 6800 FEEDFORWARD STATIONS

FEATURES

Push/Pull Feedforward Trunk

- Forward Capability of 54 to 550 MHz
- Feedforward Amplification for Higher Gain and Less Distortion
- Forward Operation Gain of 22, 26, or 30 dB
- Built-in Hybrid Redundancy
- Optional Status Monitoring
- Optional Plug-in Interstage Filter
- Directional Coupler Test Points on Input and Output
- Plug-in Equalizers and Pads
- Provisions for Interstage Trimming
- Versatile Housing for Aerial or Underground
- Precision Automatic Control System Operates off CW Carriers or Modulated Channels
- 50-60 Hz Powering
- Feedforward Trunk Module Compatible with Existing Distribution Trunk Housing

Push/Pull Feedforward Distribution Amplifier

- Forward Capability of 54 to 550 MHz
- Forward Operational Gain of 32 dB
- Built-in Hybrid Redundancy
- Reverse Capability
- Field-Replaceable Feedforward Blocks
- Directional Coupler Test Points on Input and Output
- Plug-in Equalizers and Pads
- Plug-in Surge Protectors
- 50-60 Hz Powering
- Switching-Regulated Power Supply
- Optional Plug-in Thermal Network
- Optional Plug-in Trim Network

Distribution Equipment

Feedforward Trunk Stations

Model	Description	Model 6842 22 dB Feedforward Trunk Amplifier	Model 6841 26 dB Feedforward Trunk Amplifier	Model 6844 30 dB Feedforward Trunk Amplifier	Feedforward Bridger	Automatic Control	Reverse Trunk Amplifier (30 MHz)	Diplex Filters (30 MHz)
684(*)-A	Automatic Feedforward Trunk Amplifier	1				1		
684(*)-AB	Automatic Feedforward Trunk Amplifier with Feedforward Bridger	1	1			1		
684(*)-AR	Automatic Feedforward Trunk Amplifier with Thermal Reverse Amplifier and Diplex Filters	1				1	1	2
684(*)-ABR	Automatic Feedforward Trunk Amplifier with Feedforward Bridger, Thermal Reverse Amplifier and Diplex Filters	1	1			1	1	3

*Add "0" for 22 dB gain, "1" for 26 dB gain, "2" for 30 dB gain

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450, 550 MHz TRUNK AMPLIFIER MODULES 234420/344070

TRUNK AMPLIFIER MODULES

149680, 231120, 234420, AND 344070

Trunk modules 149680, 231120, 234420, and 344070 are the forward amplifiers for the Series 6500 Trunk Station in frequency ranges from 300 MHz to 450/550 MHz. Circuitry for automatic gain and slope operation is included and is driven from switch-selectable built-in thermal networks or a separate carrier level operated Automatic Control Module. The trunk module is designed to compensate for losses introduced by coaxial cable spans while introducing minimum levels of noise and non-linear distortion. Plug-in diplex filters for the input and output provide signal routing for split frequency two-way operation. Provision for plug-in interstage trim networks permit simple system frequency response error correction without affecting basic module alignment.



FEEDFORWARD TRUNK AMPLIFIER MODULES
 22 dB 450 MHz—280360 550 MHz—343900
 26 dB 450 MHz—343880 550 MHz—343910
 30 dB 450 MHz—343890 550 MHz—343920

SERIES 6800 450/550 MHz

Feedforward trunk amplifiers offer significantly improved signal distortion characteristics over conventional push-pull amplifiers. Advantages include increased amplifier spacing and improved cascadeability, while in many instances reducing the total cable system cost. Additionally, the feedforward design utilizes redundant amplifier hybrids, improving overall system reliability.

The trunk module features plug-in hybrid and feedforward amplifiers, built-in directional coupler test points on both input and output, superior hybrid amplifier heat sinking, plug-in pads, equalizer, and a series of interstage trim networks, switch-selectable thermal or carrier-controlled slope and gain, ac power directors for power pass or block from input or output, and total access for ease or maintenance in the field.

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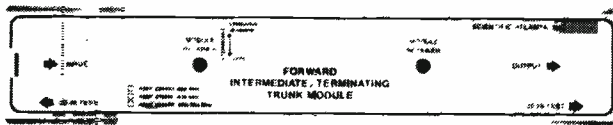
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FEEDFORWARD BRIDGING AMPLIFIER MODULE,
High-Gain 450 MHz, 280210
Low-Gain 450 MHz, 280220
High-Gain 550 MHz, 280230
Low-Gain 550 MHz, 280240

The Series 6800 feedforward bridging modules are the forward bridger amplifiers for use where superior distortion performance is required. Model 280210 high-gain feedforward bridger is used with the 22 dB feedforward trunk amplifier and Model 280220 low-gain feedforward bridger is used with the 26 and 30 dB trunk amplifiers.



INTERMEDIATE/TERMINATING TRUNK MODULE
232900 (300, 330, 400 MHz)
234430 (450 MHz)
344030 (550 MHz)

The Forward Intermediate/Terminating Trunk Module is used in the forward system to provide additional feeder between normally spaced trunk amplifier stations or to terminate the trunk system where existing trunk requirements end. In the intermediate configuration the trunk signal is passed through the module (without amplification) where a sample is tapped off, equalized, amplified, and routed to a standard bridger module. In the terminating configuration the input signal is equalized, amplified, and routed to a standard bridger module. The module is configured for intermediate or terminating operation by means of a plug-in rotatable signal director. Plug-in diplex filters for the input and output provide signal routing for split frequency two-way operation in the intermediate configuration, with a single plug-in diplex filter at the input being required for two-way operation in the terminating configuration. Because the intermediate/terminating module plugs into the station housing in the position of a standard trunk amplifier module, a terminating trunk station can directly be converted to a standard trunk station in the event future additions to a terminated trunk cascade arise.



AUTOMATIC CONTROL MODULES 276440 and 277360

The Model 276440 and 277360 Automatic Control Modules are used in the forward system to provide carrier level control of the slope and gain circuits in the trunk amplifier module. The automatic control module samples the band of signals at the trunk amplifier output, monitors the level of a selected high band carrier (high pilot) and a selected low band carrier (low pilot), and provides error correction input to the trunk amplifier slope and gain circuits in the event level changes occur. The closed loop system ensures a constant trunk amplifier output level despite changes in signal level prior to the station. The automatic control module operates from either modulated carriers by detecting the peak carrier level during the sync interval or from unmodulated CW carriers. Channels selected for automatic control operation cannot be scrambled by sync suppression.



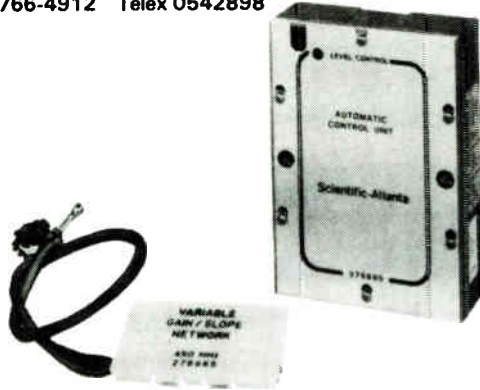
SUB-SPLIT REVERSE AMPLIFIER MODULE 233180

The Model 233180 Sub-Split Reverse Amplifier Module serves as the primary reverse amplifier for single cable 5-30 MHz reverse trunk operation. The Sub-Split Reverse Amplifier Module installs in a standard trunk housing and provides gain for reverse trunk transportation and origination of feeder signals. Built-in thermally controlled slope and gain circuits are designed to compensate for level changes that occur in a single span of cable. The design accuracy of the thermal networks, the low frequency of operation, and use of reverse trunk amplifiers in every forward amplifier station provide accurate level control over long cascades without the need for pilot systems.

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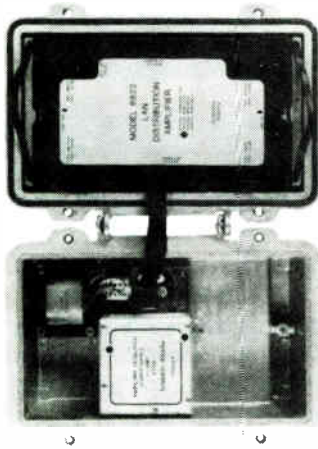
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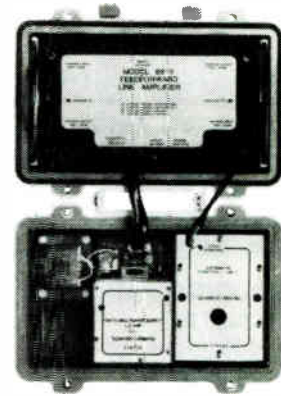
6502 AUTOMATIC CONTROL MODULE 276695

The 6502 automatic control module is used in the forward system to provide carrier level control of the slope and gain circuits in the distribution amplifier module. Automatic control module 276695 is used in the distribution amplifier and provides AGC systems up to 450 MHz. The automatic control module samples the band of signals of the distribution amplifier output, monitors a high band carrier (high pilot), and provides error correction input to the slope and gain circuits in the event level changes occur. The closed loop system ensures a constant distribution amplifier output level despite change in signal level prior to the station. The automatic control module operates from either modulated carriers by detecting the peak carrier level during the sync interval or from unmodulated CW carriers.



LAN INDOOR DISTRIBUTION AMPLIFIER, MODEL 6822

Scientific-Atlanta's Model 6822 is an indoor local area network (LAN) distribution amplifier that meets the performance and reliability requirements for high quality data and video intrafacility systems. Available to 450 MHz, the Model 6822 offers 115V ac powering, selection of the three reverse splits, and optional AGC or thermal compensation. Our standard modular approach accommodates ease of maintenance while supporting the addition of thermal or automatic compensation at a future date.



DISTRIBUTION AMPLIFIER 450/550 MHz, MODEL 6810 FEEDFORWARD

FEATURES

- Forward Capability of 54 to 550 MHz
- Forward Operational Gain of 32 dB
- Built-in Hybrid Redundancy
- Reverse Capability
- Field-Replaceable Feedforward Blocks
- Directional Coupler Test Points on Input and Output
- Plug-in Equalizers and Pads
- Plug-in Surge Protectors
- 50 - 60 Hz Powering
- Switching-Regulated Power Supply
- Optional Plug-in Thermal Networks
- Optional Plug-in Trim Networks

Scientific-Atlanta's Model 6810 450/550 MHz feedforward distribution amplifiers offer significantly improved signal distortion characteristics over conventional push-pull line extenders. Advantages include increased amplifier spacing and improved cascadeability, while in many instances reducing the total cable system cost. Additionally, the feedforward design utilizes redundant amplifier hybrids, improving overall system reliability.

Available in a 450/550 MHz forward configuration, the following table lists options for the Model 6810

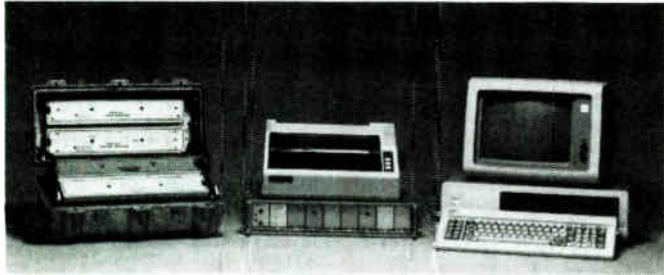
Model 6810 Feedforward Amplifier Stations

All stations shipped with housing and switching regulated power supply

Upper frequency limit of station must appear as part of each station model number (example: 6810MA50)

Model	Description	Module	Feedforward Amplifier	Automatic Control	5-30 MHz Reverse Amplifier	5-30 MHz Duplex Filter	5-30 MHz Low Pass Filter
6810M	Manual Feedforward Amplifier		1				
6810MR	Manual Feedforward Amplifier with 5-30 MHz Reverse Amplifier with Duplex Filters				1	2	1
6810A	Automatic Feedforward Amplifier		1	1			
6810AR	Automatic Feedforward Amplifier with 5-30 MHz Reverse Amplifier and Duplex Filters		1	1	1	2	1

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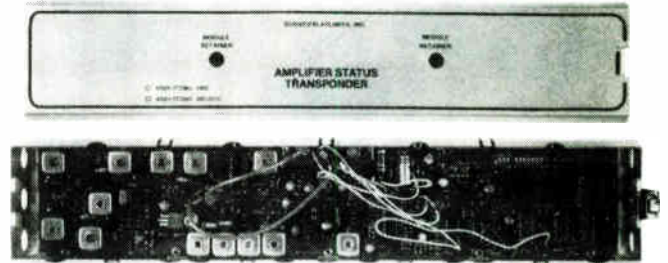
STATUS MONITORING/REVERSE SWITCHING SYSTEM, MODEL 6581

FEATURES

- Compatible with Existing Scientific-Atlanta Trunk Amplifier Stations
- Audio and visual Alarms Identify Failure Type and Location
- Reduces Fault Finding Time and Cost
- Identifies Potential Problem Areas
- Sequentially Polls up to 2048 Trunk Stations for Change in Status
- Permits High-Quality Live Remote Broadcasts to Cable Customers
- Selectively Activates/Deactivates Reverse Feeder or Reverse Trunk Paths, thus Reducing Overall System Noise and Ingress During Periods when Reverse Paths are not used
- Identifies the Source of RF Ingress by Deactivating Suspect Trunk Station Feeder
- Maintains System Integrity
- Provides a Hard Printout of Failure Type and Address
- Permits Operator Interrupt via Keyboard at any Time
- Permits Operator to Modify Status Monitoring Program Stored on Floppy Disk
- Compatible with Former Model 6580 Status Monitoring System
- IBM Personal Computer retains all the Features of a Personal Computer and can run all Software and Interface with all Hardware Designed for the IBM Personal Computer

Model 6581 Status Monitoring/Reverse Switching System automatically monitors signal levels and power throughout the trunk system. The system continually polls up to 2048 trunk stations, and can activate or deactivate reverse feeder paths or reverse trunk paths in specific trunk stations containing a reverse switch and amplifier status transponder. Reverse feeder switching reduces return path noise and facilitates high-quality, live remote video transmission.

An IBM Personal Computer and RF Subsystem, located at the headend, controls the system. Data concerning trunk station status changes or specific trunk station addresses is displayed on the computer terminal and can be printed for reference.



AMPLIFIER STATUS TRANSPONDER MODULE, PART NUMBERS 277080 and 277090

The Trunk Station Status Transponder module is a transceiver that responds to status polling and switching commands issued from the system communications control unit. Module 277080 is the HRC model, while Module 277090 is the IRC or standard model. Each transponder module is assigned a field-selectable digital address to permit selective station polling for out-of-tolerance conditions such as high or low pilot level, ac or dc power, and reverse switch status.

ACCESSORIES

FORWARD-REVERSE TRIM NETWORKS

In amplifier cascades, frequency response variations are controlled with use of interstage trim networks. A broad selection should be on hand at the outset of balance and alignment procedures.

Part Number	Operating Frequency (MHz)	Name	Where used	Description
276754	450	LPP-1	6554/6555	Line Extender Forward Trim
277161	450	LPP-1ES	6554/6555	Line Extender Forward Trim with pad socket
035959	300	HFD-5		High Frequency Dip with pad socket
143185	300	PAD-2		Interstage Pad where no other trim is used
231381	300-450	LPP-1S	Forward Trunk	Low Peak - Peak with pad socket
231382	300-450	MPP-1S	Forward Trunk	Mid Peak - Peak with pad socket
231383	300-450	LFP-1S	Forward Trunk	Low Frequency Peak with pad socket
231385	300-450	PAD-1S	Forward Trunk	Interstage Pad where no other trim is used
232206	450	PAD-1	Forward Trunk	Interstage Pad where no other trim is used
232531	300	HFP-2S	Forward Trunk	High Frequency Peak with pad socket
232532	300	LFP-2S	Forward Trunk	Low Frequency Peak with pad socket
232533	300	DIP-2S	Forward Trunk	Low to Mid Frequency Dip with pad socket
232535	300	PAD-2S	Forward Trunk	Interstage Pad with pad socket, where no other trim is used
232537	300-450	VHP-2S	Forward Trunk	High Frequency Peaking with pad socket
234341	300-450	MFP-1S	Forward Trunk	Mid Frequency Peaking with pad socket
279450	300-450	HTTP-2S	Forward Trunk	High Triple Peak with pad socket
233190	30	TPR-1	Reverse Trunk	Triple Peaking
234499	30	TPR-3	Reverse Trunk	Peaking
233108	108	RLTT-2S	Reverse Trunk	Mid-Split Cold Trim with pad socket
233109	108	RHTT-2S	Reverse Trunk	Mid-Split Hot Trim with pad socket
233110	108	RMD-2S	Reverse Trunk	Mid-Split Diplexer Trim with pad socket
279440	174	HSR-2	Reverse Trunk	High-Split Reverse
279445	174	HSRT-2	Reverse Trunk	High-Split Reverse with Thermal
279400	300-450	BVEO	Bridge	Forward Trimable Equalizer

NOTES:

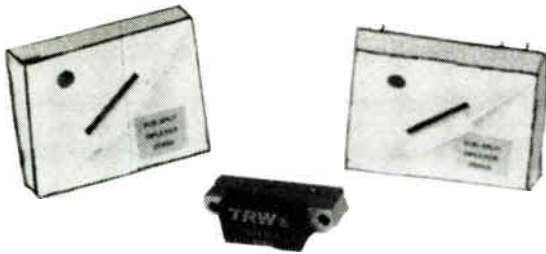
All networks with "S" suffix have plug-in pad sockets.

Networks with a "2" in their name are for use in 300 MHz trunk modules. All have 2 dB insertion loss.

Networks with a "1" in their name are for use in 330 to 450 MHz system. All have 1 dB insertion loss. These may be used in 300 MHz trunk module with 1 dB pad installed in trim.

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LINE EXTENDER/DISTRIBUTION AMPLIFIER REVERSE KITS

Forward line extenders and distribution amplifiers can be converted to sub-split two-way operation with the reverse kit.



AC POWER SUPPLY

Capable of furnishing either 30V or 60V, the Model 6509 Power Supply is used to supply power through the cable to trunk and line extender stations in the system. The unit can be mounted outside on a pole and is completely weatherproof. Total surge protection is built into the solid-state design.



MODULE PLUG-IN CABLE EQUALIZERS

Plug-in equalizers are required at the input of all forward trunk, bridger, line extender, and distribution amplifiers. They are also required at the output of all reverse trunk, line extender, and distribution amplifiers. Equalizer values are expressed in terms of cable attenuation in dB at the upper frequency. All forward equalizers are selected according to the upper frequency attenuation of the cable on the input side of the forward amplifier. Reverse equalizers are selected according to the upper frequency attenuation of the cable on the output side of the reverse amplifier.

PLUG-IN PADS

Plug-in pads are required in all bridger amplifiers, at the input of all forward modules, and at the output of all reverse modules. Where reverse is activated through a bridger, an additional pad is required in the bridger path of the reverse trunk module.

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MID-SPLIT REVERSE INTERSTAGE TRIM NETWORK

As amplifiers are cascaded, small frequency response variations can accumulate. Plug-in trim networks are available to compensate for these cascaded effects.

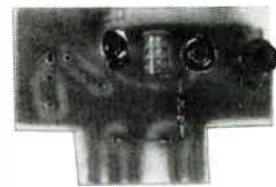
Selection and assignment of reverse interstage trim networks are as follows:



Hot Trim	Cold Trim	Diplexer Trim	2 dB Pad
233109	233108	233110	143185

Each series of four reverse trunk modules requires one of each type trim network. The sequence in which they are installed is of little significance.

The 2 dB pad (Part No. 143185) is shipped in place in each mid-split reverse trunk module and is removed to allow installation of the other trims required.



FORWARD INTERSTAGE TRIM NETWORK, FOR 6554/6555 LINE EXTENDERS

As line extenders are cascaded, small frequency response variations can accumulate. A plug-in trim network is available to compensate for this effect.



HIGH-SPLIT DRIVERS

High-split reverse amplifier, Part No. 234600, contains circuitry for slope/gain temperature compensation. Plug-in high-split drivers are required for proper operation of this circuitry. Drivers are available to permit temperature compensation for 6, 12, 18, 24, and 30 dB of cable. Both a slope and a gain driver is required for each Part No. 234600 temperature compensating high-split reverse amplifier. Slope and gain drivers are selected based on post amplifier cable loss at 174 MHz.



LINE EXTENDER THERMAL COMPENSATORS

For use in 6554/6555 line extender amplifiers.

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PLUG-IN JUMPER

Used in place of the plug-in combiner in the Intermediate/Terminating Trunk, Sub-Split Reverse Trunk, and High-Split Reverse Trunk modules.



DIPLEX FILTERS

Diplex filters are used in the trunk amplifier, bridger amplifier, and line extender amplifier modules for routing of forward and return signals. Forward trunk and line extender modules accept two plug-in diplex filters and the bridger amplifier accepts one. Diplex filters plug into the respective modules in place of diplex jumpers which are shipped standard in all modules.

Diplex Filter Specifications

	5-30 MHz	54-550 MHz	5-108 MHz	174-550 MHz	5-174 MHz	234-550 MHz
Flatness	±0.1 dB	±0.1 dB	±0.1 dB	±0.1 dB	±0.1 dB	±0.1 dB
Insertion Loss	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB
Chrominance-to-Luminance Delay	6 ns (T10)	2 ns (CH2)	1 ns (CH6)	1 ns (CH7)	1 ns (CH1)	1 ns (CH11)



ACM BYPASS ASSEMBLY

The ACM bypass assembly plugs into the trunk station housing in place of the ACM to allow status monitoring to be used in forward thermal trunk stations.



EXTERNAL DIPLEX FILTER ASSEMBLY

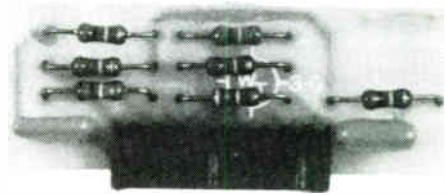
The external diplex filter assembly is used at the head-end to separate forward and reverse signals in a two-way system. The assembly consists of a standard plug-in diplex filter installed in a passive housing. Specifications are identical to the standard diplex filters.

MID-SPLIT
 DUAL DEEP
 NOTCH DDNF 1
 280108



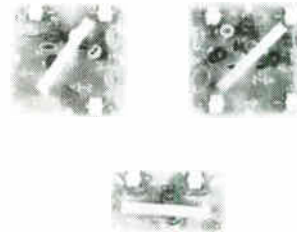
DUAL DEEP NOTCH PILOT FILTER DDNF

Used in mid-split reverse paths where one reverse pilot source intersects alternate pilot sources. The DDNF is plugged into the input of the last reverse trunk module before any intersection where pilot addition would occur.



MODEL 6501 and 6502 FORWARD THERMAL COMPENSATORS

These compensators provide thermal slope and gain compensation over a temperature range of -40°C to $+60^{\circ}\text{C}$ (-40°F to $+140^{\circ}\text{F}$).



BRIDGER FEEDER MAKERS

Bridger feeder makers are available in one, two, three, or four output configurations. One of the four types is required with each bridger module to activate trunk station feeder ports.



REVERSE THROUGH RETURN CABLE RC-100

This cable allows reverse signals to pass through a trunk station when no reverse trunk amplification or feeder input is required. Order Part No. 35860.

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TV SIGNAL DISTRIBUTION



LONG REACH TEST-POINT ADAPTOR

This 75 ohm push-in adapter permits a test cable to be connected to test points in a trunk station or line extender module. Available in two configurations, these adapters are long enough to reach through the module housing to the test point inside. The push-in test point adapter exhibits negligible insertion loss.

DROP ADAPTOR

This 75 ohm adapter permits a semi-permanent RG-59 test cable to be connected to the trunk station test point and run to the bottom of the pole for easy access. The drop adapter screws into the standard trunk station external test points. The drop adapters exhibit negligible insertion loss. For "Slim Line" trunk housing, order Part No. 231390. For other trunk housing application, order



CABLE SEIZURE WRENCH

Machined from high grade stainless steel, the wrench is used to loosen or secure the cable seizure fittings in the trunk and 6554/6555 line extender station housings. The steel pins are field replaceable.

TEST PROBE, 3 dB

This probe is used for reverse signal injection in the 6501/6502 Distribution Amplifier. It is also useful for testing reverse feeder input levels to bridging amplifier Module Number 233170.

TRUNK STATION TEST CABLE

This cable allows simple connection of test equipment to module coaxial connectors located in the trunk station amplifier housing.



TANDEM MOUNTING BRACKETS

These brackets are used in applications where dual cable construction requires tandem mounting of trunks, line extenders, and taps/passives.



LOAD PAD ASSEMBLY LPA-75

This 75 ohm termination mates with the coaxial female connectors located in the trunk station amplifier housing module sockets. This assembly is employed to terminate critical module output cables when operational modules are not used. The load pad assembly is primarily used to terminate trunk feeds to the bridger and automatic control modules when these modules are not included as part of the station.



TRUE TILT CORRECTION NETWORK

During initial set-up of the system, the true tilt correction network allows conversion of true tilt signals to a flat response. The network is connected in cascade with a short length of 75 ohm test cable attached to an FSM or spectrum analyzer. This results in a flat overall signal amplitude (frequency response observed when the signals are properly tilted). Measurements can thus be made without lengthy, error-producing calculations to ascertain flatness of response.

LINE TERMINATOR LT-75

The line terminator terminates a branch of a reverse trunk cable split when only one branch of the split is used for reverse transmission. The line terminator plugs into the output reverse amplifier module socket and terminates the unused branch of the cable split.



FUSE EXTRACTOR

The fuse extractor is used to insert/remove bridger module output fuses. Order Part No. 172510.

CIRCUIT BREAKER

Circuit breakers can be used in place of bridger module output fuses. The circuit breaker plugs in directly in place of the standard fuse.

SPECIFICATIONS

Hold Current 4A
 Trip Current 8A
 Trip Time 10-60 seconds



PLUG-IN FILTERS

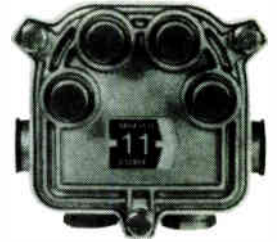
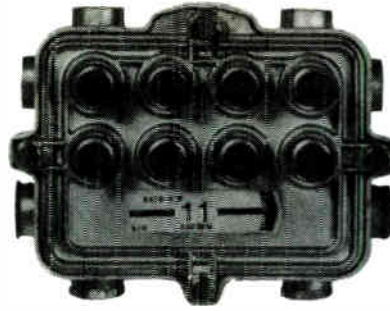
Low pass/high pass filters are required in all 6501/6502 hybrid amplifiers. A plug-in filter is not required in the sub-split (5-30 MHz) discrete module as it is hard wired to the chassis. Forward filters reject reverse carriers; reverse filters reject forward carriers.

SPECIFICATIONS	REVERSE SUB-SPLIT	REVERSE MID-SPLIT	REVERSE HIGH-SPLIT
	FORWARD S-S	FORWARD M-S	FORWARD H-S
Frequency Range	5-30 MHz	5-108 MHz	5-174 MHz
Return Loss	22 dB	21 dB	18 dB
Insertion Loss	0.35 dB	0.4 dB	0.4 dB
Frequency Response	0.2 dB	0.3 dB	0.6 dB
Isolation (Rejection)	45 dB	35 dB	45 dB
Frequency Range	54-450 MHz	174-450 MHz	234-450 MHz
Return Loss	19 dB	22 dB	20 dB
Insertion Loss	0.3 dB	0.3 dB	0.3 dB
Frequency Response	0.25 dB	0.1 dB	0.3 dB
Isolation (Rejection)	45 dB	25 dB	50 dB

SCIENTIFIC-ATLANTA, INC.

TAPS AND CONNECTORS

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DISTRIBUTION EQUIPMENT TAPS AND PASSIVES

FEATURES

- Modular design allows changing of board and cover without removal of housing from cable
- Versatile housing design permits aerial or pedestal mounting
- Subscriber ports cast into housing provide added strength, prevent leakage
- 1.00" spacing between ports gives more room for drop installation and use of traps
- Center seizure mechanism rotates to either the aerial or pedestal input/output port to eliminate need to remove center conductor seizure screw
- Tough die-cast housing
- Housing halves sealed with neoprene rubber O-rine type gasket
- Collars on input/output ports facilitate use of heat-shrink tubing
- Housing halves joined by captive bolts
- Subscriber ports sealed with a puncture-seal
- Umbrella-effect housing design prevents accumulation of water at joints
- Center conductor seizure screw can be tightened with 1/4" Hex Nut Driver or straight-blade screwdriver
- Center conductor seizure screw designed to minimize scoring and damage to the cable center conductor
- Subscriber ports designed to accept heat-shrink
- Optional weather resistant protective coating
- Optional RFI gasket

SCIENTIFIC ATLANTA-TAPS

FEATURES

- Modular design allows changing of board and cover without removal of housing from cable
- Versatile housing design permits aerial or pedestal mounting
- Subscriber ports cast into housing provide added strength, prevent leakage
- 1.00" spacing between ports gives more room for drop installation and use of traps
- Center seizure mechanism rotates from either the aerial or pedestal input/output port to eliminate need to remove center conductor seizure screw
- Tough die-cast housing
- Housing halves sealed with neoprene rubber O-ring type gasket
- Collars on input/output ports facilitate use of heat-shrink tubing
- Housing halves joined by captive bolts
- Subscriber ports sealed with a puncture-seal
- Umbrella-effect housing design prevents accumulation of water at joints
- Center conductor seizure screw can be tightened with 1/4" hex nut driver or straight-blade screwdriver
- Center conductor seizure screw designed to minimize scoring and damage to the cable center conductor
- Subscriber ports designed to accept heat-shrink
- Weather resistant protective coating

Ordering Information

2-Way Tap. Order by Part No. from table below:
 Maximum Insertion Loss (dB)

Model No.*	Tap Value										Minimum Tap-to-Output Isolation	
	5-400 ±1.0 dB	400-500 ±1.0 dB	5 MHz	30 MHz	50 MHz	300 MHz	330 MHz	400 MHz	450 MHz	550 MHz		
SAT2F-41	41.0	41.0	.3	.4	.4	.5	.6	.7	.8	—	50	
SAT2F-38	38.0	38.0	.3	.4	.4	.5	.6	.7	.8	—	48	
SAT2F-35	35.5	35.5	.3	.4	.4	.5	.6	.7	.8	.9	43	
SAT2F-32	32.0	32.0	.3	.4	.4	.5	.6	.7	.8	.9	41	
SAT2F-29	29.0	29.0	.3	.4	.4	.5	.6	.7	.8	.9	39	
SAT2F-26	26.0	26.0	.3	.4	.4	.5	.6	.7	.8	.9	37	
SAT2F-23	23.0	23.5	.4	.5	.5	.6	.7	.8	.9	1.0	36	
SAT2F-20	20.5	20.5	.4	.6	.6	.7	.7	.8	.9	1.0	33	
SAT2F-17	17	17	.5	.6	.6	.8	.8	.9	1.0	1.1	30	
SAT2F-14	14	14	.9	.9	.9	1.0	1.0	1.2	1.3	1.4	28	
SAT2F-11	11	11	1.5	1.5	1.4	1.8	1.8	1.9	2.0	2.2	23	
SAT2F-8	8	8.5	3.1	3.0	3.0	3.3	3.3	3.5	3.7	3.8	22	
SAT2F-4	4	4	Terminating									

*Add "W" to model number if environmental coating is desired.

4-Way Tap. Order by Part No. from table below:
 Maximum Insertion Loss (dB)

Model No.*	Tap Value										Minimum Tap-to-Output Isolation	
	5-400 ±1.0 dB	400-500 ±1.0 dB	5 MHz	30 MHz	50 MHz	300 MHz	330 MHz	400 MHz	450 MHz	550 MHz		
SAT4F-41	41.0	41.5	.3	.4	.4	.5	.6	.7	.8	—	45	
SAT4F-38	38.5	38.5	.3	.4	.4	.5	.6	.7	.8	—	45	
SAT4F-35	35.0	35.5	.3	.4	.4	.5	.6	.7	.8	.9	43	
SAT4F-32	32.0	32.5	.3	.4	.4	.5	.6	.7	.8	.9	41	
SAT4F-29	29.0	29.5	.3	.4	.4	.5	.6	.7	.8	.9	39	
SAT4F-26	26.0	26.5	.4	.5	.5	.6	.7	.8	.9	1.0	37	
SAT4F-23	23.5	23.5	.4	.6	.6	.7	.7	.8	.9	1.0	35	
SAT4F-20	20.5	20.5	.5	.6	.6	.8	.8	.9	1.0	1.1	31	
SAT4F-17	17.5	17.5	.9	.9	.9	1.0	1.1	1.2	1.3	1.4	29	
SAT4F-14	14.5	14.5	1.5	1.5	1.6	1.8	1.8	1.9	2.0	2.2	28	
SAT4F-11	11.5	11.5	3.1	3.0	3.0	3.3	3.4	3.5	3.7	3.8	25	
SAT4F-8	8.0	8.5	Terminating									

*Add "W" to model number if environmental coating is desired.

8-Way Tap. Order by Part No. from table below:
 Maximum Insertion Loss (dB)

Model No.*	Tap Value										Minimum Tap-to-Output Isolation	
	5-400 ±1.5 dB	400-500 ±1.5 dB	5 MHz	30 MHz	50 MHz	300 MHz	330 MHz	400 MHz	450 MHz	550 MHz		
SAT8F-35	35.5	36.5	.3	.4	.4	.5	.6	.7	.8	1.0	43	
SAT8F-32	32.0	32.5	.3	.4	.4	.5	.6	.7	.8	1.0	40	
SAT8F-29	29.0	29.0	.4	.5	.5	.6	.7	.8	.9	1.1	38	
SAT8F-26	26.0	27.0	.4	.6	.6	.7	.7	.8	1.0	1.1	35	
SAT8F-23	23.5	23.5	.5	.6	.6	.8	.8	.9	1.0	1.2	32	
SAT8F-20	20.5	21.5	.9	.9	.9	1.0	1.1	1.2	1.3	1.5	29	
SAT8F-17	17.5	17.5	1.5	1.5	1.6	1.8	1.8	1.9	2.0	2.4	28	
SAT8F-14	14.5	14.5	3.1	3.0	3.0	3.3	3.3	3.5	3.7	4.0	27	
SAT8F-11	11.5	11.5	Terminating									

*Add "W" to model number if environmental coating is desired.

2 WAY TAPS

Model No.	Tap Loss at				Tap-to-Output Isolation (min.)
	30 MHz	300 MHz	330 MHz	400 MHz	
SATW2F-41	.5	.5	.6	.7	50
SATW2F-38	.5	.5	.6	.7	50
SATW2F-35	.5	.5	.6	.7	50
SATW2F-32	.5	.5	.6	.7	47
SATW2F-29	.5	.5	.6	.7	44
SATW2F-26	.5	.5	.6	.7	41
SATW2F-23	.6	.6	.7	.8	38
SATW2F-20	.6	.6	.7	.8	35
SATW2F-17	.6	.6	.7	.8	32
SATW2F-14	1.0	1.0	1.1	1.1	30
SATW2F-11	1.8	1.8	1.9	2.0	29
SATW2F-8	3.8	3.8	3.9	4.0	26
SATW2F-4	—	—	—	—	—

4-WAY TAPS

Model No.	Tap Loss at				Tap-to-Output Isolation (min.)
	30 MHz	300 MHz	330 MHz	400 MHz	
SATW4F-41	.5	.5	.6	.7	50
SATW4F-38	.5	.5	.6	.7	50
SATW4F-35	.5	.5	.6	.7	50
SATW4F-32	.5	.5	.6	.7	47
SATW4F-29	.5	.5	.6	.7	44
SATW4F-26	.6	.6	.7	.8	41
SATW4F-23	.6	.6	.7	.8	38
SATW4F-20	.6	.6	.7	.8	35
SATW4F-17	1.0	1.0	1.1	1.1	32
SATW4F-14	1.8	1.8	1.9	2.0	30
SATW4F-11	3.8	3.8	3.9	4.0	29
SATW4F-8	—	—	—	—	—

8-WAY TAPS

Model No.	Tap Loss at				Tap-to-Output Isolation (min.)
	30 MHz	300 MHz	330 MHz	400 MHz	
SATW8F-41	.5	.5	.6	.7	50
SATW8F-38	.5	.5	.6	.7	50
SATW8F-35	.5	.5	.6	.7	50
SATW8F-32	.5	.5	.6	.7	47
SATW8F-29	.5	.5	.6	.7	44
SATW8F-26	.6	.6	.7	.8	41
SATW8F-23	.6	.6	.7	.8	38
SATW8F-20	1.0	1.0	1.1	1.1	35
SATW8F-17	1.8	1.8	1.9	2.0	32
SATW8F-14	3.8	3.8	3.9	4.0	30
SATW8F-11	—	—	—	—	—

Prices and Specifications Subject to Change Without Notice.

VRF-135

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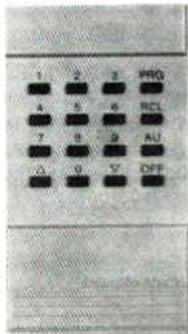
SET TOP TERMINALS



SET-TOP TERMINAL, SERIES 8500

Features

- Handsome, High-Tech Exterior
- Bright LED Display
- Extra Surge Protection
- Lighting Path Protection
- Coded Serial Communications Protects Against Internal Tampering
- Advanced Automatic Manufacturing Technique
- Well Ventilated
- UL Listed
- Protective Pads



SERIES 8500 REMOTE CONTROL UNIT

Features

- Remote Control Receiver Standard On All Series 8500 Set-Tops
- Duplicates All Keypad Functions
- Dual Message Pulse Infrared System Eliminates False Activation
- Ultra Lightweight

Control Key Functions — Both the Set-Top Terminal and Remote Control Unit have the following keys:

Increment/Decrement Keys — Steps up or down consecutively through all authorized channels.

OFF Key — Switched ac feature permits on/off control of the television from the set-top unit.

AU (Authorize) Key — To request channels subject to parental discretion, press this key and enter a 5-digit secret code.

PRG (Program) Key — To program favorite channel memory, press this key and enter desired channel number.

RCL Key — Steps through up to 20 favorite channels in memory.

VRF-136

Prices and Specifications Subject to Change Without Notice.

The Series 8500 Scientific-Atlanta set-top terminals are available in three unique set-top models, all offering fully electronic, microprocessor-based control. Series 8500 set-top terminals operate at frequencies up to 440 MHz and can deliver 128 channels in a dual cable system.

The Series 8500 Programmable set-top terminal includes a long list of standard product line features, including programmable frequency allocation and a built-in infrared remote control receiver.

The Series 8500 Programmable set-top terminal with Descrambling uses dynamic switched sync suppression for signal security. Dynamic switched sync suppression is an important Scientific-Atlanta innovation providing economical security that is extremely difficult to defeat.

The Series 8500 Addressable set-top terminal is an advanced electronic set-top terminal providing headend control for service level authorizations and pay-per-view events. The addressable CATV system includes computer capability, software programs, several headend pieces, and personnel orientation. Scientific-Atlanta offers several versions of addressable control systems, with complete hardware and software, site preparation, and personnel training.

- The System Manager II/LAMS is a linkable computer system designed to interface in a real-time fashion with a host billing system.
- The System Manager I is a stand-alone system for cable operators with less than 20,000 subscribers. Its data base includes subscriber information and inventory records.
- The Addressable Control Unit (ACU) is a microcomputer-based, addressable headend system. The ACU data base is keyed to converters only, and is designed to interface with a host computer containing both business and billing software. It can also be used in a partially automated addressable control system where subscriber data base information is managed from a manual filing system.

SERIES 8500 PROGRAMMABLE WITH DESCRAMBLING

Features

- Dynamic Switched Sync Suppression
- Full Line Headend Scrambling Accessories
- Custom-Manufactured Timing Chips That Cannot Be Purchased Commercially
- All Series 8500 Standard Product Features

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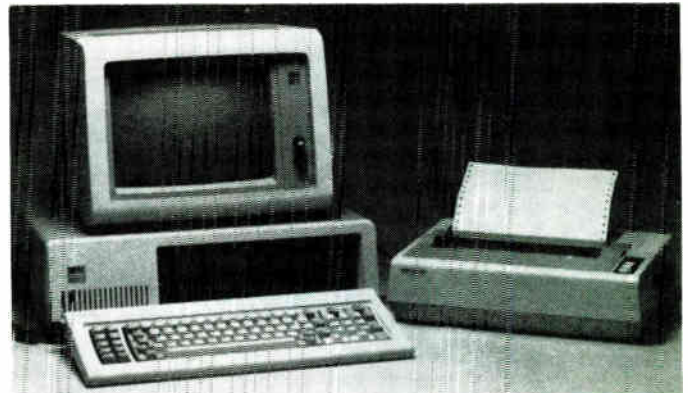
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TERMINAL CONTROL SYSTEMS

SET-TOP TERMINAL, SERIES 8500

Feature Summary

Feature	Programmable	Programmable With Descrambling	Addressable
Programmable Frequency Allocation	X	X	X
Unauthorized Channel Default to Barker	X	X	X
Parental Control Function	X	X	X
Automatic Dual Cable Switching	X	X	X
Increment/Decrement	X	X	X
Favorite Channel Memory	X	X	X
Remote Control Receiver	X	X	X
Switched AC for TV	X	X	X
Dynamic Switched Sync Suppression Scrambling		X	X
Central Control of Authorizations			X
Central Execution of Pay-Per-View Functions			X
Global Authorization and Deauthorization			X
Pay-Per-View Preview			X
Advance Pay-Per-View Program Load			X
Non-Volatile Memory			X
System Security-Legal Terminal Test			X
System Security-Refresh Timer Signal			X



SYSTEM MANAGER I FEATURES

- Uses IBM Personal Computer
- Integrated Subscriber and Converter Control Software
- Pre-Formatted CRT Display Screens for Easy, Accurate Computer Entries
- Pay-Per-View Management
- Inventory Programs
- Flexible Management Report Capability
- Added System Security
- Applications Engineering and Consulting.



SYSTEM MANAGER II/LAMS FEATURES

- Uses Hewlett-Packard Micro 1000 Computer
- Can be Interfaced with a Host Billing Computer
- Software Uses Pre-Formatted CRT Display Screen Format
- Efficient Structure for Pay-Per-View Management
- Added System Security
- Extensive Customer Support



ADDRESSABLE CONTROL UNIT, SERIES 8552 FEATURES

- Individual Converter Enable/Disable
- Individual Converter Channel Authorization/Deauthorization (change of service level)
- Advance Pay-Per-View Event Loading
- Global Authorization of a Pay-Per-View Event (only pre-loaded converters)
- Refresh Timer Signal
- Legal Terminal Test
- Display Service Levels for Each Device

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MODEL 8550 ADDRESSABLE SET-TOP TERMINAL

The Model 8550 addressable set-top terminal is designed to maximize the benefits of addressability by providing the CATV operator exceptional security and downloading flexibility. The high-performance Model 8550 and its related control equipment offer user-friendly and efficient software, large capacity for premium programming and pay-per-view events, remote diagnostic capabilities, subscriber conveniences, business management interface and extensive security features.

Enhanced Security

Dynamic switched sync suppression, a Scientific Atlanta innovation, provides signal security that is virtually impossible to defeat. This scrambling/descrambling method uses a custom-manufactured timing chip to dynamically control the restoration of the video sync tip. The timing delay for every video frame changes randomly among four values, making internal tampering or reproducible scrambling defeats extremely difficult.

The Operator's Addressable

The advanced design of the Model 8550 set-top terminal has eliminated the need for a PROM. All authorizations and frequency allocations are down-loaded into the terminal's non-volatile memory from the addressable computer at the headend. (The non-volatile memory is sealed inside the 8550 and is not affected by power outages or by unplugging the set-top in the subscriber's home.) Additions and deletions of program tiers, single channels, pay-per-view events and program promotions can be accomplished without the expense of service calls. In addition, the cable operator may enable or disable the remote control receiver remotely from the headend.

Subscriber Convenience

The Model 8550 set-top terminal provides user-definable parental control. When a set-top is tuned to a channel which has been placed under parental control, an appropriate barker channel will tune in until the correct five-digit authorization code is entered. Objectionable programming never enters the home since even audio is denied.

ADDRESSABLE TERMINAL

With the Model 8550, parental guidance channels can be defined and redefined by the subscriber utilizing an edit function, or by the cable operator downloading from the headend. The five-digit code can be changed by downloading a new code from the control computer.

Hardware and Software Support

Scientific-Atlanta provides extensive customer support for addressable systems. Services available include system design, applications engineering, site preparation, installation, training and factory repair. Also available are several versions of computer hardware and software systems, geared for different sized CATV operations with varying requirements. The System Manager series features addressable management systems which can be integrated with host billing computers, as well as stand-alone control systems.

SPECIFICATIONS

Environmental

Temperature: 0-45°C
Relative Humidity: 5-95%

Electrical

Input Bandwidth: 54 to 450 MHz
Number of Channels: 66 with single cable; 128 with dual cable
Output Channels: 3 or 4

Channel Frequency Response: ± 2 dB
Gain: 0 to +9 dB
Noise Figure: 13 dB typical

Return Loss Input: 7 dB minimum on tuned channel
Output: 11 dB minimum
Isolation Input/Output: 60 dB

Spurious Response Input: -37 dBmV (up to 470 MHz)
Output: -57 dBmV in channel

Frequency Accuracy: ± 100 kHz
Frequency Stability: ± 100 kHz
AC Input Range: 115V AC $\pm 10\%$
Power Consumption: 20 watts maximum

Power Supply Surge Protection: Yes
RF Input Surge Protection: Yes; MOV

Distortion at 15 dBmV; 60 channel load
Flat Input: Second Order: -57 dB
Cross Modulator: -57 dB
Composite Triple Beat: -57 dB

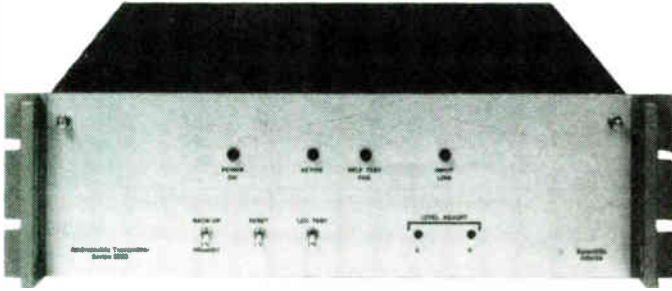
Input Level: -7 to +20 dBmV

Mechanical

Dimensions: 10.4" x 8" x 2.1"
Weight: 5.5 pounds
Keyboard Type: 16 position, X-Y matrix
Display Type: LED, 0.5" x 0.26"

SCIENTIFIC-ATLANTA, INC.

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ADDRESSABLE TRANSMITTER (ATX), SERIES 8500

The ATX, located at the headend, accepts converter control data from the ACU and transmits the data over the cable system. It operates at a standard frequency of 108.2 MHz. The unit also generates converter control signals needed to keep all legal Series 8500 Addressable set-top terminals active. Output data is transmitted as an FSK-modulated digital signal at the data rate of 19,200 baud. One ATX is required in each headend. Two ATXs can be installed in tandem for system redundancy at each site.



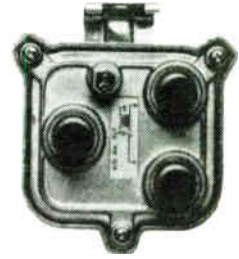
36-CHANNEL CONVERTER, MODEL 6780

FEATURES

- The 36-Channel Converter delivers High-Quality Picture over Range of Input Frequencies from 54 MHz to 300 MHz
- Sturdy Rotary Dial Selects Channels 2 through 37
- Fine Tuning Dial Adjusts Converter to Zero Frequency Error
- Handsome Dark Brown and Simulated Woodgrain Exterior Blend Well in the Modern Home
- Rugged Construction Ensures Mechanical Integrity and Long Life Under Normal Home Use
- AC Cord is Safety-Tested for up to 35 Pounds Pull
- Corrosion-Resistant Construction
- Operates in Temperatures Ranging from 54°F to 110°F, and Stores Without Damage in Temperatures from -40°F to 140°F
- FCC Certified. UL Approved

ADDRESSABLE TRANSMITTER/ CHANNEL CONVERTER

ACCESSORIES, SERIES 8500



Dual Cable Switch
Model No. 8554-002

External switching device for dual cable systems.
Corrosion-resistant.

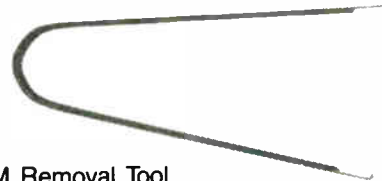


Torx Handle
Model No. 8550-093

For use with special Torx bits for Series 8500 security screws.



Torx Bit
Model No. 8550-094



PROM Removal Tool
Model No. 8550-096

Permits easy and quick removal of PROMs from set-top terminal.



PROM Insertion Kit
Model No. 8550-097

Allows easy installation of PROM without pin damage.

ATX Cable for Redundancy
Model No. 8553-001

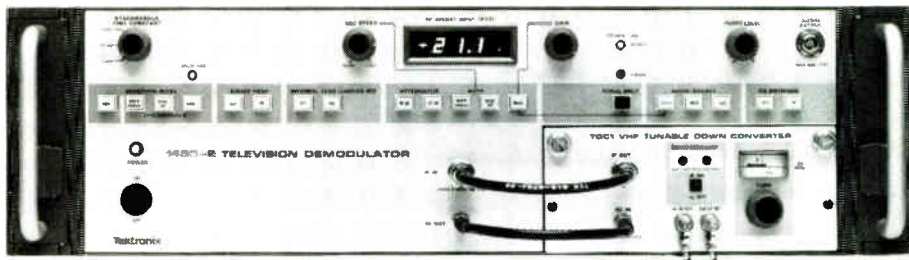
Facilitates operation of dual ATXs.

TEKTRONIX, INC.

P.O. Box 500
Beaverton, OR 97077
(503) 627-7111 Telex 151754

TELEVISION DEMODULATORS

The 1450-1 is compatible with System M Television Transmission, the 1450-2 is compatible with System B/G, and the 1450-3 is compatible with System I.



1450-2

1450-1/1450-2/1450-3

Measurement-Quality Performance for Negligible Distortion

Synchronous Detection Eliminates Quadrature Distortion

Envelope Detection for Accurately Determined Differential Phase

Surface Acoustic Wave Filter Provides Precise Nyquist Slope; Excellent Long and Short-Term Stability

Digital Readout of Input Power Level for Easy, Accurate Field Strength Readings

Constant-Bandpass Characteristics Over Wide Dynamic Range

Any Single VHF or UHF Channel Operation

UHF and VHF Tunable Down Converters

Conforms to EIA Standard RS-462 (System M Only)

The 1450-1 (System M), 1450-2 (System B/G) and 1450-3 (System I) Demodulator Mainframes are combined with a Tektronix Television Down Converter (TDC) to provide an accurate link between your transmitter's RF signals and video baseband measuring equipment. Unique components work together to identify and eliminate any possible demodulation distortion in reproduced signal characteristics. You see a transparent picture of your transmitter's performance and signal output.

High Performance Spectrum Analyzers for your RF measurements are described on pages 202-216.

Tunable or Fixed-Channel Down Converters

For demodulating an RF signal at a TV channel frequency, the 1450 Series demodulator mainframes must be used with a Tektronix TDC. Three compatible TDCs are available for each system and provide a selection between tunable and fixed-channel performance. The TDC Fixed-Channel Down Converter supports your specified system channel number. Tunable Down Converters available for VHF and UHF channels are the TDC1 and TDC2 respectively.

Demodulation of the transmitter IF signal may be accomplished by using only the mainframe.

Synchronous and Envelope Detection

The 1450 Series demodulators allow you to select either synchronous or envelope detection. Each method has advantages, yet both are required for full measurement capability. For instance, synchronous detection is necessary for measurements that can be seriously affected by quadrature distortion.

The 1450 Series demodulators have two synchronous video detectors operating in phase quadrature. One detects the in-phase signal; the other detects the quadrature component of the video signal. (The quadrature component is a measure of change in visual carrier phase resulting from a change of video level.)

However, if incidental phase modulation is present on the picture carrier, the amount of differential phase measured on a synchronously detected signal will be erroneous. Because of this, an envelope detector is necessary to determine the actual differential phase present. The envelope detector has linear transfer characteristics down to 3% carrier and so provides optimum modulation depth indication.

Tektronix-Developed Surface Acoustic Wave Filter

The 1450 Series demodulators feature a SAW (surface acoustic wave) filter developed by Tektronix. It provides more precise Nyquist slope characteristics without group delay distortion, improves long-term and short-term stability, and lowers maintenance costs compared to conventional filter network circuitry.

In conventional demodulators, the more precisely the bandpass characteristics approach an ideal Nyquist curve, the more complex the filter network required. In the 1450 Series demodulator mainframes however, the bandpass characteristics are determined by just a single component, the SAW filter. Precision is the result.

Conventional tuned IF circuitry must be meticulously adjusted and is subject to change with mechanical and thermal shock. But the SAW filter is in a sealed unit and accurately provides the critical selectivity characteristics of the demodulator—and requires no adjustments.

ORDERING INFORMATION, SYSTEM M

1450-1 Television Demodulator (Order one vision IF option)	\$14,400
Option 01 — 37 MHz Vision IF	NC
Option 02 — 38.9 MHz Vision IF	NC
Option 03 — 45.75 MHz Vision IF	NC
Option 10 — Wide Bandwidth Audio 20 Hz to 55 kHz · 0.4 dB	+\$170

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-1 mainframe.

Order one vision IF option and either Option 1* or 14	
TDC Fixed Channel Down Converter — (Stipulate channel number when ordering)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 01 — 37 MHz Vision IF	NC
Option 02 — 38.9 MHz Vision IF	NC
Option 03 — 45.75 MHz Vision IF	NC
Option 11 — System M Countries	NC
Option 14 — System M Countries	NC

ORDERING INFORMATION, SYSTEM B/G

1450-2 Television Demodulator (Order both Option 02 and Option 09)	\$11,900
Option 02 — 38.9 MHz Vision IF	NC
Option 09 — 90 ns/ 170 ns Group Delay	NC
Option 10 — Wide Bandwidth Audio 20 Hz to 55 kHz · 0.4 dB	+\$165

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-2 mainframe. Order both Option 02 and Option 12.

TDC Fixed Channel Down Converter — (Stipulate channel number when ordering)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 02 — 38.9 MHz Vision IF	NC
Option 12 — System B/G/I countries	NC

ORDERING INFORMATION, SYSTEM I

1450-3 Television Demodulator (Order Option 02)	\$13,145
Option 02 — 38.9 MHz Vision IF	NC
Option 10 — Wide Bandwidth Audio 20 Hz to 55 kHz · 0.4 dB	+\$165

For demodulation of RF signals, one of the following three down converters must be plugged into the 1450-3 mainframe. Order both Option 02 and Option 12.

TDC Fixed Channel Down Converter — (Stipulate channel number when ordering)	\$3,550
TDC-1 — Tunable Down Converter VHF Band	\$7,660
TDC-2 — Tunable Down Converter UHF Band	\$7,660
Option 02 — 38.9 MHz Vision IF	NC
Option 12 — System B/G/I countries	NC

TELEMET

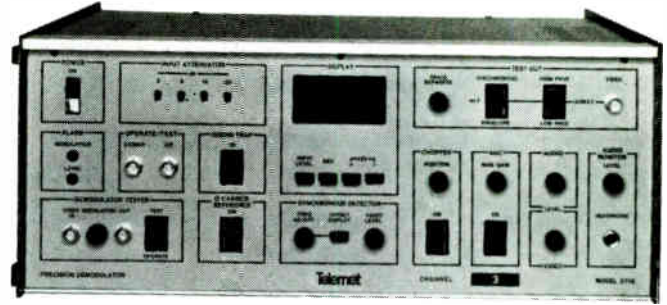
DIVISION OF GEOTEL, INC.
185 Dixon Avenue
Amityville, L.I., New York 11701
(516) 842-2300 TWX 510-227-9850

VIDEO BROADCAST TEST EQUIPMENT

MODEL 3710 Broadcast Demodulator

Broadcast Demodulator Model 3710 is the most comprehensive, precision testing instrument available today for checking video quality of the television broadcast signal; and it has its own built-in tester for self checking calibration.

3710-A1	Broadcast Demodulator — VHF — 5mv sensitivity	.....	\$9,300.00
3710-A2	Broadcast Demodulator — UHF — 5mv sensitivity	.....	9,700.00
3710-A3	Broadcast Demodulator — VHF — 1mv sensitivity	.....	9,700.00
3710-A4	Broadcast Demodulator — UHF — 1mv sensitivity	.....	10,000.00



MODEL 4500 Demodulator

Demodulator 4500 accepts the broadcast signal and converts it to base band without distorting the original picture quality. It houses a plug-in VHF front end module that is selected and ordered separately for the particular VHF channel required. This VHF module is Telemet type D-xx-A1, where xx denotes the VHF channel number (e.g. D-02-A1 for Channel 2). It contains a crystal-controlled oscillator and FET mixer. Also a 2-stage a.g.c. controlled VHF amplifier, using silicon insulated-gate field effect transistors.

4500-B1	VHF Demodulator (Off-air)	.....	\$2,110.00
D-xx-A1	VHF Plug-in (Channels 2-13)	.....	675.00
D-xx-A1	Sub-Band Plug-in (Channels T7-T11)	.....	865.00
D-xx-A1	Mid-Band Plug-in (Channels A-1)	.....	865.00
D-xx-A1	Super-Band Plug-in (Channels J-V)	.....	865.00

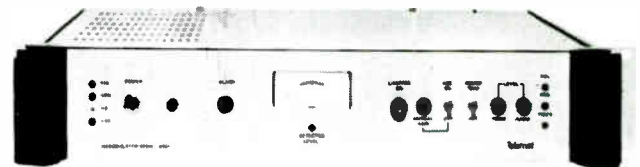


Option:	Demodulator supplied at — 48 VDC	.....	\$225.00
4500-B2	UHF Demodulator (Off-air, fixed, tuned, single channel)	.....	2,960.00

MODEL 4501 Broadcast Demodulator

Broadcast Demodulator 4501 is for use in the measurement of the characteristics of broadcast television signals, including chrominance-luminance relative gain and delay, K rating, burst amplitude and modulation depth, differential phase and gain, intercarrier frequency stability (using an external counter) and other distortions.

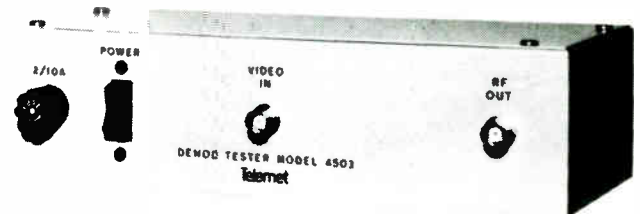
4501-A1	VHF Precision Demodulator — 5mv sensitivity	.....	\$6,000.00
4501-A2	UHF Precision Demodulator — 5mv sensitivity	.....	6,275.00
4501-A3	VHF Precision Demodulator (Channel 2-13) with low input sensitivity of 1mv	.....	6,275.00
4501-A4	UHF Precision Demodulator, input sensitivity of 1mv	.....	6,525.00



MODEL 4503 Demodulator Tester

Demodulator Tester 4503 provides a fast sure method of determining the on-going frequency response of a broadcast TV demodulator.

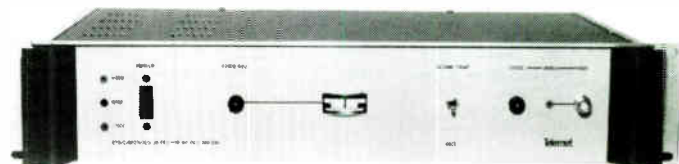
4503-A1	VHF Precision Demodulator Tester	.....	\$800.00
4503-A2	UHF Precision Demodulator Tester	.....	925.00



MODEL 4504 Synchronous Detector

Synchronous Detector Model 4504 is designed to measure transmitter parameters, especially the incidental phase modulation of the visual carrier. The Model 4504 can be used with the Telemet broadcast test demodulator Model 4501 and other suitable test demodulators.

4504-A1	Synchronous Detector	\$1,885.00
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TEXSCAN CORPORATION

2446 N. Shadeland
Indianapolis, IN 46219
(317) 357-8781

CHARACTER GENERATOR



SPECTRAGEN III (SG III)

SpectraGen III is a low-cost character generator with a full spectrum of features and programming flexibility. Texscan MSI invites you to compare the SpectraGen III with any other single channel, low-cost unit available.

Only the SpectraGen III can provide you with 150 pages of basic RAM expandable to 812 pages. Only the SpectraGen III gives you 32 keyboard-selectable colors for colored upper and lower case characters, backgrounds and edging. Only the SpectraGen III has 32 graphic symbols for display enhancements. Only the SpectraGen III can provide full, remote, off-line editing capability when used in conjunction with a Flexicaster. Only the SpectraGen III has six independently programmable display regions, a 16 x 32 character matrix and a real time clock with events switching. The SpectraGen III accepts up to four serial inputs, such as: weather, AP, UPI, Reuters, NOAA and keyboard. Stockwriters and Dow Jones optional.

The SpectraGen III is entirely self-contained in a convenient keyboard housing that fits easily on a desk or shelf top. All keyboard functions are clearly labeled. A single keystroke addresses most functions, making the SpectraGen III one of the most convenient character generators to operate.

In the past, low-cost character generators have been stripped-down versions of other models; not the SpectraGen III. This unit offers all the software features of a Texscan MSI Flexicaster. The only important thing we've dropped is the price.

FEATURES

- Single channel output • 150 to 650 page RAM memory capacity
- 16 x 32 character matrix • 32 keyboard selectable character color/background color combinations • Line or page control of character colors and background colors • Four character heights: single, double, triple, and quad • Two character widths: single and double
- 32 keyboard graphic symbols • Graphic line separators • Character edging • Upper and lower case standard Helvetica font • Six independent display regions per 21-line screen display • Auto centering • 24 hour battery memory protection • Four page display modes: Bang, Splash, Crawl and Page-print • Three page display speeds: Slow, Medium and Fast • Three crawl speeds, plus pause • Real Time Clock control or display • Programmable page display attributes • Four serial I/O ports for Weather, AP, UPI, Reuters, NOAA and Keyboard • Editing features • Line and page shift up, down, left and right • Cursor home, right, left, up and down • Character repeat • Erase to end of line/end of page • Character insert/character delete • Line insert/line delete • Word wrap line justification • Word or line flash • Capable of animation • Each page offers weekly calendar event • 68 nanoseconds dot clock with character cellular matrix of 16 x 32 • Two line levels in and four out for externals.

OPTIONAL

Interactive public access

SPECIFICATIONS

Data Inputs

Four serial data inputs configured as baudot or ASCII current loop, RS-232, or TTL at data rates from 55 to 6900 baud.

Video Outputs

Two video outputs per one channel system. Level is 1.0 v. P-P nominal at 75 ohms impedance. Standard is RS-170 A 525-line NTSC color video signal.

Memory Capacity

Up to 242K bytes dynamic RAM usable memory storage, organized in 8-bit bytes, and configured by user into pages of 1 to 21 lines in depth.

Interfaces Accomodated

Keyboard, local weather sensors, NOAA, AP and UPI.

Dimensions

15"D x 5-1/4"H x 20"W

Power Requirements

70 Watts

Housing

Aluminum, self-contained housing with built-in keyboard.

Characters

Resident font with 92 ASCII, upper and lower case characters plus 32 special graphic characters in a high-resolution 16 x 32 pixel matrix. Heights are 20, 40, 60 and 80 scan lines. Widths show 16 or 32 characters per line. Maximum screen display is 21 lines of 32 characters. Helvetica font is standard. Character Colors are pre-programmed into 32 keyboard selectable character color/background color combinations on a line or page basis.

Display Attributes

All page display attributes are programmable by the page. Page display times are from 1/2 to 99 seconds, display speeds are slow, medium or fast plus pausing crawl with up to six independent display regions per 21 line screen display. Real Time Clock control or display function.

Editing/Cursor Functions

Line and page shift, up and down, right and left. Skip page, Erase page or line. Erase to end of line or page. Character insert or delete. Word or line flash. Line insert or delete. Character repeat. Cursor home, and Word wrap.

Memory Protection

A Battery pack preserves system memory up to 24 hours in case of system failure.

COLOR CHARACTERS

Texscan MSI now offers in their full product line, 32 combinations of character, background and edging colors.

All colors are keyboard selectable, by the press of one key, on a line by line or full page basis. These colors apply to alphanumeric as well as graphic characters.

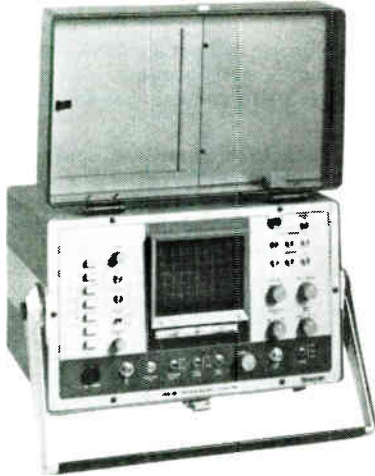
Texscan MSI selected color combinations on the basis of aesthetics, making text easy and pleasing to read. Colors range from a subdued black on grey, for newspaper applications, to bright color combinations for eye-catching display advertisements.

Other sets of color combinations are available. Consult the factory for details.

SG III — Character Generator

SG III — GLT — Genlock Titler

SG IV — High Resolution SG III GLT with 32 nanoseconds — 32 x 64 matrix

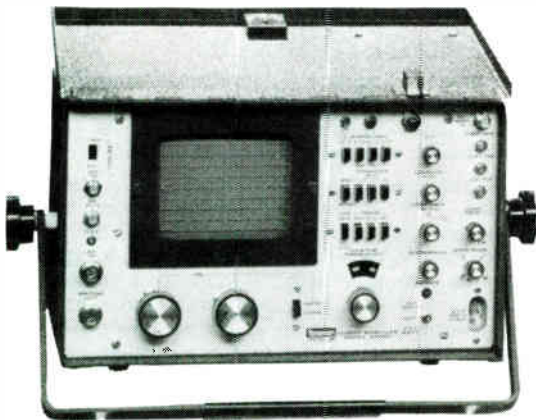


MODEL VSM-1D SPECTRUM ANALYZER

- 4-450 MHz Frequency Range • Dynamic Range of 40 dB on Screen
- Portable Operation • Typical ± 1 MHz Dial Accuracy • 8 MHz Fixed Calibrated Dispersion

More than 13 years of proven reliability and performance back the Texscan VSM-1D (75 ohm) portable spectrum analyzer. This low cost instrument provides accurate coverage of the frequency range from 4 to 450 MHz, with up to 40 dB on-screen amplitude displayed to an accuracy of ± 1.5 dB. Truly portable, and weighing only 26 lbs. (including battery), this rugged, field-ready package allows up to 2-1/2 hours of continuous operation with an internal rechargeable battery. The VSM-1D, in addition to battery or external DC power, also provides for direct conversion of 117 VAC power by utilizing an external charger/converter. Both the CRT and the front panel of this unit is securely protected (when not in use) by an integral latching cover.

Three pre-set frequency bands eliminate time-consuming operator adjustments in the VSM-1D by automatically setting center frequency and dispersion controls. A 40 dB on-screen display range and a sensitivity which exceeds -40 dBmV enables easy detection of interfering signals, and a dial accuracy of ± 1 MHz (typical) further enhances accurate signal measurements.



MODEL 9900D SWEEP SYSTEM

- Checks for illegal connections to a system • ± 0.25 dB flatness — measurement by comparison • Measure return loss, gain or insertion loss — switch selectable • Variable tilt to simplify testing

- Sweep cable to 450 MHz and 32 dB • Sweep test in the yard or on the pole — only 23 lbs. and battery operated • Scope, attenuators, sweep generator, and bridge — all in one instrument • Variable bridge available.

Sweep test cable, amplifiers, passives all with a single instrument — now to 450 MHz — and it's portable.

The 9900 Series of sweep test systems has been used for testing CATV cable for more than 12 years. This is the newest member of the club. Now the 9900 Series is portable. The same basic measurement capability that you are used to from the 9900, 9900A, and 9900B is provided by the new 9900D but at one-third the weight and size — yet battery operated to use in the yard, at the pole, or in the system.

The instrument incorporates a 4 to 450 MHz sweep generator, oscilloscope, return loss bridge, attenuators, frequency markers, and dual trace comparator to provide comparison sweep testing with a single instrument. Test your amplifiers and passives on the bench; test your cable on the reel in the yard, or take the 9900D up in a bucket to test the cable system on the pole. You can even use it to sweep the drop cable of a subscriber to determine if there are illegal connections. The sweep output can even be tilted to compensate for linear slope loss in the test piece and achieve a flat response on the oscilloscope.



MODEL VSM-5D SPECTRUM ANALYZER

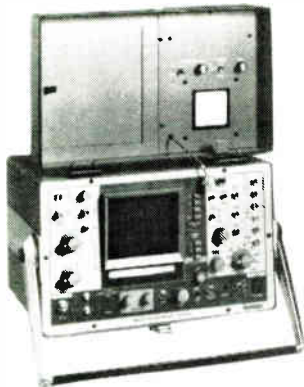
- 4-450 MHz Frequency Range • Built-In Markers (1-10-50 MHz)
- Portable Operation • Selectable Resolution • Optional Digital Storage

The VSM-5D spectrum analyzer covers the frequency range from 4 to 450 MHz and provides up to 70 dB of accurate, on-screen amplitude measurement. Truly portable, the VSM-5D allows a choice of AC, external DC, or internal rechargeable battery operation.

The VSM-5D's logical control panel layout with three presettable frequency bands facilitates quick learning of all the specialized functions and speeds testing procedures. An integral latching cover is designed to securely protect both the CRT and the controls of the VSM-5D while the unit is not in use.

Signal dispersions can be varied from below 3 kHz per division to as much as 45 MHz per division, allowing the operator to closely examine narrow band signals and to see the complete 4 to 450 MHz spectrum visually on the CRT. 60 dB dynamic display ranges make these units ideally suited for specification testing and alignment in a wide range of applications in both the laboratory and the field. A built-in, 1, 10, and 50 MHz harmonic marker combination enables the operator to identify displayed signal frequencies, and to set center frequency and scan width. An advanced oscillator design and a 500 Hz crystal IF filter enhance the VSM-5D's resolution, allowing the measurement of signals separated by only 20 kHz in frequency and 60 dB in amplitude.

2446 N. Shadeland
Indianapolis, IN 46219
(317) 357-8781



MODEL VSM-2D SPECTRUM ANALYZER

- 4-1000 MHz Frequency Range • Dynamic Range of 70 dB on Screen • Built-In Markers (1-10-50 MHz) • Portable Operation • AM /FM Audio Recovery • Optional Digital Storage

The VSM-2D spectrum analyzer covers the frequency range of 4 MHz to 1 GHz and provides 120 dB of accurate amplitude measurement. A portable spectrum analyzer, the VSM-2D allows a choice of AC, external DC, or internal rechargeable battery operation. A color-keyed front panel and a logical control layout simplify the selection of settings, and often monitored frequency bands can be preset by screwdriver controls which are easily accessible on the front panel. An integral latching cover is designed to protect both the CRT and the controls of the VSM-2D while the unit is not in use.

Signal dispersions of this instrument can be varied from less than 2 kHz per division to as much as 100 MHz per division, allowing the operator to closely examine narrow band signals and to scan the complete 1,000 MHz spectrum visually on the CRT. Also provided is the ability to make system hum measurements with a resolution of 2% per division. DC blocking of the input protects the input attenuator and mixer against inadvertent application of system powering voltages.

Phase locking in the VSM-2D is provided by a stable internal reference (below 200 kHz per division dispersion) which stabilizes the first local oscillator, yielding low residual FM performance during the investigation of narrow band dispersions. A 70 dB dynamic display range makes the VSM-2D ideally suited for specification testing and alignment in a wide range of applications. A built-in 1, 10, 50 MHz harmonic marker combination enables the operator to identify displayed signal frequencies and provides center frequency and scan width settings of unparalleled accuracy. An audio recovery system, including AM/NBFM detectors and audio amplifiers with speaker, allows the user to audibly monitor the displayed carrier signal modulation. An advanced oscillator design and a 500 Hz crystal IF filter enhance the resolution, allowing the measurement of signals separated by only 20 kHz in frequency and 60 dB in amplitude.



MODEL MDC-3 MICROWAVE CONVERTER

- 2.1 GHz, 3.7 GHz and 12.7 GHz conversion in one converter
- Spectrum analysis at microwave for less than \$10,000.00 • Microwave sweep generator for less than \$6,000.00 • Optional filter kit to simplify measurements.

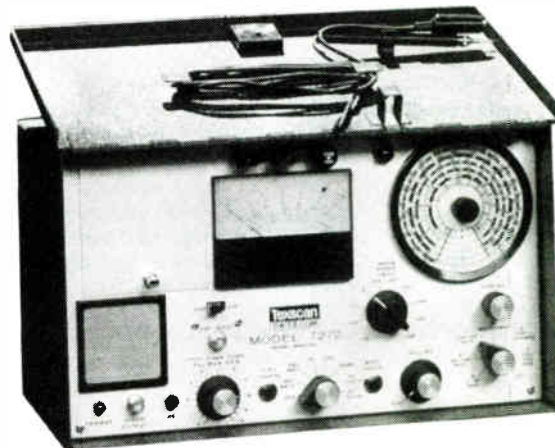
The MDC-3 provides microwave spectrum analysis at CARS band, MDS, and TVRO frequencies without a microwave spectrum analyzer. Not only is spectrum analysis possible, in conjunction with the VSM-5B, but the MDC-3 also converts low-frequency sweepers to microwave.

Faulty pointing of CARS antennas are easily corrected while monitoring the output with the MDC-3 and a VSM-5B. Deviation adjustment of CARS transmitters is easily and precisely accomplished by observing the sideband distribution on a spectrum analyzer. CARS or TVRO systems can be easily checked for spurious or interfering signals.

The MDC-3 is a small and lightweight unit which can be operated in the field with Texscan's VSM-1A, VSM-2A, or VSM-5B portable spectrum analyzers. The MDC-3 can be powered directly from these instruments, operating from their internal batteries with the retractable front panel power cord of the MDC-3.

The optional filter kit adds increased accuracy and usefulness to the MDC-3. This filter kit is necessary to use the converter for microwave sweep generator operation. The unit has a calibrated insertion loss so that absolute signal strength measurements can be made and the local oscillator for each of the three bands can be individually adjusted.

Other frequency bands are available on an optional basis.



MODEL 7272 SIGNAL LEVEL METER

- 400 MHz coverage in 6 bands • Patented peak detector eliminating errors due to modulation • Rugged construction designed for field use • Advanced design rotary attenuator • Optional UHF plug-in converter • Voltmeter and ohmmeter capability built in.

Model 7272 Signal Level Meter—featuring 5 to 405 MHz coverage without plug-ins, ± 1.0 dB accuracy, new easy reading dial, manual gain control, video output, built-in speaker and volt/ohmmeter, and patented peak detector. With the optional UHF plug-in converter, the 7272 provides the technician with the most complete and versatile Signal Level Meter in the industry. Besides versatility, accuracy and convenience, the ruggedness of the 7272 is still there. And the 7272 offers the widest level measurement range available.

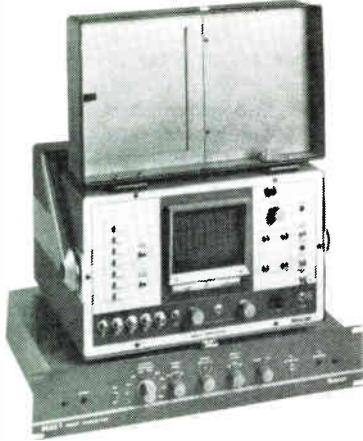
The incorporation of preselection filters for each band reduces the number of carriers present at the first mixer, thereby eliminating the effect of internally generated disorders on measurement accuracy. This feature plus the superior rejection characteristics of the IF are unavailable with other manufacturer's meters.

The 7272's built-in volt/ohmmeter eliminates the need to carry a second VOM up the pole or in the bucket truck. The VOM is an integral part of the 7272 with the leads stored in the non-detachable lid, ready when you need them.

TEXSCAN CORPORATION

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Indianapolis, IN 46219
(317) 357-8781

TEST EQUIPMENT



MODEL 9552 T/R SWEEP SYSTEM

- Low Cost • Easy Operation • Rack Mount Headend Transmitter
- Selectable Sweep Widths and Rep Rates • Digital Storage • Flat or Tilted Sweep Output • Portable, Battery Powered Receiver • Calibrated Display, 1 or 2 dB/Div.

The 9552T Transmitter employs a very fast sweep rate so that the interfering signal is only present in any video channel's bandwidth for less time than the length of one horizontal line. The sweep signal is 20 to 25dB higher in amplitude than the picture carriers resulting in a swept output display uncluttered by video carriers riding on the trace. The system will interface with most two-way radios for a "sweep-when-triggered" operation. The DBG-1 option is used to eliminate the possibility of the sweep transmitter affecting wideband fast acting AGC circuits on long cascades.

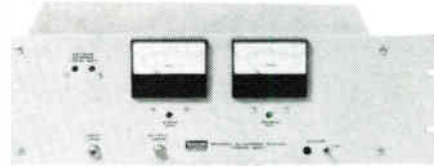
The 9552R Receiver is synchronized to the transmitter with a time base triggered by the leading edge of the sweep signal. A sample of the sweep signal is used to generate a variable marker which appears as two pips 6MHz apart riding on the swept display. This marker presentation provides a convenient reference for standard TV channel width. The receiver is rugged, portable, and battery operated. Digital storage provides continuous updated display.



MODEL VS-60CZ SWEEP SIGNAL GENERATOR

- 1-10-50MHz Harmonic Markers Standard • Optional Single Frequency Markers • 1 to 1,000MHz Frequency Coverage • +/-0.25dB Flatness • 1 and 10dB Step Precision Attenuator Output Control

In the 1 to 1000MHz range, there is simply no better instrument on the market for such a wide variety of sweep applications than the VS-60CZ. This dependable worry-free "workhorse" has proven itself as an indispensable tool. A field-proven performer, the Texscan VS-60CZ packs the capabilities of a high stability, narrow band sweeper, and the flexibility of a wide band sweeper into one versatile instrument. The VS-60CZ's 0.05 to 60Hz sweep rate range is compatible for testing almost any bandwidth. An internal automatic level control maintains the RF output amplitude at 0.25dB over the entire frequency range. Internal pushbutton activated harmonic and single frequency (optional) markers are available, and provisions for combining external RF signals for use as markers are also included.



9557
HEADEND
UNIT



9558
PORTABLE
UNIT

MODELS 9557/9558 TWO-WAY TEST SET

- Battery operation of remote receiver • Simplified two-way system alignment • Field proven reliability.

SIMPLICITY IN TWO-WAY SYSTEM ALIGNMENT

The Texscan 9557/9558 two-way test set permits alignment of the return path amplifier system with a single stop at the amplifier location. It is no longer necessary to shuttle a sweep or signal generator to various points at the extremities of the distribution system. The reverse alignment system greatly simplifies this complex task.

The reverse path alignment system consists of a headend unit and a battery-operated remote unit which functions in conjunction with a field strength meter or spectrum analyzer.

The system functions by sending a pilot signal in the forward direction (VHF). This signal is nulled by the headend when it receives the Sub band signals at the proper levels. The Sub band signals are inserted in the return patch by the remote unit. The null is detected by the FSM or spectrum analyzer.

MODELS FDM 3, 4, 5 RF LEAKAGE MONITORING SYSTEM (Not Shown)

- The FDM 3, 4 monitors discrete frequencies—minimizes erroneous results • Crystal controlled stability • Narrow (20 kHz) bandwidth provides low level reception • Speaker and meter outputs • Built-in squelch — prevents triggering on noise • Go/No Go indicator at FCC leakage level — using optional antenna • Optional customer specified test frequencies • Vehicle mount makes routine patrolling easy.

The leakage monitoring system can detect radiation leakage when it's still at a level too low to interfere with other communication systems.

Basically, the System is a crystal controlled, FM, transmit-receive system designed for rapid and convenient location of signal leakage in a cable system. The portable, battery operated receiver will activate visible and audible alarms if it receives leakage signals greater than the adjustable sensitivity threshold. The optional vehicle mounting bracket and whip antenna permit leakage monitoring during routine truck runs.

The FDM 3, 4, 5 leakage monitoring system provides complete radiation protection. Monitoring discrete frequency bands for leakage results in testing with a low probability error. Narrow receiver bandwidth and speaker output produces a leakage monitor system with high probability of detection and low false alarm rate. The FDM-5 headend unit injects a signal at 107.9 MHz at the headend. The FDM-2 receiver, vehicle mounted or hand held, is transported throughout the plant cable runs searching for leakage. If leakage is found, the FDM 3, 4, 5 can be used to make calibrated measurements to determine the severity of the leak.

TEXSCAN CORPORATION

2446 N. Shadeland
Indianapolis, IN 46219
(317) 357-8781

TEST EQUIPMENT



TFC-7A

MODEL TFC-7A TUNED FREQUENCY COUNTER

- Designed specifically for proof of performance testing
- 0 dBmV sensitivity—5 to 405 MHz coverage
- Measures selected channel with adjacent channel 10 dB larger
- Preselection/stripper—removes video modulation prior to counting
- Simple operation—lightweight. Measures video carrier frequency and audio-video carrier spacing accurately in the presence of modulation.

Texscan's highly accurate Model TFC-7A Tuned Frequency Counter uses a broadband preselector/stripper to remove modulation and an accurate counter for Proof-of-Performance measurements. The TFC-7A provides precise count accuracies in fully loaded 52 channel systems—even with adjacent channels 10 dB greater than the desired. The TFC-7A gives precision frequency measurements at any test point in the system—with measurements down to 0 dBmV.

For operator convenience, intercarrier spacing is measured at the push of a button, eliminating the requirements for two separate carrier readings and subtraction of the results. A digital LED read-out provides simplified frequency tuning. Input attenuators control signal input to the counter, maintaining optimum operation from high-level head-end to low-level output test points.

Additional features of the TFC-7A include a special RF output capability of +40 dBmV which may be used as a counted variable marker for accurate adjustment of processor bandpass limits, adjacent channel sound and video traps, and other alignments where precise frequency measurement is required. Also, a detected video output of 4 MHz bandwidth, allows close examination of sync pulses and other transmitted information. Providing added versatility, the TFC-7A will also function as a broadband, high-level frequency counter for signals above +20 dBmV. This feature lends itself to applications with tracking sweep generators and other single frequency unmodulated frequency counter applications.



DU-127

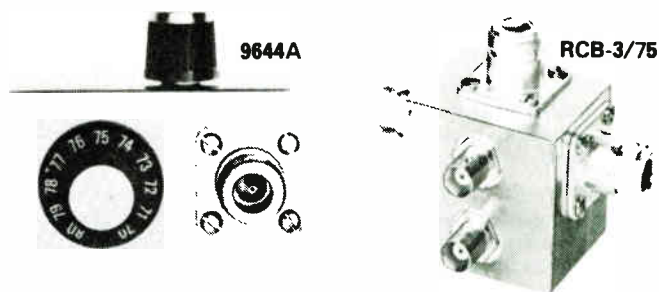
MODEL DU-127 X-Y OSCILLOSCOPE

- Large 12 inch diagonal CRT—for reduced eye fatigue
- 25 kHz horizontal and vertical bandwidth—for excellent marker presentation whether they're vertical or tilted
- Excellent sensitivity—1mV/division both horizontally and vertically.

The DU-127 combines high performance, low cost and wide bandwidth in a wide screen display ideal for laboratory sweep testing.

The Texscan DU-127 X-Y, wide screen oscilloscope combines low cost and high performance and is an excellent choice for laboratory and repair test systems. The DU-127 features a large 12 inch diagonal CRT with a bright, stable, focused trace for ease of viewing. It has high sensitivity, high resolution, good writing speed, and high output light level.

The DU-127 is compatible with any sweep generator since it accommodates pulse, birdy or intensity markers. The combination of 1 mV/DIV sensitivity and extremely low drift make this instrument a workhorse.



MODEL RCB-3/75 REFLECTION COEFFICIENT BRIDGES

- Tests return loss of cable, amplifiers, passives and taps
- Accurate to 1 GHz

The Texscan reflection coefficient bridge is a broadband RF comparator which, when used in conjunction with a sweep generator and oscilloscope, provides an accurate display of reflection or VSWR versus frequency. Component and/or device mismatch is easily and accurately determined.

The RCB-3/75 is an ideal device for laboratory testing of amplifiers, filters, taps, passives, attenuators and other coaxial components. The bridge provides a DC output which is proportional to the unknown element's reflection coefficient.

MODEL 9644A VARIABLE BRIDGES

- Measures Structural Return Loss Independent of Average Cable Impedance
- Accurate to 450 MHz.

The 9644A Variable Bridge is recommended for Structural Return Loss testing of 75 ohm coaxial cable. It is specifically designed for use with Texscan's Model 9900D Sweep System, but may also be used in conjunction with a separate sweep generator, attenuator set, and display scope.

The built-in reference termination has adjustable resistance and reactance, which allows Structural Return Loss to be measured independently of average cable impedance.

Bridge Kits

KRCB-3	(50 ohms) (VS-60C)
KRCB-3/75	(75 ohms) (VS-60CZ)

Each bridge can be purchased separately or as a kit with calibrated mismatches included. A kit consists of a bridge and five calibrated MF-75 mismatches, representing VSWR values of 1.0:1 (2 each), 1.2:1, 1.5:1, and 2.0:1.

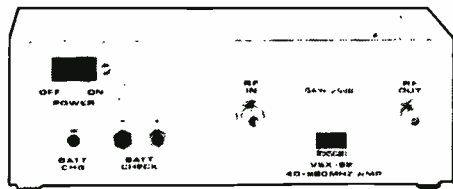
KRCB-3



TEXSCAN CORPORATION

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TEST EQUIPMENT



BROADBAND AMPLIFIER

VSX-92S

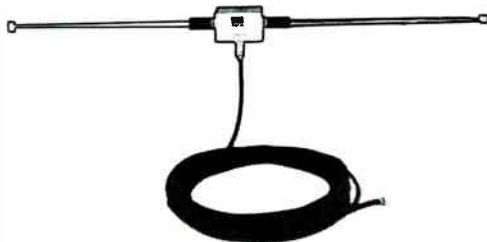
- 7dB Noise Figure • 26dB Gain • ± 1.0 dB (40-890MHz)

VSX-92S AMPLIFIER

The VSX-92S wideband RF amplifier is designed to amplify low-level signals. This portable, lightweight, solid-state amplifier extends the range of signal level meters, spectrum analyzers and similar test equipment. The battery-operated VSX-92S incorporates two hybrid broadband amplifiers, a flatness-compensation network, and a voltage regulator.

TBC-12 BATTERY CHARGER

The TBC-12 Battery Charger is designed to charge the battery system used in the VSX-92S. This instrument charges the battery in approximately 12 hours. For optimum battery cycle life, the charger should be disconnected within 14 hours.



REFERENCE DIPOLE ANTENNA

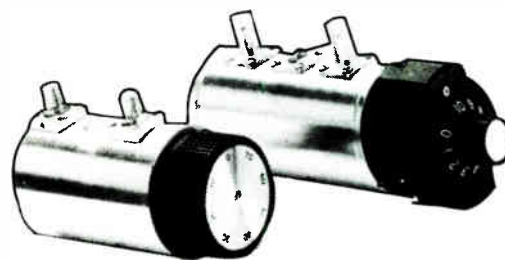
AFS-1

- Replaceable Dipole Elements • Fiberglass Mast • Calibrated Down-lead

AFS-1 ANTENNA

The AFS-1 is a calibrated, adjustable half-wave dipole specifically designed for making required FCC radiation tests from 50 to 400MHz. This unit is passive, requiring no batteries, and it is provided with a mast to make measurements 20 feet above the ground.

A calibration chart for setting antenna length for the resonance at any carrier frequency in the VHF band is supplied with the antenna. The antenna can be used with a signal level meter and preamplifier to make the FCC required radiation test on CATV systems. The AFS-1 is provided with calibration data and test information, allowing accurate data to be recorded when used with a VSX-92S amplifier and a spectrum analyzer, or signal level meter.

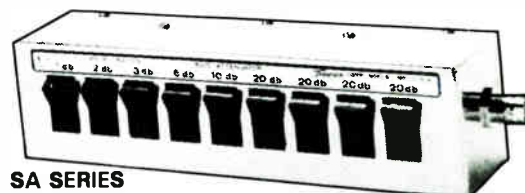


PRECISION ROTARY ATTENUATORS

- Housed in Lightweight Irridated Aluminum • Attenuation from 9 to 70dB • Low VSWR • Wideband Accuracy

ROTARY ATTENUATORS

The Rotary Attenuator Models RA-70F, RA-71F, RA-73F, RA-734F, RA-74F are laboratory-type precision instruments for bench use or inclusion in test equipment. Model RA-70F provides 0 to 10dB of attenuation in 1dB steps from DC to 1000MHz. Model RA-71F provides 0 to 70dB of attenuation in 10dB steps from DC to 1000MHz. Model RA-73F provides 0 to 1dB of attenuation in 0.1dB steps from DC to 500MHz. Model RA-734F provides 0 to 11dB of attenuation in 0.1dB steps from 0 to 500MHz. Model RA-74F provides 0 to 50dB in 1dB steps with accuracies from DC to 1000MHz.



SA SERIES

BMA SERIES



SWITCHABLE AND BENCH MOUNT ATTENUATORS

SA SERIES/BMA SERIES

- Finger Tip Controlled Rocker Switches • Selectable Attenuation • Can Be Bench or Panel Mounted • 500MHz Coverage • Single Unit Operation • Accurate Reduction of High Level Signals • Accuracy up to 1000MHz.

MODEL SA-70F and SA-78F

The SA Series Switchable Attenuators provide selectable attenuation by finger tip control of nine rocker type switches. This 75 ohm attenuator is equipped with Type F connectors and may be placed on the bench or panel mounted. Provides coverage up to 500MHz.

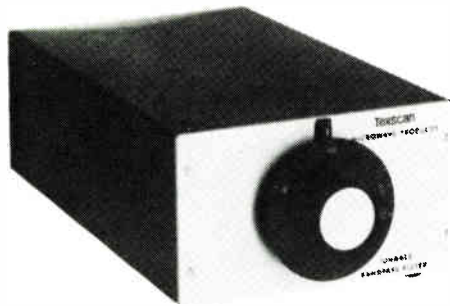
MODEL BMA-577 and BMA 567

A "packaged attenuator", the BMA series, may be used in measurement-by-comparison test applications and for reduction of high-level signals from sweep generators to oscilloscopes and spectrum analyzers.

The advantages of the "packaged attenuator" concept are convenience of operation (single unit versus a pair of non-attached attenuators) and a neater test bench—plus accurate reduction of high-level signals for measurement-by-comparison tests.

TEXSCAN CORPORATION

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TUNABLE BANDPASS FILTERS

VF SERIES

- Octave tuning bandwidth
- 3% or 5% bandwidth available
- 3 or 5 section available
- Low insertion loss

For measurement of low level signals in the presence of high level signals—like triple beat measurements.

No cross mod or triple beat measurement should be made without filtering the input to your spectrum analyzer or field strength meter. This is necessary to reduce the number of carriers present at the analyzer input. If the overloading effect of these signals is not removed, it is not possible to make the measurement with reliability or accuracy. Texscan's line of VF tunable filters are specifically designed for this application. In fact, any time you are looking for a low level signal in the presence of high level signals, a filter is necessary; for example, radiation surveys, signal surveys, carrier to noise measurements, co-channel, etc. Various models in the series cover a frequency range from 48MHz to 400MHz with each model covering more than an octave. These units are available with either a three or five section response and have a 3dB bandwidth of 5% or 3% with low insertion loss values from 0.2dB through 1.5dB. VSWR is less than 1.5:1.



LOGARITHMIC AMPLIFIER LN-70

- 70dB Dynamic range with ± 0.5 dB accuracy
- A calibrated digital readout with ± 0.1 dB resolution is provided
- Selectable noise filtering for accurate measurement at low signal levels
- Selectable sensitivity of 10, 5, 2, 1, and 0.5dB per volt are provided
- Tracking adjustments to calibrate to various detectors

The LN-70 logarithmic amplifier will display a full 70dB range for inputs of +20dBm. The frequency range of the device is that of the RF detector. The DC offset control allows the generation of a reference line on the scope display which indicates the amount of gain or loss. The digital readout has an ± 80 dB range and resolution of ± 0.1 dB.

VRF-148

TEST EQUIPMENT



FIXED ATTENUATOR PADS

- Accurate to 1200MHz
- Calibration data supplied standard
- Lab attenuators
- Color coded

FP-75

The FP-75 Fixed Attenuator Pad is available in a wide range of attenuation values and provides accurate attenuation to 1200MHz. Each of the pads is color coded for easy identification of the value of attenuation and calibration points are clearly marked on the body of the pads. The FP-75 is provided with calibration points at 30MHz and at 1000MHz.



MINIMUM LOSS PADS

- Converts system impedance level simply and accurately
- Performance through 1000MHz

ZM SERIES

Most signal and sweep generators have a nominal source impedance of 50 or 75 ohms. However, these impedance levels can be conveniently changed to some other impedance for specific applications using ZM series pads. Providing good performance through 1000MHz, these pads provide a simple and accurate means of converting system impedance levels. Texscan's minimum loss, coaxial pads are resistive "L" pads, which provide the minimum loss possible for resistive matching between impedance levels.

When ordering, be sure to specify input impedance, connector type and sex, and output impedance, connector type, and sex. Model ZM-57F (Male F, 75 ohms; Female BNC, 50 Ohms) or ZM-57M (Female F, 75 ohms; Male BNC, 50 Ohms).



DETECTORS

- Accurate to 1000MHz
- Efficient operation

The CD-75F in-line detector is designed for efficient operation in the 200kHz to 1GHz range, which provides a halfwave output with positive or negative polarity as specified by the customer. The standard unit Model DC-75F is equipped with an F-type input connector and an F-type output connector.



CD-75F DC BLOCKS

- Accurate to 1000MHz
- Less than 0.1dB insertion loss at 300MHz

BLOCKING NETWORK

The DB-75 Blocking Network passes RF signals in the 5 MHz to 1000MHz range, and blocks DC and 60 Hz voltages. The blocking network can be used in any application where high-frequency signal components must be separated from 60 Hz voltage. Insertion loss is less than 0.1dB at 300 MHz. Available with type F, BNC, or N connectors.

Prices and Specifications Subject to Change Without Notice.

TEXSCAN CORPORATION

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DISTRIBUTION EQUIPMENT

XRPR CABLE POWER UNITS

Features

Turn On Time Delay — Delays power turn on to the cable to minimize transients.

AC Input Circuit Breaker — Metal oxide varistor and gas filled surge protectors plus low pass filters are standard.

Optional Transient Clipper and Thyrite Arrestor — For severe transient conditions and lightning protection.

30 and 60 V Units Available — Dual mounted units also available.

Painted Housing and Louvered Cabinet — With locking capability.

Power Couplers and Splitters — Available as internally mounted options.

The Theta-Com XRPR AC power sources continue to be the workhorses of the CATV industry. Ruggedness, reliability and ease of maintenance characterize these supplies. They are available in two basic versions; a 60 volt 14 ampere unit and a switchable 30 volt/60 volt unit. Each can be purchased as a single unit or in a dual mounted configuration.

Providing 2% regulation, standard units are supplied with a self-healing, non-polarized gas filled surge protector, metal oxide varistor, low pass output filter, and turn on time delay. In addition to the standard surge protectors, optional protection is available. A transient clipper can be incorporated in the AC output to prevent power supply transients from entering the cable system. This option is recommended in locations which suffer from severe power transients. And for lightning protection, a thyrite arrestor is also available. Burn-In is not required due to a lack of 'infantile failures'.

These AC supplies are designed to be compatible with the Theta-Com T series and Phoenician II distribution system but are equally at home providing power for any distribution equipment.

Specifications XRPR

Specification/Model	XRPR 60/14	XRPR 30/60	XRPR 30/60 E	(2)
Voltage Input (Nominal)	115 VRMS/60 Hz	115 VRMS/60 Hz	220 VRMS/50 Hz	
Current-Input at 115V + 14A ⁽⁴⁾	8 Amps	4 Amps	5 Amps	
Voltage Output	60 VRMS	30 or 60 VRMS	60 VRMS	
Current-Output	14 Amps	14 or 7 Amps	10 or 5 Amps	
Regulation-Line %	± 2	± 2	± 2	
-Load %	± 2	± 2	± 2	
Turn On Time Delay (Sec)	6 ± 3	6 ± 3	6 ± 3	(1)
Surge Protector	145 Volt	145 Volt	145 Volt	
Dimensions In. (Cm)	18 x 11 x 7 (46 x 28 x 18)			
Weight Lbs. (Kg)	49 (22.3)	39 (17.7)	39 (17.7)	

NOTES

1. An adjustable (1 to 10 seconds) time delay relay kit is available to retrofit supplies in the field.
2. Dual units are available (24 x 12 x 8-1/2") (61 x 31 x 22cm) in all types but cannot be supplied with optional couplers or splitters.
3. The transient clipper cannot be supplied with the optional couplers.
4. Input currents vary with line voltage and load current. Numbers above are maximums, consult factory for typical numbers for various operating conditions.

OPTIONS

1. Power Coupler—A power coupler to couple AC power to the CATV system is available for any single mounted supply (3).
2. Splitter—A splitter to feed power into two inputs is available for any single mounted supply.
3. Transient Clipper—A 91 volt transient clipper is available (3).
4. Thyrite Arrestor—A thyrite lightning arrestor is available.
5. Transient Clipper Tester—This feature can be purchased with the transient clipper to allow testing of the clipper while mounted in the supply. Only available for the 60/14 supply.

RF CABLE PRODUCTS DIVISION

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Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

UNJACKETED TRUNK AND FEEDER CABLE T4™

Unjacketed T4 cable is recommended for aerial installations in non-corrosive environments.

- A center conductor coating that is moisture blocking yet strips clean.
- A hard foam dielectric which provides firm support for the fullwall seamless aluminum outer conductor, achieves excellent core-to-outer conductor adhesion, and has superior handling characteristics.

Unjacketed T4 cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric, bonded to the center conductor with a moisture blocking adhesive, supports the fullwall seamless aluminum outer conductor.

DETAILS OF CONSTRUCTION AND MATERIALS

- **Center conductor** — Electrical grade 10% nominal (by volume) copper-clad aluminum (ASTM B-556 Class 10A).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).

PART NUMBERS

Cable Type	Cable Size	
	0.625	0.875
Copper-Clad Aluminum Center Conductor		
Unjacketed	21171	21191
Unjacketed, color coded	21170	21190

PHYSICAL SPECIFICATIONS

Cable Type	Cable Size	
	0.625	0.875
Dimensions		
Conductor	0.136 in.	0.194 in.
Insulation	0.563 in.	0.797 in.
Outer Conductor	0.625 in.	0.875 in.
Nominal Weight (per 1000 ft.)		
	120 lb.	224 lb.
Nominal Weight (per reel)		
	386 lb.	658 lb.
Nominal Length (per reel)		
	2300 ft.	2350 ft.
Maximum Pull Force		
	280 lb.	475 lb.
Minimum Bend Radius		
	8.8 in.	12.3 in.
Reel Size (inches) (Flange x Traverse x Hub)		
	42 x 18 x 18	54 x 24 x 30

JACKETED TRUNK AND FEEDER CABLE T4™

Jacketed T4 cable incorporates the same features, construction and materials as unjacketed shown opposite.

Jacketed T4 cable is recommended for aerial installations in urban and coastal environments where corrosion is more likely to occur. This cable will withstand more abrasion and mechanical abuse than an unjacketed cable.

A protective jacket of low density high molecular weight black polyethylene is extruded over the outer conductor.

- **Jacket** — Abrasion resistant low density high molecular weight black polyethylene (Federal Specification LP-390 and ASTM D-1248 jacketing material).

PART NUMBERS

Cable Type	Cable Size	
	0.625	0.875
Copper-Clad Aluminum Center Conductor		
Jacketed	21172	21192
Heavy jacket	21930	21950
Extra heavy jacket	21933	21953
Jacketed, color coded	21176	21196
Heavy jacket, color coded	21936	21956
Extra heavy jacketed, color coded	21938	21958

PHYSICAL SPECIFICATIONS

Cable Type	Cable Size	
	0.625	0.875
Dimensions		
Conductor	0.136 in.	0.194 in.
Insulation	0.563 in.	0.797 in.
Outer Conductor	0.625 in.	0.875 in.
Jacket		
Heavy Jacket	0.725 in.	0.975 in.
Extra Heavy Jacket	0.765 in.	1.015 in.
	0.875 in.	1.125 in.
Nominal Weight (per 1000 ft.)		
Jacket	163 lb.	283 lb.
Heavy Jacket	182 lb.	308 lb.
Extra Heavy Jacket	239 lb.	382 lb.
Nominal Weight (per reel)		
Jacket	485 lb.	797 lb.
Heavy Jacket	539 lb.	924 lb.
Extra Heavy Jacket	682 lb.	1098 lb.
Nominal Length (per reel)		
	2300 ft.	2350 ft.
Maximum Pull Force		
	280 lb.	475 lb.
Minimum Bend Radius		
	8.8 in.	12.3 in.
Reel Size (inches) (Flange x Traverse x Hub)		
Jacket	42 x 18 x 18	54 x 24 x 30
Heavy Jacket	48 x 24 x 30	63 x 26 x 40
Extra Heavy Jacket	54 x 24 x 30	63 x 26 x 40

NOTE: Standard colored stripes are red, yellow, green, blue, purple, white, and slate. For other color combinations, please contact a customer service representative or your area salesman.

RF CABLE PRODUCTS DIVISION

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ARMORED TRUNK AND FEEDER CABLE T4

Recommended Applications

Armored T4 cable is recommended for direct burial installations where the cable is exposed to increased mechanical abuse and rodent attack.

FEATURES

- A center conductor coating that is moisture blocking yet strips clean.
- A hard foam dielectric which provides firm support for the fullwall seamless aluminum outer conductor, achieves excellent core-to-outer conductor adhesion, and has superior handling characteristics.
- A flooded jacketed cable with an additional jacket over a flooded steel tape.

Construction

Armored T4 cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric, bonded to the center conductor with a moisture blocking adhesive, supports the fullwall seamless aluminum outer conductor. A combination layer of a flooding compound, a polyethylene jacket, a helically wound steel tape, another layer of flooding compound, and a polyethylene jacket form a complete mechanical and corrosion-resistant shield.

Details of Construction and Materials

- **Center conductor** — Electrical grade 10% nominal (by volume) copper-clad aluminum (ASTM B-556 Class 10A).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).
- **Self-healing flooding compound** — Low molecular weight polyisobutylene which cold flows for self healing.
- **Jacket** — Abrasion resistant low density high molecular weight black polyethylene (Federal Specification LP-390 and ASTM D-1248 jacketing material).
- **Armor** — 0.010 in. thick steel tape SAE/AISI 1010 steel.

PART NUMBERS

Cable Type	Cable Size	
	0.525	0.875
Jacketed	21175	21195
Heavy jacket	21932	21952
Extra heavy jacket	21935	—
Jacketed, color coded	21178	21198
Heavy jacket, color coded	21813	21815

NOTE: Standard colored stripes are red, yellow, green, blue, purple, white, and slate. For other color combinations, please contact a customer service representative or your area salesman.

PHYSICAL SPECIFICATIONS

Cable Type	Cable Size	
	0.625	0.875
Dimensions		
Conductor	0.136 in.	0.194 in.
Insulation	0.563 in.	0.797 in.
Outer Conductor	0.625 in.	0.875 in.
1st Jacket	0.725 in.	0.975 in.
Armor	0.745 in.	0.995 in.
2nd Jacket	0.845 in.	1.095 in.
Heavy Jacket	0.895 in.	1.145 in.
Extra Heavy Jacket	1.005 in.	1.255 in.
Nominal Weight (per 1000 ft.)		
Armored	282 lb.	440 lb.
Heavy Jacket	309 lb.	476 lb.
Extra Heavy Jacket	375 lb.	560 lb.
Nominal Weight (per reel)		
Armored	769 lb.	1234 lb.
Heavy Jacket	843 lb.	1319 lb.
Extra Heavy Jacket	1063 lb.	1591 lb.
Nominal Length (per reel)		
	2300 ft.	2350 ft.
Maximum Pull Force		
	280 lb.	475 lb.
Minimum Bend Radius		
	11.8 in.	15.3 in.
Reel Size (inches) (Flange x Traverse x Hub)		
Armored	48 x 24 x 30	63 x 26 x 40
Heavy Jacket	54 x 24 x 30	63 x 26 x 40
Extra Heavy Jacket	63 x 26 x 40	66 x 36 x 42

RF CABLE PRODUCTS DIVISION

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ARMORED TRUNK AND FEEDER CABLE T4 PLUS™

Armored T4 Plus cable is recommended for direct burial installations where the cable is exposed to increased mechanical abuse and rodent attack.

FEATURES

- A flooded steel tape and jacket are layered over the standard flooded jacketed cable for increased mechanical strength.
- A cold flowing, self-healing (underground) or non-dripping (aerial) flooding compound provides an additional layer of corrosion protection.
- Cable jackets have sequential footage markers for easy determination of the amount of cable remaining on the reel.
- A tough jacket of linear low density polyethylene provides increased abrasion resistance and can be cut and removed easily for connector installation.
- A fully bonded composite construction increases pull strength and resists sidewall pressure damage during installation.
- Bonding of the jacket to sheath provides improved handling characteristics and prevents concealment of aluminum sheath damage.
- Controlled bonding of the core provides high core-to-sheath adhesion (to -40°C) dramatically improving protection against connector pull-outs due to extreme temperature variations and allows the use of standard connectors.
- Bonding of the dielectric to center conductor prevents moisture ingress and can be easily stripped without leaving a harmful residue.
- A reduced bend radius of approximately 8x the outside diameter of the cable allows easy accommodation to vault and pedestal placements.
- Available with increased bandwidth of 5 to 550 MHz.

Armored T4 Plus cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric supports the fullwall seamless aluminum outer conductor. A composite construction is obtained by bonding the individual components together, center conductor to dielectric and dielectric to outer conductor, with proprietary polymer adhesives. A combination of a layer of a flooding compound, a polyethylene jacket, a helically wound steel tape, another layer of flooding compound, and a polyethylene jacket form a complete mechanical and corrosion-resistant corrosive shield.

DETAILS OF CONSTRUCTION AND MATERIALS

- **Center conductor** — Electrical grade 10% nominal (by volume) copper-clad aluminum (ASTM B-556 Class 10A); solid copper (ASTM B-3).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Dielectric coating** — Clean stripping proprietary polymer adhesive.
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).
- **Self-healing flooding compound** — Cold flowing, low molecular weight polyisobutylene for self healing.
- **Jacket** — Abrasion resistant linear low density black polyethylene (Federal Specification LP-390 and ASTM D-1248 jacketing material).
- **Armor** — A 0.010" thick steel tape per SAE/AISI 1010 steel.

PART NUMBERS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Copper-Clad Aluminum Center Conductor						
Armored	22403	22503	22603	22703	22803	22903
Armored, color coded	22413	22513	22613	22713	22813	22913
Solid Copper Center Conductor						
Armored	22423	22523	—	22723	—	—
Armored, color coded	22433	22533	—	22733	—	—

PHYSICAL SPECIFICATIONS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Dimensions						
Conductor	0.088 in.	0.109 in.	0.136 in.	0.165 in.	0.194 in.	0.220 in.
Insulation	0.362 in.	0.450 in.	0.563 in.	0.678 in.	0.797 in.	0.890 in.
Outer Conductor	0.412 in.	0.500 in.	0.625 in.	0.750 in.	0.875 in.	1.000 in.
1st Jacket	0.480 in.	0.570 in.	0.695 in.	0.830 in.	0.955 in.	1.090 in.
Armor	0.500 in.	0.590 in.	0.715 in.	0.850 in.	0.975 in.	1.110 in.
2nd Jacket	0.600 in.	0.690 in.	0.815 in.	0.950 in.	1.075 in.	1.210 in.
Nominal Weight (per 1000 ft.)	158 lb.	198 lb.	266 lb.	348 lb.	428 lb.	562 lb.
Nominal Weight (per reel)	560 lb.	575 lb.	732 lb.	967 lb.	1206 lb.	1508 lb.
Nominal Length (per reel)	2850 ft.	2350 ft.	2300 ft.	2400 ft.	2350 ft.	2150 ft.
Maximum Pull Force	180 lb.	240 lb.	350 lb.	470 lb.	530 lb.	610 lb.
Minimum Bend Radius	8.4 in.	9.7 in.	11.4 in.	13.3 in.	15.0 in.	16.9 in.
Reel Size (inches) (Flange x Traverse x Hub)	42 x 18 x 18	42 x 18 x 18	48 x 24 x 30	54 x 24 x 30	63 x 26 x 40	66 x 36 x 42

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

JACKETED MESSENGERED TRUNK AND FEEDER CABLE T4 PLUS™

RECOMMENDED APPLICATIONS

Jacketed messengered T4 Plus cable is recommended for aerial feeder installations where strand installation is not practical.

FEATURES

- A strong integral galvanized steel wire supports the cable in aerial installations.
- A tough jacket of linear low density polyethylene provides increased abrasion resistance and can be cut and removed easily for connector installation.
- A fully bonded composite construction increases pull strength and resists sidewall pressure damage during installation.
- Bonding of the jacket to sheath provides improved handling characteristics and prevents concealment of aluminum sheath damage.
- Controlled bonding of the core provides high core-to-sheath adhesion (to -40°C) dramatically improving protection against connector pull-outs due to extreme temperature variations and allows the use of standard connectors.
- Bonding of the dielectric to center conductor prevents moisture ingress and can be easily stripped without leaving a harmful residue.
- A reduced bend radius of approximately 8x the outside diameter of the cable allows easy accommodation to vault and pedestal placements.
- Available with increased bandwidth of 5 to 550 MHz.

Jacketed messengered T4 Plus cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric supports the fullwall seamless aluminum outer conductor. A composite construction is obtained by bonding the individual components together, center conductor to dielectric and dielectric to outer conductor, with proprietary polymer adhesives. A galvanized steel wire is integrally attached to the cable by a web of polyethylene that is part of the protective polyethylene jacket over the outer conductor and messenger wire.

DETAILS OF CONSTRUCTION AND MATERIALS

- **Center conductor** — Electrical grade 10% nominal (by volume) copper-clad aluminum (ASTM B-556 Class 10A); solid copper (ASTM B-3).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Dielectric coating** — Clean stripping proprietary polymer adhesive.
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).
- **Messenger** — Galvanized 0.109 in. solid steel wire (ASTM A-326) or a galvanized 0.188 in. stranded wire (ASTM A-475).
- **Jacket** — Abrasion resistant linear low density black polyethylene (Federal Specification LP-390 and ASTM D-1248 jacketing material).

NOTE: Conventional strand installation of cable offers more mechanical protection than messengered cable. However, where strand installation is not possible, messengered cable offers the next best approach if care is taken to follow the hardware manufacturers' installation instructions and proper cable sags and tensions are used.

PART NUMBERS

Cable Type	Cable Size		
	0.412	0.500	0.625
Copper-Clad Aluminum Center Conductor			
Jacketed messengered	22405	22505	22605
Solid Copper Center Conductor			
Jacketed messengered	22425	22525	—

PHYSICAL SPECIFICATIONS

	Cable Size		
	0.412	0.500	0.625
Dimensions			
Conductor	0.088 in.	0.109 in.	0.136 in.
Insulation	0.362 in.	0.450 in.	0.563 in.
Outer Conductor	0.412 in.	0.500 in.	0.625 in.
Jacket	0.480 in.	0.580 in.	0.725 in.
Messenger	0.109 in.	0.109 in.	0.188 in. (stranded)
Nominal Weight (per 1000 ft.)	121 lb.	145 lb.	252 lb.
Nominal Weight (per reel)	455 lb.	451 lb.	712 lb.
Nominal Length (per reel)	2850 ft.	2350 ft.	2300 ft.
Maximum Pull Force	540 lb.	540 lb.	600 lb.
Minimum Bend Radius	3.0 in.	4.0 in.	5.0 in.
Messenger Break Strength	1800 lb.	1800 lb.	3990 lb.
Reel Size (inches) (Flange x Traverse x Hub)	42x18x18	42x18x18	54x24x30

TIMES FIBER COMMUNICATIONS, INC.

CABLE

RF CABLE PRODUCTS DIVISION

P.O. Box 384
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(203) 265-8400 TWX 710-476-0763

JACKETED TRUNK AND FEEDER CABLE T4 Plus™

RECOMMENDED APPLICATIONS

Jacketed T4 Plus cable is recommended for aerial installations in urban and coastal environments where corrosion is more likely. This cable will withstand more abrasion and mechanical abuse than an un-jacketed cable.

FEATURES

- A tough jacket of linear low density polyethylene provides increased abrasion resistance and can be cut and removed easily for connector installation.
- A fully bonded composite construction increases pull strength and resists sidewall pressure damage during installation.
- Bonding of the jacket to sheath provides improved handling characteristics and prevents concealment of aluminum sheath damage.
- Controlled bonding of the core provides high core-to-sheath adhesion (to -40°C) dramatically improving protection against connector pull-outs due to extreme temperature variations and allows the use of standard connectors.
- Bonding of the dielectric to center conductor prevents moisture ingress and can be easily stripped without leaving a harmful residue.
- A reduced bend radius of approximately 8x the outside diameter of the cable allows easy accommodation to vault and pedestal placements.
- Available with increased bandwidth of 5 to 550 MHz.

Jacketed T4 Plus cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric supports the fullwall seamless aluminum outer conductor. A protective jacket of tough linear low density polyethylene is extruded over the sheath. A composite construction is obtained by bonding the individual components together, center conductor to dielectric, dielectric to outer conductor, and sheath to jacket, with proprietary polymer adhesives.

DETAILS OF CONSTRUCTION AND MATERIALS

- **Center conductor** — Electrical grade 10% nominal (by volume) copper clad aluminum (ASTM B-556 Class 10A); solid copper (ASTM B-3).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Dielectric coating** — Clean stripping proprietary polymer adhesive.
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).
- **Jacket adhesive** — Proprietary non-residue polymer adhesive.
- **Jacket*** — Abrasion resistant linear low density black polyethylene (Federal Specification LP-390 and ASTM D-1248 jacketing material).

*Sequential footage marking on outer jacket available upon request.

PART NUMBERS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Copper-Clad Aluminum Center Conductor						
Jacketed Heavy jacket (0.065 in.)	22401	22501	22601	22701	22801	22901
Jacketed, color coded Heavy jacket, color coded	—	22506	22606	22706	22806	22906
	22411	22511	22611	22711	22811	22911
	—	22516	22616	22716	22816	22916
Solid Copper Center Conductor						
Jacketed	22421	22521	—	22721	—	—
Jacketed, color coded	22431	22531	—	22731	—	—
Heavy jacket, color coded	—	22536	—	22736	—	—

PHYSICAL SPECIFICATIONS

CABLE TYPE	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Dimensions						
Conductor	0.088 in.	0.109 in.	0.136 in.	0.165 in.	0.194 in.	0.220 in.
Insulation	0.362 in.	0.450 in.	0.563 in.	0.678 in.	0.797 in.	0.890 in.
Outer Conductor	0.412 in.	0.500 in.	0.625 in.	0.750 in.	0.875 in.	1.000 in.
Jacket	0.470 in.	0.560 in.	0.685 in.	0.820 in.	0.945 in.	1.080 in.
Heavy Jacket	0.542 in.	0.630 in.	0.755 in.	0.880 in.	1.005 in.	1.130 in.
Nominal Weight (per 1000 ft.)						
Jacketed	74 lb.	98 lb.	146 lb.	206 lb.	266 lb.	377 lb.
Heavy Jacket	—	124 lb.	178 lb.	238 lb.	303 lb.	412 lb.
Nominal Weight (per reel)						
Jacketed	286 lb.	305 lb.	446 lb.	626 lb.	757 lb.	1011 lb.
Heavy Jacket	—	401 lb.	529 lb.	703 lb.	912 lb.	1086 lb.
Nominal Length (per reel)	2850 ft.	2350 ft.	2300 ft.	2400 ft.	2350 ft.	2150 ft.
Maximum Pull Force	180 lb.	240 lb.	350 lb.	470 lb.	530 lb.	610 lb.
Minimum Bend Radius	2.5 in.	3.5 in.	4.5 in.	6.0 in.	7.0 in.	8.0 in.
Reel Size (inches) (Flange x Traverse x Hub)						
Jacketed	36 x 18 x 16	36 x 18 x 16	42 x 18 x 18	54 x 24 x 30	54 x 24 x 30	63 x 26 x 40
Heavy Jacket	—	42 x 18 x 18	48 x 24 x 30	54 x 24 x 30	63 x 26 x 40	63 x 26 x 40

TIMES FIBER COMMUNICATIONS, INC.

CABLE

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

UNJACKETED TRUNK AND FEEDER CABLE T4 Plus™

RECOMMENDED APPLICATIONS

Unjacketed T4 Plus cable is recommended for aerial installations in a non-corrosive environment.

FEATURES

- A full wall seamless aluminum tube provides maximum strength, shielding integrity, and low sheath resistance.
- A fully bonded composite construction increases pull strength and resists sidewall pressure damage during installation.
- Controlled bonding of the core provides high core-to-sheath adhesion (to -40°C) dramatically improving protection against connector pull-outs due to extreme temperature variations and allows the use of standard connectors.
- Bonding of the dielectric to center conductor prevents moisture ingress and can be easily stripped without leaving a harmful residue.
- A reduced bend radius of approximately 8x the outside diameter of the cable allows easy accommodation to vault and pedestal placements.
- Available with increased bandwidth of 5 to 550 MHz.

Construction

Unjacketed T4 Plus cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric supports the fullwall seamless aluminum outer conductor. A composite construction is obtained by bonding the individual components together, center conductor to dielectric and dielectric to outer conductor, with proprietary polymer adhesives.

DETAILS OF CONSTRUCTION AND MATERIALS

- **Center conductor** — Electrical grade 10% nominal (by volume) copper-clad aluminum (ASTM B-556 Class 10A); solid copper (ASTM B-3).
- **Conductor coating** — Proprietary moisture blocking polymer adhesive.
- **Dielectric** — Foamed polyethylene (Federal Specification LP-390 and ASTM D-1248 prior to foaming).
- **Dielectric coating** — Clean stripping proprietary polymer adhesive.
- **Outer conductor** — Seamless fullwall high purity electrical grade aluminum tube, alloy 1060 (ASTM B-221).

PART NUMBERS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Copper-Clad Aluminum Center Conductor						
Unjacketed	22400	22500	22600	22700	22800	22900
Unjacketed, color coded	22410	22510	22610	22710	22810	22910
Solid Copper Center Conductor						
Unjacketed	22420	22520	—	22720	—	—
Unjacketed, color coded	22430	22530	—	22730	—	—

PHYSICAL SPECIFICATIONS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Dimensions						
Conductor	0.088 in.	0.109 in.	0.136 in.	0.165 in.	0.194 in.	0.220 in.
Insulation	0.362 in.	0.450 in.	0.563 in.	0.678 in.	0.797 in.	0.890 in.
Outer Conductor	0.412 in.	0.500 in.	0.625 in.	0.750 in.	0.875 in.	1.000 in.
Nominal Weight (per 1000 ft.)	58 lb.	78 lb.	121 lb.	171 lb.	225 lb.	325 lb.
Nominal Weight (per reel)	240 lb.	258 lb.	388 lb.	530 lb.	661 lb.	948 lb.
Nominal Length (per reel)	2850 ft.	2350 ft.	2300 ft.	2400 ft.	2350 ft.	2300 ft.
Maximum Pull Force	180 lb.	240 lb.	350 lb.	470 lb.	530 lb.	610 lb.
Minimum Bend Radius	3 in.	4 in.	5 in.	7 in.	8 in.	9 in.
Reel Size (inches) (Flange x Traverse x Hub)	36 x 18 x 16	36 x 18 x 16	42 x 18 x 18	48 x 24 x 30	54 x 24 x 30	63 x 26 x 40

RF CABLE PRODUCTS DIVISION

P.O. Box 384
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JACKETED FLOODED TRUNK AND FEEDER CABLE T4 PLUS™

RECOMMENDED APPLICATIONS

Jacketed flooded T4 Plus cable is recommended for underground, both conduit and direct burial installations. Asphaltic flooding compound may also be used for aerial applications.

FEATURES

- A cold flowing, self-healing (underground) or non-dripping (aerial) flooding compound provides an additional layer of corrosion protection.
- Cable jackets have sequential footage markers for easy determination of the amount of cable remaining on the reel.
- A tough jacket of linear low density polyethylene provides increased abrasion resistance and can be cut and removed easily for connector installation.
- A fully bonded composite construction increases pull strength and resists sidewall pressure damage during installation.
- Bonding of the jacket to sheath provides improved handling characteristics and prevents concealment of aluminum sheath damage.
- Controlled bonding of the core provides high core-to-sheath adhesion (to -40°C) dramatically improving protection against connector pull-outs due to extreme temperature variations and allows the use of standard connectors.
- Bonding of the dielectric to center conductor prevents moisture ingress and can be easily stripped without leaving a harmful residue.
- A reduced bend radius of approximately 8x the outside diameter of the cable allows easy accommodation to vault and pedestal placements.
- Available with increased bandwidth of 5 to 550 MHz.

Construction

Jacketed flooded T4 Plus cable is available with a copper-clad or solid copper center conductor. A hard foamed polyethylene dielectric supports the fullwall seamless aluminum outer conductor. A composite construction is obtained by bonding the individual components together, center conductor to dielectric and dielectric to outer

conductor, with proprietary polymer adhesives. A layer of flooding compound is applied over the outer conductor, and a protective jacket of linear low density polyethylene is extruded over the flooding compound.

JACKETED FLOODED TRUNK AND FEEDER CABLE T4™

FEATURES

- A center conductor coating that is moisture blocking yet strips clean.
- A hard foam dielectric which provides firm support for the full-wall seamless aluminum outer conductor, achieves excellent core-to-outer conductor adhesion, and has superior handling characteristics.
- A protective layer of flooding compound for additional corrosion protection.

T4™ PART NUMBERS

Cable Type	Cable Size	
	0.625	0.875
Copper-Clad Aluminum Center Conductor		
Jacketed flooded polyisobutylene	21174	21194
Heavy jacket flooded (0.065 in.)	21931	21951
Extra heavy jacket flooded	21934	21954
Jacketed flooded, asphalt*	21993	21995
Jacketed flooded, polyisobutylene, color coded	21177	21197
Heavy jacket flooded polyisobutylene, color coded	21937	21957
Extra heavy jacket, flooded, color coded	21939	21959
Jacketed flooded, asphalt* color coded	21803	21805

T4 PLUS™ PART NUMBERS

Cable Type	Cable Size					
	0.412	0.500	0.625	0.750	0.875	1.000
Copper-Clad Aluminum Center Conductor						
Jacketed flooded polyisobutylene	22402	22502	22602	22702	22802	22902
Heavy jacket flooded (0.065 in.)	—	22507	22607	22707	22807	22907
Jacketed flooded, asphalt*	22404	22504	22604	22704	22804	22904
Jacketed flooded, polyisobutylene, color coded	22412	22512	22612	22712	22812	22912
Heavy jacket flooded, polyisobutylene, color coded	—	22517	22617	22717	22817	22917
Jacketed flooded, asphalt* color coded	22414	22514	22614	22714	22814	22914
Solid Copper Center Conductor						
Jacketed flooded polyisobutylene	22422	22522	—	22722	—	—
Jacketed flooded, asphalt*	22424	22524	—	22724	—	—
Jacketed flooded, polyisobutylene, color coded	22432	22532	—	22732	—	—
Heavy jacket flooded polyisobutylene, color coded	—	22537	—	22737	—	—
Jacketed flooded, asphalt*, color coded	22434	22534	—	22734	—	—

*May also be used for aerial applications due to non-dripping compound.

TIMES FIBER COMMUNICATIONS, INC.

DROP CABLE

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

T4 DROP LOW COVERAGE BRAID CABLE

The Low Coverage Braid T4 drop cable is recommended for use in areas where low RF signal noise is present and ease of connector installation is not critical.

FEATURES

- A bonded dielectric that blocks moisture yet pulls off easily leaving no residue on the conductor.
- An environmentally resistant black PVC jacket that provides long drop life.
- Uniform web dimensions that allow easy messenger wire separation.



Single—Low coverage braid T4 drop cable has a copper-clad steel center conductor with a hard foamed polyethylene dielectric. An aluminum-polypropylene-aluminum (APA) laminated tape is longitudinally wrapped with an overlap around the dielectric. An aluminum wire braid is then applied over the APA tape, and a protective PVC jacket is extruded over the braid to environmentally seal the construction.

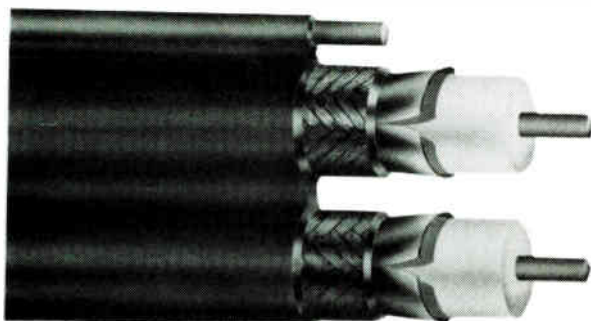
Flooded—The same as the single, except with a layer of flooding compound between the braid and PVC jacket.



Messengered—The same as the single, except with a galvanized steel wire integrally attached by a PVC web that is part of the jacket that covers the braid and messenger wire.



Siamese—The same as the single, except two singles are attached by a PVC web.



Siamese Messengered—The same as the siamese, except a galvanized steel wire is integrally attached by a PVC web.

PART NUMBERS

Description	RG-59 Size	RG-6 Size	RG-11 Size
Single (Black)	2045	2060	2062
Single (Beige or White*)	2070	2091	---
Single Flooded	2074	2086	2082
Single Messengered	2047	2064	2066
Siamese (Black)	2048	2096	---
Siamese (Beige or White*)	2055	---	---
Siamese Messengered	2050	2084	---

*Beige and white cables are not recommended for long term outdoor storage or installation.

PHYSICAL SPECIFICATIONS

	RG-59 Size	RG-6 Size	RG-11 Size
Dimensions			
Conductor	0.0320 in	0.0403 in	0.0641 in
Dielectric	0.146 in	0.185 in	0.285 in
Unsealed APA Tape Outer			
Conductor	0.150 in	0.189 in	0.289 in
Aluminum Braid Outer Conductor	0.175 in	0.214 in	0.314 in
Jackets	0.238 in	0.275 in	0.407 in
Messenger	0.051 in	0.061 in	0.109 in
Jacketed with Messenger	0.393 in	0.430 in	0.631 in
Siamese	0.521 in	0.595 in	
Messenger (Siamese)	0.072 in	0.072 in	
Siamese with Messenger	0.698 in	0.772 in	
Number of Braid Ends	2	2	3
Cable Weight per 1000 ft			
Single	23 lb	29 lb	63 lb
Single Messengered	35 lb	41 lb	89 lb
Single Flooded	22 lb	28 lb	
Siamese	46 lb	59 lb	
Siamese Messengered	66 lb	79 lb	

ELECTRICAL SPECIFICATIONS

Attenuation at 68°F-dB per 100 ft.

Frequency MHz	RG-59 Size		RG-6 Size		RG-11 Size	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5	0.79	0.83	0.60	0.63	0.38	0.40
30	1.46	1.53	1.11	1.16	0.70	0.74
50	1.74	1.83	1.32	1.39	0.87	0.91
108	2.46	2.58	1.95	2.05	1.29	1.36
216	3.48	3.66	2.78	2.92	1.85	1.95
240	3.67	3.86	2.93	3.08	1.96	2.06
270	3.89	4.09	3.12	3.27	2.08	2.19
300	4.11	4.32	3.29	3.46	2.20	2.31
325	4.28	4.49	3.43	3.60	2.29	2.41
350	4.44	4.66	3.56	3.74	2.39	2.51
375	4.60	4.83	3.69	3.87	2.47	2.60
400	4.75	4.99	3.81	4.00	2.56	2.69
450	5.04	5.29	4.05	4.25	2.73	2.86
500	5.31	5.58	4.27	4.49	2.88	3.03
550	5.57	5.86	4.49	4.72	3.03	3.19
600	5.83	6.12	4.69	4.93	3.18	3.34

±1% per 10°F Variance

Nominal DC Resistance (ohms per 1000 ft)	RG-59 Size		RG-6 Size		RG-11 Size	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
Loop	62.9		44.0		21.7	
Center Conductor	48.2		30.4		12.1	
Nominal Capacitance						
16.5 pF per ft						

Prices and Specifications Subject to Change Without Notice.

VRF-157

TIMES FIBER COMMUNICATIONS, INC.

DROP CABLE

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

T4 DROP MEDIUM COVERAGE BRAID CABLE

The Medium Coverage Braid T4 drop cable is recommended for use in areas where moderate RF signal noise is present and easy connector installation is required.

FEATURES

- A bonded dielectric that blocks moisture yet pulls off easily leaving no residue on the conductor.
- An environmentally resistant black PVC jacket that provides long drop life.
- Uniform web dimensions that allow easy messenger wire separation.

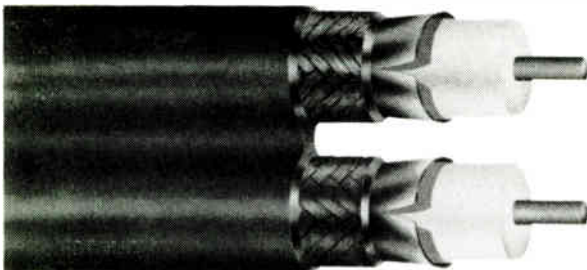


Single—Medium coverage braid T4 drop cable has a copper-clad steel center conductor with a hard foamed polyethylene dielectric. A sealed aluminum-polypropylene-aluminum (APA) laminated tape is longitudinally wrapped with an overlap around the dielectric. An aluminum wire braid is then applied over the sealed APA tape, and a protective PVC jacket is extruded over the braid to environmentally seal the construction.

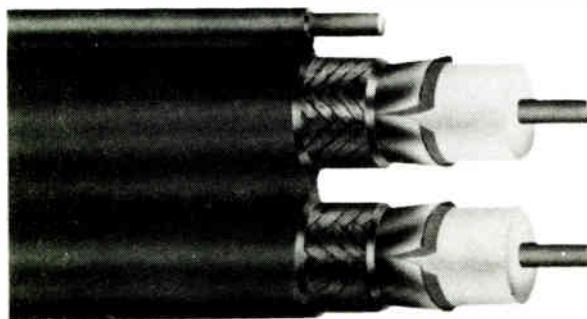
Flooded—The same as the single, except with a layer of flooding compound between the braid and PVC jacket.



Messengered—The same as the single, except with a galvanized steel wire integrally attached by a PVC web that is part of the jacket that covers the braid and messenger wire.



Siamese—The same as the single, except two singles are attached by a PVC web.



Siamese Messengered—The same as the siamese, except a galvanized steel wire is integrally attached by a PVC web.

PART NUMBERS

Description	RG-59 Size	RG-6 Size	RG-11 Size
Single (Black)	2045	2060	2062
Single (Beige or White*)	2070	2091	---
Single Flooded	2074	2086	2082
Single Messengered	2047	2064	2066
Siamese (Black)	2048	2096	---
Siamese (Beige or White*)	2055	---	---
Siamese Messengered	2050	2084	---

*Beige and white cables are not recommended for long term outdoor storage or installation.

PHYSICAL SPECIFICATIONS

	RG-59 Size	RG-6 Size	RG-11 Size
Dimensions			
Conductor	0.0320 in	0.0403 in	0.0641 in
Dielectric	0.146 in	0.185 in	0.285 in
Unsealed APA Tape Outer Conductor	0.150 in	0.189 in	0.289 in
Aluminum Braid Outer Conductor	0.175 in	0.214 in	0.314 in
Jacket	0.238 in	0.275 in	0.407 in
Messenger	0.051 in	0.051 in	0.109 in
Jacketed with Messenger	0.393 in	0.430 in	0.631 in
Siamese	0.521 in	0.595 in	
Messenger (Siamese)	0.072 in	0.072 in	
Siamese with Messenger	0.698 in	0.772 in	
Number of Braid Ends	2	2	3
Cable Weight per 1000 ft			
Single	23 lb	29 lb	63 lb
Single Messengered	35 lb	41 lb	89 lb
Single Flooded	22 lb	28 lb	
Siamese	46 lb	59 lb	
Siamese Messengered	66 lb	79 lb	

*4 Braid end cable available upon request.

ELECTRICAL SPECIFICATIONS

Attenuation at 68°F—dB per 100 ft.

Frequency MHz	RG-59 Size		RG-6 Size		RG-11 Size	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5	0.79	0.83	0.60	0.63	0.38	0.40
30	1.46	1.53	1.11	1.16	0.70	0.74
50	1.74	1.83	1.32	1.39	0.87	0.91
108	2.46	2.58	1.95	2.05	1.29	1.36
216	3.48	3.66	2.78	2.92	1.85	1.95
240	3.67	3.86	2.93	3.08	1.96	2.06
270	3.89	4.09	3.12	3.27	2.08	2.19
300	4.11	4.32	3.29	3.46	2.20	2.31
325	4.28	4.49	3.43	3.60	2.29	2.41
350	4.44	4.66	3.56	3.74	2.39	2.51
375	4.60	4.83	3.69	3.87	2.47	2.60
400	4.75	4.99	3.81	4.00	2.56	2.69
450	5.04	5.29	4.05	4.25	2.73	2.86
500	5.31	5.58	4.27	4.49	2.88	3.03
550	5.57	5.86	4.49	4.72	3.03	3.19
600	5.83	6.12	4.69	4.93	3.18	3.34

±1% per 10°F Variance

Nominal DC Resistance (ohms per 1000 ft)	RG-59 Size	RG-6 Size	RG-11 Size
Loop	62.9	44.0	21.7
Center Conductor	48.2	30.4	12.1
Nominal Capacitance (16.5 pF per ft)			

TIMES FIBER COMMUNICATIONS, INC.

DROP CABLE

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

T4 DROP HIGH COVERAGE BRAID CABLE

The High Coverage Braid T4 drop cable is recommended for use in areas where moderate to high RF noise level is present.

FEATURES

- A bonded dielectric that blocks moisture yet pulls off easily leaving no residue on the conductor.
- An environmentally resistant black PVC jacket that provides long drop life.
- Uniform web dimensions that allow easy messenger wire separation.

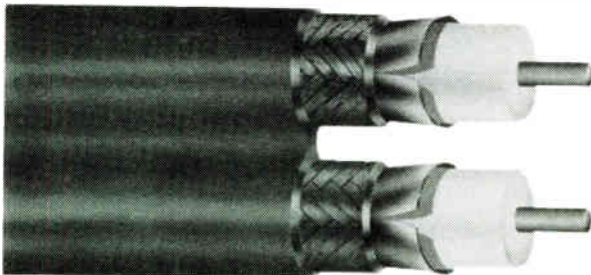


Single—High coverage braid T4 drop cable has a copper-clad steel center conductor with a hard foamed polyethylene dielectric. A sealed aluminum-polypropylene-aluminum (APA) laminated tape is longitudinally wrapped with an overlap around the dielectric. An aluminum wire braid is then applied over the sealed APA tape, and a protective PVC jacket is extruded over the braid to environmentally seal the construction.

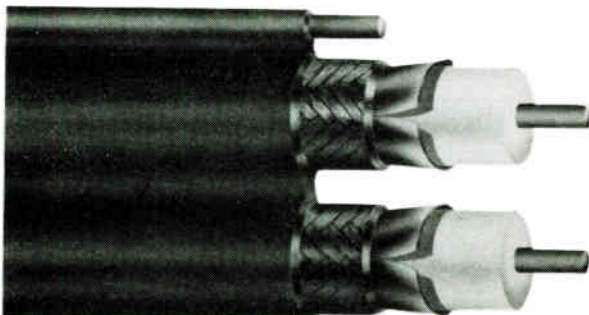
Flooded—The same as the single, except with a layer of flooding compound between the braid and PVC jacket.



Messengered—The same as the single, except with a galvanized steel wire integrally attached by a PVC web that is part of the jacket that covers the braid and messenger wire.



Siamese—The same as the single, except two singles are attached by a PVC web.



Siamese Messengered—The same as the siamese, except a galvanized steel wire is integrally attached by a PVC web.

PART NUMBERS

Description	RG-59 Size	RG-6 Size	RG-11 Size
Single (Black)	2045	2060	2062
Single (Beige or White*)	2070	2091	---
Single Flooded	2074	2086	2082
Single Messengered	2047	2064	2066
Siamese (Black)	2048	2096	---
Siamese (Beige or White*)	2055	---	---
Siamese Messengered	2050	2084	---

*Beige and white cables are not recommended for long term outdoor storage or installation.

PHYSICAL SPECIFICATIONS

	RG-59 Size	RG-6 Size	RG-11 Size
Dimensions			
Conductor	0.0320 in	0.0403 in	0.0641 in
Dielectric	0.146 in	0.185 in	0.285 in
Unsealed APA Tape Outer			
Conductor	0.150 in	0.189 in	0.289 in
Aluminum Braid Outer Conductor	0.175 in	0.214 in	0.314 in
Jacket	0.238 in	0.275 in	0.407 in
Messenger	0.051 in	0.051 in	0.109 in
Jacketed with Messenger	0.393 in	0.430 in	0.631 in
Siamese	0.521 in	0.595 in	
Messenger (Siamese)	0.072 in	0.072 in	
Siamese with Messenger	0.698 in	0.772 in	
Number of Braid Ends	2	2	3
Cable Weight per 1000 ft			
Single	23 lb	29 lb	63 lb
Single Messengered	35 lb	41 lb	89 lb
Single Flooded	22 lb	28 lb	
Siamese	46 lb	59 lb	
Siamese Messengered	66 lb	79 lb	

ELECTRICAL SPECIFICATIONS

Attenuation at 68°F-dB per 100 ft.

Frequency MHz	RG-59 Size		RG-6 Size		RG-11 Size	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5	0.79	0.83	0.60	0.63	0.38	0.40
30	1.46	1.53	1.11	1.16	0.70	0.74
50	1.74	1.83	1.32	1.39	0.87	0.91
108	2.46	2.58	1.95	2.05	1.29	1.36
216	3.48	3.66	2.78	2.92	1.85	1.95
240	3.67	3.86	2.93	3.08	1.96	2.06
270	3.89	4.09	3.12	3.27	2.08	2.19
300	4.11	4.32	3.29	3.46	2.20	2.31
325	4.28	4.49	3.43	3.60	2.29	2.41
350	4.44	4.66	3.56	3.74	2.39	2.51
375	4.60	4.83	3.69	3.87	2.47	2.60
400	4.75	4.99	3.81	4.00	2.56	2.69
450	5.04	5.29	4.05	4.25	2.73	2.86
500	5.31	5.58	4.27	4.49	2.88	3.03
550	5.57	5.86	4.49	4.72	3.03	3.19
600	5.83	6.12	4.69	4.93	3.18	3.34

±1% per 10°F Variance

Nominal DC Resistance (ohms per 1000 ft)	RG-59 Size	RG-6 Size	RG-11 Size
Loop	62.9	44.0	21.7
Center Conductor	48.2	30.4	12.1
Nominal Capacitance			
16.5 pF per ft			

Prices and Specifications Subject to Change Without Notice.

VRF-159

RF CABLE PRODUCTS DIVISION

P.O. Box 384
358 Hall Avenue
Wallingford, CT 06492
(203) 265-8400 TWX 710-476-0763

T4 DROP QUADSHIELD CABLE

Quadshield T4 drop cable is recommended for use in areas where a high to very high RF noise level is present.

FEATURES

- A bonded dielectric that blocks moisture yet pulls off easily leaving no residue on the conductor.
- An environmentally resistant black PVC jacket that provides long drop life
- Uniform web dimensions that allow easy messenger wire separation

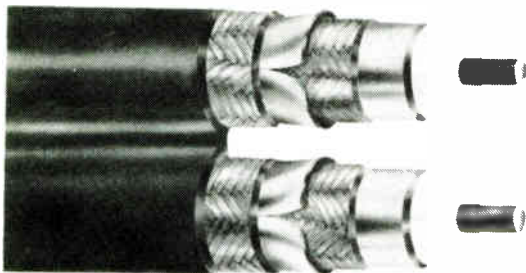


Single — Quadshield T4 drop cable has a copper-clad steel center conductor with a hard foamed polyethylene dielectric. A sealed aluminum-polypropylene-aluminum (APA) laminated tape is longitudinally wrapped with an overlap around the dielectric. A medium coverage aluminum wire braid is applied over the sealed APA tape, an unsealed APA tape is applied over the braid, a low coverage aluminum wire braid is applied over the unsealed tape, and a protective PVC jacket is extruded over the braid to environmentally seal the construction.

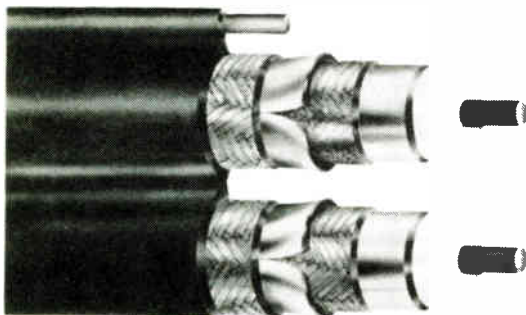
Flooded — The same as the single, except with a layer of flooding compound between the braid and PVC jacket.



Messengered — The same as the single, except with a galvanized steel wire integrally attached by a PVC web that is part of the jacket that covers the braid and messenger wire.



Siamese — The same as the single, except two singles are attached by a PVC web.



Siamese Messengered — The same as the siamese, except a galvanized steel wire is integrally attached by a PVC web.

PART NUMBERS

Description	RG-59 Size	RG-6 Size	RG-11 Size
Single (Black)	2245	2260	2262
Single (Beige or White*)	2270	2291	----
Single Flooded	2274	2286	2282
Single Messengered (Black)	2247	2264	2266
Siamese (Black)	2248	2296	----
Siamese (Beige or White*)	2255	2256	----
Siamese Flooded	2252	2253	----
Siamese Messengered (Black)	2250	2284	----

- * Beige and white cables are not recommended for long term outdoor storage or installation.

PHYSICAL SPECIFICATIONS

	RG-59 Size	RG-6 Size	RG-11 Size
Dimensions			
Conductor	0.032 in	0.040 in	0.061 in
Dielectric	0.146 in	0.185 in	0.285 in
Sealed APA Tape First Outer			
Conductor	0.153 in	0.192 in	0.292 in
Aluminum Braid Second Outer			
Conductor	0.178 in	0.217 in	0.317 in
APA Tape Third Outer Conductor	0.182 in	0.221 in	0.321 in
Aluminum Braid Fourth Outer			
Conductor	0.207 in	0.246 in	0.346 in
Jacket	0.262 in	0.300 in	0.434 in
Messenger	0.051 in	0.051 in	0.109 in
Jacketed with Messenger	0.417 in	0.455 in	0.654 in
Siamese	0.569 in	0.645 in	
Messenger (Siamese)	0.072 in	0.072 in	
Siamese with Messenger	0.746 in	0.822 in	
Number of Braid Ends			
Second Outer Conductor	3	4	5
Fourth Outer Conductor	2	2	3
Cable Weight per 1000 ft			
Single	27 lb	34 lb	70 lb
Single Messengered	39 lb	46 lb	96 lb
Single Flooded	26 lb	32 lb	68 lb
Siamese	54 lb	68 lb	
Siamese Messengered	74 lb	88 lb	
Siamese Flooded	51 lb	65 lb	

ELECTRICAL SPECIFICATIONS

Attenuation at 68°F - dB per 100 ft.

Frequency MHz	RG-59 Size		RG-6 Size		RG-11 Size	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5	0.79	0.83	0.60	0.63	0.38	0.40
30	1.46	1.53	1.11	1.16	0.70	0.74
50	1.74	1.83	1.32	1.39	0.87	0.91
108	2.46	2.58	1.95	2.05	1.29	1.36
216	3.48	3.66	2.78	2.92	1.85	1.95
240	3.67	3.86	2.93	3.08	1.96	2.06
270	3.89	4.09	3.12	3.27	2.08	2.19
300	4.11	4.32	3.29	3.46	2.20	2.31
325	4.28	4.49	3.43	3.60	2.29	2.41
350	4.44	4.66	3.56	3.74	2.39	2.51
375	4.60	4.83	3.69	3.87	2.47	2.60
400	4.75	4.99	3.81	4.00	2.56	2.69
450	5.04	5.29	4.05	4.25	2.73	2.86
500	5.31	5.58	4.27	4.49	2.88	3.03
550	5.57	5.86	4.49	4.72	3.03	3.19
600	5.83	6.12	4.69	4.93	3.18	3.34

* 1% per 10°F Variance

Nominal DC Resistance (ohms per 1000 ft)	RG-59 Size	RG-6 Size	RG-11 Size
Loop	54.5	35.7	16.1
Center Conductor	48.2	30.4	12.1
Nominal Capacitance (pF per ft)			

TRANS USA CORPORATION

158 Tices Lane
 High View Industrial Park
 East Brunswick, NJ 088816
 (201) 254-3020 Telex 138-122

DISTRIBUTION AMPLIFIERS

Distribution amplifiers are designed to amplify signal voltage to overcome the inherent distribution system losses and provide adequate signal level to receiver.



EAGLE SERIES

Eagle series distribution amplifiers are designed mainly for CATV systems. It can handle 30 channels present simultaneously with no perceptible distortion. Ideal for multi outlet home or garden apartments which hook up to a CATV system or to a master antenna system.

EAGLE SERIES DISTRIBUTION AMPLIFIERS SPECIFICATIONS

Models	Band Width MHz	Gain dB	Max Output dBmV	Noise Figure dB	Impedance ohm	V.S.W.R Input and Output	Flatness dB
DA7508	50-400	8	52	7	75	1.5:1	± 0.5
DA7516	50-400	16	52	7	75	1.5:1	± 0.5
DA7524	50-400	24	52	7	75	1.5:1	± 0.5
DA7530	50-400	30	52	8	75	1.5:1	± 0.5
DA7508-4	50-400	1(4)	52	7	300	1.5:1	± 0.5

MATCHING TRANSFORMER

MODEL MT-101

75 to 300 ohm matching transformer — designed to handle the most difficult of direct pick-up problems.

SPECIFICATIONS

- Frequency Range: 5-450 MHz
- Insertion Loss: .5 dB max.
- Balance: 40 dB min.
- Return Loss: 18 dB min.
- Response: ±.25 dB max.
- Isolation: 1000V min.

FEATURES

- Heavy Duty Twin Lead
- Soldered and Crimped Lugs
- Brass Connector
- PC Board
- 3 Capacitors
- Metal Case with Plastic Cover



DISTRIBUTION AMP/ TRANSFORMERS/SPLITTER

MATCHING TRANSFORMER WITH FILTER

MODEL MT-102

Matching transformer with high pass filter — designed to block interference caused by C.B., Ham Radio, Two-way Communication, Industrial Equipment, Auto Ignition, X-ray, etc.

SPECIFICATIONS

- Frequency Range: 50-450 MHz
- Insertion Loss: .9 dB max.
- Balance Ratio: 30 dB min.
- Return Loss: 18 dB min.
- Cut-off Frequency: 50 MHz
- Filter Attenuation: 35 dB min. (5-35 MHz)

FEATURES

- Heavy Duty Twin Lead
- Soldered and Crimped Lugs
- Brass Connector
- P.C. Board
- Totally Shielded Housing



TF-7

TV FM SPLITTER

MODEL TF-7

TV/FM Splitter — designed to separate TV and FM signals. Eliminates the interference between FM and TV set.

SPECIFICATIONS

- Frequency Range: TV — 5-88 & 120-300 MHz;
FM — 88-110 MHz
- Insertion Loss: TV — .7 dB max.; FM — 3 dB max.
- FM Rejection on TV Output: 35 dB min.
- TV Rejection on FM Output: 25 dB at Ch. 2 and 7
- Return Loss: 18 dB min.

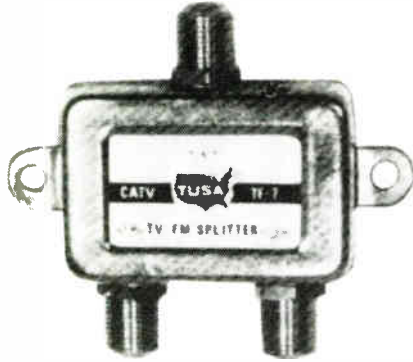
FEATURES

- Brass Connector
- Epoxy Sealing
- Chrome Plated

TRANS USA CORPORATION

158 Tices Lane
High View Industrial Park
East Brunswick, NJ 088816
(201) 254-3020 Telex 138-122

SPLITTERS



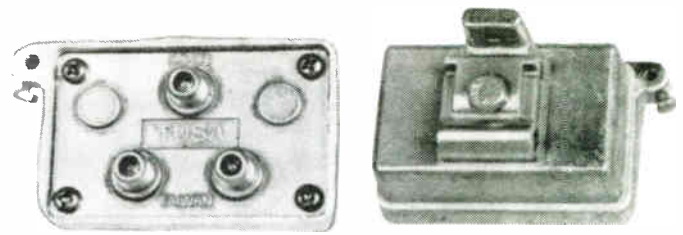
MODEL TF-7A

MODEL TF-7A TV FM SPLITTER

SPECIFICATIONS:

Frequency Range: 5-450 MHz
Insertion Loss: TV 0.5 dB max.
FM 4 dB max.
Isolation: TV-FM 120-150 MHz 22 dB min.
150-300 MHz 35 dB min.
300-450 MHz 30 dB min.
Impedance: 75 ohm

Same features as TF-7



MODEL OS-201

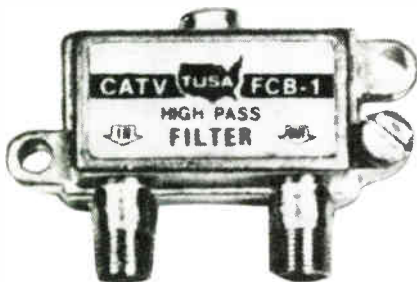
MODEL OS-201 OUTDOOR 2-WAY HYBRID SPLITTER

SPECIFICATIONS:

Bandwidth: 5-450 MHz
Insertion Loss: 3.2 dB max.
Frequency Response: $\pm .25$ dB
Isolation Between Output: 30 dB min.
Return Loss: 20 dB min.

FEATURES:

- Weatherproof and corrosion resistant die cast A-360 aluminum alloy housing
- Built-in grounding block
- Stand mounted or wall mounted
- Epoxy sealing

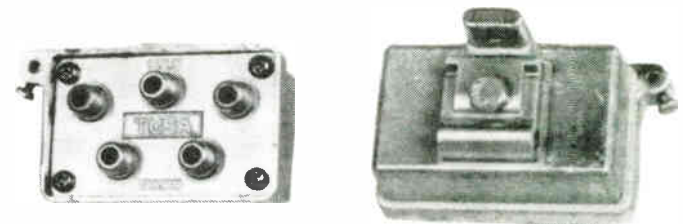


MODEL FCB-1

MODEL FCB-1 HIGH PASS FILTER

SPECIFICATIONS:

Frequency Range: 54-450 MHz
Cut Off Frequency: 50 MHz
Insertion Loss: 1 dB
Filter Feature: 35 dB
Impedance: 75 ohm



MODEL OS-401

MODEL OS-401 OUTDOOR 4-WAY HYBRID SPLITTER

SPECIFICATIONS:

Bandwidth: 5-450 MHz
Frequency Response: $\pm .25$ dB
Insertion Loss: 7 dB max.
Return Loss: 20 dB min.
Isolation: 30 dB min.

FEATURES:

- Weatherproof and corrosion resistant die cast A-360 aluminum alloy housing
- Built-in grounding block
- Stand mounted or wall mounted
- Epoxy sealing

TRANS USA CORPORATION

158 Tices Lane
High View Industrial Park
East Brunswick, NJ 088816
(201) 254-3020 Telex 138-122

SPLITTERS



SP-203



SP-204

2-WAY HYBRID SPLITTERS

MODELS SP-203, SP-204

Indoor 2-way hybrid splitters. Designed to divide signal into two, provide high isolation between outputs.

SPECIFICATIONS

Bandwidth: 5-450 MHz
Insertion Loss: 3.2 dB max.
Frequency Response: ± 25 dB
Isolation Between Output: 30 dB min.
Return Loss: 20 dB min.

FEATURES

- Totally Shielded Housing
- Brass Connector
- Epoxy Sealing



SP-301

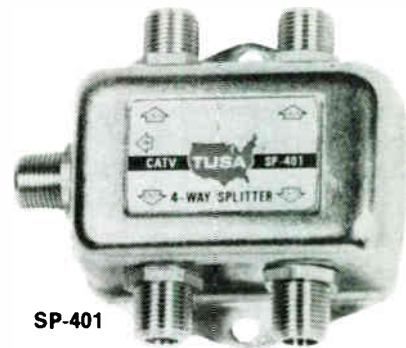
3, 4-WAY HYBRID SPLITTERS

MODELS SP-301, SP-401

3, 4-Way indoor hybrid splitters — to divide signal into 3, 4 outputs.

SPECIFICATIONS (SP-301)

Bandwidth: 5-450 MHz
Frequency Response: ± 25 dB
Insertion Loss: 3.5 dB max., 1 port; 7.0 dB max., 2 ports
Return Loss: 20 dB min.
Isolation: 30 dB min.



SP-401

SPECIFICATIONS (SP-401)

Bandwidth: 5-450 MHz
Frequency Response: ± 25 dB
Insertion Loss: 7 dB max.
Return Loss: 20 dB min.
Isolation: 30 dB min.

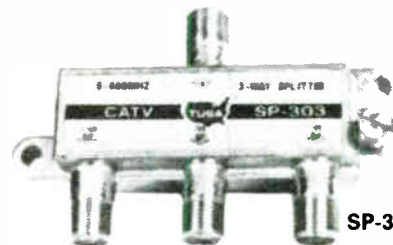
3, 4-WAY INDOOR/OUTDOOR HYBRID SPLITTERS

MODELS SP-303, SP-403

To divide signal into 3, 4 outputs.

FEATURES

- Nickel Plated Die Cast Housing
- Totally Weather Shielded
- Stainless Steel Bottom Plate
- Epoxy Sealing



SP-303

SPECIFICATIONS (SP-303)

Bandwidth: 5-450 MHz
Frequency Response: ± 25 dB
Insertion Loss: 3.5 dB max., 1 port
7.0 dB max., 2 ports
Return Loss: 20 dB min.
Isolation: 30 dB min.



SP-403

SPECIFICATIONS (SP-403)

Bandwidth: 5-450 MHz
Frequency Response: ± 25 dB
Insertion Loss: 7 dB max.
Return Loss: 20 dB min.
Isolation: 30 dB min.

TRANS USA CORPORATION

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High View Industrial Park
East Brunswick, NJ 088816
(201) 254-3020 Telex 138-122

SPLITTERS/TAPS



SP-201



SP-202

2-WAY HYBRID SPLITTERS

MODEL: SP-201, SP-202—

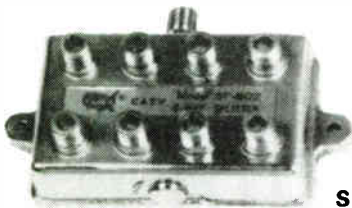
Indoor/Outdoor

SPECIFICATIONS

- Bandwidth: 5-450MHz
- Insertion loss: 3.2dB max.
- Frequency response: $\pm .25$ dB
- Isolation between output: 30dB min.
- Return loss: 20dB min.

FEATURES:

- Nickel plated die cast housing
- Built-in grounding block (SP-201)
- Totally weather shielded
- Stainless steel bottom plate
- Epoxy sealing



SP-802

8-WAY HYBRID SPLITTER

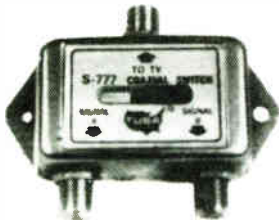
MODEL SP-802—Indoor/Outdoor

SPECIFICATIONS

- Bandwidth: 5-450MHz
- Frequency response: $\pm .25$ dB
- Insertion loss: 10dB
- Return loss: 20dB min.
- Isolation: 30dB min.

FEATURES

- Nickel plated die cast housing
- Totally weather shielded
- Stainless steel bottom plate
- Epoxy sealing



S-777



S-377

S-337

MODELS S-777, S-377, S-337

75 to 75 ohm and 75 to 300 ohm Coax Cable Switch

SPECIFICATIONS

- Frequency range
- Output impedance
- Input impedance
- Insertion loss
- Return loss
- Isolation

5-890 MHz		
S-777	S-377	S-337
75 ohm	75 ohm	300 ohm
75 ohm	75 ohm	75 ohm
75 ohm	300 ohm	300 ohm
0.2 dB	0.6 dB	0.6 dB
20 dB	20 dB	20 dB
60 dB	60 dB	60 dB

1-WAY DIRECTIONAL TAPS

FEATURES

- Brass connector
- Totally shielded housing
- Epoxy sealing
- Nickel plated



IT-10



IT-12

MODEL IT-10, IT-12

SPECIFICATIONS

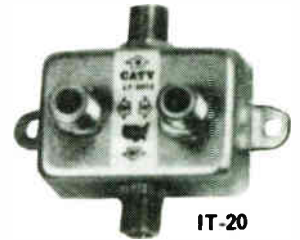
- Bandwidth: 1-450MHz
- Return loss: 20dB min.
- Isolation: 30dB min.

• Tap Values:	0.8	12	16	20	24	28	32	dB
• Insertion Loss:	1.0	0.7	0.5	0.4	0.4	0.4	0.4	dB

2-WAY DIRECTIONAL TAP

FEATURES

- Brass connector
- Totally shielded housing
- Chrome plated



IT-20

MODEL IT-20

SPECIFICATIONS

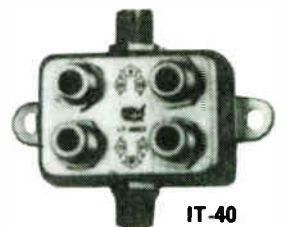
- Bandwidth: 1-450MHz
- Return loss: 20dB min.

• Tap Values:	0.8	12	16	20	24	28	32	dB
• Insertion Loss:	3.2	1.2	0.7	0.6	0.5	0.5	0.5	dB

4-WAY DIRECTIONAL TAP

FEATURES

- Brass connector
- Totally shielded housing
- Epoxy sealing
- Chrome plated



IT-40

MODEL IT-40

SPECIFICATIONS

- Bandwidth: 1-400MHz
- Return loss: 20dB min.

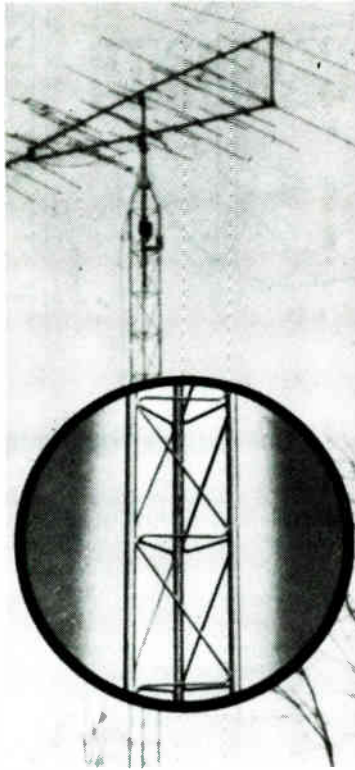
• Tap Values:	12	16	20	24	28	32	dB
• Insertion Loss:	3.5	1.5	0.75	0.5	0.5	0.5	dB

UNR-ROHN

DIVISION OF UNR, INC.

P.O. Box 2000
6718 West Plank Road
Peoria, IL 61656
(309) 697-4400 TWX 910-652-0646

TOWERS



ROHN NO. 25G TOWER

General Purpose Communication or Heavy-Duty TV Tower. The 25G will satisfy a tremendously wide range of tower needs.

Built on a 12-1/2" equilateral triangular design with continuous steel "zig-zag" cross-bracing entirely electric welded and fabricated in precision equipment. The 8 "zig-zag" braces per 10' section mean more than usual strength.

CONSTRUCTION

Unequalled Sturdiness...Extra heavy-duty 1-1/4" steel tubing is used for side rails, resulting in far greater strength and sturdiness than ordinarily found in this size tower. SUPERIOR STRENGTH.

FINISH

Famous ROHN Hot-Dip Galvanized long-life finish.

SPECIAL FEATURES

The No. 25G uses double-bolted joints...proven the best method of joining tower sections for sturdiness and dependability. The extra strength of the No. 25G allows it to be self-supporting provided a house bracket is used and can go 35 feet above this bracket under normal conditions. Under most guyed conditions the No. 25G is suitable to heights of 200 feet. Where special conditions or unusual antenna loading requirements must be met, we suggest you contact the Engineering Department for complete information. Assembly bolts and nuts are located within 1 leg of each tower section.

SELF-SUPPORTING HEIGHTS FOR 25G TOWER*

WIND LOAD	Factor of Safety—1.5		Factor of Safety—2.3	
	No. Ant.	2 Ft. ²	No. Ant.	2 Ft. ²
10.0 PSF (50 MPH)	72.4'	64.8'	58.4'	50.9'
14.4 PSF (60 MPH)	60.4'	52.9'	48.7'	41.3'
20.0 PSF (70.7 MPH)	51.3'	43.8'	41.4'	34.1**

*See Installation Instruction

**Recommended

#25 TOWER

Part Number	Wt.
25G	10' tower section 40
20BG	3' top section for use as home TV top section 6-1/2
25AG	9' top section for use as home TV top section 31
ST25AG	5' short top section for use as home TV top section 18
25AG1	Top section for use with communication antenna. Mast support tube is 1-1/4" galvanized pipe, threaded on top and projecting 12" above apex of side rails 31
25AG2	Top section for use with communication antenna. Mast support tube is 2-1/4" O.D. tubing, 36" total length, extending 18" above apex of side rails 31
25AG3	Top section for use with communication antenna. Mast support tube is 2-1/4" O.D. tubing, extending 12" above apex of side rails. A 2" O.D. antenna stub will fit snugly inside support tube 31
25AG4	8' top section for use with communication antenna. Upper end terminates in 11" dia. flat, circular plate with 2-1/4" dia. hole in center 31
25AG5	Top section for use with communication antenna. Mast support tube is 2-3/4" O.D. and 2-9/16" I.D. tubing, 18" total length 31
25TG	10' tapered base section 60
*25RG	10' insulator section for 25G tower (includes three #10470 post insulators) 74
25ACL	10' anti-climb section (for #25 and #20 towers) 115
25ACL3	3' anti-climb metal sheets for attaching to tower section 65
25JBK	Joint bolt kit 1/2
APL25G	Beacon plate 14
SB25G	3'4" short base section for concrete 10
*SBH25G	3'4" hinged short base section for concrete 14
*SDB25G	Single drive base 20
*BPC20G	Concrete Base Plate 13
*BPC25G	Concrete base plate 27
3/4X12PP	Pier pin (for BPC25G or 25TG—one required) 1
*BPH25G	Hinged base plate for concrete 21
1/2X12BB	Concrete base bolt with double nuts (for BPH25G—four required) 1/2
*FR25G	Flat roof mount 24
*PR25G	Peak roof mount 14
*BP25G	Base plate (for use with drive rods) 7
*DR25G	2' drive rods (set of 3) 6
DT25	Drive tool 1
RP25G	Rotor post 3
RP25GCM	Rotor post 2
AS25G	Accessory shelf. Triangular plate for mounting Ham "M" rotor or mast bearing. Mounts inside of tower. When using Model 400 Rotor, plate must be redrilled 4
GA25G	Guy assembly (bracket with torque bars) 10
GB25G	Guy bracket only 6
HB25AG	Adjustable house bracket (0 to 15") 6
HB25BG	Adjustable house bracket (0 to 24") 11
HB25CG	Adjustable house bracket (0 to 36") 17
HBU	Universal house bracket (6" to 30") 15
EB2525G	Eave bracket (universal) 7
TB50	Tower bushing for 25AG and ST25AG tops (1-1/4" I.D. x 2" O.D.) 1/2
TB75	Tower bushing for 25AG and ST25AG tops (1-1/2" I.D. x 2" O.D.) 1/2
AB	Amateur bearing for use with 25AG4 top (2" x 4" x 10" hardware) 1
TB3	Heavy duty thrust bearing, recommended for 2" O.D. tubing 2-1/2
TB4	Heavy duty thrust bearing, recommended for 3" O.D. tubing 3
BPL25G (Disc.)	Top plate with guy lugs for mounting AB or TB3 bearing 7
BAS25G	Bearing/accessory shelf section for mounting AB or TB3 bearing and rotor 18
UHF25G	Side arm mount for UHF and FM antennas 4
SA253UA	Side arm bracket for top antenna mounting alongside beacon (2-1/2" O.D. tubing, 36" total length) 15
SA25G67	67" side arm with 1-1/4" I.D. support tube for mounting TV receiving antenna (not recommended and must be guyed to resist twist) 25
TA25	Torque arm stabilizer assembly 35
25TDM2	Top dish mount w/2" O.D. mast (extends 2' above top plate) 34
25TDM2SP	Top dish mount w/2" standard pipe (extends 3' above top plate) 44
25TDM2EH	Top dish mount w/2" EH pipe (extends 3' above top plate) 53
25TDM25SP	Top dish mount w/2-1/2" standard pipe (extends 3' above top plate) 58
DM25G2	Face dish mount w/2" (2-3/8" O.D.) 5' long standard pipe 42
WP25G	Work platform (for #25 and #20 towers) 10
SR245	Safety ring 6
EF2545	Aluminum erection fixture, 12' long (fits all models with 1-1/4" side rails) 18
P2545	Pole only for EF2545 10
H2545	Head only for EF2545 6

*Towers mounted on these bases must be bracketed or guyed.

Part Number	Height
25G030BRKT	30' Complete Bracketed Tower
25G040BRKT	40' Complete Bracketed Tower
25G050BRKT	50' Complete Bracketed Tower
25G060BRKT	60' Complete Bracketed Tower
25G070BRKT	70' Complete Bracketed Tower
25G080BRKT	80' Complete Bracketed Tower

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ROHN® NO. 45 COMMUNICATION TOWER

This tower is an 18 inch triangular pattern suitable for heights to 300 feet with proper guying. A true multi-user tower.

DESIGN

ROHN No. 45 tower is designed in an 18 inch equilateral triangular pattern. The three legs of the tower are of heavy, 14 gauge, special quality steel. The cross bracing is the ROHN "zig-zag" design using a continuous, solid steel rod, electric welded to side rails every 15 inches. All sections are 10 feet in length.

USAGE

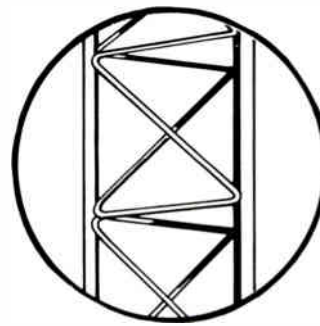
This tower is suitable for mounting communication antennas or other equipment under normal conditions for heights up to a maximum of 300 feet. See specification sheets for complete guying and wind load information.

#45 TOWER		Wt.
45G	10' tower section	70
45AG	9' top section	52
45AG1	Top section. Mast support tube is 1-1/4" galv. pipe, threaded on top and projecting 12" above apex of side rails	60
45AG2	Top section. Mast support tube is 2-3/8" O.D. tubing, 36" total length, extending 18" above apex of side rails	60
45AG3	Top section. Mast support tube is 2-1/4" O.D. tubing, extending 12" above apex of side rails. A 2" O.D. antenna stub will fit snugly inside support tube	60
45AG4	7' top section. Upper end terminates in flat, triangular plate with 3-1/8" dia. hole in center	52
45AG5	Top section. Mast support tube is 2-3/4" O.D. and 2-9/16" I.D. tubing, 18" total length	60
45TG	10' tapered base section	90
*45RG	10' insulator section for 45G tower (includes 3 #10470 insulators)	104
45ACL	10' anti-climb section	165
45ACL3	3 anti-climb metal sheets for attaching to tower section	100
5545G	20' adaptor section for joining 45G and 55G sections	160
45JBK	Joint bolt kit	3/4
APL45G	Beacon plate	17
SB45G	5' short base section for concrete	35
*BPC45G	Concrete base plate	39
3/4X12PP	Pier pin (for BPC45G or 45TG - one required)	1
*BPH45G	Hinged base plate for concrete	53
1/2X12BB	Concrete base bolt with double nuts (for BPH45G - four required)	1/2
*FR45G	Flat roof mount	34
AS455G	Accessory shelf. Plate for mounting Ham "M" rotor or mast bearing. Mounts inside of tower. When using Model 400 rotor, plate must be redrilled	8
GA45G	Guy assembly (bracket with torque bars)	20
GB45G	Guy bracket only	16
HBU	Universal house bracket (6" to 30")	15
TB50	Tower bushing for 45AG top (1-1/4" I.D. x 2" O.D.)	1/2
TB75	Tower bushing for 45AG top (1-1/2" I.D. x 2" O.D.)	1/2
AB	Amateur bearing for use with 45AG4 top (2" x 4" x 10" hardware)	1
TB3	Heavy duty thrust bearing, recommended for 2" O.D. tubing	2-1/2
TB4	Heavy duty thrust bearing, recommended for 3" O.D. tubing	3
BPL45G	Top plate with guy lugs for mounting AB, TB3 or TB4 bearing	17
SA253UA	Side arm assembly, 2-1/2' to 3' extension, with 2-1/4" support tube	28
SAB45G2	Discontinued (Replaced by SA253UA)	15
SA45G224	Discontinued (Replaced by SA253UA)	22
**TA45	Torque arm stabilizer assembly	56
*45TDM2	Top dish mount w/2" O.D. mast (extends 3' above top plate)	60
*45TDM2SP	Top dish mount w/2" standard pipe (extends 5' above top plate)	80
*45TDM2EH	Top dish mount w/2" EH pipe (extends 5' above top plate)	85
*45TDM25SP	Top dish mount w/2-1/2" standard pipe (extends 5' above top plate)	90
*45TDM25EH	Top dish mount w/2-1/2" EH pipe (extends 5' above top plate)	110
DM45G2	Face dish mount w/2" (2-3/8" O.D.) 5' long standard pipe	52
DM454	Face dish mount w/4" (4-1/2" O.D.) 5' long standard pipe	88
WP45G	Work platform	14
SR245	Safety ring	8
EF2545	Aluminum erection fixture, 12' long (fits all models with 1-1/4" side rails) (use to raise one 10' section at a time)	18
P2545	Pole only for EF2545	10
H2545	Head only for EF2545	8

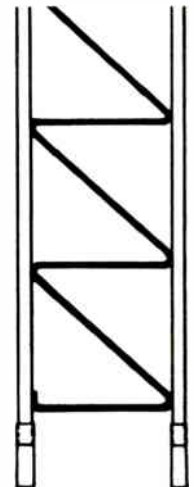
*Towers mounted on these bases must be bracketed or guyed.

**This item is not to be used without proper design consideration.

TOWERS



45



55

ROHN® NO. 55 COMMUNICATION TOWER

GENERAL USE

This tower lends itself to a wide variety of uses commonly encountered in the communications field. Adaptability to varying heights and loading requirements are two of the strong points for this model.

DESIGN

This tower was engineered to provide excellent strength in heights up to 400 ft. in a 30 lb. per sq. ft. wind load. When properly installed and guyed, this tower will support approximately 10 sq. ft. of antenna. Because of this rugged design the No. 55 tower satisfies a broad range of communication uses, particularly where unusual wind loading and height requirements exist.

CONSTRUCTION

Constructed on an 18-1/2" equilateral triangle pattern, utilizing 1-1/2" high-strength tubing for the side rails. The "zig-zag" cross bracing is formed from a continuous 7/16" solid steel rod electrically welded every 15-3/4" on the side rails. Each 10' section is sleeve joined to the other and double bolted to provide superior strength.

#55 TOWER		Wt.
55G	10' tower section	100
55TG	10' tapered base section	158
*55ACL	10' welded anti-climb section	185
*55ACL3	3 anti-climb metal sheets for attaching to tower section	100
5545G	20' adaptor section for joining 45G and 55G sections	166
55JBK	Joint bolt kit	1
APL55G	Beacon plate	18
SB55G	5' short base section for concrete	45
BPC55G	Concrete base plate	40
3/4X12PP	Pier pin (for BPC55G or 55TG - one required)	1
GA55G	Guy assembly (bracket with torque bars)	28
GB55G	Guy bracket only	19
*BPL55G	Top plate with guy lugs for mounting AB, TB3 or TB4 bearing	25
*AB	Amateur bearing for use with appropriate top (2" x 4" x 10" hardware)	1
*TB3	Heavy duty thrust bearing, recommended for 2" O.D. tubing	2-1/2
*TB4	Heavy duty thrust bearing, recommended for 3" O.D. tubing	3
*SA253UA	Side arm assembly, 2-1/2' to 3' extension, with 2-1/4" O.D. support tube	28
TA55	Torque arm stabilizer assembly	60
*55TDM2	Top dish mount w/2" O.D. mast (extends 3' above top plate)	60
*55TDM2SP	Top dish mount w/2" standard pipe (extends 5' above top plate)	80
*55TDM2EH	Top dish mount w/2" EH pipe (extends 5' above top plate)	90
*55TDM25SP	Top dish mount w/2-1/2" standard pipe (extends 5' above top plate)	95
*55TDM25EH	Top dish mount w/2-1/2" EH pipe (extends 5' above top plate)	110
DM55G2	Side face dish mount w/2" (2-3/8" O.D.) 5' long standard pipe	46
DM554	Side face dish mount w/4" (4-1/2" O.D.) 5' long standard pipe	69
EF5565	16' aluminum erection fixture for #55 or 10' #65 sections	70
EF6520	16' heavy duty aluminum erection fixture for #55 or 20' #65 sections	100
EF6520RH	Erection fixture (same as above) with rotating head	115
SR55	Safety ring	10
WP55G	Work platform	15

Note: Erection fixtures should be used to raise one 10' or 20' section at a time.

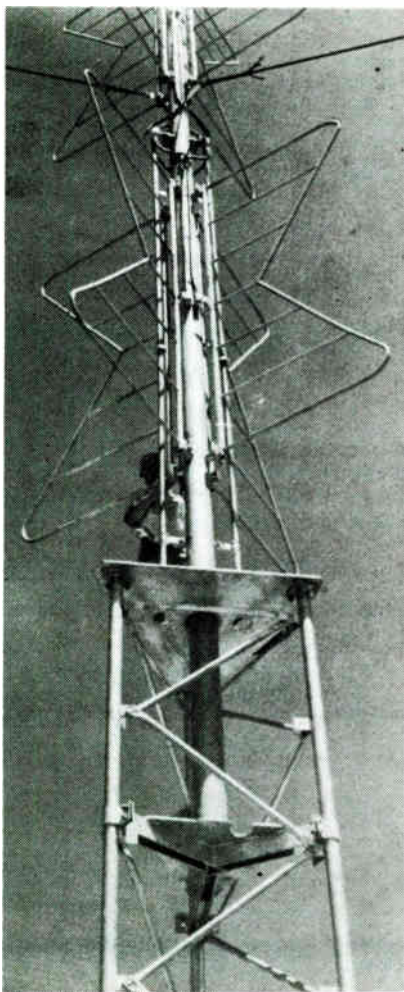
*This item is not to be used without proper design consideration.

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TOWERS



ROHN NO. 80 COMMUNICATION TOWER

This tower is designed specifically for microwave installations, heavy duty communications, TV and FM broadcast and meteorological equipment installations.

CONSTRUCTION

The No. 80 tower is constructed in an equilateral triangular pattern with steel legs and crossbracing in a pattern as indicated by the insert. The triangular size is 41" on leg centers and the diameter of the tower legs vary to meet the requirements of the installation. This feature permits considerable flexibility in supplying a tower tailored to specifically meet and adequately handle the equipment to be installed. Cross-bracing is of tubular steel with bolted construction.

FINISH

All components of this tower are completely hot dip galvanized after fabrication to protect all areas of the tower. A minimum of 2 ounces of zinc of square feet of surface is applied throughout including bolts.

RATING

This tower is rated for installation up to 800 feet using variable size and weight of tubular steel components. Each tower is individually engineered to handle a particular job.

#80 TOWER

Part Number		Wt.
83P	20' standard tower section	435
83PH	20' standard tower section	520
84	20' standard tower section	565
84H	20' standard tower section	685
845H	20' standard tower section	715
85	20' standard tower section	730
85H	20' standard tower section	900
83PX	20' X-braced tower section	560
83PHX	20' X-braced tower section	640
84X	20' X-braced tower section	680
84XTA	20' X-braced tower section (for use with TA80H)	1110
84HX	20' X-braced tower section	800
84HXTA	20' X-braced tower section (for use with TA80H)	1230
84HXTA3	3' extension for 84HXTA tower section	225
845HX	20' 84HX transition section with 85 feet	830
85X	20' X-braced tower section	845
85HX	20' X-braced tower section	1015
84HC	15' standard tower section	545
84HXC	15' X-braced tower section	620
83ACL	Anti-climb panels	595
84ACL	Anti-climb panels	600
80TB	5' welded tapered base section	390
85TB	5' welded tapered base section	465
80TBKD	5' knocked down tapered base section	400
80TBI	5' welded tapered base section (drilled to fit base insulator)	360
85TBI	5' welded tapered base section (drilled to fit base insulator)	450
80TBKDI	5' knocked down tapered base section (drilled to fit base insulator)	525
3/4 X 16BB	Concrete base bolt with double nuts (12 required)	1-1/2
15/16 X 16PP	Pier pin for tapered bases (one required)	3
DP80A	Drainage plates (set of 3)	20
DP85A	Drainage plates (set of 3)	44
GA80	Guy assembly (bracket with torque bars)	115
GA85	Guy assembly (bracket with torque bars)	140
*TA838	8" channel type torque arm (7-1/2')	335
*TA8310	10" channel type torque arm (7-1/2')	420
*TA8312	12" channel type torque arm (7-1/2')	580
*TA848	8" channel type torque arm (7-1/2')	340
*TA8410	10" channel type torque arm (7-1/2')	425
*TA8412	12" channel type torque arm (7-1/2')	585
*TA858	8" channel type torque arm (7-1/2')	345
*TA8510	10" channel type torque arm (7-1/2')	430
*TA8512	12" channel type torque arm (7-1/2')	595
*TA80H	Heavy duty microwave torque arm (15')	740
*TA85H	Heavy duty microwave torque arm (15')	745
*DM80F	Dish mount, face mounted, with 4" (4-1/2" O.D.) 5' long pipe	200
*DM80FTBC	Dish mount (same as above) with tie back clips	205
*DM80FTBT	Dish mount (same as above) with tie back tube	265
APL83M	Beacon plate for inside or outside tower (for sections 83P and 83PH)	50
APL84M	Beacon plate for inside or outside tower (for sections 84 and 84H)	50
APL85M	Beacon plate for inside or outside tower (for sections 85 and 85H)	50
APL6A	Beacon plate (leg mounted) and two cap plates with nuts and bolts (for sections 83P, 83PH, 84 and 84H)	20
APL7A	Beacon plate (leg mounted) and two cap plates with nuts and bolts (for sections 85 and 85H)	24
CP6A	Cap plates (set of 3 w/nuts and bolts) for sections 83P, 83PH, 84 and 84H)	7
CP7A	Cap plates (set of 3 w/nuts and bolts) for sections 85 and 85H)	11
L80	Ladder, standard, leg mounted—10' or 20' sections	4/ft.
L80H	Ladder, heavy, leg mounted—10' or 20' sections	8/ft.
L80F	Ladder, standard, face mounted—10' or 20' sections	4/ft.
L80FH	Ladder, heavy, face mounted—10' or 20' sections	8/ft.
L80IF	Ladder, standard, inside corner mounted—20' sections	4/ft.
L80IFH	Ladder, heavy, inside corner mounted—20' sections	8/ft.
S80	Step bolts, one leg	1/ft.
SOL80H	Ladder step-off assembly for bypassing heavy duty torque arm, consisting of two platforms and 30' face mounted standard ladder	213
SOH80H	Ladder step-off assembly for bypassing heavy duty torque arm, consisting of two platforms and 30' face mounted heavy ladder	331
SM80	Shims (set of 15)	
SM85	Shims (set of 15)	
	For heavy 1/8" braces on standard sections	add 90/ wt.
	For heavy 1/8" braces on X-braced sections	add 180/ wt.

*This item is not to be used without proper design consideration.

Prices and Specifications Subject to Change Without Notice.

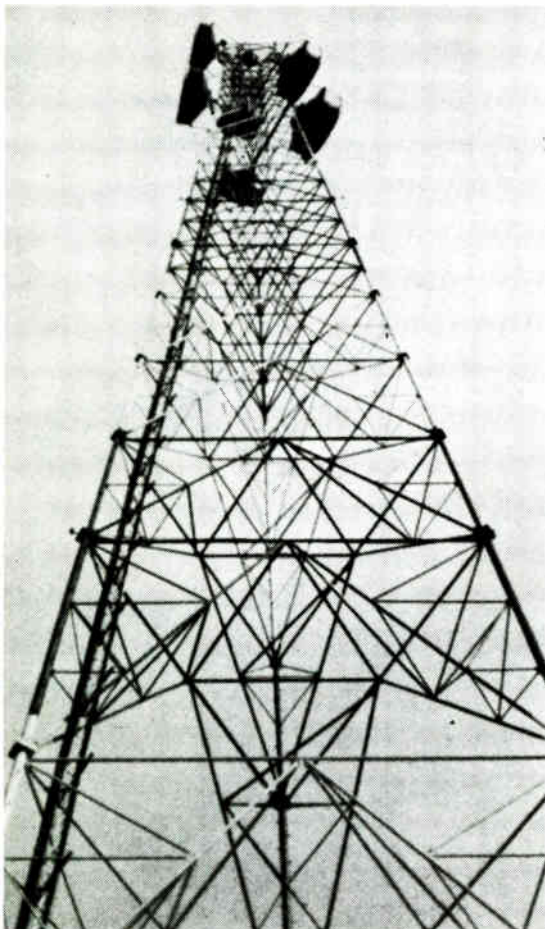
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6718 West Plank Road
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(309) 697-4400 TWX 910-652-0646

TOWERS



SSV SELF-SUPPORTING COMMUNICATION TOWERS

- Designed for a minimum wind load of 30 psf. Towers requiring higher wind or ice loads are no problem due to the tower's amazing versatility.
- Standard designs available in heights to 500 feet depending on loading. Special towers available depending on specific requirements.
- The SSV series make use of primarily knock-down construction for on-site assembly, which reduces shipping costs.
- Towers for minimal loadings are available in welded construction in heights up to 60 feet, shipped in 20 foot sections.
- All components and hardware are Hot Dip Galvanized after fabrication with a zinc coating per E.I.A. Standards.
- All ROHN SSV series towers are engineered, designed and fabricated to meet or exceed latest E.I.A. specifications.

SELF-SUPPORTING TOWER SSVN SERIES

Part Number		Wt.
Standard Welded Tower Sections		
1W	18' straight section	116
1WB	10' straight section	65
2W	20' tapered section	160
2WB	10' straight section	90
2WST	20' straight section	190
3WN	20' tapered section	230
3WNB	10' straight section	125
3WNST	20' straight section	250

Standard Knock Down (Tapered) Tower Sections

4N	20' section	435
5N	20' section	540
6N	20' section	480
7N	20' section	545
8N	20' section	700
9N	20' section	720
10N	20' section	830
11N	20' section	1410

Lugs for step bolts welded to one leg of section included in prices—
approx. 15" spacing

12N	20' section	1515
13N	20' section	1700
14N	20' section	2470
15N	20' section	3155
16N	20' section	3305

Lugs for step bolts welded to all 3 legs of section included in prices—
approx. 15" spacing

Standard Knock Down (Straight) Tower Sections

4NB	10' section	250
4NST	20' section	480
5NB	10' section	300
5NST	20' section	590
6NST	20' section	530
7NST	20' section	605
8NST	20' section	795
9NST	20' section	935
10NST	20' section	1110
11NST	20' section	1745

Lugs for step bolts welded to one leg of section included in prices—
approx. 15" spacing

Heavy Duty Knock Down (Tapered) Tower Sections

6N	20' section	480
7N	20' section	545
8N	20' section	700
9NH	20' section	840
10NH	20' section	945
11N	20' section	1410

Lugs for step bolts welded to one leg of section included in prices—
approx. 15" spacing

12NH	20' section	1730
13NH	20' section	1960
14NH	20' section	2735
15NH	20' section	3530
16NH	20' section	3680

Lugs for step bolts welded to all 3 legs of section included in prices—
approx. 15" spacing

Heavy Duty Knock Down (Straight) Tower Sections

6NST	20' section	530
7NST	20' section	605
8NST	20' section	795
9NHST	20' section	1045
10NHST	20' section	1220
11NST	20' section	1745

Lugs for step bolts welded to one leg of section included in prices—
approx. 15" spacing

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TOWERS

SSV CONTINUED



SSV SELF SUPPORTING TOWER

Anchor Bolts for Standard and Heavy Duty Sections

Part Number	Wt.
Individual Anchor Bolts (12 required per tower)	
3/8X18AB For sections 1 and 2	3/4
1/2X24AB For section 3	1-1/2
5/8X30AB For sections 4, 5, 6, 7, 8 and 9	3
3/4X36AB For section 10	5-1/2
7/8X42AB For sections 11, 12 and 13	9
1X48AB For sections 14, 15N and 16N	13
1X72AB For sections 15NH and 16NH	18

Anchor Bolt Assemblies

6NAB For sections 6N, 7N, 8N, 9N and 9NH (consists of 12-5/8X30AB w/templates)	45
10NAB For sections 10N and 10NH (consists of 12 - 3/4X36AB w/templates)	70
11NAB For sections 11N, 12N, 12NH, 13N and 13NH (consists of 12 - 7/8X42 w/templates)	120
14NAB For sections 14N, 14NH, 15N and 16N (consists of 12 - 1X48AB w/templates)	165
15NHAB For sections 15NH and 16NH (consists of 12 - 1X72AB w/templates)	225

Accessories for Standard and Heavy Duty Sections

	WT.
Tapered Tops	
1TT For sections 1W, 1WB or 2W	18
3TT For sections 2WB, 2WST or 3WN	20
4TTN For sections 3WNB, 3WNST or 4N	21
5TTN For sections 4NB, 4NST or 5N	23
6TT For sections 5NB, 5NST or 6N	25
4' Short Base Sections	
SB2 For section 2W	45
SB3 For section 3WN	65
SB4 For section 4N	80
SB5 For section 5N	105

Beacon Plates and Cap Plates

APL1W2WA Beacon plate for section 1W or 2W	26
APL3WNA Beacon plate for section 3WN	23
APL4A Beacon plate for section 4N	13
APL4HA Beacon plate and two cap plates for sections 5N or 6N	15
APL5A Beacon plate and two cap plates for sections 7N, 8N, 9N or 10N	15
APL6A Beacon plate and two cap plates for section 11N	16
APL7A Beacon plate and two cap plates for sections 12N, 13N or 14N	17
CP4A Cap plates (set of 3 w/nuts and bolts) for section 6N	15
CP5A Cap plates (set of 3 w/nuts and bolts) for sections 7N, 8N, 9N or 10N	15
CP6A Cap plates (set of 3 w/nuts and bolts) for section 11N	15
CP7A Cap plates (set of 3 w/nuts and bolts) for sections 12N, 13N or 14N	15
BCA5A Beacon plate, cap plate and antenna support tube for sections 6NST, 7N, 8N, 9N or 10N	36
BCA6A Beacon plate, cap plate and antenna support tube for section 11N	37
BCA7A Beacon plate, cap plate and antenna support tube for sections 12N, 13N or 14N	39

Side Arm Brackets for Top Antenna Mounting Alongside Beacon

SAB1W For section 1W	15
SAB2W For section 2W	15
SAB3WN For section 3WN	15
SAB45N For sections 4N or 5N	15
SA32PL For sections 6 and 7	100
SA325PL For sections 8, 9 and 10	100
SA33PL For section 11	100

Type 1W Side Arm Booms for SSVN Sections**

SSV256B 6' boom for sections 2 through 5	61
SSV259B 9' boom for sections 2 through 5	81
SSV66B 6' boom for section 6	69
SSV679B 9' boom for sections 6 and 7	89
SSV6712B 12' boom for sections 6 and 7	110
SSV715B 15' boom for section 7	133
SSV89B 9' boom for section 8	92
SSV8912B 12' boom for sections 8 and 9	113
SSV891015B 15' boom for sections 8, 9 and 10	136
SSV91018B 18' boom for sections 9 and 10	147

**Boom lengths mentioned above are the total length of the boom. Each boom includes an antenna mast kit w/2" (2-3/8" O.D.) 3' long standard pipe and hardware, plus kit w/hardware for mounting boom to required section. NOTE: Total required boom length is determined by section number, section width at mounting elevation and amount of the boom needed as side arm to extend beyond face of tower on one side. (See appropriate drawings for face widths of tower sections and Dwg. C-710348 for boom installation information).

Miscellaneous

LSSVN Ladder, leg mounted	4/ft.
LSSVNIX Ladder, inside corner mounted, for X-braced sections 7NST through 16	8/ft.
DMSSL Leg dish mount w/4" (4-1/2" O.D.) 5' long standard pipe	135
DMSSLTB Leg dish mount (same as above) with tie back clips	150
RMBSS Reflector mount (for leg mounting)	130
EFSSV Erection fixture, 16' long (for use w/sections 2 through 10 only)	90
EFSSVRH Erection fixture (same as above) with rotating head	100

NOTE: Erection fixtures should be used to raise 10' or 20' sections only (one section at a time).

WAVETEK CORP.

9191 Tower Centre Drive
San Diego, CA 92122
(619) 450-9971

TEST EQUIPMENT



TVRO/BENCH SWEEP SYSTEM MODEL 1084

Model 1084 is an economical sweep generator that features simple operation, 1% display linearity, and digital readout.

Versatile Testing With Adjustable Bandwidths From 200kHz to 1GHz
Model 1084 has three operating modes (CW, ΔF , and Full Sweep) to facilitate both broadband and narrowband measurements. In the CW mode, frequency is selected by the frequency control and is displayed by the frequency indicator with 1MHz resolution. In the ΔF mode, center frequency is selected by the frequency control and sweep width is controlled by a 100MHz step selector and 100MHz vernier. In the Full Sweep mode, the instrument sweeps from 3.5 to 4.5GHz. The marker frequency is identified by the four-digit vacuum fluorescent display.

Test Made Simple At Any Sweep Rate

Simple pushbutton control of the sweep characteristics of Model 1084 is achieved through the use of digital front-panel circuitry.

The instrument is equipped with two sweep modes and three sweep rates. The single sweep mode, which is manually initiated by the trigger button, enables the unit to sweep through a single cycle. The recur mode allows the unit to automatically sweep through continuously repeating cycles. Sweep time is continuously variable from 0.01 to 100 sec. sweep. Additionally, a line-locked sweep rate may be selected (sweep time equals one-half line period).

Accurate Frequency Location

Wavetek's Model 1084 includes a built-in marker system to aid in simple location of frequency and sweep width. Birdy bypass markers with frequencies of 1, 10, and 100MHz located harmonically through the spectrum are tools for the operator to accurately locate any given frequency with 1MHz resolution. This crystal-controlled system eliminates guessing or the need for calibrated external marker inputs except for those measurements requiring identification of specific frequencies with resolutions better than 1MHz. An external marker input is provided and is controlled via an external frequency source for those applications.

Power Level Accurately Displayed

For compatibility with both small signal and medium-power testing, the unit has an output level of +13dBm and is continuously adjustable to -60dBm. Output level is read from a three-digit vacuum fluorescent display with .1dBm resolution. Additionally, the instrument's level system has a 10dB/step attenuator for coarse level settings, and an 11dB vernier which utilizes an electronic P.I.N. diode attenuator. This enables the user to finely adjust signal level for extremely accurate measurements.

System Level Correction

Inaccuracies found in test setups caused by high-frequency rolloff of system components, such as adaptors, cables or "lossy" connectors, can be compensated for via the slope control on the rear panel of the instrument. Simply connect all system components except for the device under test. Look at the detected response of the network and adjust the slope control ($\pm 1\text{dB/GHz}$) to compensate for inherent system errors which typically result in undesirable high-frequency rolloff. Then insert the device under test in the setup. Absolute gain or loss measurements can now be made.

Signal Generator Measurements Possible

In many communications systems, the sweep test at some point loses its effectiveness and signal generators take over where the sweep generator leaves off. Model 1084 Sweep Generator not only is a cost-effective sweep source, but, through a very simple interface to a phase-locking counter, can take up the slack in system testing and replace a signal generator for some measurements. This makes it unnecessary to purchase two RF sources and reduces the chance of error caused by testing the same device with signals of differing purity. Thus, the system not only has phase-locking capabilities, but can also adapt the instrument to the IEEE-488 bus.

SPECIFICATIONS MODEL 1084

FREQUENCY	
Range	3.5 to 4.5 GHz
Sweep Width	ΔF 500 kHz to 1000 MHz Full Sweep 3.5 to 4.5 GHz
Readout	3 1/2 digit LED
Resolution	1 MHz
Operating Modes	CW, ΔF , and Full Sweep
Accuracy	CW, Center Frequency of ΔF , and Variable marker, ± 10 MHz Frequency accuracy can be improved to ± 1 MHz at a specific frequency Sweep width at 100 MHz intervals ± 10 MHz
Display Linearity	1% at maximum sweep width
Drift	< 800 kHz for 10 minutes <i>NOTE: At a constant temperature after 1 hour warm up</i>
RF OUTPUT	
Impedance	50 Ω
Output Connector	Type N
Power Level Range	+13 to -60 dBm (50 Ω)
Attenuation	Continuously adjustable in 10 dB steps with a 11 dB vernier. Output level is displayed on a 3 digit readout with 0.1 dB resolution
Accuracy	Step attenuator $\pm (0.3 \text{ dB} + 1\% \text{ of attenuation})$ Vernier attenuation $\pm 0.5 \text{ dB}$
Output Flatness	$\pm 0.5 \text{ dB}$
SPECTRAL PURITY	
Harmonic Output	> 30 dBc
Nonharmonics	Non-detectable
Residual FM (CW Mode)	< 10 kHz peak
SWEEP CHARACTERISTICS	
Sweep Modes Recurring and single sweep	
Sweep Time	
Fast	0.010 to 1 sec (typical)
Slow	1 to 100 sec (typical)
Line	$\sim 1/2$ of AC line period
Horizontal Output	0 to 10 volts Impedance 1000 Ω
Blanking	RF output is blanked during sweep retrace

MARKER SYSTEM

RF Markers	Birdy bypass marker system is controlled by front-panel switch which provides selection of harmonic markers in these combinations 100 MHz only, 100 MHz and 10 MHz, or 100 MHz, 10 MHz, & 1 MHz
Accuracy	0.005%
Width	Adjustable from approximately 100 to 500 kHz
Amplitude	Adjustable from approximately 1 mV to 1.5V p-p
Variable Marker (Full Sweep Mode Only)	
	The 10-turn potentiometer and 3 1/2 digit frequency display function as variable marker. The marker produces a bright spot on the display by momentarily delaying the sweep ramp for approximately 2 msec. Accuracy is ± 10 MHz

REMOTE PROGRAMMING

Frequency	Rear-panel jack permits remote control of center frequency, sweep width and external frequency modulation
Level	Rear-panel jack permits external control of RF output level over greater than 10 dB range
Trigger	TTL input, during high to low transition Also, by contact closure to ground

OUTPUTS

Pen Lift	Contact closure during sweep
Blanking	-15V during sweep +15V during retrace
Sweep	0 to 10V
Reference	Output of 1W/100 MHz
Power Supply	+18V, -18V, and common. External current limited to 10 mA

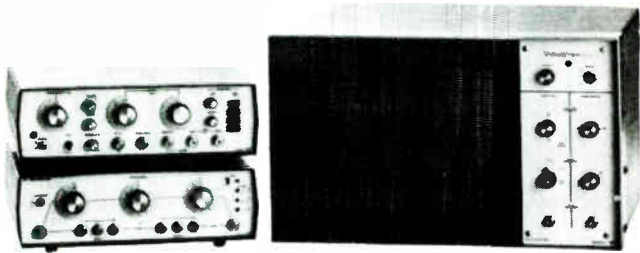
GENERAL

Dimensions	28.6 cm (11 1/4 in.) wide, 13.3 cm (5 1/4 in.) high, 26.7 cm (10 1/2 in.) deep
Weight	4.9 kg (10 3/4 lb.) net, 6.8 kg (15 lb.) shipping
Power	90 to 110V, 105 to 125V, 190 to 220V, or 210 to 250V, 50 to 400 Hz, approximately 35 watts.

WAVETEK CORP.

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(619) 450-9971

TEST EQUIPMENT

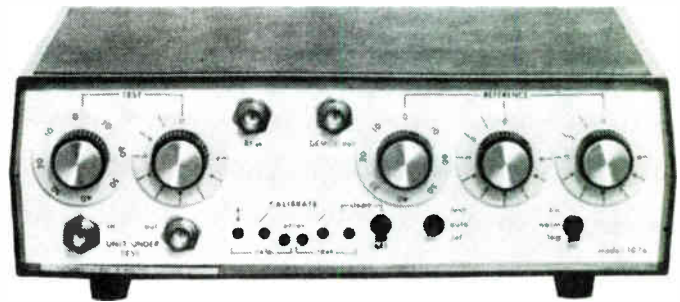


MODELS 1067/1075/1801-B 1 to 500 MHz BENCH SWEEP SYSTEM

A complete system is available for sweep testing amplifiers, filters, and passives. With a good sweep system you can maintain your system components and avoid lengthy factory repair cycles. A Bench Sweep System also permits you to check components before they are installed in your system.

A Bench Sweep system is comprised of a sweep and marker generator, a comparator, and an oscilloscope. The WAVETEK 400 MHz system offers you a choice of the Basic Model 1067 Sweep Generator or the more flexible Model 1801B Laboratory Style Sweeper. The sweeper is used in conjunction with the Model 1075 Comparator and the 1901C Large Screen Oscilloscope. The sweep generators both contain built-in marker generator systems, and can be purchased separately for use with existing scopes or comparators.

The Sweep Generator Comparator system can also be purchased for use with your own oscilloscope.



MODEL 1076 SWEEP COMPARATOR

The Model 1076 Sweep Comparator allows easy, accurate measurement of frequency response characteristics of 75-ohm amplifiers and passive devices, by simultaneously displaying the input and output of the device on an oscilloscope screen. Calibrated attenuators allow the traces to be superimposed, permitting measurement of gain or loss at any frequency. A logarithmic detector allows measurement of return loss to 40 dB, using a bridge.

The 1076 is used in conjunction with a sweep generator, which provides RF, markers, and DC power. Frequency response of the 1076 is 1 to 1000 MHz. Gain may be measured to 79.9 dB on 0.1 dB steps; loss is measurable to at least 65 dB.

The sweep is switched alternately between the reference channel and the channel containing the unit under test. The reference channel is closely matched to the test channel, including the length of the cables connecting to the unit under test, so that the only difference between the channels is the presence of the unit under test. Gain is measured by attenuating the test channel until the traces match; loss is measured by attenuating the reference channel. An RF post amplifier drives the internal detector. The detector output may be shaped to provide logarithmic or quasi-linear response.

The 1076 plugs directly into the Wavetek Models 1067, 1067-522, 1801B, and 1081.

SPECIFICATIONS MODEL 1067

RF SPECIFICATIONS		Sweep Time	Continuously variable from less than 0.5 Hz to more than 60 Hz
Frequency Range	1 to 400 MHz (1 to 500 MHz optional)	Horizontal Output	10V p-p triangular waveform symmetrical about ground
Dial Calibration	50 MHz intervals (frequency vernier included)	MARKER SYSTEM	
Accuracy in CW Mode (at 25 °C)	5% of full sweep	RF Markers	Fuse and Birdy-type markers are provided by plug-in "A" Option. Six sockets are provided for these options. Birdy marker modules use one socket, pulse markers use two
Sweep Width	200 kHz to 400 MHz w/log taper continuously adjustable	Accuracy	Pulse 0.02% (at leading edge) Birdy 0.005% (at center)
Display Linearity	2%	Width	Pulse 80 us Birdy adjustable, 100 to 400 kHz
Spurious Signals		Amplitude	Adjustable approximately from 2mVpp to 2Vpp
Fundamental	(10 to 400 MHz)	REMOTE PROGRAMMING	
Harmonic	-30 dB below output	A rear-panel connector is provided for remote control of frequency, sweep width and the 20 dB vernier level control. The connections can also be used to provide external AM or FM. Also provided is access to ±18 V (30 mA), blanking and scope horizontal signals to drive the Model 1075 Comparator	
Nonharmonic	30 dB below output	MECHANICAL	
Residual FM (CW mode)	less than 20 kHz	Dimensions	28.6 cm (11 1/4 in.) wide, 10.2 cm (4 in.) high, 26.7 cm (10 1/2 in.) deep
Stability	100 kHz/5 minutes - 2 MHz/8 hours (after 1/2 hour warm-up at constant temperature and allowing a 5 minute stabilizing period after a frequency change)	Weight	3.7 kg (8.25 lbs.) net, approximately 5.5 kg (12 lbs.) shipping
Blanking	Retrace blanking of the RF output provided for sweep operation. Removed for CW operation.	Power	115 or 230 VAC ±10%, 50 to 60 Hz, 25 VA max
Impedance	75 ohms (50 ohms available at no extra cost)	ENVIRONMENTAL	
Output Amplitude (Max)	+10 dBmV	Specifications apply at 25 °C ± 5 °C. Instrument will operate from 0 °C to 50 °C	
Level Calibration	50 dB in 10 dB steps, vernier with +7 to -7 dBmV calibrated in 1 dB intervals		
Accuracy			
Vernier	±1.0 dB		
Step Attenuator	±0.2 dB/10 dB step		
Output Flatness	±0.25 dB (Measured with Wavetek D171 detector and includes an AC-DC block (100 V max.) in RF output line)		
Output Connector	Type F		

SWEEP SPECIFICATIONS

Sweep Modes: Repetitive sweep, single sweep, externally triggered sweep, line-locked sweep

SPECIFICATIONS MODEL 1076

Frequency	1 to 1000 MHz
Gain Measurement Range	79.9 dB in 0.1 dB steps.
Loss Measurement Range	65 dB minimum with 1 millivolt/div. oscilloscope.
Impedance	75-ohm.
Connectors	75-ohm BNC.
Error Display (LEDS)	Excess sweep input will overload internal RF Post Amplifier.
DEMODO Out	Low impedance, 5000 Ohms nominal 0.5 to 0.7 volt, positive.
Scope Display	Linear, normal and log (30 dB).
Power	Supplied by associated sweep generator.
Balance Adjustment Range	±1 dB level; ±1 dB slope
GAIN/LOSS ACCURACY	
	Error - dB
Balance Ref. to Test	2-500 MHz ±0.05 1-1000 MHz ±0.15
0.1 dB attenuator	±0.1 ±0.2
1 dB attenuator	±0.2 ±0.25
10 dB attenuator	±0.5 ±1
Maximum error	±0.85 dB ±1.60 dB

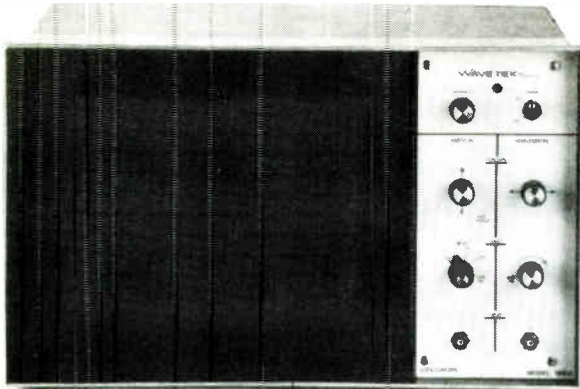
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VRF-171

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TEST EQUIPMENT



1901C

MODEL 1901C, 12-INCH MODEL 1905, 9-INCH DISPLAY SCOPES

MODEL 1901C

The 1901C Display Scope is designed to display sweep system responses. It is an excellent display for Bench Sweep Systems as well as set Top Converter Sweep Displays. The large 12" display lets you easily see amplifier responses over wide 300 to 400 MHz sweep ranges. This dedicated display (no internal sweep) is available with P-7 phosphor as well as the standard P-1. This unit also has an automatic blanking circuit preventing phosphor damage by blanking the CRT when the horizontal input is removed.

SPECIAL MARKER DISPLAY

The 1901C has a Z axis modulation circuit that is designed to accept standard Birdy Markers and produce pinball (bright spot) markers on the sweep display. This is extremely useful when using a variety of markers such as those available with the 1402A converter sweeper. It also is easier to identify markers on the steep response of traps or other pass band type responses.

STABLE DISPLAY

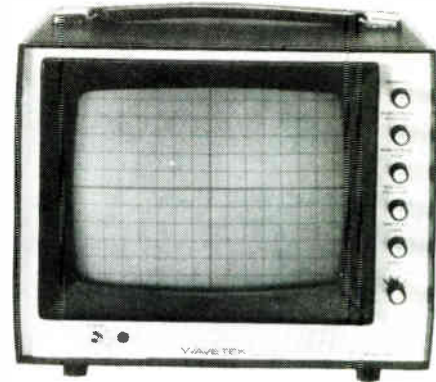
The 1901C provides a very stable display. After a half hour warm-up, the trace will drift less than a half division in an eight hour period. This eliminates annoying trace repositioning while working on amplifiers or converters for an extended period of time.

OPTIONS

- A:** P-4 medium short persistence phosphor (white).
- B:** P-7 Long persistence phosphor.
- C:** Clear faceplate (instead of grid).
- D:** Amber faceplate (normally used with P-7 Phosphor) without grid.
- E:** Amber faceplate with grid.

SPECIFICATIONS MODEL 1901C

DISPLAY	CRT 12 inch diagonal (30 CM)	HORIZONTAL	Sensitivity Continuously adjustable from 0.1 V/div. to over 10 V/div
Phosphor	P-1 (medium persistence - green)	MARKER ADDER	Input Signal Pulse or birdy
VERTICAL		Sensitivity (Max)	Typically 0.5 V/div (continuously adjustable with rear-panel control)
Sensitivity	4 position step attenuator for 1, 10 and 100 mV and 1 V/div. continuously variable vernier between steps	Polarity	Rear-panel switch provides polarity reversal
Bandwidth	DC to 15 kHz	Input Impedance	Approximately 15 K ohms
Drift	Typically less than 1/2 div for 8 hours (at a constant temperature after 1/2 hour warm-up)		
Polarity	Front-panel switch for inversion of vertical signal		



1905

MODEL 1905

The Model 1905 is a low cost, electromagnetic, X-Y display scope, ideal for use in displaying the sweep response of passive or active circuits. High performance and low cost make this scope an excellent choice for engineering laboratories, bench application, production facilities, educational institutions, and original equipment manufacturers.

VERSATILITY

The Model 1905 weighs only 15 lbs. It is a versatile unit which occupies a small area of bench space. In addition to its compact size, it has a rugged exterior and carrying handle for easy portability to a site location. The simple straightforward design of the magnetic deflection tube is ideal for point-by-point image construction. There is no degradation of spot size as is normally found in electrostatic deflection tubes.

ULTRASTABLE DISPLAY

The Model 1905 features a large 9-inch diagonal CRT with a bright, stable, focused trace for ease of viewing. An automatic blanking circuit prevents phosphor damage by blanking the CRT when the horizontal input or the vertical input is removed.

PHOSPHORS

The standard phosphor for Model 1905 is P-1, a green phosphor. Other phosphors are available on special order.

SPECIFICATIONS MODEL 1905

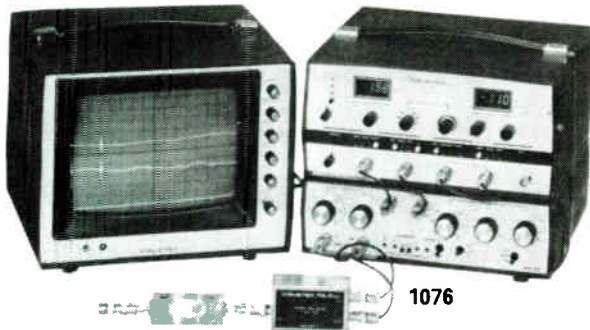
CRT DISPLAY	23 cm diagonal (9 in.)	Drift	Typically less than 1/2 div for 8 hours (at a constant temperature after 1/2 hour warmup)
Phosphor	P-1 is standard Other phosphors are available on special order.	Protection Circuit	Autobanking protects the phosphors in the event of loss of deflection signal. Either horizontal or vertical signals of about 4 div. (<60 Hz) will cause "unblanking"
Graticule	1.2 cm/div., 10 vertical, 14 horizontal.	Z AXIS	
Deflection	Magnetic.	Sensitivity	Adjustable from 1 to 10V p-p for full intensity modulation via rear panel contrast control
Acceleration Voltage	8KV nominal.	Input Impedance	20 k Ω
VERTICAL		Bandwidth	Flat from dc to 1 MHz, 3 dB down at 3.5 MHz, 10 dB down at 10 MHz
Sensitivity	4-position step attenuator for 1, 10 and 100 mV and 1 V/div., continuously variable vernier between steps.	Polarity	Positive going voltage intensifies the trace Internally changeable for positive blanking
Impedance	374 k Ω	Input Connector	BNC, rear panel
Bandwidth	DC to 15 kHz	GENERAL	
Coupling	Switchable ac-dc (when ac coupled, maximum dc voltage plus ac peak not to exceed 200V).	Dimensions	29.8 cm (11 3/4 in.) wide, 24.8 cm (9 3/4 in.) high, 25.7 cm (10 1/8 in.) deep.
Linearity	3%	Weight	6.8 kg (15 lb) net; 10 kg (22 lb) shipping
Input Connector	BNC, rear panel	Power	115/230V ± 10%. 50/60 Hz approximately 75 watts
Drift	Typically less than 1/2 div. for 8 hours (at a constant temperature after 1/2 hour warmup).	OPTIONS	Non-standard phosphors are available on special order. Consult factory for pricing
Polarity	Switchable for inversion of vertical signal		
HORIZONTAL			
Sensitivity	Continuously adjustable from 0.1 V/div. to over 10 V/div		
Impedance	>320 k Ω		
Bandwidth	DC to 1.5 kHz		
Coupling	Switchable ac-dc (when ac coupled, max dc voltage plus ac peak not to exceed 200V)		
Linearity	3%		
Input Connector	BNC, rear panel		

VRF-172

Prices and Specifications Subject to Change Without Notice.

WAVETEK CORP.

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MODELS 1081/1076
1 to 1000 MHz

BENCH SWEEP SYSTEM

EXTENDED RANGE BENCH SWEEPING

For bench sweep requirements exceeding the 1 to 400 MHz range, the Model 1081 1 to 1000 MHz Sweeper, and the Model 1076 Sweep Comparator offer precision and ease of use previously unavailable.

This system accurately displays measurements such as loss, gain, and return loss, while eliminating errors typically created in other systems by amplifier and display drift.

Using a Model 1081 Sweeper, a calibrated dual-channel switching RF comparator, and a large-screen oscilloscope this system simultaneously compares a test and reference channel, allowing continuous monitoring of both the input signal (reference channel) and the resulting output signal (test channel) during testing.

This 1 to 1000 MHz bench sweep system allows alignment and adjustment of system components, including amplifiers, filters, passives and cable. The addition of a suitable return loss bridge, such as the Wavetek Model FB40-75 extends further the usefulness of this system by allowing the direct reading of return loss. The Model FB40-75 connects directly to the Model 1076 Comparator.



1081

MODEL 1081 1000 MHz SWEEP GENERATOR

Model 1081 is an economical, 1 to 1000 MHz sweep generator that features simple operation, 1% display linearity, digital readout, and a unique "auto-zero" circuit that improves frequency accuracy and virtually eliminates frequency drift.

CW, ΔF , FULL SWEEP

The compact 1081 has three operating modes: CW, ΔF and Full Sweep.

Frequency in the CW mode is set by a ten-turn potentiometer and displayed with a resolution of 1 MHz on a 3-1/2 digit display. In the ΔF mode, center frequency is selected by the ten-turn potentiometer; the sweep width range of 200 kHz to 1000 MHz is controlled

TEST EQUIPMENT

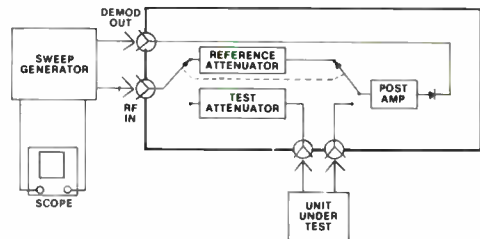
by a 100 MHz/Step selector and a 100 MHz vernier. In the Full Sweep mode, the start frequency is fixed at 1 MHz and the stop frequency is fixed at 1 GHz. The ten-turn potentiometer and the 3-1/2 digit frequency display operate as a 1 to 1000 MHz variable marker.

+60 to -10 dBmV OUTPUT POWER

Model 1081 has an output power range of +60 to -10 dBmV. The output is continuously adjustable with a 10 dB/Step attenuator and an 11 dB vernier. Output level is displayed on a 3 digit readout with 0.1 dB resolution.

MARKER SYSTEM

The birdy bypass marker system is controlled by a front-panel switch which provides selection of harmonic markers at 1, 10 and 100 MHz. Differences in marker amplitudes make identification of markers easy. Marker width is adjustable for optimum wide and narrow band operation. A calibrated variable marker is provided in the Full Sweep mode. External marker input is standard.



SPECIFICATIONS MODEL 1081

FREQUENCY

Range	1 to 1000 MHz
Sweep Width	F 200 kHz to 1000 MHz Full Sweep 1 to 1000 MHz
Readout	3 digit LED
Resolution	1 MHz
Operating Modes	CW, ΔF , and Full Sweep
Accuracy	CW, Center Frequency of ΔF , and Variable marker, ± 10 MHz Frequency accuracy can be improved to ± 1 MHz at a specific frequency Sweep width at 100 MHz intervals ± 10 MHz

Display Linearity 1% at maximum sweep width
Drift < 200 kHz for 10 minutes

NOTE: At a constant temperature after "hour warm up"

RF OUTPUT

Impedance	75 Ω
Output Connector	Female BNC
Power Level Range	+60 to -10 dBmV
Attenuation	Continuously adjustable in 10 dB steps with a 11 dB vernier. Output level is displayed on a 3 digit readout with 0.1 dB resolution
Accuracy	Step attenuator $\pm (0.3 \text{ dB} + 1\% \text{ of attenuation})$ Vernier attenuation $\pm 0.5 \text{ dB}$
Output Flatness	$\pm 0.25 \text{ dB}$

SPECTRAL PURITY

Harmonic Output	1 to 20 MHz < 20 dBc 20 to 100 MHz < 30 dBc in 1 to 2000 MHz band
Nonharmonics	1 to 500 MHz < 50 dBc below 400 MHz 400 to 1000 MHz < 35 dBc
Residual FM (CW Mode)	< 10 kHz peak

SWEEP CHARACTERISTICS

Sweep Modes	Recurring and single sweep
Sweep Time	Fast 0.010 to 1 sec (typical) Slow 1 to 100 sec (typical) Line $\sim 1/2$ of AC line period
Horizontal Output	0 to 10 volts Impedance 1000 Ω
Blanking	RF output is blanked during sweep retrace

MARKER SYSTEM

RF Markers	Birdy bypass marker system is controlled by front-panel switch which provides selection of harmonic markers in these combinations 100 MHz only 100 MHz and 10 MHz or 100 MHz, 10 MHz, and 1 MHz
Accuracy	0.005%
Width	Adjustable from approximately 100 to 500 kHz
Amplitude	Adjustable from approximately 1 mV to 1.5V p-p
External Marker	BNC input accepts CW signal for conversion to birdy marker. Input level must be at least 100 mV into 50 Ω
Variable Marker (Full Sweep Mode Only)	The 10-turn potentiometer and 3 1/2 digit frequency display function as a 1 to 1000 MHz variable marker. The marker produces a bright spot on the display by momentarily delaying the sweep ramp for approximately 2 msec. Accuracy is ± 10 MHz

REMOTE PROGRAMMING

Frequency	Rear-panel jack permits remote control of center frequency, sweep width and external frequency modulation
Level	Rear-panel jack permits external control of RF output level over greater than 10 dB range
Trigger	TTL input, during high to low transition. Also, by contact closure to ground

OUTPUTS

Pen Lift	Contact closure during sweep
Blanking	-15V during sweep +15V during retrace
Sweep	0 to 10V
Reference	Output of 1V/100 MHz
Power Supply	+18V, -18V, and common. External current limited to 10 mA

GENERAL

Dimensions	28.6 cm (11 1/4 in.) wide, 13.3 cm (5 1/4 in.) high, 26.7 cm (10 1/2 in.) deep
Weight	4.9 kg (10 3/4 lb) net 6.8 kg (15 lb) shipping
Power	90 to 110V, 105 to 125V, 190 to 220V, or 210 to 250V 50 to 400 Hz, approximately 35 watts

Prices and Specifications Subject to Change Without Notice.

VRF-173



MODEL SAM I 450 MHz FULL PERFORMANCE METER

The SAM I is a very popular meter. This is due primarily to its excellent accuracy and reliability. This accuracy and reliability is designed in. The basic approach is the up-convert/down-convert system used in all SAM's. The internal controls are designed to eliminate critical tuning. IF is designed with ceramic filters to eliminate coils that can shake loose and change tuning.

Another reason for the SAM's popularity is its flexibility. It will perform almost every test that the SAM III will. The spectrum analyzer feature of the SAM III is available as an option on the SAM I. This option, when coupled with an external oscilloscope, expands the testing capability of the SAM I.

There are many additional features that combine to make this a great meter!

SPECIFICATIONS MODEL SAM I

MEASUREMENT RANGES

Frequency	4 MHz to 300 MHz, or 4 MHz to 450 MHz, 470 MHz to 890 MHz optional.
Amplitude	-40 dBmV to +60 dBmV.
Temperature	0 Fahrenheit to +20 Fahrenheit.
Hum	0.5% to 5%.
Voltage	5-100 volts AC-DC.

ACCURACY

Frequency	± 1 MHz.
Amplitude	± 0.5 dB at room temperature; ± 1.0 dB over temperature when calibrated at that temperature.
Hum	± 0.3%.
Volts	10%.

GENERAL

IF Bandwidth	280 kHz at 3 dB point, 600 kHz at 40 dB point.
Video Output	Approx 1 volt.
Power	Internal Nicad batteries, external 110 VAC/60 Hz or 200VAC/50 Hz.
Battery Life	Typically 8 hours, continuous operation.
Size	7" high x 11" wide x 10" deep.
Weight	11 lbs.

FURNISHED ACCESSORIES

Instruction Manual
Shoulder Strap
Voltmeter Leads
Sam Bag Carry-case

CALIBRATOR

Frequency	150 MHz ± 2 MHz.
Amplitude	+ 20 dBmV ± 0.25 dB over temperature range.

ANALYZER

Amplitude Range	40 dB on screen, -40 dBmV to +60 dBmV.
Frequency Range	4 MHz to 300 MHz or 4 MHz to 450 MHz.
Rate	Variable 2 Hz to 40 Hz, plus manual.
Dispersion	Variable from 0.15 MHz
Horizontal Output	+ 0.5 to + 9 volts.
Vertical Output	0-3 volts.

ORDERING INFORMATION

When ordering the Sam I Signal Level Meter, please specify the following models

Model	Description
Sam I	300 MHz SAM with Spectrum Analyzer
Sam I - UHF	300 MHz Sam with Spectrum Analyzer and UHF option (470 MHz to 890 MHz)
Sam I - 450	450 MHz Sam with Spectrum Analyzer
Sam I - 450/UHF	450 MHz Sam with Spectrum Analyzer and UHF option (470 MHz to 890 MHz).

OPTIONAL ACCESSORIES

Sky-1 Strandhook



MODEL SAM III 450 MHz MICROPROCESSOR CONTROLLED METER

The Model SAM III is the first in a new generation of completely microprocessor-controlled signal level meters. Utilizing state-of-the-art electronic tuning, coupled with on-board computer memory, the SAM III allows rapid keyboard access to any frequency or channel across the entire CATV spectrum.

This new electronic design has been combined with time-proven mechanical packaging and features, to create the ultimate in a signal level meter.

SPECIFICATIONS MODEL SAM III

MEASUREMENT RANGES

Frequency	4 MHz to 450 MHz, 470 MHz to 890 MHz optional.
Amplitude	-40 to +60 dBmV.
Temperature	0 to 120 degrees F.
Hum	0.5% to 5%.
Voltage	5-100 volts AC-DC.

ACCURACY

Frequency	± 100 KHz.
Amplitude	± 0.5 dB at room temperature, ± 1.0 dB over temperature, when calibrated at the temperature.
Hum	± 0.3%.
Volts	10%.

GENERAL

IF Bandwidth	280 kHz at 3 dB point, 600 kHz at 40 dB point.
Video output	Approx 1 volt.
Power	Internal Ni-Cad batteries External 110 VAC/60 cycle 220 VAC/50 cycle.

Battery life	Typically 5 hours.
Size	7" x 11" x 10".
Weight	11 lbs.

CALIBRATOR

Frequency	150 MHz ± 2 MHz.
Amplitude	+ 20 dBmV ± 0.25 dB.

ANALYZER

Amplitude range	40 dB on screen -40 to +60 dBmV.
Frequency range	4 MHz to 450 MHz, 470 MHz to 890 MHz optional.
Rate	Variable 2 Hz to 40 Hz Plus manual.
Dispersion	Variable from 0.15 MHz to 450 MHz.
Horizontal output	+ 0.5 to + 9 volts.
Vertical output	0-3 volts.

KEYBOARD PROGRAMMING

Standard Channels, VHF	Video 2 to 60, Audio 2 to 60, UHF 14 to 83.
HRC Channels	Video 2 to 60, Audio 2 to 60.
Frequency	Preset for 0.1 MHz steps, 4 MHz to 450 MHz, 470 MHz to 890 MHz.

FURNISHED ACCESSORIES

Instruction Manual
Shoulder Strap
Voltmeter leads
Sam Bag Carry-case

OPTIONAL ACCESSORIES

Sky-1 Strandhook

WAVETEK CORP.

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(619) 450-9971

TEST EQUIPMENT

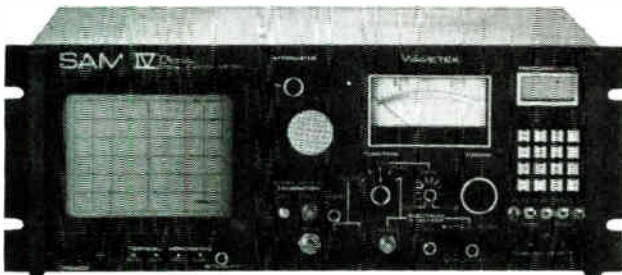


MODEL SAM IIID 450MHz COMPUTER CONTROLLED METER

The SAM IIID is a computer controlled version of the Sam III. Utilizing the advanced microprocessor techniques employed in the SAM III, the remote control is accomplished through a standard RS-232 interface. This allows remote activation and control of the instrument. The controller might be as simple as a terminal, or as complex as an extensive computer system.

Provisions are made for remote measurements of signal level, hum, battery status, and temperature, in addition to automatic power on/off of the unit.

Access to the SAM IIID may be through telephone lines equipped with the correct modems, or through two-way cable systems, equipped with the proper interface.



MODEL SAM IV 450 MHz HEAD-END COMPUTER CONTROLLED METER

The SAM IV Signal Level Meter is a computer-controlled, rack-mounted measurement system, with a built-in display for spectrum analysis.

The SAM IV features direct entry keyboard tuning to any of 60 factory set standard channels, and 60 HRC format channels, either video or audio, across the standard 4 to 450 MHz band.

In addition, any frequency from 4 to 450 MHz may be accessed through the keyboard, in 0.1 MHz increments.

A unique feature of the SAM IV enables the operator to tune up to the next channel with the touch of a button. The NEXT button automatically selects the next higher channel in the channel configuration being used (either Standard or HRC).

Channel configurations are available for some countries. Please consult the factory for specific standards.

SPECIFICATIONS MODEL SAM IV

MEASUREMENT RANGES		Video Output	1 volt for full scale reading
Frequency	4 MHz to 450 MHz 470 MHz to 890 MHz optional	Power	110/220 VAC
Amplitude	-40 dBmV to +60 dBmV	Size	7 in. high x 19 in. wide x 12 in. deep
Temperature	0 degrees Fahrenheit to +120 degrees Fahrenheit	CALIBRATOR	
Hum	0.5% to 5%	Frequency	150 MHz ± 2 MHz
Voltage	5 to 100 volts AC-DC	Amplitude	+20 dBmV ± 0.25 dB over temperature range
ACCURACY		ANALYZER	
Frequency	± 100 kHz	Amplitude Range	50 dB on screen
Amplitude	± 0.5 dB at room temperature		-40 dBmV to +60 dBmV
Hum	± 0.3%	Frequency Range	4 MHz to 450 MHz 470 to 890 MHz optional
Volts	10%	Rate	Variable 2 Hz to 40 Hz plus manual
GENERAL		Dispersion	Variable from 0.15 MHz to 450 MHz
IF Bandwidth	280 kHz at 3dB point 600 kHz at 40 dB point		
Resolution	Sufficient to measure two FM signals of equal amplitude 400 kHz apart. Sufficient to measure a sound carrier in the presence of an upper video 40 dB greater than the sound carrier		



MODEL SAM JR. FULL RANGE METER

The SAM Jr. is a meter that fills in the line of signal level meters. The Jr.'s capabilities fall in between the LM-13 installer's meter and the SAM I full performance meter. The basic electronic design is quite similar to the SAM I and SAM III, which are very high quality and popular meters. The SAM Jr. has the same RF front end as these other two meters with only a slightly relaxed amplitude accuracy specification. This is very important as the RF front end is a prime factor in meter accuracy and reliability.

SPECIFICATIONS MODEL SAM JR.

Frequency Range	10 MHz to 300 MHz or 50 MHz to 450 MHz; 470 MHz to 890 MHz optional.	ORDERING INFORMATION	When ordering the Sam Jr. Signal Level Meter, please specify the following models:
Amplitude	-35 dBmV to +60 dBmV	Model	Description
Amplitude Accuracy	± 0.75 dB	Sam Jr.	10 MHz to 300 MHz Sam Jr.
Temperature Accuracy	± 2 dB	Sam Jr. - 450	50 MHz to 450 MHz Sam Jr.
Batteries	Rechargeable Nickel Cadmium.	Sam Jr. - UHF	10 MHz to 300 MHz, 470 MHz to 890 MHz Sam Jr.
Size	6 1/2" high x 8 3/4" wide x 6 1/2" deep.	Sam Jr. - 450/UHF	50 MHz to 450 MHz, 470 MHz to 890 MHz Sam Jr.
Weight	5 lbs 12 ounces.		

FURNISHED ACCESSORIES

Instruction Manual
Shoulder Strap
Sam Bag Carry-Case
Battery Charger (110/230 VAC, 50/60 Hz)

OPTIONAL ACCESSORIES

Sky-1 Strandhook

WAVETEK CORP.

9191 Tower Centre Drive
San Diego, CA 92122
(619) 450-9971

TEST EQUIPMENT

7500 SERIES ATTENUATORS

FEATURES

- Broadband operation
- Low VSWR
- Highly accurate
- OEM, lab, and field use

The 7500 Series Attenuators are miniature turret type units that operate over wide frequency ranges.

They are ideal for bench setups, field use or incorporation into test instruments.

The 7500 Series (75 ohm) units cover the dc to 1000 MHz range. They are designed primarily for the CATV industry and have VSWRs of less than 1.1 up to 500 MHz (26dB return loss.)

Units having 1dB, 10dB, 35dB, and 70dB of attenuation, variable in 0.1, 1, 5, and 10dB steps, are available in either 50-ohm or 75-ohm versions.

Model 7580 is a dual concentric type attenuator that provides a total of 80dB attenuation, variable in 1dB steps.

All units are direct reading, ruggedly constructed, and have provisions for panel mounting.

7500 SERIES (75 OHM) ATTENUATORS

MODEL	7510	7535	7570	7580
Attenuation	0 to 10 dB in 1 dB steps	0 to 35 dB in 5 dB steps	0 to 70 dB in 10 dB steps	1 to 80 dB in 1 dB steps
Frequency Range	0 to 1000 MHz	0 to 1000 MHz	0 to 1000 MHz	1 to 1000 MHz
Impedance	75 ohms	75 ohms	75 ohms	75 ohms
Insertion Loss	2 dB max	2 dB max	4 dB max	7 dB max
Accuracy*	± 2 dB to 1000 MHz	± 5 dB to 500 MHz ± 1 dB to 1000 MHz	± 5 dB to 500 MHz ± 1 dB to 1000 MHz	± 5 dB to 500 MHz ± 1 dB to 1000 MHz
VSWR	1.1 max to 500MHz 1.2 max to 1000MHz	1.1 max to 500MHz 1.2 max to 1000MHz	1.1 max to 500MHz 1.2 max to 1000MHz	1.1 max to 500MHz 1.2 max to 1000MHz
Max Input Power	10w	10w	5w	5w
Angle between Steps	30°	45°	45°	30° 0.10 dB 45° 0.70 dB
Connectors	BNC female (F Available)	BNC female (F Available)	BNC female (F Available)	BNC female (F Available)

*A - Accuracy with reference to the minimum loss position



MODEL 7580.1

MODEL 7580.1 ATTENUATOR SET

The Model 7580.1 (75 ohm) attenuator set consists of 10dB, 1dB, and 0.1dB turret type attenuators, mounted in a cabinet ideally suited for bench-top use.

The total attenuation range is 0 to 81dB with a fixed 1dB insertion loss. Attenuation accuracy is ± 1.0dB from dc to 400 MHz, and ± 2.0dB from dc to 1,000 MHz. Maximum input power is 0.5W.

BNC connectors are standard; however, F fittings are available at no additional cost.

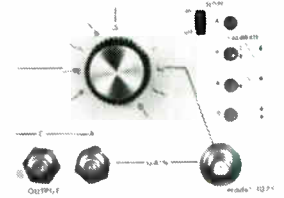
SPECIFICATIONS

Attenuation	0 to 81 dB in 0.1 dB steps	Accuracy	± 1 dB to 500 MHz ± 2 dB to 1000 MHz
Frequency Range	DC to 1000 MHz	VSWR	1.2:1 dc to 500 MHz 1.3:1 dc to 1000 MHz
Impedance	75 ohm	Max Input Power	0.5 Watt
Insertion Loss	1 dB (Min Atten) + 1 dB max	Connectors	BNC
		Dimension	10.2 cm (4 in.) High, X 17.8 cm (7 in.) Wide, X 10.2 cm (4 in.) Deep

MODEL 1075 COMPARATOR

OPTIONS

- A-1: Single frequency markers
- A-2: Harmonic Markers
- A-3: External Marker
- A-4: IF Markers
Crystals for above
- B-2: Pilot Carrier Notches
- B-3: Tilt Control



MODEL 1075

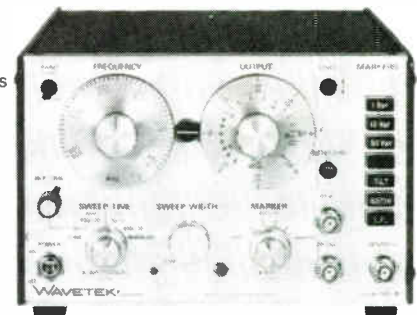
SPECIFICATIONS

Frequency Range	5 to 400 MHz	Insertion Loss	Less than 1 dB
Operating Modes	Ch A Ch B, Auto	Connectors	Type F
Impedance	75 ohms	Calibration Adjustment Range	± 1 dB tilt Ch A & Ch B ± 1 dB tilt Ch A & Ch B
VSWR	1.25 (19 dB return loss)	Isolation Between Ports	greater than 60 dB @ 200 MHz greater than 50 dB @ 300 MHz
Gain/Loss Range	59.9 dB in 0.1 dB steps	Slope Adjustment Range	0 to approx -20 dB
Gain/Loss Accuracy		OPTIONS	
Balance (Ch A to Ch B)	± 0.1 dB	D-171 RF Detector	
0.1 dB Attenuator	± 0.1 dB	FB40-75 Return Loss Bridge	
10 dB Attenuator	± 0.2 dB/10 dB		
Total Minimum Error	± 0.1 dB		
Total Maximum Error	± 1.4 dB		

MODEL 1801B ADVANCED SWEEP GENERATOR

OPTIONS

- A-1: Single Frequency Markers
- A-2: Harmonic Markers
- A-4: 1 kHz Square Wave
- A-5: Pen Lift
- A-6: IF Markers
Crystals for above
- A-7: Pilot Carrier Notches
- A-8: UHF Option (450-950)



MODEL 1801B

SPECIFICATIONS

RF FREQUENCY		SWEEP MODES	
Frequency Range	1 to 500 MHz 450 to 950 MHz (optional)		Recurring, single sweep, external trigger, manual, and line lock
Dial Calibration	10 MHz/div with +5 MHz vernier	SWEEP TIME	Continuously variable from 10 to 100 ms and from 1 to 100s, plus a special variable 1 to 10 ms sweep time range with an associated variable 1 to 10s repetition rate for testing of operating CATV systems
Accuracy	10 MHz or 2% of selected frequency (whichever is greater)	MARKERS	Provisions for up to 6 crystal-controlled, plug-in birdy by-pass markers, plus rear panel external marker input. Markers may be either single frequency (Option A-1) or harmonic type (Option A-2). Pulse type markers are also available (Option A-6)
Sweep Width	200 kHz to 500 MHz		
Display Linearity	2%	RF OUTPUT	
Spurious Signals	-30 dB above 10 MHz (-35 dB minimum available on special order)	Impedance	75 ohms
		Output Amplitude	+57 dBmV, 0.7V rms, maximum
		Output Flatness	± 0.25 dB for 1 MHz to 500 MHz ± 0.35 dB for 1 MHz to 950 MHz
		Attenuation	Continuously adjustable from +57 dBmV to -33 dBmV, 70 dB in 10 dB steps plus a 20 dB PIN diode attenuator calibrated in 1 dB increments
		Accuracy	± 0.5 dB to 500 MHz ± 1.0 dB to 950 MHz
		Reference Attenuator	Internally adjustable from 0.05 dB to 0.5 dB above and below output level
		WIDTH	Adjustable from approximately 15 kHz to 400 kHz in 4 steps
		AMPLITUDE	Adjustable from approximately 1 mV p-p to 1V p-p
		POWER	115 or 230V ± 10% (available for 100 to 200V at no extra cost) 50 to 60 Hz approximately 20 watts

WAVETEK CORP.

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San Diego, CA 92122
(619) 450-9971

TEST EQUIPMENT



MODEL 1880 SYSTEM ANALYZER

The Model 1880 CATV System Analyzer is a 4 to 450 MHz field-portable test system designed to perform both FCC compliance tests and routine day-to-day system measurements.

A unique microprocessor control system replaces the complexity of a traditional spectrum analyzer, allowing rapid, precision measurements ranging from headend amplitude checks to subscriber drop composite triple beat. Measurements, such as Carrier-to-Noise, Hum, FM Deviation, Cross-Modulation and Composite-Triple-Beat are performed anywhere on the system with pushbutton ease.

Any portion of the spectrum may be viewed instantly, while split-screen capability allows two separate sections of the band to be viewed simultaneously. This allows rapid amplifier setup, and immediate verification of correct parameters. For example, Channel 2 and Channel 60 may be viewed in 10 MHz frequency spans at the same time, in a real-time display; and the channels may be called up with direct keyboard entry by converter number.

SPECIFICATIONS MODEL 1880

Frequency Range	4 to 450 MHz
Frequency Accuracy	± 1.00 kHz
Center Frequency	± 10%
Span	± 10 dB
Amplitude Accuracy	± 1.0 dB
Measurement Range	110 dB
	> 60 dB or screen
Resolution	0.1 dB
Pre-Programmed Channels	2 to 60
Temperature	- 10 to + 120 °F - 20 to + 50 °C.
Power	Battery, rechargeable sealed lead-acid, operating life approximately 2 1/2 hours
Display	5-in. diagonal, electromagnetic Alphanumeric with analog assist, developed by the microprocessor
Weight	30 lb (13.5 kg)

OPTIONAL ACCESSORIES

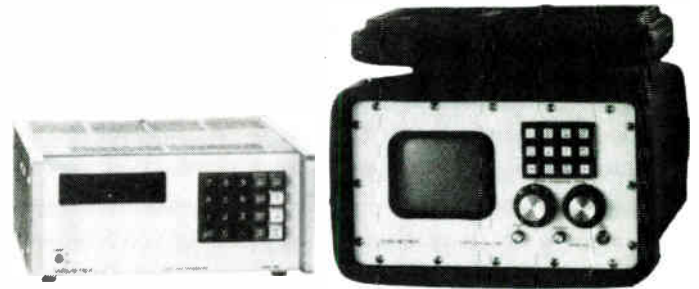
BU-1	Bucket-bucket for use with a standard bucket truck
C-1	Polaroid Camera for making permanent records for the 1880
PP-75	55 to 440 MHz Precision Preselector for use with extended amplitude range measurements.
BC-3	Heavy duty battery charger/AC adaptor for continuous 110/220 VAC, 50/60 cycle operation

ACCESSORIES FURNISHED

Test Cable
Instruction Manual
View ng Hood
Vehicle Cable BC-1

AUTOMATED FUNCTIONS

Carrier-to-Noise	53 dB max ± 1 dB
Hum Modulation	5%
FM Deviation	< 5% residual 200 kHz max < 5 kHz residual
Cross Modulation	43 to 62 dB ± 2 dB
2nd/3rd Order (Composite Triple Beat)	> 70 dB max ± 3 dB



MODELS 1855/1865 CABLE SYSTEM SWEEP

The Model 1855/65 Sweep Recovery System consists of a micro-processor controlled transmitter and receiver. The transmitter is installed at the headend and provides a sweep every 5 seconds at a speed unnoticed by your subscribers. The portable, battery operated receiver is taken into the field and used to evaluate the swept response at any point in the system.

This Recovery System provides an easy to use technique to maintain or audit your cable system. It can cut service calls by indicating changes in the trunk which affect the swept response even though the pilots may be at the proper level. The "signature" of the swept response will indicate:

- 1) Moisture in the cable.
- 2) Bad grounds on amplifier modules.
- 3) Corroded or loose RF cable fittings.
- 4) Mismatches from kinked or squeezed cable.
- 5) Low gain amplifiers.
- 6) Suck outs within the frequency response.

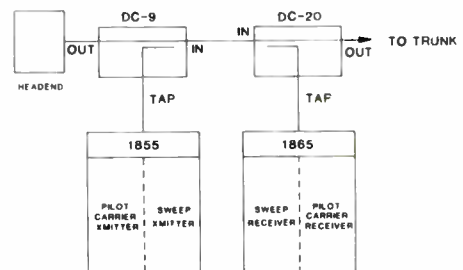
It will aid in locating these problems as they develop, so they may be corrected before the entire system is down.

This results in improved signal quality through easy-to-do, daily, preventative maintenance.

The recovery system can also be used for the annual FCC proof. It provides a fast easy method for headend, in-channel flatness measurements with no auxiliary signal generators or counters, and does so, while the CATV System is still "On the Air". It is also used for the 24 hour tests.

The receiver is as easy to use as a simple radio receiver. The internal microprocessor does all the work. Once the receiver is set up and calibrated at the headend, the technician simply takes it into the field, connects it to the output test point of the first trunk amplifier, turns it on and observes the swept responses from the headend to, and including, the first amplifier. Two level cursors automatically provide a 2 dB window of where the swept response should be. The technician merely adjusts the slope and gain controls of the amplifier to get the flattest pattern between the cursors (see figure #1).

If the response is correct, he turns the receiver off and continues to the next amplifier. If he has a problem it can be analyzed by using the keyboard. A push button will automatically provide a readout (in dBmV) of the peak-to-valley response. Other buttons on the keyboard allow the measurement of frequency to help in locating faults. See description of the 1865 for complete information on the cursor measurement system.



WAVETEK CORP.

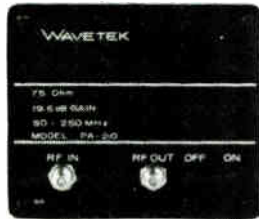
9191 Tower Centre Drive
San Diego, CA 92122
(619) 450-9971

TEST EQUIPMENT

ACCESSORIES

PA-20 AMPLIFIER

The PA-20 is a general purpose amplifier. This battery powered unit is ideal for field work. Current consumption is less than 20 milliamps. The low power consumption provides more than ten hours of battery life. The PA-20 is a low noise amplifier. The low noise figure makes it an ideal preamp for spectrum analyzers or field strength meter applications.



SPECIFICATIONS MODEL PA-20

Frequency	50-250 MHz Useful 5-300 MHz
Gain	19.5 dB
Flatness	± 0.25 dB
Noise	7 dB typical
Impedance	75 ohms
Power	4-9 Volt batteries
Battery Life	10 hours continuous operation.
Size	4" high x 5" wide x 1 1/4" deep
Weight	1 lb

CABLE EQUALIZERS AND CABLE SIMULATORS

These devices are useful to compensate for true tilt devices or long cable drops for "easements", when using WAVETEK SLM or Sweep Recovery Systems.

Models are available to 300 or 400 MHz, and in 3 or 6 dB versions. They all follow the tilt characteristics of cable to within ±0.5 dB. The chart will aid in your selection.

EQUALIZERS	LOSS AT 50 MHz	LOSS AT 300 MHz	LOSS AT 400 MHz
E - 3 - 300	3 dB	0	—
E - 3 - 400	3 dB	—	0
E - 6 - 300	6 dB	0	—
E - 6 - 400	6 dB	—	0

SIMULATORS	LOSS AT 50 MHz typical	TRUE TILT 50-300 MHz	TRUE TILT 50-400 MHz
S - 3 - 300	1.9 dB	3 dB	—
S - 3 - 400	1.4 dB	—	3 dB
S - 6 - 300	3.8 dB	6 dB	—
S - 6 - 400	3 dB	—	6 dB

MATCHING PADS MODELS M175 & M157

- Low VSWR
- Broad Frequency Range
- Flat Response

TRANSFORMS IMPEDANCE

Most RF communication equipment is designed for 50-ohm transmission, although several 75 ohm applications do exist in CATV and other related areas. All of the standard Wavetek Sweep/Signal Generators are available with either 50 or 75 ohm calibrated output systems. Matching pads are available to convert equipment with 50 ohm output to 75 ohm output or vice versa.

SPECIFICATIONS

Frequency Range	DC to 1000 MHz.
Impedance	50 to 75 ohms.
VSWR	1.15 to 1.
Insertion Loss	5.7 ± 0.1 dB.
Maximum Input Power	1 watt.
BNC Connectors	
M157	50 ohm male; 75 ohm female.
M175	50 ohm female; 75 ohm male.

RF DETECTORS SERIES 150/170

LOW VSWR

The series 150 and 170 Detectors are designed for applications requiring low VSWR and flat frequency response across broad operating ranges.

50 AND 75 OHM UNITS

The Models D151 and D152 are 50-ohm units with typical VSWR's of 1.2 at 1000 MHz. The D151 has a 1000 MHz upper limit and the D152 can be operated up to 2 GHz.

The Model D171 is a 75 ohm detector that operates over the frequency range of 200 kHz to 1000 MHz with a response of ± 0.3 dB and a return loss of greater than 23 dB. This is accomplished through use of the Wavetek designed 75 ohm BNC connector and associated frequency compensating circuitry.

Model D153 has a frequency range of 1.0 to 12,400 MHz with a VSWR typically less than 1.20.

RF DETECTORS SERIES 150/170

MODEL	D151	D152	D153	D171
Frequency Range (MHz)	0.2 to 1000	0.2 to 2000	1.0 to 12,400	0.2 to 1000
Impedance (ohms)	50	50	50	75
VSWR	1.15	1.5	1.2 to 4.5 GHz 1.3 to 7.0 GHz 1.4 to 12.4 GHz	1.15 (23 dB return loss)
Max Input	3.0V	3.0V	100 mW	3.0V
Output Polarity	Negative	Negative	Negative	Negative
Frequency Response (dB)	± 0.3	± 0.5	± 0.2 per octave to 8 GHz ± 0.5 overall	± 0.3
Connectors				
RF Input	Male BNC	Male BNC	Male N	Male BNC (75 ohm)
DC Output	Female BNC	Female BNC	Female BNC	Female BNC
Dimensions - Diameter	1.4 cm (9/16 in.)	1.4 cm (9/16 in.)	2.1 cm (0.83 in.)	1.4 cm (9/16 in.)
Length	5.7 cm (2 1/4 in.)	5.7 cm (2 1/4 in.)	6.3 cm (2.47 in.)	5.7 cm (2 1/4 in.)

DC BLOCKS MODELS B171 & B172

- Prevents Equipment Damage
- Low VSWR
- Minimum Insertion Loss

PROTECTS AGAINST BURNOUT

DC Blocks are designed to stop dc and attenuate any 60 Hz signals that are present in a signal while passing the RF portion with minimum insertion loss or additional VSWR. CATV line amplifiers are commonly powered through the RF cable itself. This voltage can cause severe damage when connected to 75 ohm systems not having internal dc blocking networks.

MOUNT PERMANENTLY

Model B171 is ideally suited for series insertion into any existing line having a BNC connector, while the B172 cable/block assembly is suited for permanent mounting in test equipment as a precaution against burnout. The standard B172 is supplied with a 9-inch cable. (Other cable lengths are available on special order.)

SPECIFICATIONS

Frequency Range	1 MHz to 1000 MHz	B172	75 ohms male & panel mounting female
Impedance	75 ohms		
VSWR	1.1 to 1	Dimensions B171	1.4 cm (9/16 in.) diameter, 4.8 cm (1 7/8 in.) length
Insertion Loss	0.2 dB	B172	1.4 cm (9/16 in.) diameter, 22.8 cm (9 in.) length (with BNC and cable).
DC Breakdown Voltage	100V		
BNC Connectors			
B171	75 ohms male & female		

WAVETEK CORP.

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San Diego, CA 92122
(619) 450-9971

TEST EQUIPMENT



MODEL ST-1 "CUCKOO" RADIATION DETECTOR

This is a system that provides a low-cost method of patrolling cable systems for signal leakage. The system utilizes an ordinary FM radio for patrolling, and a special signal transmitter in the headend.

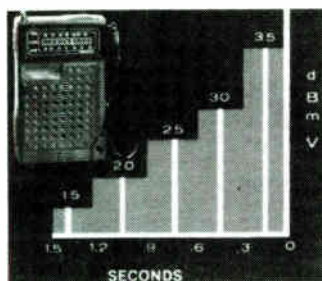
The ST-1 produces a signal which is continuously tuneable from 86 to 110 MHz. The signal can be switched to either a 1 kHz tone or a double tone similar to a Cuckoo Clock. The amplitude can be automatically switched over 5 different output levels, 5 dB apart. The different output levels produce a beeping sound on the radio. This sound increases in volume the closer you get to a signal leakage point.

To see how this stepping helps you, refer to Figure #1. As you approach a leakage point, the first signal you hear is the high-level signal. The closer in you get, the more leak you pick up. When you are by the leak, you will even pick up the signal when it is attenuated to 20 dB. The signal remains at each level for 1/3 of a second, which works out nicely for patrolling at about 30 MPH or slower.

This system enables you to equip every service vehicle to patrol for leakage produced by illegals, minor breaks, loose housings and other problems that might soon become major. If you have an FM radio in your car, just drive around town and check your system.

The "Cuckoo" system is one of the most popular ideas introduced to CATV testing. The reason for its popularity is that it pays for itself in reduced troubleshooting time and increased system performance. You turn it on and leave it on. The system is always available when you're ready for it. Leaks are easy to find. Operators report finding underground faults, illegal hookups, bad connectors, all with portable radios.

The sensitivity of the system depends on the radio you purchase. It is very easy to find radios which are much better than 1 uV. We recommend operating the signal at about 5 dB above normal FM level. The advantage in running near the FM band is that the band of frequencies that most concerns the FCC is the VHF OMNIRANGE for aircraft, starting at 108 MHz. This system allows you to put a carrier just below this point, and lets you check for radiation.



SPECIFICATIONS MODEL ST-1

Output	+ 35 dBmV (min.)
Frequency Tuning Range	86-110 MHz
FM Deviation	± 75 KHz
Output Level Control Range	20 dB
FM Modulation Frequency	1000 Hz (approx)
AM Modulation	Four 5 dB Steps
AM Modulation Step	
Rep Rate	Approx 0.33 Sec/Step
Incidental FM Modulation	± 10 KHz (max.)
Supply Voltage	110 Vac



ST-1C

MODELS ST-1C, CR-1B RADIATION DETECTOR

A COMPLETE LOW-COST SYSTEM THAT DETECTS RADIATION

The ST-1C operates in the same manner as the ST-1. The difference between the two units is that the ST-1C is crystal controlled. The purpose of this transmitter is to operate the CR-1B receiver.

SPECIFICATIONS MODEL ST-1C

Output	+ 35 dBmV
Frequency	107.997 MHz
FM Deviation	± 2.5 kHz
Output Level Control Range	20 dB
FM Modulation Frequency	1050 Hz
AM Modulation	Four 5 dB Steps
AM Modulation Step	
Rep Rate	Approx 0.33 Sec/Step
Supply Voltage	110 Vac



CR-1B

CR-1B CRYSTAL CONTROLLED RECEIVER

The CR-1B has two major advantages over the FM radios. The first advantage is that you don't have to tune it. You are always sure you are on frequency. There is no possibility of someone listening to a rock station instead of doing radiation patrol. The second advantage is the tone squelch circuit. The tone squelch circuit disables the audio until a 1050 Hz tone is received. While the CR-1B is tone squelched the receiver gain stays at maximum. Although the gain is high no bothersome noise is heard. When the receiver picks up the 1050 Hz tone from the transmitter, it automatically activates the audio. The CR-1B can be vehicle mounted or used as a portable unit. It is powered from batteries or vehicle +12 or 110 VAC supplies. The receiver has a built-in antenna as well as provisions for using an external antenna.

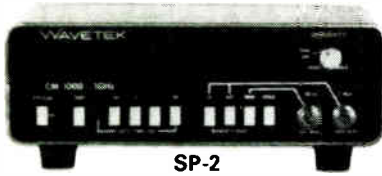
SPECIFICATIONS MODEL CR-1B

Frequency	107.997 MHz
Sensitivity	1 uV will activate tone squelch
Tone Squelch	1050 Hz Activated
Antenna	Internal whip and external jack
Power	110 VAC, + 12 VDC, or internal batteries, Four C Cells

WAVETEK CORP.

9191 Tower Centre Drive
San Diego, CA 92122
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TEST EQUIPMENT



SP-2



CM-1000

MODELS SP-2, CM-1000 FREQUENCY COUNTERS

A frequency counter will not properly count TV signals. This problem is due to the complex modulation. The SP-2 is designed to process the signals so that a frequency counter will read them. The two main measurements that must be made are video carrier accuracy and inter-carrier accuracy. The video carrier must be within ± 25 kHz of assigned frequency. The intercarrier frequency must be 4.5 MHz ± 1 kHz. The SP-2 processes the video carrier and removes 90% of the modulation. This instrument also compares the video carrier to the aural and provides the resultant 4.5 MHz signal at the front panel. The SP-2 signal processor is completely solid state. Integrated circuits are used extensively to minimize components and increase reliability. The input circuits are AC blocked to minimize effects of 30 volt AC supplies. The instrument's input is your system's signals. The SP-2 processes these signals and provides 3 main outputs. Output 1 is the intercarrier signal which is the 4.5 MHz differential between the video and sound carriers. This is very useful for aligning modulators as well as doing FCC proofs. The second output is the video carrier with modulation suppressed. The third output is for hum modulation tests. The Hum Mod output is a high quality video detector. Detection is accomplished in an integrated circuit and provides more than 2 volts of video signal with only 20 μ V of noise. This large ratio makes Hum Modulation measurements much more convenient than with low level video outputs from FIELD STRENGTH meters.

The SP-2 has measurement capability for measuring the standard twelve channels plus all the MID band and SUPER band channels J, K, and L. SP-2's may be ordered to measure other SUPER band channels by deleting MID band channels.

CM-1000

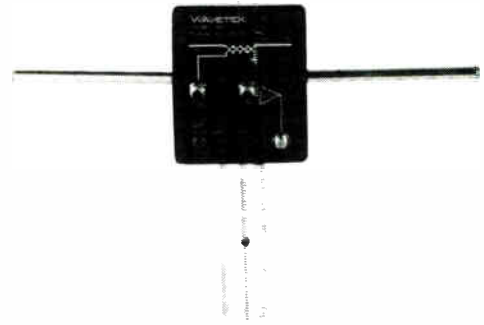
The CM-1000 is part of a new generation of low cost frequency counters. This counter is ideal for CATV application. The front-panel F connectors interface easily with most CATV instrumentation. This counter is extremely tolerant of video modulation, and this tolerance makes it an ideal companion for the SP-2 signal processor. This unit is normally powered from 115 volt AC, and covers a frequency range of 5 Hz to 1000 MHz. This wide band coverage is very useful for working on SUPER band headend units, their local oscillators, and UHF applications.

SPECIFICATIONS MODEL CM-1000

Frequency Range	
Direct	5 Hz to 60 MHz
Prescaled	25 MHz to 1 GHz.
Sensitivity	
Direct	+ 25 dBmV
Prescaled	+ 40 dBmV.
Input Impedance	
Direct	1 MEG OHM
Prescaled	50 OHM.
Overload Protection	
Direct	100 Volt Max.
Prescaled	5 Volt Max
Aging	1 PPM Per Year.
Display	9 digit, 0.4" LED
Size	3 3/4" H x 7 3/4" W x 6 3/4" D
Weight	2 lbs

SPECIFICATIONS MODEL SP-2

Frequency Range	50 MHz to 270 MHz.
Input Sensitivity	Normal operation from + 16 dBmV to + 60 dBmV
Input Impedance	75 ohms
Video Carrier Output	At least 100 mV into 50 ohms.
Inter Carrier Output	At least 100 mV into 100 K ohms.
Power	Internal - 12 volt rechargeable battery; External - 110 VAC 2 watts.
Battery Life	10 hours.
Hum Mod Output	2 volts video minimum



RD-1 TUNED DIPOLE

The RD-1 is a tuned dipole with a 16 dB gain battery operated amplifier. It is designed to test compliance with FCC CATV radiation specifications. The RD-1 is the most convenient dipole to use, no matter what you pay. The adjustable dipole whip antennas can be set for frequencies from 50 MHz to 250 MHz which covers the standard TV band, MID band, and SUPER band through channel 0. The whips are easily field replaceable and are available from stock.

The signal level to be measured for radiation and signal leakage tests are in the range of -30 to -50 dBmV. Most signal level meters do a poor job below -30 dBmV and can't measure anything below -40 dBmV. The RD-1 contains a low noise, battery operated preamplifier to solve this problem. In many areas of the country, it is necessary to measure small leakage signals in the presence of strong local signals. Provisions have been made on the RD-1 to permit you to place a bandpass filter between the dipole and preamplifier to correct this problem. The amplifier may also be used separately as a portable field instrument.

The pamphlet that is provided with the RD-1 lists the length of the dipole in inches for all channels to be measured. The chart also indicates the signal level to be measured to pass the FCC 20 microvolts per meter specifications. This eliminates the need for cumbersome formulas and calculations. You simply refer to the chart to find your pass-fail point in dBmV for every channel.

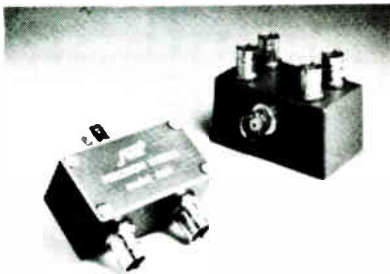
SPECIFICATIONS MODEL RD-1

Dipole Tuning	50 MHz to 250 MHz
Amplifier Noise Figure	6 dB
Amplifier Bandwidth	± 0.5 dB 50-250 MHz. adjustable 5-300 MHz
Power	4-9 volt batteries
Amplifier Gain	16 dB
Weight	2 lbs

WIDE BAND ENGINEERING CO., INC.

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HYBRID POWER DIVIDER/ COMBINERS/RF SWITCHES



**PRECISION HYBRID
DIVIDER/COMBINERS**

HYBRID SPLITTER/COMBINERS

Models A66 and A67 are hybrid splitter/combiners with exceptional bandwidth and performance for instrumentation and communications. Applications include signal splitting, combining, mixing, and phasing. Effects of impedance changes, shunts, or disconnections at one or more ports have a minimum effect on the insertion loss or impedance match through the other ports due to the high port-to-port isolation. This high isolation also minimizes intermodulation problems caused by mixing between signal sources. Each Model A66 or A67 is individually tuned for optimum performance.

MODELS AVAILABLE

Models A66 and A67 are 2-way and 4-way hybrids covering 1-500MHz. Model A66GA is a higher performance version of the A66 with higher isolation for critical applications.

Model A66L is a low frequency version covering .3-100MHz.

Model	N-Way	Freq Range MHz	VSWR (max)	Loss (max) back-back (dB)	Isolation (with matched input termination) (dB)	Response Flatness dB	max power to input	max power to output	Size (See Back Cover)						
A66	2	1-500	1.5:1	.7	20	±.25	5 watts	.25 watts	A						
		2-300	1.2:1	.30	35	±.1									
A66GA	2	1-500	1.5:1	.7	20	±.25			5 watts	.25 watts	A				
		2-400	1.3:1	.5	40	±.15									
A66L	2	.3-100	1.5:1	.5	35	±.2					5 watts	.25 watts	A		
		1-50	1.15:1	.2	40	±.06									
A67	4	1-500	1.5:1	1.0	20	±.25							5 watts	.25 watts	B
		2.5-300	1.2:1	.5	30	±.1									

When ordering specify: A) Model Number, B) Impedance, C) Connectors

A64 SOLID STATE SWITCH

Model A64 is an ultra wide band PIN diode solid state switch for transferring both low and high level signals with negligible distortion, high isolation, and minimum loss.

SPECIFICATIONS

Switch Type: SPDT

Frequency: 1-500MHz, useable .3-1000MHz

Impedance: 50 or 75 ohm (specify when ordering)

Loss: .5dB max; .2dB typical

Isolation:

Freq MHz	1	5	50	100	300	500
dB min	-100	-90	-80	-75	-60	-55

VSWR: 1-500MHz 1.3:1 (18dB RL); 5-500MHz 1.1:1 (26dB RL)

Response Flatness: 1-500MHz +/- .15dB; 5-300MHz +/- .1dB

Power:

When ordering specify: A) Model Number, B) Impedance, C) Connectors

A64MP PIN DIODE TRANSFER SWITCH

Frequency Range: 1.5-500MHz (usable .3-700MHz)

VSWR: 1.2:1 max

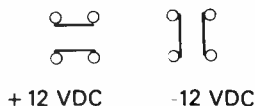
Loss: 1.3dB typical

Isolation: 50dB min (65dB min at 300MHz)

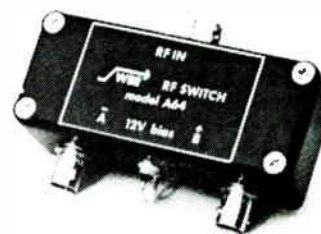
Max Signal Level: 1V rms for minimum distortion

Enclosure: 1-1/8" x 1-3/8" x 2-1/4" cast aluminum

Schematic:



When ordering specify: A) Model Number, B) Impedance, C) Connectors



SOLID STATE SWITCH

max levels permitted with negligible distortion

	cw Power	Peak Volts	Max cw Volts	dBm
50 ohm 1 MHz	50 mW	2	1.5	+17
50 ohm 5-500 MHz	1.0 W	11	7	+30
75 ohm 1 MHz	75 mW	3.5	2.3	+19 (+63 dBmV)
75 ohm 5-500 MHz	.75 W	11	7.5	+29 (+77 dBmV)

Switching Time: 0-.5ms

DC Bias: (+) and (-) 12V at 50mA

Enclosure: 3-5/8" x 1-1/2" x 1-1/4" cast aluminum, blue finish

UHF SWITCHES

A64U have specifications of a single switch head of the A49U RF Comparator.

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DIRECTIONAL COUPLERS/ FILTERS

A73 SERIES DIRECTIONAL COUPLERS

A73 Series Directional Couplers are of reciprocal hybrid ferrite circuitry, featuring broad bandwidth with outstanding directivity and flatness.

APPLICATIONS

Line Monitoring: Power split from the line is -20dB down for sampling without altering line characteristics, for level measuring, VSWR alarms, etc.

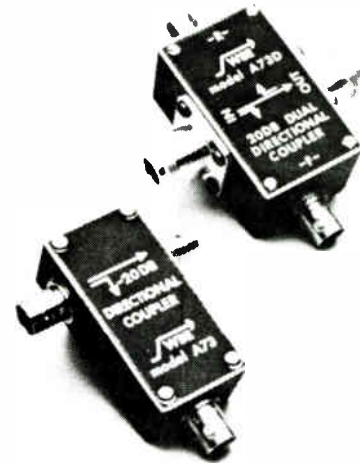
Power Measurements: Insertion in the line allows level measurements with simple lower level detectors or field strength meters and power measuring equipment. By reversing the coupler in the line or using the A73D types, an indication of impedance match and/or reflected power can be measured by comparing the forward to reflected power levels.

Load Source Isolator: Using a directional coupler in the line, a signal can be taken from the source to the tap with high attenuation (directivity) between the tap and the load.

MODELS AVAILABLE

A73-20 types are for 1-500MHz signals up to 5-10 watts. GA and GB versions have a higher minimum directivity for more critical measurement applications.

A73-20P and A73-20PA are 1-100 and 10-200MHz couplers for precision measurements up to 50 watts. X versions have a higher minimum directivity.



DIRECTIONAL COUPLERS

A73D-20P and A73D-20PA are dual versions of the above for simultaneous measurement of forward and reflected power. X versions have a higher minimum directivity.

A73M is a 1-500MHz, 50 watt non-directional coupler providing a transformer tap -30dB down from the line.

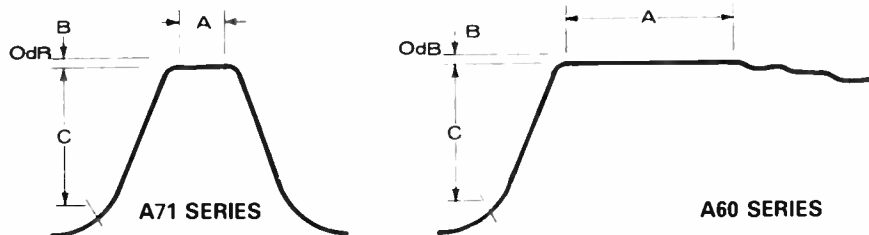
Model	Freq Range MHz	Coupler Type	In Line Power	Minimum Directivity (dB)		In Line Loss (dB)	Response Flatness of -20 dB port (dB)	VSWR	Size (See Back Cover)
				1-500 MHz	5-300 MHz				
A73-20	1-500	single	5W cw (10W cw 5-300 MHz)	20	30	.4 max .2 typical	-1 5-300 MHz -1.25 1-500 MHz	1.1:1 5-500 1.5:1 1-500	A
A73-20GA				30	40				A
A73-20GB				40	45				A
A73-20P	1-100	single	50W cw 175 ohm limited to 10W cw)	35 dB min 40 dB min typical		.15	-1	1.1:1 max 1.04:1 typical	A
A73D-20P		dual		.3	B				
A73-20PX		single		45 dB min	.15	A			
A73D-20PX		dual		.3	B				
A73-20PA	10-200	single	50W cw 175 ohm limited to 10W cw)	35 dB min 40 dB min typical		.15	-1	1.1:1 max 1.04:1 typical	A
A73D-20PA		dual		.3	B				
A73-20PA X		single		45 dB min	.15	A			
A73D-20PA X		dual		.3	B				
A73M	1-500	NA	50W cw	none		.1	-2.5	1.1:1	A

When ordering specify: A) Model Number, B) Impedance, C) Connectors

RF FILTERS

Models A60 Hi-Pass/Lo-Pass, A60D Hi-Lo Diplexer, and A71 Band-pass are high density, flat hi-pass, lo-pass, or band-pass filter series, from 1-700MHz, totally impedance matched throughout the band-pass. Although some filters must be custom designed, WBE has many standard proven designs that may meet your requirements promptly without extra development. Hi-pass, Lo-pass, and Band-pass filters are specified by the customer using the following terms:

- A) Matched Bandwidth: Minimum impedance matched bandpass frequency boundaries. Usually 1.2:1 max VSWR
- B) Loss: Maximum loss allowable in dB throughout matched band-pass
- C) Rejection: Specific minimum rejection outside bandpass with dB attenuation and frequency required. 20dB or 30dB points suggested with other critical areas to be considered.



Warranty: 1 year

When ordering or requesting quotations specify: A) Model Number, B) Impedance, C) Connectors, D) Size Requirements, E) Exact Requirements.

VRF-182

Prices and Specifications Subject to Change Without Notice.

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IMPEDANCE BRIDGES/ DC BLOCKS/RF TERMINATIONS



RF IMPEDANCE BRIDGES

Models A56 and A57 are both widely used broad band balun transformer type RF IN-RF OUT impedance bridges with the unknown port balanced against a reference termination. Return loss is read directly as insertion loss through the bridge. This method is superior to simpler resistor-diode (RF IN-DC OUT) bridges since models A56 and A57 function independent of input level and do not require diode square law corrections, special scope graticules and calibrated mismatches. Models A56 and A57 are frequently used with an automatic RF Comparator (A49), RF Analyzer (A51) or Wideband RF Amplifier (A52) and a fixed or variable attenuator for automatic direct reading comparison, and can be amplified to display return loss levels even below 50dB.

MODELS AVAILABLE

Models A57 and A57U are provided with a reference port for balancing the bridge against an external termination. (Total of 4 ports).

Models A57T and A57TU have a built-in fixed termination without a reference port. (Total of 3 ports).

Model A56 is primarily for coaxial cable impedance testing (SRL). Termination is variable with two dials for reading of ohms resistance and + or - pF correction capacitance. Type "N" female fitting standard on "unknown" port. (Total of 3 ports).

Models A57GA, A57TGA and A56GA are high precision versions with a minimum guaranteed directivity of 50dB from 5-500MHz. Measured lab data is included with each "GA" model.

GENERAL SPECIFICATIONS

Frequency Range: A57, A57T, A56 1-500MHz; A57U, A57TU 1-900MHz.

Impedance: 50 or 75 ohm (specify when ordering).

Bridge Type: Return Loss, direct reading, balun-null.

Directivity or "Balance" (Terminated Loss-Bridge Loss): A57/A57T, A56 40dB min. (1.02:1 residual VSWR) 1-500MHz, 50dB min. (1.006:1 residual VSWR) 10-300MHz; A57U/A57TU 40dB min. (1.02:1 residual VSWR) 1-900MHz.

Bridge Loss RF IN-RF OUT: 12dB nominal or 6dB per leg (RF IN-Test Port or RF OUT-Test Port).

Short-Open Error: 1dB max.

Service: Shock protected, suitable for factory test or for calibration of lab instruments.

Enclosure: Cast aluminum, blue finish.

Connectors: Model A56 has standard type "N" female on unknown port.

Weight: A56 8-1/2 oz.; A57/A57T 3 oz.; A57U/A57TU 3 oz.

Size: A56 C; A57/A57T B; A57U/A57TU A

When ordering specify: A) Model Number, B) Impedance
C) Connectors

NEW PRODUCTS

Low Frequency Bridges

The units listed are representative of the types of Bridges available. If the units here do not meet your specific requirements, we will be most happy to quote to your specific Frequency Range and Directivity desired.

A57/30 and A57T/30

Frequency: 30kHz - 30MHz; Directivity: 40dB min.

A57LS and A57TLS

Frequency: 300kHz - 100MHz;

Directivity: 40dB min. 300kHz - 100MHz, 50dB min. 1 - 50MHz

A57LL and A57TLL

Frequency: 190kHz - 30MHz; Directivity: 50dB min.

Converted Bridges

RF In and RF Out ports are 50 ohms with Reference and/or Test Ports 75 ohms; or RF In and RF Out ports are 75 ohms with Reference and/or Test Ports 50 ohms. Specify when ordering.

A57C and A57TC

Frequency: 1-500MHz; Directivity: 40dB min.

A57GAC and A57TGAC

Frequency: 1-500MHz

Directivity: 40dB min. 1-500MHz, 50dB min. 5-500MHz

PRECISION DC BLOCK

Model A74 Precision DC Block is a capacitive block which provides up to 200 volts protection for RF Bridges, Detectors or other RF Equipment susceptible to damage by AC or DC power entering the RF Port. The excellent impedance match allows it to be useful in measurement applications where general purpose DC Blocks are inadequate.

SPECIFICATIONS

Frequency Range: 2-350MHz

VSWR: 1.02:1 max

Impedance: 50 or 75 ohm (specify when ordering)

Enclosure: 1-1/2" x 1-1/8" x 7/8" cast aluminum, blue finish

When ordering specify: A) Model Number, B) Impedance,
C) Connectors

RF TERMINATIONS

Several precision terminations are available. VSWR: 1.01:1 max 0-500MHz (45dB return loss); 1.006:1 max 0-300MHz (50dB return loss)

Model	Type	Impedance	Connector	Weight
A56T50B	Fixed	50 ohm	Male BNC	1 oz.
A56T75B	Fixed	75 ohm	Male BNC	1 oz.
A56T75F	Fixed	75 ohm	Male F	1 oz.
A56T50S	Fixed	50 ohm	Male N	2 oz.
A56T75S	Fixed	75 ohm	Male N	2 oz.
A56T50	Variable R & C	50 ohm	Female N	8 1/2 oz.
A56T75	Variable R & C	75 ohm	Female N	8 1/2 oz.

Prices and Specifications Subject to Change Without Notice.

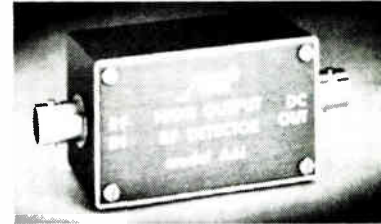
VRF-183

MODEL A61 HIGH OUTPUT RF DETECTOR

Model A61 provides a flat DC voltage gain better than 10dB over conventional detectors. The unit replaces most detectors where easily increased gain is desired. The unit basically consists of a specially designed voltage doubling wide band RF transformer, loaded at the secondary by a frequency compensating termination network. More gain in voltage is realized by applying a dual microwave diode voltage doubling network at this termination. Additional DC output is gained from raising the diodes operating point in the square law region with respect to the RF input level. The detector is shunted by only 100 pF for exceptionally high frequency response on the DC side. For additional flatness, a network isolates the DC or Video output from the reactive effects or "suckouts" normally associated with various cable lengths connected between the detector and the scope, recorder, or other device. Additional external capacitance at the DC output may be used to reduce the high frequency video response for noise and transient reduction without the usual resonance distortion effects reflected back to the RF Termination. Some applications include sweep display, RF measurements, and signal monitoring.

MODEL A33 DETECTORS

These detectors are half wave and full wave voltage doubling detectors. A special feature is DC isolation between the RF line and the detector circuit.



MODELS AVAILABLE

Model A61: Special high output detector, increases gain 10dB +

Model A33: Half wave detector

Model A33D: Dual diode voltage doubling version of A33, increases DC voltage gain 6dB

Model A33T: In line half wave detector

Model A33TD: Dual diode voltage doubling version of A33T, increases DC voltage gain 6dB

Model	Freq MHz	Detector Circuitry			Configuration		VSWR	Flatness (dB)		In Line Loss (dB)	Typical DC Gain -30 dBm	Size (See Back Cover)
		Special High Output	Half Wave, Single Diode	Dual Diode, Voltage Doubling	Internally Terminated RF In, DC Out	In Line RF In, RF Out, DC Out		3-300 MHz	1-500 MHz			
A61	1-500	X			X		1.5:1*	±.1	±.5	NA	15 dB	B
A33	.5-500		X		X		1.1:1	±.1	±.1	NA	0 dB	A
A33D	.5-500			X	X		1.1:1	±.1	±.1	NA	6 dB	A
A33T	1-500		X			X	1.1:1	±.1	±.25	.25	0 dB	A
A33TD	1-500			X		X	1.1:1	±.1	±.25	.1	6 dB	A

*1.1:1 5-300 MHz

Warranty: 1 year

When ordering specify: A) Model Number, B) Impedance, C) Connectors, D) Positive or Negative DC Polarity

50/75 OHM IMPEDANCE CONVERTER

Model A65 uses a specially designed, individually tuned broadband transformer for 50 ohms to 75 ohms or 75 ohms to 50 ohms with virtually no loss (.15dB typical). This device replaces the conventional MLP (minimum loss pad) where extra padding is unnecessary. Model A65 is frequently attached directly to a 50 ohm test instrument for use in a system requiring a 75 ohm impedance. The unit is also valuable when attached to both ports of a device under test of opposite impedance than the measuring system. When Model A65 is used on each end of a two port device or on both generator and detector, a gain of approximately 11dB is added to the circuit when substituted for two resistive MLPs.

SPECIFICATIONS

Frequency Range: 1-500MHz

VSWR: 1.2:1 max 1-500MHz; 1.1:1 max 2-500MHz;

1.05:1 max 10-500MHz

Loss: .25dB max .8-500MHz; .16dB max 20-500MHz

Power: 5W cw

Enclosure: 1-1/2" x 1-1/8" x 7/8" cast aluminum, blue finish

Weight: 2 oz.

Warranty: 1 year

A65GA: Same as A65 except VSWR: 1.03:1 max 20-500MHz

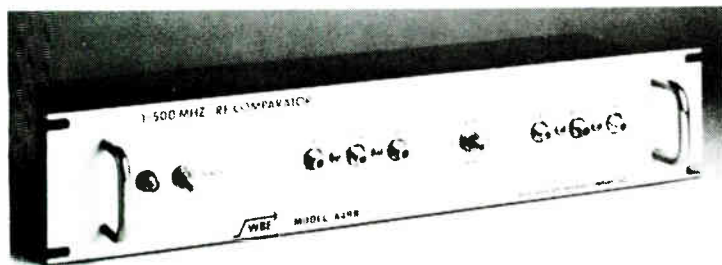
A65U: Frequency Range: 10-900MHz, VSWR: 1.1:1 max, 1.05:1 typical, Loss: .5dB max

When ordering specify: A) Model Number, B) 50 ohm connector, C) 75 ohm connector

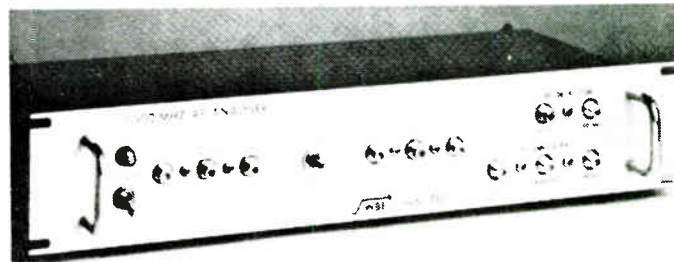
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RF ANALYZERS/ COMPARATOR



RF SWITCHER/COMPARATOR, 1-500MHz



1-500MHz RF ANALYZERS

MODEL A49 RF COMPARATOR

Model A49 is a totally solid state, dual channel RF Comparator for comparison of gain, loss, and impedance with an attenuator or master reference, the technique used in the more advanced network analyzers. The Model A49 has the stability and high isolation required for measuring insertion loss in steps of .01dB to SRL and shielding effectiveness testing beyond -80dB. With both ports balanced, measurement error can be reduced to that of the standard alone without compensating for errors resulting from dual trace scopes, detector tracking, scale accuracy, linearity, drift, etc.

SPECIFICATIONS

Frequency Range: 1-500MHz (usable .5-1000MHz)
Switch Configuration: DPDT (2 separate SPDT heads)
Impedance: 50 or 75 ohms (specify when ordering)
VSWR: 1.1:1 typical
Flatness: +/- .1dB
Isolation: 45dB min at 300MHz, 50dB per switch typical
Path Selection: Path A only, Path B only, or Path A and Path B simultaneous at 30Hz line locked switch rate
Channel Match: .1dB max
Phase Control: Rear chassis mounted phase adjust and phase reverse controls.
Size: 3-1/2" x 19" EIA Panel x 5" deep
Finish: Grain satin panel, blue enclosure
Power: 115VAC, 60Hz, 15W
Weight: 4-1/2 lbs
Warranty: 2 years
When ordering specify: A) Model Number, B) Impedance, C) Connectors

A49U: Frequency Range: 1-900MHz. Other specifications: See A49.
When ordering specify: A) Model Number, B) Impedance, C) Connectors

Model A51 Combines — A49 RF Comparator
— A52 RF Sweep Amplifier
— A61 High Output Detector

MODEL A51 RF ANALYZER

For professional measurements of gain, loss, impedance, and response comparison. The user selects the accessory equipment such as attenuators, sweep signal generators, RF bridges and oscilloscope. The A51 is ideal for low cost reliable test and alignment stations or for high precision laboratory measurements dependent on the precision or economy of the accessory equipment. This system allows substitution or future upgrading and makes use of existing equipment without being "locked-in" to a high priced package analyzer. Panel connectors for the comparator, amplifier, and detector are provided for normal interconnection as a system, or these components may be used individually.

OVERALL SYSTEM SPECIFICATIONS

Frequency Range: 1-500MHz (usable .5-600MHz)
Impedance: 50 or 75 ohm (specify when ordering)
Flatness: +/- .5dB (+/- .25dB 5-300MHz)
Range: .01dB to 100dB depending on setup (i.e. .5V RF Input equals 1mV per scope division at -80dB attenuation).
Size: 3-1/2" x 19" EIA Panel x 5" deep
Enclosure: Heavy gauge aluminum, blue finish
Power: 115VAC, 60Hz, 22W
Weight: 6 lbs
Warranty: 2 years

MODELS AVAILABLE

Model	Amplifier Type	Model	Amplifier Type
A51/40	A52/40 (40dB)	A51/50	A52/50 (50dB)
A51/20	A62/20 (20dB)	A51/60	A72/60 (60dB)
A51/30	A52/30 (30dB)		

A51U/30 Frequency Range: 1-900MHz. Contains the A49U, A52U/30 and choice of A33, or A33D detector.
When ordering specify: A) Model Number, B) Detector Polarity, C) Impedance, D) Connectors

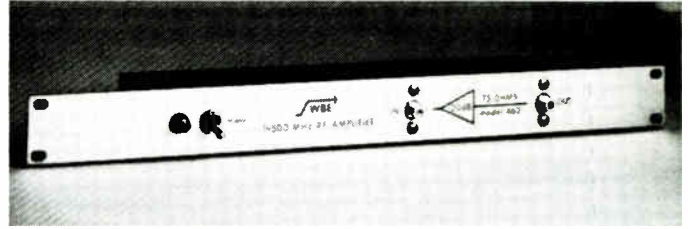
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RF SWEEP AMPLIFIERS/ MINIATURE AMPLIFIERS

RF AMPLIFIERS, 1-500 MHz

WBE RF Sweep Amplifiers are extremely flat response, low noise, wide band amplifiers for post amplification in critical sweep frequency measurement set-ups. Available in 50 or 75 ohm impedances, these units are excellent general purpose lab amplifiers amplifying signals for receivers, frequency counters, spectrum analyzers, oscilloscopes, markers and detectors and are rugged enough for mobile applications. Line filtering and double shielding prevent ambient and power line interference.



GENERAL SPECIFICATIONS

Frequency Range: 1-500 MHz (usable .5-600 MHz)
Impedance: 50 or 75 ohms (specify when ordering)
Noise Figure: 7dB max, 5dB typical
Input VSWR: 1.5:1 max, 1.2:1 typical

Output Capability: .7V min output for 1dB gain compression (saturation 1V)
Hum Modulation: .5% max
Power: 115V AC, 60 Hz, 10W

MODELS AVAILABLE

Model	Gain dB	Flatness (dB)		EIA Panel	Depth Behind Panel
		1-500 MHz	5-300 MHz		
A62/20	20	+/- .15	+/- .1	1-3/4" x 19"	2-1/2"
A52/30	30	+/- .22	+/- .15	1-3/4" x 19"	2-1/2"
A52/40	40	+/- .30	+/- .20	1-3/4" x 19"	2-1/2"
A52/50	50	+/- .45	+/- .25	1-3/4" x 19"	2-1/2"
A72/60	60	+/- .60	+/- .30	3-1/2" x 19"	5"

When ordering specify: A) Model Number, B) Impedance, C) Connectors

MODEL A52U/30

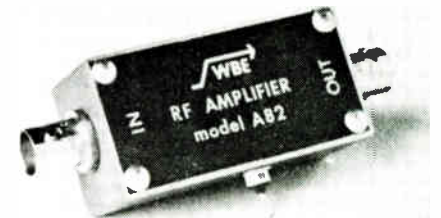
Frequency Range: 1-900 MHz
Gain: 30dB nominal
Flatness: +/- .5dB
Impedance: 50 or 75 ohms (specify when ordering)
Noise Figure: 7dB max, 5dB typical
Input VSWR: 1.5:1 max, 1.2:1 typical

Output Capability: .7V min output for 1dB gain compression (saturation 1V)
Hum Modulation: .5% max
Power: 115V AC, 60 Hz, 10W
EIA Panel: 1-3/4" x 19"
Depth Behind Panel: 2-1/2"

When ordering specify: A) Model Number, B) Impedance, C) Connectors

A82 SERIES MINIATURE RF AMPLIFIERS

Series A82 satisfies applications that require the following specifications in a rugged miniature package. Series A82 is ideal for direct antenna mounting. Applications include airborne equipment, test instrumentation, sweep equipment, spectrum analyzers, frequency counters, telemetry, radio astronomy, wide band communications, or a convenient all around test bench amplifier. Each stage is transformer coupled for highest power output with minimum distortion. Selective feedback is used to maintain flatness and impedance match over the entire bandwidth.



MODELS AVAILABLE

Models A82 and A82A are amplifiers of ultra wide bandwidth, extreme flatness, and excellent impedance match. Models A82H, A82L, and A82LA offer a more limited or specific bandpass with less stringent flatness specifications. Models A82/RP, A82A/RP, A82H/RP, A82L/RP, and A82LA/RP are remote power option amplifiers which may be remotely powered through the output connector.

GENERAL SPECIFICATIONS

Impedance: 50 or 75 ohms (specify when ordering)
Input VSWR: 1.5:1 max, 1.2:1 or less typical except at band edge
Gain: 20dB stable +/- .5dB -40 to 170°F

Noise Figure: 7dB max, 4.5dB typical
Reverse Attenuation: -30dB typical
Enclosure: Cast aluminum, blue finish
Warranty: 1 year

Model	Freq Range (Full Specification) MHz	Approximate 3 dB points (MHz)	Gain Flatness	Output Capability in V output for 1 dB Compression	Power Requirements +12 VDC @ ___ mA	Size (See Back Cover)	Weight oz.
A82	1-500	.3-650	±.15	.7	28	A	2 1/2
A82A	1-500	.3-650	±.15	.7	28	B	3
A82H	4-450	1.5-550	±.5	.7	28	B	3
A82L	.1-50	.050-150	±.5	1.0	50	B	3
A82LA	.4-30	.3-100	±.5	1.0	50	B	3

When ordering specify: A) Model Number, B) Impedance, C) Connectors

REMOTE POWER ACCESSORIES

Model A82PIN: Power Injection Network contains network for injecting the DC into the RF amplifier "downline" and remotely powering any of the A82/RP Series. .5-500 MHz, 50 ohm, 1.2:1 max VSWR, .25dB max loss, 60dB min RF-DC Isolation, BNC connectors

standard, 2-1/4" x 1-1/8" x 7/8". Model A82RPS: Remote Power Supply for remote powering of any A82/RP Series amplifier. A82RPS contains power injection network comparable to A82PIN and a DC power supply. 4-11/16" x 3-11/16" x 2-7/32", 6 ft. line cord, BNC Connectors on RF IN and RF OUT.

WIDE BAND ENGINEERING CO., INC.

PRICE LIST

P.O. Box 21652
 1838 East University Drive
 Phoenix, AZ 85036
 (602) 254-1570

Connectors: VHF equipment is stock fitted with either 50 ohm BNC or 75 ohm type "F" (F61A or F61AS) connectors. UHF equipment is stock fitted with type BNC connectors (type "F" connectors are not recommended for 1-900MHz instruments). Other connectors are available at additional cost per connector (see price list). Special customer furnished connectors are installed at no additional charge.

Measurements: WBE specifications and data for 50 or 75 ohm impedance measurements, directivity, etc., requiring a precision termination are referenced to General Radio GR874 type precision termination and adaptors. For certain high precision items such as A66GA, A56GA, A73GB, etc., attenuation/gain data are referenced to Weinschel attenuators. If customer has a preferred termination, WBE will reference to the customer supplied equipment and return same with order.

General Information

Chassis Sizes: (referenced in catalog charts)

- A. 7/8" x 1-1/8" x 2-1/4"
- B. 1-1/8" x 1-3/8" x 2-1/4"
- C. 4-3/8" x 2-3/8" x 1-1/4"
- D. 3-5/8" x 1-1/2" x 1-1/4"

Model #	Price 50 ohm	Price 75 ohm
RF SWEEP AMPLIFIERS		
A62/20	\$253.00	\$268.00
A52/30	338.00	356.00
A52/40	421.00	444.00
A52/50	531.00	560.00
A72/60	640.00	674.00
A52U/30	628.00	650.00

Model #	Price 50 ohm	Price 75 ohm
MINIATURE RF AMPLIFIERS		
A82	162.00	174.00
A82A	151.00	161.00
A82L	123.00	133.00
A82LA	111.00	120.00
A82/RP	162.00	174.00
A82A/RP	151.00	161.00
A82L/RP	123.00	133.00
A82LA/RP	111.00	120.00

Model #	Price 50 ohm	Price 75 ohm
ACCESSORIES		
A82PIN	55.00	61.00
A82RPS	102.00	110.00

Model #	Price 50 ohm	Price 75 ohm
RF COMPARATORS		
A49	457.00	478.00
A49U	512.00	544.00

Model #	Price 50 ohm	Price 75 ohm
RF ANALYZERS		
A51/40	878.00	925.00
A51/20	710.00	749.00
A51/30	794.00	837.00
A51/50	988.00	1040.00
A51/60	1097.00	1155.00
A51U/30	1140.00	1196.00

Model #	Price 50 ohm	Price 75 ohm
VARIABLE IMPEDANCE BRIDGES 1-500MHz		
A56	445.00	448.00
A56GA	482.00	485.00
A56GATD	525.00	528.00

Model #	Price 50 ohm	Price 75 ohm
IMPEDANCE BRIDGES 1-500MHz		
A57	\$258.00	\$271.00
A57GA	311.00	323.00
A57GATD	397.00	408.00

Model #	Price 50 ohm	Price 75 ohm
A57T	258.00	270.00
A57TGA	311.00	322.00
A57TGATD	354.00	365.00

Model #	Price 50 ohm	Price 75 ohm
IMPEDANCE BRIDGES 1-900MHz		
A57U	357.00	370.00
A57UTD	501.00	514.00
A57TU	357.00	369.00
A57TUTD	429.00	441.00

Model #	Price 50 ohm	Price 75 ohm
IMPEDANCE BRIDGES (30kHz - 100MHz Range)		
A57/30	\$311.00	\$323.00
A57/30TD	397.00	408.00
A57LS	258.00	271.00
A57LSTD	344.00	367.00
A57LL	395.00	411.00
A57LLTD	481.00	497.00
A57T/30	311.00	322.00
A57T/30TD	354.00	365.00
A57TLS	258.00	270.00
A57TLSTD	301.00	323.00
A57TLL	395.00	410.00
A57TLLTD	438.00	453.00

Model #	Price 50 ohm	Price 75 ohm
IMPEDANCE BRIDGES (50/75 ohm Conversion built-in)		
A57C	\$309.00	
A57GAC	361.00	
A57GACTD	447.00	
A57TC	308.00	
A57TGAC	360.00	
A57TGACTD	403.00	
DC Blocking (when ordered on bridge)	15.00	15.00

Model #	50 ohm with data	50 ohm without data	75 ohm with data	75 ohm without data
DIRECTIONAL COUPLERS				
A73-20	\$ 86.00	\$ 62.00	\$ 98.00	\$ 72.00
A73-20GA	144.00	119.00	161.00	135.00
A73-20GB	244.00	220.00	—	—
A73-20P	108.00	83.00	120.00	96.00
A73D-20P	186.00	148.00	206.00	170.00
A73-20PA	121.00	95.00	135.00	113.00
A73D-20PA	223.00	186.00	247.00	209.00
A73-20PX	144.00	119.00	155.00	130.00
A73D-20PX	258.00	220.00	275.00	237.00
A73-20PAX	160.00	136.00	172.00	147.00
A73D-20PAX	320.00	282.00	340.00	302.00
A73M	93.00	62.00	114.00	82.00

Model #	Price 50 ohm	Price 75 ohm
PRECISION HYBRID DIVIDER/COMBINERS		
A66	\$ 85.00	\$ 60.00
A66GA	119.00	94.00
A66L	82.00	56.00
A67	152.00	119.00

Model #	Price 50 ohm	Price 75 ohm
RF SWITCHES		
A64	\$144.00	\$120.00
A64U	—	117.00
A64MP	204.00	178.00

Model #	Price 50 ohm	Price 75 ohm	
CONNECTOR OPTIONS			
BNC male	\$7.00	N female	\$ 9.00
F male .025 pin	7.00	N male	11.00
F male Push	3.00	GR874	45.00

Model #	Price 50 ohm	Price 75 ohm
VARIABLE TERMINATIONS		
A56T50	50 ohm	\$107.00
A56T75	75 ohm	107.00

Model #	Price 50 ohm	Price 75 ohm
PRECISION FIXED TERMINATIONS		
1-500MHz		\$43.00
1-900MHz		72.00
(Add U to above Models)		

Model #	Price 50 ohm	Price 75 ohm
MISMATCHES		
1-500MHz (Special Order Only)		56.00

Model #	Price 50 ohm	Price 75 ohm
DC BLOCK		
A74	\$31.00	\$40.00

Model #	Price 50 ohm	Price 75 ohm
RF DETECTORS		
A61	99.00	102.00
A33	50.00	53.00
A33D	55.00	58.00
A33T	55.00	60.00
A33TD	63.00	68.00

Model #	Price 50 ohm	Price 75 ohm
50/75 OHM IMPEDANCE CONVERTERS		
A65		\$50.00
A65GA		63.00
A65U		69.00

Model #	50 ohm with data	50 ohm without data	75 ohm with data	75 ohm without data	
PRECISION HYBRID DIVIDER/COMBINERS					
A66	\$ 85.00	\$ 60.00	\$ 98.00	\$ 72.00	
A66GA	119.00	94.00	135.00	110.00	
A66L	82.00	56.00	93.00	69.00	
A67	152.00	119.00	164.00	138.00	
RF SWITCHES					
A64	\$144.00	\$120.00	\$159.00	\$135.00	
A64U	—	117.00	—	132.00	
A64MP	204.00	178.00	226.00	202.00	
CONNECTOR OPTIONS					
BNC male	\$7.00	N female	\$ 9.00	SMA female	\$ 7.00
F male .025 pin	7.00	N male	11.00	SMA male	11.00
F male Push	3.00	GR874	45.00	TNC female	7.00
				TNC male	11.00

WINEGARD CO.

3000 Kirkwood
Burlington, IA 52601
(319) 753-0121

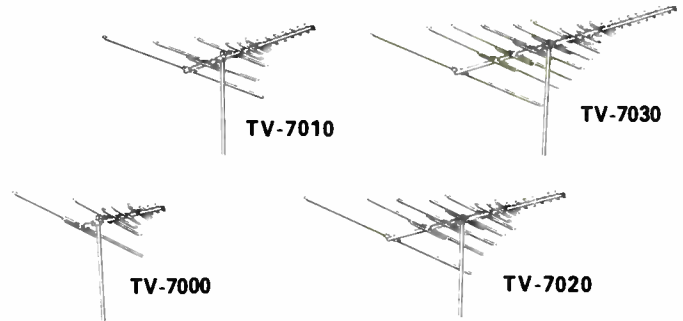
ANTENNAS

TV MAN™

VHF-UHF FM ANTENNAS

Invite comparisons with this complete line of nine VHF-UHF antennas.

- Dual action director/reflector screen serves as reflector for UHF signals and director for VHF signals
- Unique driven element combines signals from VHF and UHF sections with very low loss
- All 82 channel models include free VHF-UHF band separators for making TV set connections
- Die-cut impedance correlators allow close spacing of antenna elements for a strong, compact antenna that will better withstand wind and ice loading
- All aluminum parts are 100% protected against corrosion and industrial deposits
- Exclusive wrap-around mast clamps with four locking jaws cannot crush antenna boom or mast
- High tensile aluminum elements are not affected by ice loading or strong winds
- Completely automatic hardware, locks tightly into place, unfolds in seconds.



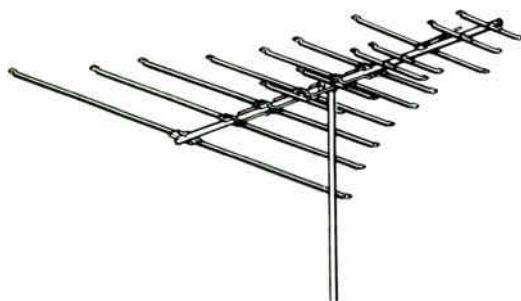
TV-7000	TV-Man Line Ant V/U	\$22.75
TV-7010	TV-Man Line Ant V/U	35.25
TV-7020	TV-Man Line Ant V/U	46.50
TV-7022	TV-Man Line Ant V/U	50.50
TV-7030	TV-Man Line Ant V/U	56.50
TV-7035	TV-Man Line Ant V/U	63.00
TV-7040	TV-Man Line Ant VHF	82.25
TV-7042	TV-Man Line Ant V/U	96.25
TV-7052	82 Channel Ant	105.25

MOOEL NO.	TV-7052	TV-7042	TV-7040	TV-7035	TV-7030	TV-7022	TV-7020	TV-7010	TV-7000
TOTAL ELEMENTS	43	37	32	27	23	20	18	14	9
VHF ELEMENTS	15	14	17	15	13	8	10	6	5
UHF ELEMENTS	28	23	15	12	10	12	8	8	4
BOOM LENGTH	160"	140"	140"	117"	100"	84"	84"	55"	29"
TURNING RADIUS	96"	96"	82"	74"	68"	64"	64"	52"	51"
MAXIMUM WIOTH	111"	111"	111"	111"	111"	111"	111"	100"	100"
OVERALL HEIGHT	30"	20"	18"	5"	5"	15"	5"	5"	5"

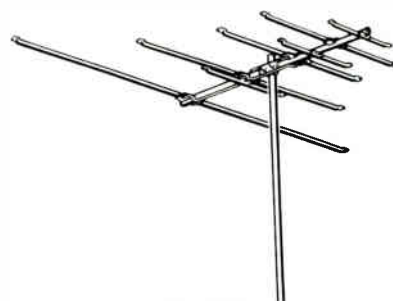
TV MAN VHF-FM antennas combine simple, straightforward mechanical design with Winegard tried and tested electronic features for the best low priced antennas ever produced. These five TV MAN VHF-FM models have been carefully selected for their performance ability in a price range long deprived of antennas with quality mechanical construction.

TV MAN antennas, combined with CP-Series preamplifiers, cover an even wider range of reception conditions.

TV-5000	TV-Man Line Ant VHF	\$27.50
TV-5020	TV-Man Line Ant VHF	47.75
TV-5030	TV-Man Line Ant VHF	57.75
TV-5040	TV-Man Line Ant VHF	80.50



TV-5020



TV-5000

	TV-5040	TV-5030	TV-5020	TV-5000
TOTAL ELEMENTS	24	17	13	7
BOOM LENGTH	168"	117"	93"	35"
TURNING RADIUS	113"	76"	68"	52"
MAXIMUM WIOTH	111"	111"	111"	100"
OVERALL HEIGHT	18"	5"	5"	5"

WINEGARD CO.

3000 Kirkwood Street
Burlington, IA 52601
(319) 753-0121

TV ANTENNAS

CHROMSTAR II™

Winegard has combined its most popular antenna features with new and evolutionary design changes to provide advanced excellence in construction and performance.

Whether you need long distance reception or picture-perfect close-in reception, Winegard offers a Chromstar II model that will be ideal for your location.

POWERFUL VHF PERFORMANCE

When it comes to reception on Channels 2-13, Chromstar II antennas come through with the finest performance yet. This can make a big difference in picture quality when weak signals are a problem — so much, in fact, that in many areas a smaller model than usual may be used for excellent results.

Many features combine to give Chromstar II red-hot performance including our famous Electro-Lens® director system combined with cross-phased, end-fire driven elements; low-Q dual directors...all of which give increased capture area and provide for peaking the antenna on each VHF channel.

POWERFUL UHF PERFORMANCE

Outstanding UHF reception is accomplished by precise director spacing combined with a highly efficient corner reflector system. Weak UHF signals are captured and reflected with minimal loss to the driven element for increased uniform gain on all UHF frequencies on Channels 14-69.

FINEST OUTDOOR FM ANTENNA

For FM and FM stereo reception from stations near or far, the Chromstar II CS-6065 is a must. Same rugged construction features as outdoor TV antennas including built-in, weatherproof downlead/preamplifier housing. Designed to cut distortion; separate adjacent channels and reduce or eliminate fading and noise.

HIGH PERFORMANCE RUGGEDIZED YAGIS

Chromstar II single channel and broadband yagis are designed for high gain, pinpoint directivity and perfect 75 ohm or 300 ohm impedance match, for maximum transfer of signal and perfect color pictures. Superb front-to-back ratio...no back lobes.



UHF MODEL
CS-9065



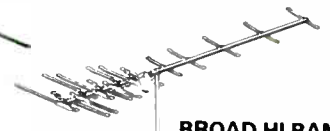
UHF MODEL
CS-9085



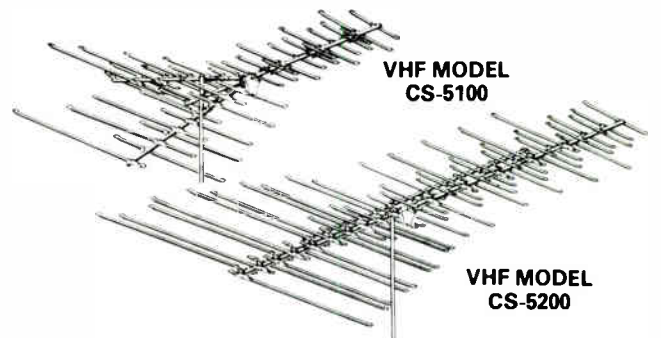
UHF MODEL
CS-9095



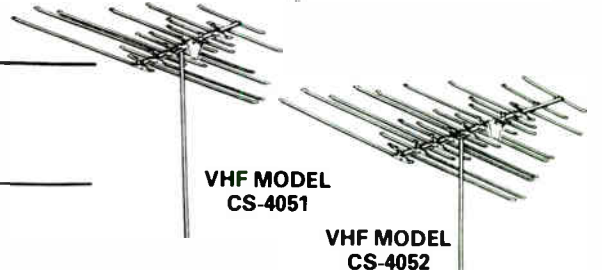
BROAD LO BAND
AND SINGLE CH.
CS-2026
(Channels 2-6)
Replaces CH-2026



BROAD HI BAND
AND SINGLE CH.
CS-2073
(Channels 7-13)

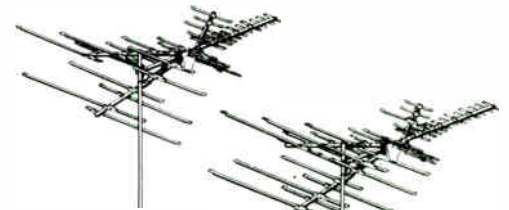


VHF MODEL
CS-5100



VHF MODEL
CS-4051

VHF MODEL
CS-4052



VHF/UHF
MOD. CS-8096



VHF/UHF
MOD. CS-8098



FM MODEL
CS-6065

FM 88-108MHz

Elements	10
Dimensions	123"L x 70"W
Recommended Preamplifiers	CP-3000, CP-3700, CP-3800

SINGLE CHANNEL VHF YAGIS

Elements	9	10
Dimensions	144-3/4"L x 110"W	126-1/2"L x 34"W
Recommended Preamplifiers	CP-3000, CP-3700, CP-3800	CP-3000, CP-3700, CP-3800

UHF

Elements	22	39	49
Dimensions	45-1/2"L x 16"W	73-1/2"L x 24"W	93-1/2"L x 24"W
Recommended Preamplifiers	CP-4300, CP-4700, Fringe CP-4800	CP-4300, CP-4700, Fringe CP-4800	CP-4300, CP-4700, Fringe CP-4800

FM UHF VHF

Elements	32-13V-19U	43-19V-24U	53-22V-31U	61-29V-32U
Dimensions	72"L x 108"W	89-1/2"L x 110"W	114"L x 110"W	133-1/2"L x 112"W
Recommended Preamplifiers	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800
Elements	43-12V-31U	55-20V-35U	64-26V-38U	70-30V-40U
Dimensions	90"L x 110"W	114"L x 110"W	142"L x 110"W	177"L x 110"W
Recommended Preamplifiers	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800	CP-8300, CP-8700, CP-9000, Fringe CP-8900, CP-8800

FM VHF

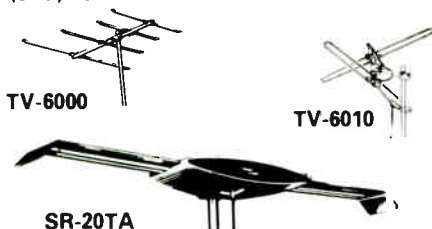
Elements	13	18	26
Dimensions	53-3/4"L x 110"W	76"L x 110"W	111"L x 110"W
Recommended Preamplifiers	CP-3000, CP-3700, CP-3800	CP-3000, CP-3700, CP-3800	CP-3000, CP-3700, CP-3800
Elements	36	40	45
Dimensions	159"L x 110"W	156"L x 110"W	199-1/2"L x 110"W
Recommended Preamplifiers	CP-3000, CP-3700, CP-3800	CP-3000, CP-3700, CP-3800	CP-3000, CP-3700, CP-3800

Prices and Specifications Subject to Change Without Notice.

VRF-189

WINEGARD CO.

3000 Kirkwood
Burlington, IA 52601
(319) 753-0121



SR-20TA TV ANTENNA

Solid-state VHF-UHF travel TV antenna for side mounting on travel trailers and RVs. Gives best possible color and black and white reception on all 82 TV channels. Mast mounts on side of vehicle and is raised to the receiving position manually. Antenna may be rotated and lowered over roof so no parts can be damaged by tree limbs or wires. Pre-amplifier circuit board is coated with sealant to provide corrosion and salt spray protection. All components enclosed to meet RVIA electrical standards. Package includes both 117VAC and 12VDC power supplies, 46" mast, TV set cord with band separator and 15' of coaxial cable.

RV-1000

RV TV ANTENNA REPAIR KIT

Repair kit for Winegard RV models RVH-2K, RVH-3, RVH-4. Small quantities of most used repair parts.

RVH-2K

AMPLIFIED RV ANTENNA

Winegard has designed the RVH-2K exclusively for recreational vehicles — modern space age design and compact rugged construction gives the RVH-2K a pleasing appearance and years of trouble free service. Sensar's solid state circuitry amplifies TV signals to pull in VHF and UHF stations up to 60 miles or more away, depending on terrain. Power supply mounts flush in wall, provides TV outlet on-off switch and pilot light. Power supply requires 12VDC.

Permanent corrosion resistant finish of the RVH-2K insures lifetime installation that will not rust, corrode or stain finish of vehicle. Easy to install — requires only simple hand tools. UL listed. Carton contain Sensar antenna, 20' coaxial cable, power supply, mounting hardware and antenna lift.

RVH-3

RV AND VAN TV ANTENNA

Same as RVH-2K shown above except 12VDC power supply has a 12 volt receptacle for TV outlet and includes a VHF-UHF, MSJ-6 band separator with TV set cord attached.

RVH-4

NON-AMPLIFIED RV ANTENNA

300 ohm version of the RVH-2K designed for use on recreational vehicles. The modern space-age design and compact construction give the RVH-4 an appealing look and years of trouble free service. Pulls VHF, UHF and FM signals in from 40 miles away. Includes antenna, lift assembly, rotating handle, elevating crank assembly, and 15' of antenna lead-in wire.

RA-3330

SIGNAL AMPLIFIER

300 ohm TV signal amplifier mounted on wall plate. Designed for use on any 300 ohm non-amplified RV antenna such as RVH-4, RV-7020, etc. Connects to 12V DC power supply of vehicle. Provides up to five times the input signal for improved picture quality and greater range.

TV-6000 FM ANTENNA

TV MAN, 4 element flat yagi for FM and FM/stereo reception. Recommended for suburban areas where a moderately directive antenna is required. Completely factory preassembled, unfolds in seconds for easy installation.

TV-6010 OMNI-DIRECTIONAL FM ANTENNA

For receiving signals in all directions. Compact design is recommended for city and suburban reception areas. Popular turnstile design features unique one piece construction for easy installation. (was FM-3T)

KU-420 UHF ANTENNA

Four bay bow-tie UHF antenna for channels 14 thru 83. Ships UPS.

KU-4202 UHF ANTENNA

Eight bay bow-tie similar to KU-420. Features 2.5dB more gain, excellent directivity and front-to-back ratio for channels 14 thru 83.

U-800 UHF ANTENNA

25 element yagi with corner reflector for regular UHF band, channels 14 thru 50.

T-876

UHF ANTENNA (TRANSLATOR)

16 element yagi with corner reflector for UHF band, channels 50 thru 83. Similar to U-800.

SINGLE CHANNEL AND BROADBAND YAGIS

"K" series 5 and 10 element VHF cut-to-channel and broadband yagi antennas. Full size, wide spread precision tuned elements. "K" series yagis are completely factory preassembled with lock-tight reflector hardware and wrap-around mast clamp. All elements and boom are constructed of gold finish aluminum — all hardware dichromate tridite or triple thick cadmium plated.

TV-6000
TV-6010

KU-420
KU-4202
U-800
T-876

SM-2200

SR-20A

RV-1000
RVH-2K
RVH-3
RVH-4

TV-Man Line Ant FM	\$22.50
TV-Man Line Ant FM	28.50
TV-Man Line Ant FM	\$29.75
UHF Ant.....	66.75
UHF Ant.....	37.50
UHF Ant.....	31.75
Scanner Ant	\$34.25
82 Ch Ant.....	\$90.25
RV Parts Kit	\$104.25
RV Ant	168.25
RV Antenna.....	180.75
RV Antenna.....	119.00

Prices and Specifications Subject to Change Without Notice.

VRF-190

ANTENNAS

SM-2200 SCANNER ANTENNA

Designed for peak performance on LO, HI and UHF public service bands. Vertically polarized with omni-directional pattern. Antenna is gold anodized. Mounts below TV antenna or on separate mast. Includes 65' coaxial cable with Motorola plug attached.

FM TRAP

Amplified models are equipped with a special FM circuit to prevent overload from strong local stations. Circuit may be easily switched out when FM amplification is desired.

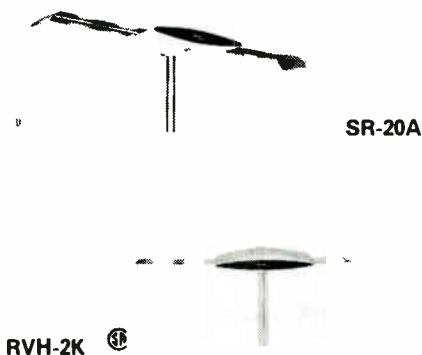
SR-20A HOME TV ANTENNA

Winegard's ultra-compact Sensar 82-channel TV antenna provides perfect color and black and white reception in most viewing areas.

The Sensar antenna has elegant modern styling which blends with the decor of any home setting. Compact, unobtrusive design does not require elaborate mounting hardware, yet Sensar installations are stronger than conventional antennas with comparable performance.

Unique bi-directional characteristics of a Sensar antenna provides excellent reception in areas where stations are in different directions. Eliminates the need for an antenna rotor in most locations.

Recommended for viewing areas up to 50 miles from transmitters...even farther depending on mounting height and signal strength. The SR-20A features built-in solid state modular amplifier, plus power-supply and band separator. Requires 117VAC power. Ships UPS.



WINEGARD CO.

3000 Kirkwood Street
Burlington, IA 52601
(319) 753-0121

CHROMSTAR II™ PREAMPLIFIERS



PA-1375

75 ohm input and output
channels 2 thru 13 amplified
UHF bypassed

PA-4975

75 ohm input and output
channels 14 thru 83 amplified
VHF bypassed

PA-8275

75 ohm input and output
channels 2 thru 83 amplified

Winegard's PA series preamplifiers provide the systems installer with the latest high technology, RF circuitry available. Noise figure, gain and VSWR specifications are carefully engineered to maintain the highest signal quality while providing sufficient levels to overcome downlead loss and drive the system amplifiers to their rated outputs. Models which amplify VHF feature a selectable FM trap that reduces FM signals (88 to 108MHz) — 15dB to prevent overload from strong local stations. PA series circuitry is designed for maximum stability and housed in a rugged extruded aluminum housing for years of maintenance free service. Mounting hardware provided. UL listed.

GAIN (dB) CHANNEL	2	7	13	26	49	83
PA-1375	29	26	23	-0.8	-0.6	-1.0
PA-4975	-1.3	-0.7	-1.0	30	29	25
PA-8275	29	25	23	31	26	26

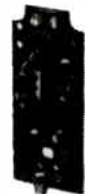
		PA-1375	PA-4975	PA-8275
BANDPASS	VHF	50 to 220MHz	50 to 220MHz	50 to 220MHz
	UHF	460 to 900MHz	460 to 900MHz	460 to 900MHz
NOISE FIGURE	VHF	2.0dB	NA	2.0dB
	UHF	NA	1.0dB	1.0dB
MAX. TOTAL OUTPUT	VHF	64dBmV (1.5V)	NA	63dBmV (1.4V)
	UHF	NA	62dBmV (1.3V)	62dBmV (1.3V)
MAX. TOTAL INPUT	VHF	80.000uv	NA	80.000uv
	UHF	NA	45.000uv	45.000uv
VSWR OUTPUT	VHF	1.2:1	1.3:1	1.2:1
	UHF	1.2:1	1.2:1	1.2:1
FM TRAP SELECTABLE		-15dB	NA	-15dB
RESPONSE		± 25dB per 6MHz Channel		
IMPEDANCE INPUT		75 ohm unbalanced		
OUTPUT		75 ohm unbalanced		
MOUNTING TYPE		Mast		
ACC. FURNISHED		Mtg hardware, 4 F-59 Conn, Boot, 1 Power Supply		



EXCLUSIVE HOUSING



DOWNLEAD CARTRIDGE



PREAMPLIFIER CARTRIDGE

DOWNLEAD/PREAMP HOUSING FEATURES

- Preattached to all Chromstar antennas
- Includes downlead circuit board with installer choice of 300 or 75 ohm connection. Protects connections from water, salt, etc.
- Molded of clear, G-E Lexan® to prevent breakage, insured protection against ultra-violet rays and chemical deposits
- New snap-lock feature eliminates use of inconvenient small screws
- Accepts addition of any Chromstar II preamplifier and/or "TP" channel trap
- If preamplifier is removed, downlead can be reconnected to terminal board so antenna owner is not without reception
- The universal housing, CPH-1, can be attached to any make antenna or mast
- Selectable FM trap reduces FM signal to prevent overload from strong stations

CHROMSTAR II PREAMPLIFIERS HELP TO SOLVE TOUGH RECEPTION PROBLEMS

Size and cost limit the gain available from TV antennas, therefore where more gain is required an antenna mounted preamplifier is the best solution. Antenna mounted preamplifiers increase signal levels at the point of signal interception and improve picture quality throughout the system. Because preamplifiers are located on or near the antenna downlead terminals, they have at their input the best quality signals available.

Winegard Chromstar II preamplifiers are available with specifications to meet every local reception requirement. The Chromstar II line features models for use in mixed strong local and fringe signal areas which need high input levels to prevent overload and models for deep fringe areas which require high gain and low noise to boost signals to a useable level and preserve picture quality. Combinations of these specifications are also available for VHF and UHF channels to give the user a perfect custom installation for his particular area.

CHROMSTAR II™ PREAMPLIFIER CROSS REFERENCE

PREAMPLIFIER	CHROMSTAR II REPLACEMENT PREAMPLIFIER	HOUSING
AC-2230	CP-3000	
AC-2950	CP-3700	
AC-9130	CP-3800	
AC-4950	CP-4700	
AC-4990	CP-4800	
AC-8230	CP-8300	
AC-8950	CP-8700	
AC-9990	CP-8800	
AC-9880	CP-8900	
AC-9820	CP-9000	
AH-0100	CPH-1	
GA-3000	CP-3000 + CPH-1	
GA-3700	CP-3700 + CPH-1	
GA-3800	CP-3800 + CPH-1	
GA-2830	CP-2830 + CPH-1	
GA-2870	CP-2870 + CPH-1	
GA-2880	CP-2880 + CPH-1	
GA-4700	CP-4700 + CPH-1	
GA-4800	CP-4800 + CPH-1	
GA-4830	CP-4830 + CPH-1	
GA-8300	CP-8300 + CPH-1	
GA-8700	CP-8700 + CPH-1	
GA-8780	CP-8780 + CPH-1	
GA-8800	CP-8800 + CPH-1	
GA-8900	CP-8900 + CPH-1	
GA-9000	CP-9000 + CPH-1	



ANTENNA

NOTE: Both housing and preamp must be ordered to replace each GA series preamp.

		SPECIAL PURPOSE Separate VHF and UHF inputs (For antennas other than Chromstar II)															
		HIGH INPUT MODELS			HIGH GAIN, LOW NOISE MODELS							HIGH INPUT	HIGH GAIN LOW NOISE	HIGH INPUT	HIGH INPUT		
		CP-3000 CP-3700	CP-4700	CP-8300 CP-8700	CP-3800	CP-4830 CP-4800	CP-8780	CP-8800	CP-8800	CP-8000	CP-2830 CP-2870	CP-2880	CP-2837	CP-2847			
GAIN Avg. (dB)	VHF	15.6	-1.0	15.9	28.0	-1.6	15.0	27.9	18.0	29.0	15.5	28.0	17.0	-2.5			
	UHF	-4.0	15.0	15.8	-3.0	19.8	26.0	20.3	21.5	14.0	14.7	19.6	4.0	18.0			
MAX. TOTAL OUTPUT* (Volts)	VHF	1.2	..	1.1	1.0	..	0.78	1.0	1.0	1.2	1.0	1.0	1.2	..			
	UHF	..	1.0	1.1	..	0.8	0.75	0.8	0.9	0.9	1.0	0.8	1.2	..			
MAX. TOTAL INPUT* (Volts)	VHF	0.18	..	0.18	0.04	..	0.160	0.04	0.20	0.075	0.18	0.04	0.17	..			
	UHF	..	0.18	0.18	..	0.08	0.039	0.08	0.13	0.200	0.18	0.08	..	0.16			
NOISE FIGURE (in dB)	VHF	3.1	..	3.1	3.4	..	4.0	3.4	3.0	3.0	3.1	3.5	3.0	..			
	UHF	..	7.3	7.3	..	4.2	3.9	4.0	2.2	8.5	7.8	4.0	..	7.2			
BANDPASS	VHF	All models that amplify VHF (54 to 216MHz) are equipped with a selectable FM trap. This trap attenuates the FM band (88 to 108MHz) and reduces problems with overload from strong local FM stations.															
UHF	54-216MHz 470-890MHz																
INPUT CONNECTIONS		300 ohm, No-Strip Screw Type															
OUTPUT CONNECTIONS		300 ohm 75 ohm	300 ohm 75 ohm	300 ohm 75 ohm	75 ohm	300 ohm 75 ohm	75 ohm			300 ohm 75 ohm	75 ohm	75 ohm	75 ohm	75 ohm			
FM TRAP		YES	NA	YES	YES	NA	YES			YES	YES	YES	YES	NA			
POWER REQUIREMENTS		117VAC, 60Hz, 4.3 Watts										5.0 Watts 117VAC, 60Hz				117VAC, 60Hz, 4.3 Watts	
ACCESSORIES FURNISHED		Power Supply, Mounting Bracket and Hardware, 3F-59 Connectors with all 75 ohm output models															

* Ch. VHF 5 Ch. UHF 0.5% Cross Modulation (40 Ch. eqpt)

Prices and Specifications Subject to Change Without Notice.

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