

BROADCAST ENGINEERING

1987 Annual Issue/\$20

1987

**Buyer's
BAG**

**Spec
Book**

**Your
Year-Long
Reference**

TELEVISION SUPERSTATION, AFFILIATE OR INDEPENDENT... ADM MAKES YOUR CHANGE TO STEREO EASY

When you're making the transition to stereo TV, make the move to ADM. In addition to stereo, you can have the traditional ease of operation, reliability and quality available only with ADM consoles.

ADM's top of the line BCS has proven to be a best seller at major networks, affiliates and independents. The console features input pre-selection and bussing, dual cue, group mute and Slidex® VCA control of all main program paths provide superior stereo tracking... making ADM your logical choice.



BCS SERIES

For any broadcaster who needs ADM quality at a price that will be gentle on your equipment budget, the S/TV fills the bill.

With the ADM five year warranty on parts and labor you can buy it and forget it. It will handle your stereo needs now and in the future. Call us, we like to make life easier for our friends.



S/TV SERIES

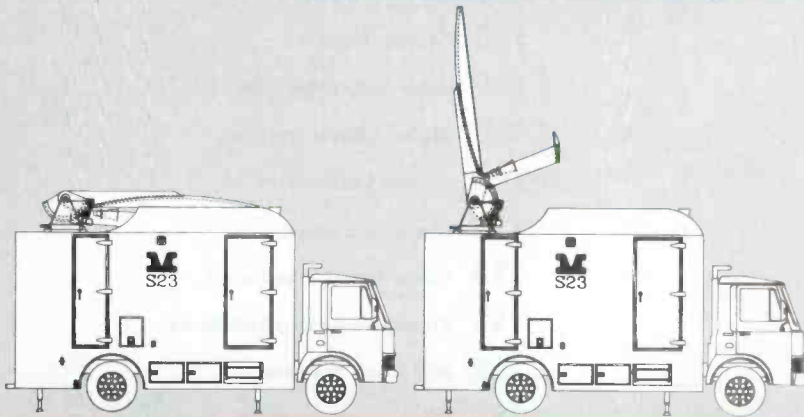
ADM®
The
Audio
Company

ADM Technology, Inc.
1626 E. Big Beaver Road, Troy, Michigan 48084
Phone: (313) 524-2100 • TLX 23-1114
Circle (1) on Reply Card

Mobile Satellite News Systems



— The Second Generation



At the 1986 NAB Show in Dallas, Midwest ushered in the **SECOND GENERATION** of Mobile Satellite News Systems, the S-18... featuring the new Vertex 1.8M, Dual Reflector, Off-set Ku Antenna, specifically designed for this new service.

At the 1986 RTNDA Show in Salt Lake City, yet another Midwest innovation, the S-23, was introduced, featuring a 2.6M version of the Vertex Antenna, with 50 dbi Gain and 35db of Cross Polar Isolation.

For more information on this remarkable new antenna technology, Midwest's modular TWT Power Amplifier Systems, and other **SECOND GENERATION** innovations, call us at 800-543-1584.

Cincinnati, OH 606-331-8990	Toledo, OH 419-382-6860	Grand Rapids, MI 616-796-5238	Nashville, TN 615-255-2801	Kansas City, KS 913-469-6810	Roanoke, VA 703-980-2584	Washington, D.C. 301-577-4903	Tampa, FL 813-885-9308
Columbus, OH 614-846-5552	Pittsburgh, PA 412-364-6780	Louisville, KY 502-491-2888	Knoxville, TN 615-687-9515	Atlanta, GA 404-875-3753	Charlotte, NC 704-399-6336	Baltimore, MD 301-665-9323	Orlando, FL 305-898-1885
Dayton, OH 513-435-3246	Indianapolis, IN 317-872-2327	Lexington, KY 606-277-4994	Bristol, TN 615-968-2289	Norfolk, VA 804-853-2600	Raleigh, N.C. 919-850-9811	Miami, FL 305-592-5355	New Orleans, LA 504-542-5040
Cleveland, OH 216-447-9745	Detroit, MI 313-689-9730	Charleston, WV 304-768-1252	St. Louis, MO 314-569-2240	Richmond, VA 804-262-5788	Greenville, S.C. 803-226-9259	Jacksonville, FL 904-642-8368	Seattle, WA 206-232-3550

Circle (3) on Reply Card

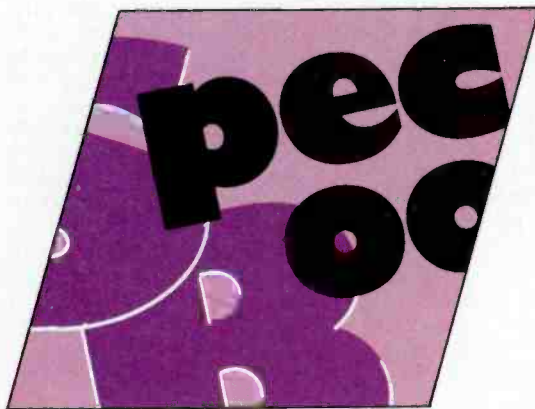
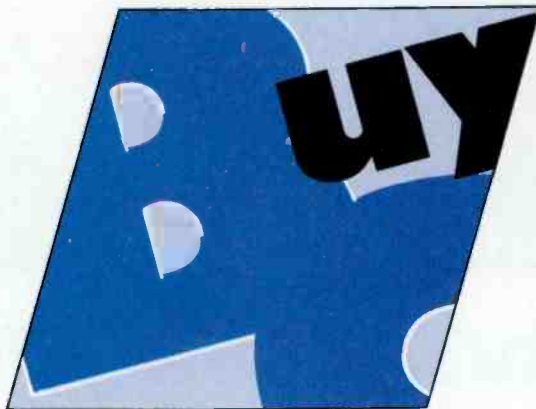
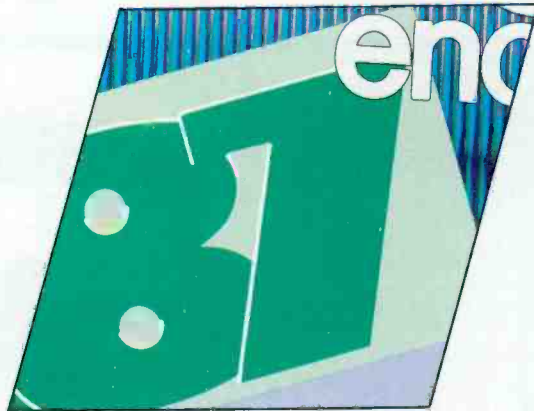


MIDWEST
Communications Corp.

One Sperti Drive
Edgewood, KY 41017

Contents

1987 BG/SB • Volume 28 • Number 13



BROADCAST ENGINEERING

SPECIAL ISSUE: BUYERS' GUIDE/SPEC BOOK

6 Letter from the Editors

BUYERS' GUIDE

11 Introduction to the Buyers' Guide

14 Product Directory

A listing of more than 1,000 broadcast manufacturers provides you with the companies who offer the equipment you need. The blue listings indicate advertisers in this issue and the page number of their ads.

77 Manufacturers' Addresses

If you ever need the address and/or telephone number to contact a company, this directory provides the most up-to-date information.

129 Dealers/Distributors

This directory puts you in close contact with the dealers and distributors within particular states that carry the equipment you need.

SPEC BOOK

147 VIDEO SPECS

147 Color TV Camera

153 Camera Lenses

155 Color Video Monitors

160 Digital Effects Systems

163 Editing Controllers

173 Graphics Systems

179 Video Signal Processors

183 Video Production Switchers

188 Still-Store Systems

189 TBCs/Synchronizers

192 Time Code Equipment

197 AUDIO SPECS

199 Videotape Recorders

203 Mixers

224 Compact Disc Players

226 Audio Recorders

ON THE COVER

The Fall **Buyers' Guide/Spec Book** is a comprehensive reference manual for radio and TV broadcasters. This special **BE** publication can be used as a guidebook whenever an equipment purchase is being planned. Keep this annual publication on your desk for reference throughout the year. The striking cover design for the **BE Buyers' Guide/Spec Book** was conceived by graphic designer Kristi Younger

HOW THE SK-110D PUTS AN END TO THE REIGN OF ERROR.

With the SK-110D, Hitachi has created a studio broadcast camera with microprocessor technology, so accurate that registration errors and time-consuming setup are things of the past.

Using a single button, now you can automatically set up RGB, color balance, and analog and digital registration—along with complete fault diagnosis—for up to 42 cameras simultaneously in just two minutes. And while you're shooting, the SK-110D keeps correcting real-time zoom and focusing errors, as well as registration changes caused by fluctuating prism temperatures.

The SK-110D performs magnificently.

Here's why:

The 30-mm LOC diode gun Plumbicon and electronics yield 750 lines horizontal resolution and greater than -56dB S/N. Dynamic focus provides for superb corner resolution. And detail signals are generated from both red and green.

The SK-110D is also today's most technologically advanced and versatile camera system. It offers iris and auto-setup by external chart. It has a high-resolution viewfinder with electronic markers.

The battery-backed head and CCU store up to four full-function files, eight lens files and 64 scene files. And add a smart RCU that controls those files, and you've got a camera that can precisely remember the "look" of every production shot you'll take.

Put an end to the reign of error in your studio today. And usher in a new era of image quality with the Hitachi SK-110D. For a demonstration in your studio contact Hitachi Denshi America Ltd., Broadcast and Professional

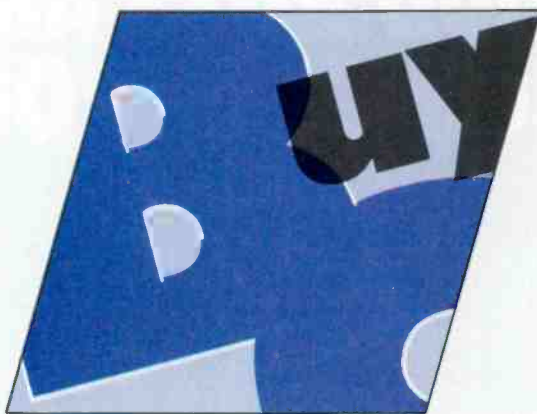
Division, 175 Crossways Park West, Woodbury, NY 11797; (516) 921-7200 or (800) 645-7510. Canada: Hitachi Denshi, Ltd. (Canada), 65 Melford Drive, Scarborough, Ontario M1B 2G6; (416) 299-5900.

 **HITACHI**

Circle (4) on Reply Card



Table of contents



233 Telephone Bandwidth Extenders

234 Audio Delay Systems

236 Audio Processors, Level Control

239 TRANSMITTING, TEST & MEASURING SPECS

242 Wireless Microphones

246 Transmitters

258 Aural STL Systems

259 Distortion Analyzers

261 Modulation Monitors

262 Vectorscopes

263 Waveform Monitors

264 TV Demodulators

266 TV Test Systems

BROADCAST
engineering

Editorial and advertising correspondence should be addressed to: P.O. Box 12901, Overland Park, KS 66212-9981 (a suburb of Kansas City, MO); (913) 888-4664. Telex: 42-4156 Intertec OLPK. Circulation correspondence should be sent to the above address, under P.O. Box 12937.

EDITORIAL

Jerry Whitaker, *Editorial Director*
 Brad Dick, *Radio Technical Editor*
 Ned Soseman, *TV Technical Editor*
 Carl Bentz, *Special Projects Editor*
 Dan Torchia, *Group Managing Editor*
 Paula Janicke, *Associate Editor*
 Dawn Hightower, *Associate Editor*
 Pat Blanton, *Directory Editor*

ART

Kristi Younger, *Graphic Designer*

EDITORIAL CONSULTANTS

Fred Ampel, *Audio*
 Miguel Chivite, *International*
 Nils Conrad Persson, *Electronics*
 Tom Cook, *Video*
 Mel Lambert, *Professional Audio*

BUSINESS

Cameron Bishop, *Group Vice President*
 Duane N. Hefner, *Publisher*
 Stephanie Fagan, *Promotions Manager*
 Cynthia Sedler, *Promotions Coordinator*
 Dee Unger, *Advertising Supervisor*
 Mary Birnbaum, *Advertising Coordinator*

Advertising sales offices listed in classified section.

ADMINISTRATION

R. J. Hancock, *President*
 John C. Arnst, *Circulation Director*
 JoAnn DeSmet, *Circulation Manager*
 Kevin Callahan, *Art Director*
 Dee Manies, *Reader Correspondent*

TECHNICAL CONSULTANTS

Eric Neil Angevine, *Broadcast Acoustics*
 John H. Baltison, *Antennas/Radiation*
 Blair Benson, *TV Technology*
 Dennis Ciapura, *Radio Technology*
 Dane E. Ericksen, *Systems Design*
 Howard T. Head, *FCC Rules*
 Wallace Johnson, *FCC/Bdct. Engineering*
 John Kean, *Subcarrier Technology*
 Donald L. Markley, *Transmission Facilities*
 Harry C. Martin, *Legal*
 Robert J. Nissen, *Studio/Communications*
 Hugh R. Paul, *International Engineering*
 Art Schneider, *A.C.E., Post-production*
 Elmer Smalling III, *Cable/Satellite Systems*
 Vincent Wasilewski, *Communications Law*

MEMBER ORGANIZATIONS

Acoustical Society of America
 Society of Broadcast Engineers
 Member, Association of Business Publishers
 Member, Business Publications Audit of Circulation



SUBSCRIPTIONS: BROADCAST ENGINEERING is mailed free to qualified persons within the United States and Canada in occupations described above. Non-qualified persons may subscribe at the following rates: United States and Canada; one year, \$25.00. Qualified and non-qualified persons in all other countries; one-year, \$30.00 (surface mail); \$108.00 (air mail). Back issue rates, \$5, except for the Buyers' Guide/Spec Book, which is \$20. Rates include postage. Adjustments necessitated by subscription termination at single copy rate. Allow 6-8 weeks for new subscriptions or for change of address. Second class postage paid at Shawnee Mission, KS.

BROADCAST ENGINEERING, Volume 28, No. 13 (USPS 338-130) is published monthly (except in the fall, when two issues are published) by Intertec Publishing Corporation, 9221 Quivira Road, P.O. Box 12901, Overland Park, KS 66212. Second Class Postage paid at Shawnee Mission, KS and additional mailing offices. **POSTMASTER:** Send address changes to BROADCAST ENGINEERING, P.O. Box 12983, Overland Park, KS 66212.

Photocopy rights: Permission to photocopy for internal or personal use is granted by Intertec Publishing Corporation for libraries and others registered with Copyright Clearance Center (CCC), provided the base fee of \$2.00 per copy of article is paid directly to CCC, 21 Congress St., Salem, MA 01970. Special requests should be addressed to Cameron Bishop, group vice president. ISSN 0007 1794 \$2.00 + \$0.00.

©1986. All rights reserved.

Advertising offices listed on page 164.



LEADER



Once-in-a-lifetime events don't happen twice!

This 8-lb EFP/ENG Monitor confirms your field productions are perfect, first time, every time!

The LVM-5863A Color/Audio/Waveform Monitor confidence tests camera and VCR performance anywhere. Shows you the overall production quality immediately... with full color (NTSC) and sound. LVM-5863A lets you be sure all your productions are technically and artistically correct before you leave the location. The LVM-5863A confirms white balance, sync and burst levels. Its 2H and 2V waveforms show both line and field rate signals. A switchable IRE filter makes it easy to check peak video. And for

accurate verification of setup and black balance, switch on the 4x magnifier. With all this, the LVM-5863A is easy to use since controls are kept to a minimum.

It goes anywhere.

Lightweight and small, the LVM-5863A is easy to hand carry or to mount in trucks, vans or helicopters. Requiring only 12 Vdc, it can use a readily available, self-contained battery (Sony NP-1 or equivalent) or

external power sources such as vehicles and EFP battery belts.

Quickly pays for itself.

The LVM-5863A eliminates the risk of time-wasting, cost-increasing, missed or poor-quality shots.



LVM-5863A

Call toll-free
(800) 645-5104

In NY State
(516) 231-6900

Request an evaluation sample, our latest Test Instrument Catalog with over 100 outstanding products, the name and address of your nearest "Select" Leader Distributor, or additional information.

For professionals

who know
the difference.

LEADER
Instruments Corporation

380 Oser Avenue, Hauppauge, New York 11788
Regional Offices:
Chicago, Dallas, Los Angeles, Boston, Atlanta
In Canada call Omnitronix Ltd. (514) 337-9500

For product demonstration Circle 5 on Reply Card

For product information Circle 6 on Reply Card



Welcome to **Broadcast Engineering's** 1987 *Buyers' Guide/Spec Book*. For busy engineers, like yourself, reference material should be easy and convenient to use. Whether you operate a radio or TV broadcast facility, an audio or video production studio or do consulting work for any type of broadcast communications system, you don't want to thumb through any more references than necessary to find names, phone numbers and other pertinent information. That is why readers keep the combined *Buyers' Guide* and *Spec Book* issue on their bookshelf.

Making contact

The *Buyers' Guide* section provides an up-to-date listing of 1,200 companies involved with products and services for the broadcasting industry, an increase of more than 160 from last year. Each entry includes addresses and phone numbers for your key contact with that company. Many also include regional sales offices for your convenience.

Another section of the *Buyers' Guide* lists major distributors by stages. Each is keyed with the product areas that are supported and the geographical areas that are served.

More than 350 categories of products relating to broadcasting are identified. Each has a list of the manufacturers supporting that product. For your conven-

ience, advertisers in the issue have been printed in blue, alerting you to further information about the company and its products. These lists have been generated by information provided by the manufacturers.

Special heavy stock tab pages separate the various sections, making them easier to locate. Reader service numbers are keyed to each advertiser to bring you data sheets and other information as quickly as possible. But there's more.

By the numbers

The *Spec Book* portion of the issue, now in its sixth year, is unique in the industry. Forty-one categories of the equipment products that make up the radio and TV industry are included. A selection of the primary specifications are arranged in a comparative format. This gives you the chance to see at a glance what model(s) best fit your application.

The information in *Spec Book* is not presented for the final step in decision making. Rather, it is the place to start when thinking about equipment acquisition. From *Spec Book* you will contact those companies offering the products most applicable to your operation. That contact is simplified by the individual reader service numbers supplied with the 1,023 items in the comparative listings. The products are all important items that are becoming essential in to-

day's broadcast station.

Please note

Equipment prices have not been included as a specification, even though many have asked for that information. Because we know that pricing often varies with the equipment package, we feel that product pricing is best discussed between you and the manufacturer.

Also, be aware that it is impossible to list every product available from every manufacturer within the product categories used. In compiling the *Spec Book* information, a diligent attempt has been made to provide the widest spectrum of products possible. You may find that a question about a possible product, directed at a manufacturer, will lead you to exactly the item you were looking for.

Keep in touch

The staff of **Broadcast Engineering** is pleased to provide you with the *Buyers' Guide/Spec Book* as one of the industry's leading reference books for equipment acquisition. If you have suggestions that will help us to improve this service, you will find the **BE** staff open to ideas. After all, the purpose of our publication is to serve this industry of which you are an important part. With your help we will continue to see it grow and prosper.

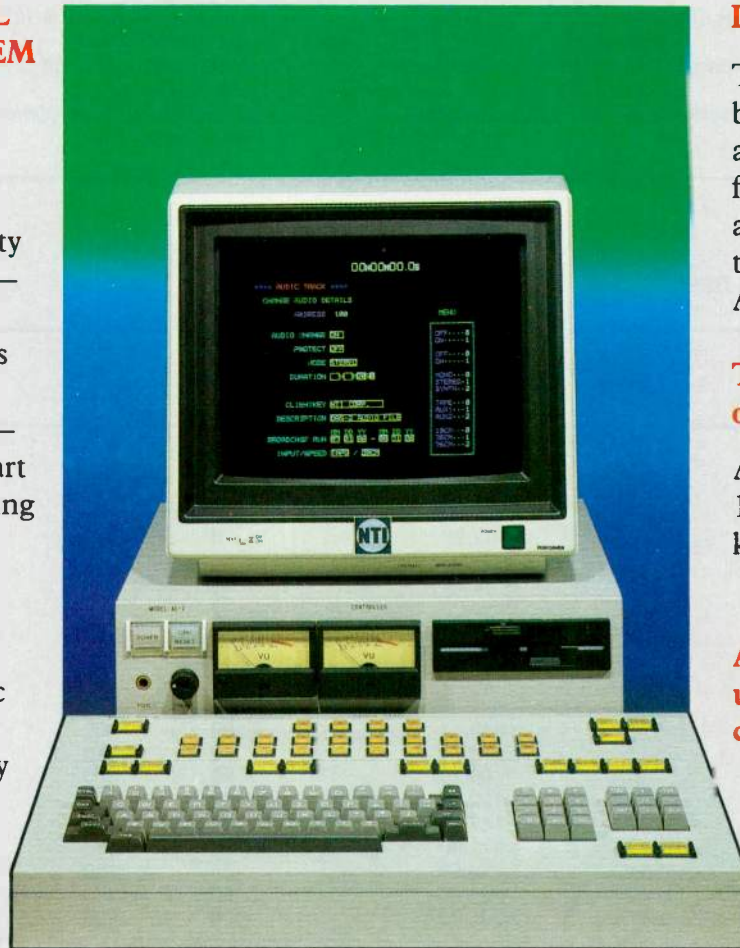
The Editors.

Say goodbye to mechanical tape failures — with the DAS-2 digital audio system

No more jammed tapes, broken cartridges, wow and flutter, phase problems, loss of high frequency response, tape breakage, machine malfunctions, airplay of outdated spots, and errors caused by manual logging . . .

The DAS-2 DIGITAL AUDIO FILE SYSTEM solves these problems **PLUS:**

- You can store up to 28 hours of high quality digital programming — spot announcements, sales promotions, news actualities as well as full length programs — using the state-of-the-art DPCM-AQ-AS recording method.
- The DAS-2 can be interfaced with your station's EDP or traffic computer via a serial port or MS DOS floppy disk providing positive verification of airplay.
- Special 20 button, 4 page access feature offers you the choice of up to 80 events for instant playback.
- Choice of either automatic or manual mode.



- User friendly operation.
- Easy to expand for your station's future growth.

Proven track record.

The DAS-2 system has been operating flawlessly at major overseas stations for more than 5 years, and has been redesigned to meet the needs of the American broadcaster.

Three systems are offered:

AM @ 10 kHz, FM @ 15 kHz and FM @ 20 kHz response.

• • •

Are you ready to upgrade to the DAS-2 digital audio system?

For further information or to arrange for a hands-on demonstration, contact:

Broadcast Engineering
Mitsubishi International Corp.
46305 Landing Parkway
Fremont, California 94538

(415) 651-9931. Call collect.



Designed and built by the innovators of digital storage for broadcasting:
Nippon Television Industry Corporation



Sold and supported in the U.S.A. by:
Mitsubishi International Corporation
Electronic Equipment Division: Fremont, CA

Circle (7) on Reply Card

TABLE 1. FORMULAS

<p>Temperature</p> $C^{\circ} = (F^{\circ} - 32) \times (5/9) = (F^{\circ} - 32)/1.8$ $F^{\circ} = (C^{\circ} \times (9/5)) + 32 = 1.8C^{\circ} + 32$ <p>Resistance</p> <p><i>In series:</i> $R_{total} = R_1 + R_2 + R_3 + \dots$</p> <p><i>In parallel:</i></p> <p>general $R_{total} = 1/((1/R_1) + (1/R_2) + (1/R_3) + \dots)$</p> <p>for R_1 & R_2 $R_t = R_1 \times R_2 / (R_1 + R_2)$ $R_1 = R_t \times R_2 / (R_2 - R_t)$</p> <p>(Note: For capacitance in parallel, use series resistance formula. For capacitance in series, use parallel resistance formula.)</p>	<p>Ohm's Law</p> <p><i>dc circuits:</i></p> $E = I \times R = P/I = (P \times R)^{1/2} \quad R = E/I = P/I^2 = E^2/P$ $I = E/R = P/E = (P/R)^{1/2} \quad P = I \times E = I^2 \times R = E^2/R$ <p><i>ac circuits:</i></p> $I = E/Z = (P/(Z \cos \theta))^{1/2} = P/(E \cos \theta)$ $E = I \times Z = ((P \times Z)/\cos \theta)^{1/2} = P/(I \cos \theta)$ $Z = E/I = P/(I^2 \cos \theta) = (E^2 \cos \theta)/P$ $P = I^2 Z \cos \theta = I E \cos \theta = (E^2 \cos \theta)/Z$ $\cos \theta = P/E = (\text{true power})/(\text{apparent power}) = \text{pf or power factor}$
---	---

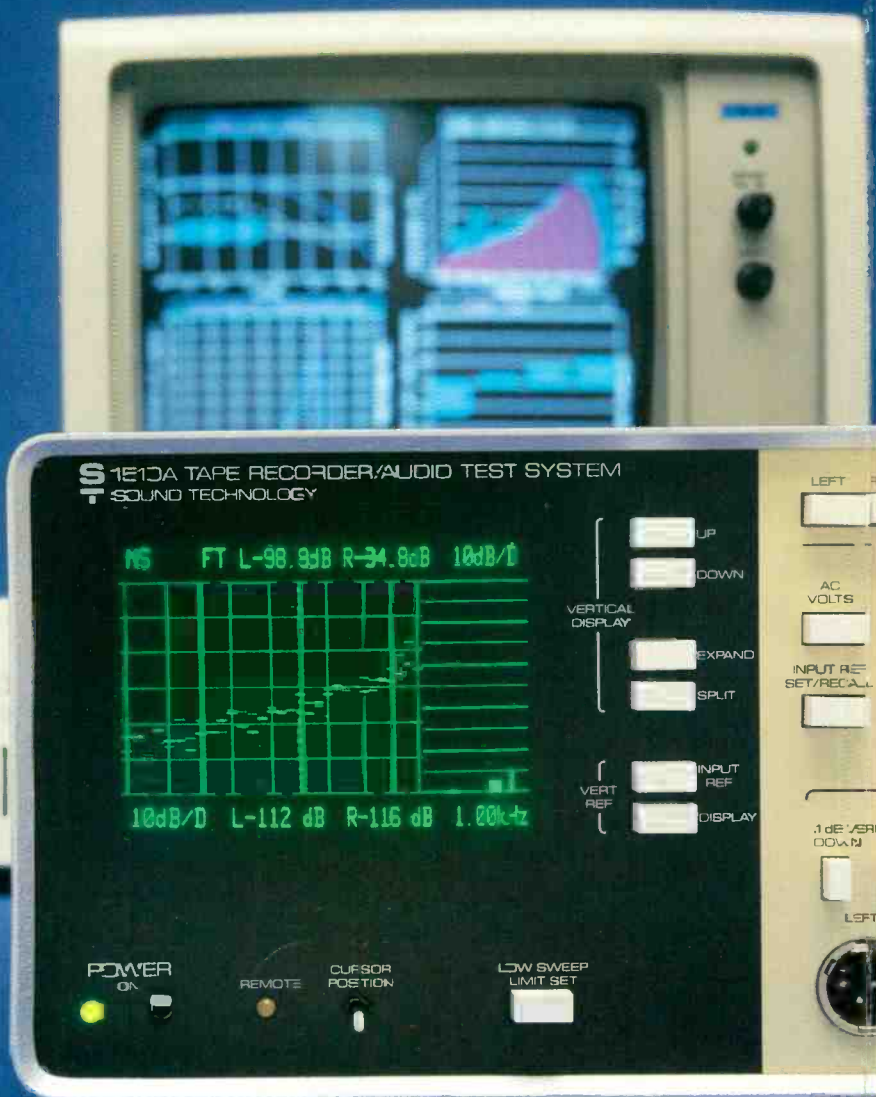
TABLE 2. COAXIAL CABLE DELAY

Cable length (feet)	Delay time (ns)	Degrees of phase NTSC	PAL	Cable length (meters)	Delay time (ns)	Degrees of phase NTSC	PAL
1	1.54	1.99	2.46	1	5	6.45	7.99
2	3.08	3.97	4.92	2	10	12.89	15.97
3	4.62	5.96	7.38	3	15	19.34	23.96
4	6.15	7.93	9.82	4	20	25.79	31.94
5	7.69	9.91	12.28	5	25	32.23	39.93
6	9.23	11.90	14.74	6	30	38.68	47.91
7	10.77	13.89	17.20	7	35	45.13	55.90
8	12.31	15.87	19.66	8	40	51.57	63.89
9	13.85	17.86	22.12	9	45	58.02	71.87
10	15.38	19.83	24.56	10	50	64.46	79.86
20	30.77	39.67	49.14	20	100	128.93	159.72
30	46.15	59.50	73.71	30	150	193.39	239.57
40	61.54	79.34	98.29	40	200	257.86	319.43
50	76.92	99.17	122.85	50	250	322.32	399.29
60	92.31	119.01	147.43	60	300	386.79	479.15
70	107.69	138.84	172.00	70	350	451.25	559.01
80	123.08	158.69	196.58	80	400	515.72	638.86
90	138.46	178.52	221.14	90	450	580.18	718.72
100	153.85	198.36	245.72	100	500	644.64	798.58

TABLE 3. CONVERSION FACTORS AND CONSTANTS

$\pi = 3.14$	$2\pi = 6.28$
$\pi^2 = 9.87$	$(2\pi)^2 = 39.5$
$e = 2.718$	$\log \pi = 0.497$
$\sqrt{2} = 1.414$	$\ln_e(10) = 2.303$
$\sqrt{3} = 1.732$	$1 \text{ radian} = 57.3^{\circ}$
1 in = 25.4mm = 2.54cm	
1 m = 39.36in = 3.28ft	
1 km = 0.621mi	
1 kg = 2.2 lb	
1 l = 1.06 qt	
1 oz = 28.35 g	
1 hp = 42.4BTU/min = 746W	

The best of both worlds:



THE SOUND TECH 1510A AUDIO TEST SYSTEM

Until recently, most Audio Test Systems have been either manual stand-alone systems or external-computer driven automated systems.

Engineers have long enjoyed the portability, ease of operation and cost effectiveness associated with manual stand-alone systems. Unfortunately, these systems have always lacked speed and documentation capabilities.

On the other hand, the ideally configured external-computer driven test system can provide speed, data analysis, documentation, graphics and integration with other GPIB test systems. Unfortunately external-computer driven systems are designed for production testing and are not suitable for troubleshooting or field work.

However, Sound Technology has combined the Best of Both Worlds into a portable, intelligent stand-alone system with complete PC compatibility: the Model 1510A! The Model 1510A can be used as an intelligent stand-alone system, and when connected to an external computer it becomes the ideal Automated Test System.

The ST1510A as a Stand-alone System

- Built-in Intelligence
- Portable
- Semi-automatic and Manual Test modes for fast troubleshooting
- Built-in CRT/Graphics

The ST1510A as an Automated Test System

- Graphics
- Test Chaining/limit testing
- Industry-standard Computer Interface (GPIB)
- User Choice of PC
- Bundled software for IBM, HP
- Compatible with Automated Switchers
- Production Testing

Contact us now for full technical and applications information. Learn firsthand why the ST1510A is the only test system that combines the best of both worlds!

SOUND TECHNOLOGY

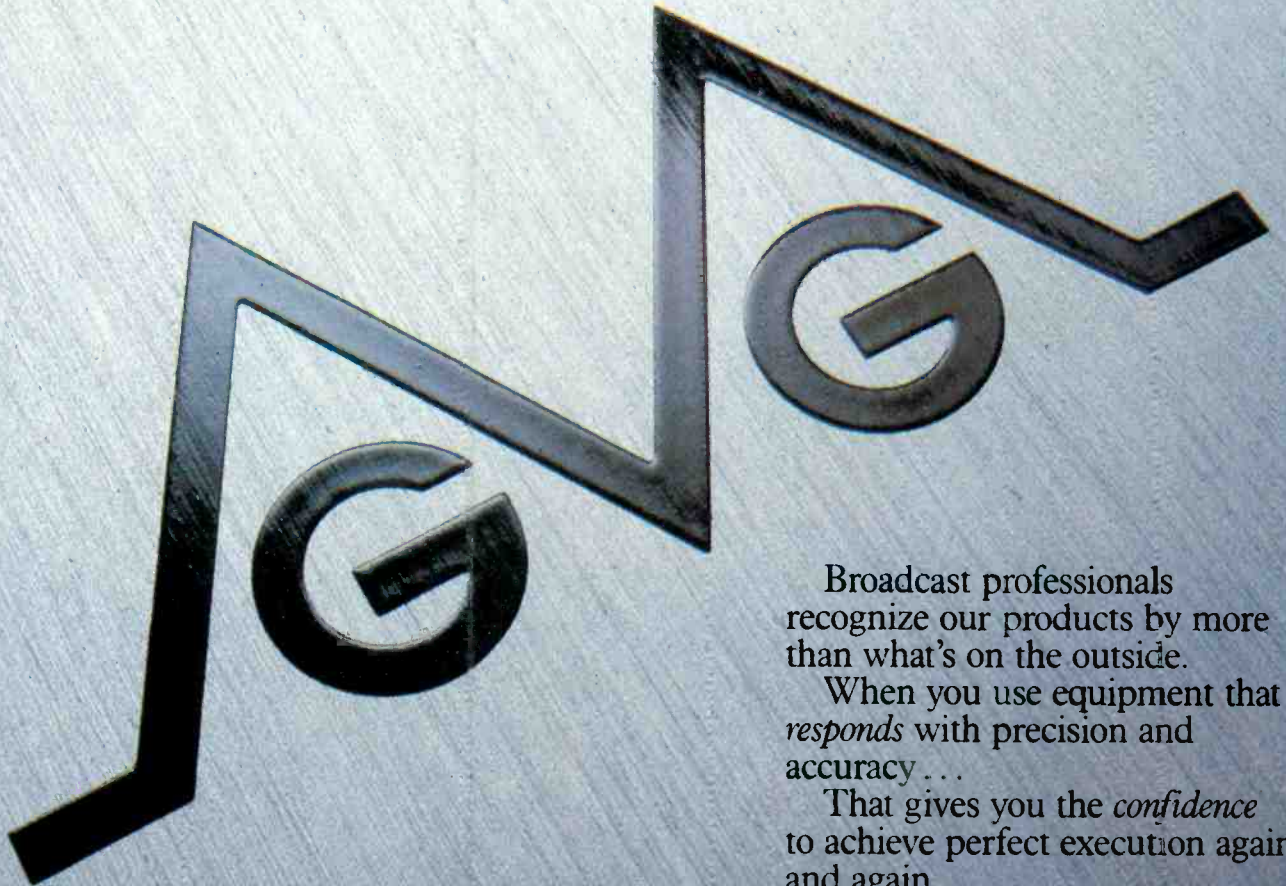
1400 Dell Avenue
Campbell, California 95008
(408) 378-6540 Telex: 357445



**Put The Best
To Test!**

Circle (150) on Reply Card

On it. In it. Behind it.



Broadcast professionals recognize our products by more than what's on the outside.

When you use equipment that *responds* with precision and accuracy...

That gives you the *confidence* to achieve perfect execution again and again...

That's backed by a world-famous *commitment* to innovation and customer support...

You know it's from Grass Valley Group.

Grass Valley Group[®]

STRENGTH YOU CAN RELY ON

PRODUCTION SWITCHERS EDITORS DIGITAL EFFECTS GRAPHICS SYSTEMS ROUTING SWITCHERS
 MASTER CONTROL AUTOMATION SIGNAL PROCESSING/DISTRIBUTION/TIMING EQUIPMENT FIBER OPTICS

THE GRASS VALLEY GROUP, INC. P.O. Box 1114, Grass Valley, CA 95945 USA (916) 273-8421 TRT 160432
 OFFICES: New York (201) 848-7388, Detroit (313) 622-6313, Atlanta (404) 493-1255, Chicago (219) 264-0931, Minneapolis (612) 483-2594
 Dallas/Fort Worth (817) 483-7447, Los Angeles (818) 999-2303, San Francisco (415) 968-6680. A Tektronix Company

Circle (151) on Reply Card

The 1987 BUYERS' GUIDE PRODUCT LISTINGS

When tracking down a manufacturer...

**More than 350
product categories
and nearly 1,200
listed manufacturers
are featured in this
broadcast product
reference guide.**

- *Product directory*page 14
- *Broadcast Product Manufacturers' Addresses*page 77
- *Broadcast Product Dealers/Distributors*page 129

The first **Broadcast Engineering Buyers' Guide** issue, 17 years ago, began a tradition to bring the industry the most complete guide to broadcast-applicable equipment possible. As our industry has grown in size and complexity, this reference issue has expanded to encompass the many additional types of prod-

ucts for the radio and TV facility.

This 1987 edition of *Buyers' Guide* follows the plan introduced in the 1985 guide. The Product Directory, beginning on page 14, has been divided into seven product sections and are listed below.

When tracking down the equipment and who makes it...

- *Audio Equipment* 14
- *Video Equipment* 24
- *RF Equipment* 45
- *Meters, Monitors, Test Equipment* 62
- *Automation, Computer Equipment* 64
- *Miscellaneous Equipment* 68
- *Services, Rental/Leasing* 71

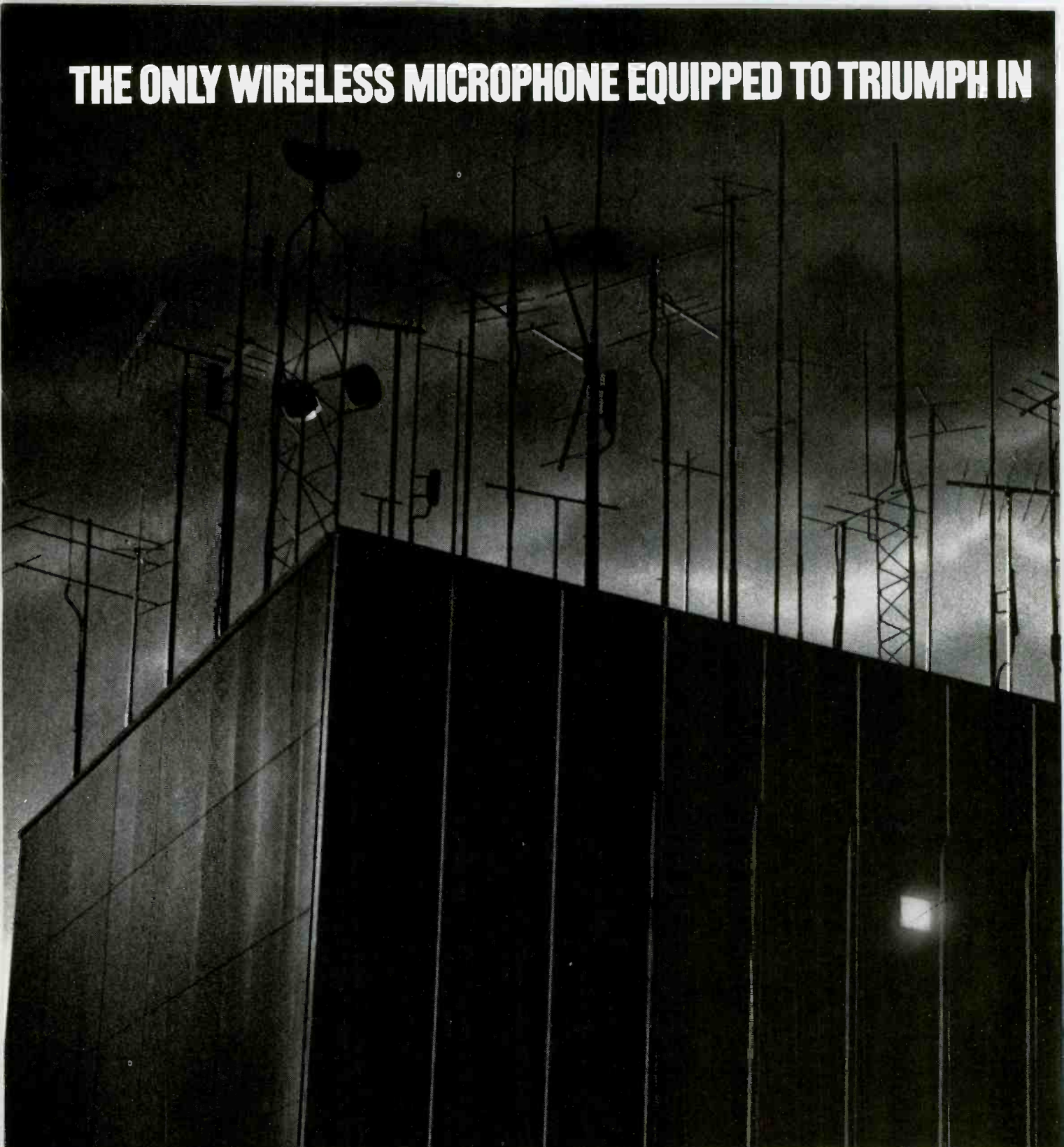
Within the Product Directory issue, advertisers' entries are printed in blue ink with page numbers to alert you to additional information regarding the products you seek.

All manufacturers found in the category breakdown are listed alphabetically in the Broadcast Product Manufacturers' Addresses section, beginning on page 92. This industry directory includes complete mailing addresses and telephone numbers for the headquarters office of each company. To aid in finding the manufacturing representative nearest to you, many entries include sales and service locations.

The Broadcast Product Dealer/Distributor directory follows, on page 118, listed by states. Each entry indicates the type of products handled and the states served from that office. Additional information about the dealers and distributors guide heads the section.

If your information needs do not require immediate contact with a representative, Reader Service Cards are located inside the back cover of this issue. Circling the appropriate numbers on the card will have information on its way to you within a few weeks. This customer service is in effect until September 1987.

THE ONLY WIRELESS MICROPHONE EQUIPPED TO TRIUMPH IN



The airwaves are bursting with interference. TV broadcasts, police emergency calls, taxi dispatches, even other wireless microphones.

All of which can make a performer look bad, and an engineer look worse. But fortunately, Sony has created an effective alternative to the anxiety of conventional wireless microphones. The VHF Synthesized Wireless System.

TUNE YOUR WAY OUT OF A JAM.

Other wireless microphones are pre-tuned to just one channel. Each electronically synthesized Sony VHF wireless microphone, on the other hand, gives

you 48 channels—48 opportunities to get on the air without interference. With a mere push of a button.

In fact, with as few as 4 Sony wireless microphones and a tuner, you can reach 168 microphone channels. And the Sony Wireless System makes it possible to use up to 13 microphones in the same place at the same time. Also, Sony's tuner gives you an easy-to-read LCD display. Which is an indispensable asset when you happen to be in a big hurry.

In addition, Sony's wireless microphones won't leave you wincing at poor dynamic range. Thanks to a companding technique which yields a dynamic range

THE BATTLE OF THE BANDS.

in excess of 94dB. Well within the realm of wired microphone performance.

The Sony system is also designed to withstand the rigors of live recording. Besides being lightweight, it's also extremely sturdy. Including everything from the microphones, to the body pack transmitter, to the tuners, to the shock-resistant portable cases and rack-mounting brackets.

An arsenal of equipment designed to be invaluable to you in the battle of the bands. And to be an exceptional value

in Part 74 subpart H of the FCC regulations and requires an appropriate license.



as well—about \$3,000 for a full-diversity system.

A small price to pay to keep a respected engineer's reputation from being at the mercy of a taxi dispatcher.

For more information about the Sony Wireless System, call the Sony Professional Audio office nearest you. In the East, call (201) 368-5185; in the South, (615) 883-8140; in the Central Region, (312) 773-6002; and in the West, (213) 639-5370.

SONY
Professional Audio

Circle (81) on Reply Card

ONE LESS ALLIGATOR

The Broadcast Engineer works with time-line responsibilities few of us will ever experience. He knows that equipment problems can wreck production schedules.

That's why the Otari BII audio machine is so widely used for broadcast, news editing, and production.

Three speed operation, front panel record calibrations, a microprocessor controlled tape counter with LED display, and variable speed control, coupled with "bulletproof" reliability and high level product support all add up to one less alligator snapping at your heels. From Otari: The Technology You Can Trust.



Contact your nearest Otari dealer for a demonstration, or call Otari Corporation, 2 Davis Drive, Belmont, CA 94002 (415) 592-8311 Telex: 910-376-4890

OTARI®



Circle (8) on Reply Card

© Otari 1984

AUDIO PRODUCTS

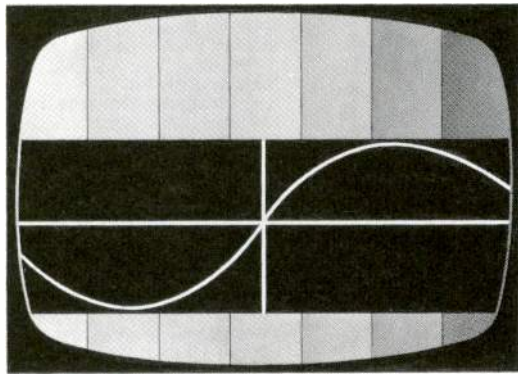
See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
U.S. Audio Inc. Thomas Valentino Inc. Valley People, Inc. 92 White Instruments Yamaha International Corp. Pro Products Div. .....143	Publison Audio Professional S.A.R.L. Ram Broadcast Systems Rebis Audio Richmond Sound Design, Ltd. C.N. Rood B.V. Broadcasting Div. S.C.V. Audio SCV Inc. Southlake Technologies, Inc. Symetrix Inc. 124 Tectan, Inc. Texar Inc. .....201 Tonographie Apparatebau Toshiba Corp. U.S. Audio Inc. Valley People, Inc. 92 Ward-Beck Systems Ltd. BC Wheatstone Corp. Yamaha International Corp. Pro Products Div. .....143	Ortofon Inc. Russco Electronics Mfg. Inc. Shure Brothers Inc. Stanton Magnetics Inc. .....122 Vidaire Electronics Mfg. Corp.	Audio & Design (Audio Design Calrec, Inc.) Audio Developments Ltd. Audio Service Corp. Audio-Technica U.S., Inc. Auxid Ltd. B.F.E. KG Broadcast Electronics, Inc. Calrec Audio (Audio Design Calrec, Inc.) Canford Audio Ltd. Carvin Corp. Coherent Communications, Inc. Comrex Corp. 72 Connectronics Corp. Crosspoint Latch Corp. Dacobas, Inc. A Subsidiary of Zero Corp. Dorough Electronics DYMA Engineering, Inc. EELA Audio EMT-Franz GmbH Electro-Voice Inc. Electronic Systems Labs, Inc. Elektroimpex Fostex Corp. of America 39 Gotham Audio Corp. Hallikainen & Friends, Inc. Harrison Systems, Inc. Hoppmann Corp. Howe Audio Productions, Inc. 38 Interface Electronics ITAME, S.A. JVC Co. of America .....177 Kaitronics Corp. .....175 Keystone Metal Products, Inc. Klark-Teknik Electronics Klark-Teknik PLC Logitek Electronic Systems, Inc. 31 MBI Broadcast Systems McCurdy Radio/Ram Broadcast Micro-Trak Corp. Neotek Corp. Rupert Neve Inc. .....197 Opamp Labs, Inc. Panasonic Industrial Co. Audio-Video System: Products Group Peavey Electronics Corp. Precision Design Ram Broadcast Systems Ramko Research Inc. Richmond Sound Design, Ltd. Russco Electronics Mfg. Inc. SATT Communications AB Schafer World Communications Corp. Shure Brothers Inc. Sonosax SA Soundtracs PLC Spectra Sonics Sphere Electronics, Inc. Stellavox Studer Revox America 19 TASCAM 198 Telfax Communications TOA Electronics, Inc. Tonographie Apparatebau Toshiba Corp. Ward-Beck Systems Ltd. BC West Coast Audio, Inc. Wheatstone Corp. Winsted Corp. Yamaha International Corp. Pro Products Div. .....143
AUDIO FADERS Audio Export Georg Neumann & Co. GmbH Audio Kinetics Ltd. Auditronics, Inc. .....205 B.F.E. KG Elektroimpex Omicron Video .....142 Penny & Giles ProTech Audio Corp. Shalloco, Inc. Spectra Sonics Tonographie Apparatebau Toshiba Corp. Wheatstone Corp.	CONSOLES, AUDIO ON-AIR ADM Technology, Inc. IFC AHB-USA Ltd. ATI-Audio Technologies Inc. .....100 Alice (Stancoil Ltd.) Amek Consoles Inc. IBC Amek Systems & Controls Arrakis Sytems Inc. 21 Audio Export Georg Neumann & Co. GmbH Audio-Metrics Auditronics, Inc. .....205 Audium Ltd. Autogram Corp. B.F.E. KG Broadcast Audio Corp. Broadcast Electronics, Inc. Canford Audio Ltd. Carvin Corp. Dacobas, Inc. A Subsidiary of Zero Corp. Dorough Electronics EELA Audio EMT-Franz GmbH Electronic Systems Labs, Inc. Elektroimpex Enertec/Schlumberger Dept. Audio Professionnel Fostex Corp. of America 39 Gotham Audio Corp. Hallikainen & Friends, Inc. Harris Corp. Broadcast Div. Harrison Systems, Inc. Heie Engineering Howe Audio Productions, Inc. 38 ITAME, S.A. JBL Professional/UREI .....217 Keystone Metal Products, Inc. LPB Inc. Logitek Electronic Systems, Inc. 31 MBI Broadcast Systems McCurdy Radio/Ram Broadcast Micro-Trak Corp. Neotek Corp. Rupert Neve Inc. .....197 Opamp Labs, Inc. Panasonic Industrial Co. Audio-Video System Products Group Quantum Audio Labs, Inc. Radio Systems Inc. Ram Broadcast Systems Ramko Research Inc. Richmond Sound Design, Ltd. ROH Corp. Schafer World Communications Corp. Scientific Systems, Inc. Solid State Logic 49 Sonosax SA Soundcraft Electronics Ltd. Soundcraft USA Soundtracs PLC Spectra Sonics Sphere Electronics, Inc. Studer Revox America 19 TTC Companies TASCAM 198 Television Technology Corp. Wilkinson Electronics Inc. Tonographie Apparatebau Tore Seem Toshiba Corp. Trident U.S.A. Inc. Ward-Beck Systems Ltd. BC Wheatstone Corp. Winsted Corp.	CONSOLES, AUDIO PORTABLE ADM Technology, Inc. IFC AHB-USA Ltd. ATI-Audio Technologies Inc. .....100 AIWA Co., Ltd. Alice (Stancoil Ltd.) Amek Systems & Controls Ampex Switcher Co. Arrakis Sytems Inc. 21 Audio & Design (Audio Design Calrec, Inc.) Audio Developments Ltd. Audio Export Georg Neumann & Co. GmbH Audio Service Corp. Audio-Technica U.S., Inc.	
AUDIO PROCESSING SYSTEMS (Compress/De-esser/Expand/ Limit) ADM Technology, Inc. IFC AEA, Inc. AEG Bayly Inc. ART, Applied Research & Technology ATI-Audio Technologies Inc. .....100 Altec Lansing Corp. Amek Systems & Controls Aphex Systems Ltd. 40 Arrakis Sytems Inc. 21 Ashly Audio Inc. Audio & Design (Audio Design Calrec, Inc.) Audio/Digital, Inc. 34 Audio Export Georg Neumann & Co. GmbH Auditronics, Inc. .....205 B.F.E. KG BGW Systems Inc. Barcus-Berry Electronics, Inc. R. Barth KG Broadcast Electronics, Inc. Brooke Siren Systems CRL Audio Circuit Research Labs, Inc. 37 Calrec Audio (Audio Design Calrec, Inc.) Connectronics Corp. Court Acoustics Sales Ltd. dbx, Inc. Delta Electronics Inc. .....123 Dorough Electronics EMT-Franz GmbH Elcom-Bauer Electronic Systems Labs, Inc. Elektroimpex Engel Engineering Eventide Inc. For-A Corp. of America .....215 Furman Sound, Inc. Gaines Audio Gotham Audio Corp. Harris Corp. Broadcast Div. Hubbard Communications, Inc. Industrial Research Products Inovonics Inc. 267 International Music Co. JBL Professional/UREI .....217 JVC Co. of America .....177 Kahn Communications, Inc. Klark-Teknik Electronics Klark-Teknik PLC LPB Inc. Lexicon Inc. Marcom Marti Electronics McCurdy Radio/Ram Broadcast Mitsubishi Pro Audio Group Digital Entertainment Corp. Modular Audio Products Unit of Modular Devices, Inc. Modulation Sciences, Inc. NTP Elektronik A/S Rupert Neve Inc. .....197 Nexus Engineering Corp. Orban Associates Inc. 27 Pinzone Communications Products Inc.	AUDIOTAPE (All Formats) Agfa-Gevaert Inc. Magnetic Tape Div. Ampex Corp. Audio-Video Systems Div. Ampex Corp. Magnetic Tape Div. 76 Aristocart Div., Western Int'l. Communications, Ltd. 46 BASF Burlington Audio/Video Tapes Capitol Magnetic Products 82 Cartridge Technology Dictaphone Corp. Elektroimpex Fidelipac Corp. 75 Fostex Corp. of America 39 International Music Co. International Tapetronics Corp./3M 23 Magnetic Media Div./3M Marathon Products Corp. Maxell Corp. of America Procort RKO Tape Corp. Sony Magnetic Products Co. TDK Electronics Corp. Zonal Ltd.	CABLE, AUDIO/MICROPHONE AKG Acoustics, Inc. AVS (Audio-Visuel Systems) Audio Export Georg Neumann & Co. GmbH Audio Service Corp. Audio-Technica U.S., Inc. B.F.E. KG Belden Electronic Wire & Cable Beyer Dynamic Birns & Sawyer Inc. Bi-Tronics, Inc. Brintec Corp. Brand-Rex Cable Systems Div. Canare Cable, Inc. Canford Audio Ltd. Chester Cable Div. Celwave Systems, Inc. Comprehensive Video Supply Corp. Connectronics Corp. Dukane Corp. EMT-Franz GmbH Elektroimpex Fostex Corp. of America 39 Gotham Audio Corp. Marshall Electronics MERET, Inc. NEK Cables Ltd. Nemal Electronics Int'l. Peavey Electronics Corp. Peirce-Phelps, Inc. RCI (Recording Consultants Inc.) Shure Brothers Inc. Switchcraft Inc. .....225 Trimm Inc. Vidaire Electronics Mfg. Corp. Wireworks Corp.	CARTRIDGES, PHONO AKG Acoustics, Inc. Audio-Technica U.S., Inc. Capitol Magnetic Products 82 EMT-Franz GmbH Gotham Audio Corp.

SYSTEM TIMING & SC/H PHASING CAN BE

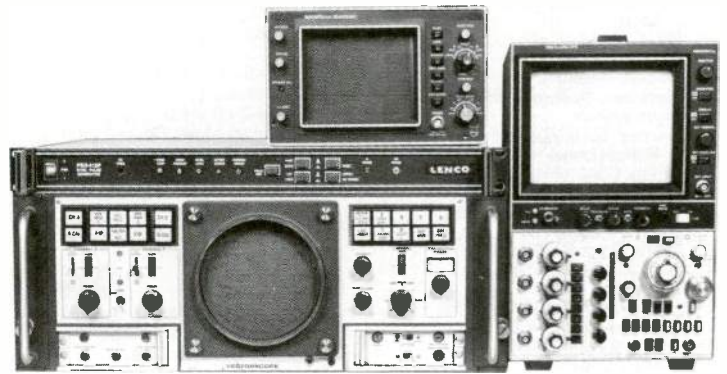
EASY

OR

DIFFICULT



LENCO VIDEOSCOPE



WAVEFORM, VECTORSCOPE, SYNC GENERATOR & OSCILLOSCOPE

LENCO now provides you PAL and NTSC VIDEOSCOPIES. These VIDEOSCOPIES transform a complicated task into an easy, convenient one!

Until now detection of timing and SC/H phasing problems has required some very expensive and complex measuring equipment. The equipment was so complex that it required extensive knowledge and training to operate.

Now at a single glance of a standard video monitor, system timing and phasing problems and errors can be quickly detected, and both problems can be easily and accurately corrected without the need of complicated and expensive test equipment.

The VIDEOSCOPE'S "on screen" graphics system and LED readout provide critical sync to subcarrier phase information in a simple to understand, accurate video display — on a standard color or monochrome monitor. SC/H relationship is easily and accurately displayed in degrees by an LED readout — not by complicated test equipment.

Locating time base error, sync to subcarrier jitter, system crosstalk problems as well as referencing network subcarrier may be difficult with other equipment. But not with the Lenco VIDEOSCOPE. It was designed for ease of operation and accuracy!

Take the time and guesswork out of your SC/H and system timing problems! *Go the easy and efficient way with the Lenco VIDEOSCOPE.*



CONTACT: Lenco International Sales Manager

300 N. Maryland • P.O. Box 348 • Jackson, MO 63755 USA • TWX 910/760-1382 • Telephone: 314/243-3147

Circle (9) on Reply Card

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Auditronics, Inc.205
Audix Ltd.
Autogram Corp.
B.F.E. KG
Benchmark Media Systems, Inc.
Broadcast Audio Corp.
Broadcast Electronics, Inc.
Bud Industries, Inc.
Calrec Audio (Audio Design Calrec, Inc.)
Carvin Corp.
Connectronics Corp.
Dacobas, Inc. A Subsidiary of Zero Corp.
EELA Audio
EMT-Franz GmbH
Electro-Voice Inc.
Electronic Systems Labs, Inc.
Elektroimpex
Enertec/Schlumberger Dept. Audio Professionnel
Fostex Corp. of America 39
Gotham Audio Corp.
Graham-Patten Systems, Inc.
Grass Valley Group 10
Harris Corp. Broadcast Div.
Harrison Systems, Inc.
Hoppmann Corp.
Howe Audio Productions, Inc. 38
Interface Electronics
International Music Co.
ITAME, S.A.
JBL Professional/UREI217
Klark-Teknik Electronics
Klark-Teknik PLC
Lexicon Inc.
Logitek Electronic Systems, Inc. 31
MBI Broadcast Systems
McCurdy Radio/Ram Broadcast
Micro-Trak Corp.
Mitsubishi Pro Audio Group Digital Entertainment Corp.
Neotek Corp.
Rupert Neve Inc.197
Opamp Labs, Inc.
Orion Research, Inc.
Pacific Recorders & Eng. Corp.102
Panasonic Industrial Co. Audio-Video System Products Group
Quantum Audio Labs, Inc.
Ram Broadcast Systems
Ramko Research Inc.
Richmond Sound Design, Ltd.
ROH Corp.
Russco Electronics Mfg. Inc.
Scantex Labs Inc.
Schafer World Communications Corp.
Siemens
Solid State Logic 49
Sonosax SA
Sound Workshop Pro Audio Products
Soundcraft Electronics Ltd.
Soundcraft USA
Soundolier
Soundtracs PLC
Spectra Sonics
Sphere Electronics, Inc.
Studer Revox America 19
TTC Companies
TASCAM198
TOA Electronics, Inc.
Tonographie Apparatebau
Tore Seem
Toshiba Corp.
Trident U.S.A. Inc.
Ward-Beck Systems Ltd. BC
West Coast Audio, Inc.
Wheatstone Corp.
Yamaha International Corp. Pro Products Div.143

CONSOLES, SOUND REINFORCEMENT/PA

AHB-USA Ltd.
ATI-Audio Technologies Inc.100
AXE (Artists X-Ponent Eng.)
Altec Lansing Corp.
Amek Consoles Inc.IBC
Amek Systems & Controls
Arrakis Systems Inc. 21
Audio Developments Ltd.
Audio-Technica U.S., Inc.

Audix Ltd.
B.F.E. KG
Bogen, A Lear Siegler Co.
Carvin Corp.
Connectronics Corp.
Court Acoustics Sales Ltd.
Dorrough Electronics
Dukane Corp.
EMT-Franz GmbH
Electro-Voice Inc.
Electronic Systems Labs, Inc.
Elektroimpex
Enertec/Schlumberger Dept. Audio Professionnel
Fostex Corp. of America 39
Harrison Systems, Inc.
Hoppmann Corp.
Interface Electronics
International Music Co.
Klark-Teknik Electronics
Klark-Teknik PLC
McCurdy Radio/Ram Broadcast
Micro-Trak Corp.
Mitsubishi Pro Audio Group Digital Entertainment Corp.
Neotek Corp.
Rupert Neve Inc.197
Panasonic Industrial Co. Audio-Video System Products Group
Peavey Electronics Corp.
ProTech Audio Corp.
Quantum Audio Labs, Inc.
Ram Broadcast Systems
Ramko Research Inc.
Richmond Sound Design, Ltd.
Siemens
Soundcraft Electronics Ltd.
Soundcraft USA
Soundolier
Soundtracs PLC
Spectra Sonics
TASCAM198
TOA Electronics, Inc.
Tonographie Apparatebau
Toshiba Corp.
Touch Technologies Inc.
Trident U.S.A. Inc.
Ward-Beck Systems Ltd. BC
Wheatstone Corp.
Yamaha International Corp. Pro Products Div.143

CORRECTORS, AF STEREO PHASE

Broadcast Devices Inc.
Elektroimpex
Harris Corp. Broadcast Div.
Howe Audio Productions, Inc. 38
McCurdy Telecommunications Products
Souder Electronics Inc.
Titus Technological Labs
Tonographie Apparatebau

DIGITAL AUDIO DISC SYSTEMS

Advanced Music Systems
AIWA Co., Ltd.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Century 21 Programming Inc.
EMT-Franz GmbH
For-A Corp. of America215
Fougerolle S.A.
Gotham Audio Corp.
Granite Telecom Corp.
IGM Communications
Lexicon Inc.
Mitsubishi Int'l. Corp. Electronic Equipment Div. 7
NTI America, Inc.
Optical Disc Corp.
Philips Television Systems, Inc. 93-96
Pioneer Electronics
Pye TVT Ltd. Broadcast Co. of Philips
Sono-Mag Corp.
Straight Wire Audio, Inc.
Studer Revox America 19

ENCODERS/DECODERS, AF TONE

Audio/Digital, Inc. 34
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
R. Barth KG
Robert Bosch Corp. Video Equipment Div. 93-96
Channematic, Inc.
Comunitronics Ltd.
Di-Tech Inc. 35
Enertec/Schlumberger Dept. Audio Professionnel
Fostex Corp. of America 39
Gorman-Redlich Mfg. Co.
Johnson Electronics Inc.
Ledex Inc.
MEI Electronics/Microprobe
Marti Electronics
Monroe Electronics, Inc.
Nexus Engineering Corp.
Omni Q Inc.
Palomar Engineers
Ram Broadcast Systems
Schafer World Communications Corp.
Tonographie Apparatebau
Wegener Communications Inc.

EQUALIZERS, AF

ADM Technology, Inc.IFC
ART, Applied Research & Technology
ATI-Audio Technologies Inc.100
Altec Lansing Corp.
Amek Systems & Controls
Arrakis Systems Inc. 21
Ashly Audio Inc.
Audio & Design (Audio Design Calrec, Inc.)
Audio Export Georg Neumann & Co. GmbH
Audisar
Auditronics, Inc.205
B.F.E. KG
R. Barth KG
Bogen, A Lear Siegler Co.
Calrec Audio (Audio Design Calrec, Inc.)
Carvin Corp.
Connectronics Corp.
Court Acoustics Sales Ltd.
Dukane Corp.
Electro-Voice Inc.
Elektroimpex
Furman Sound, Inc.
Gotham Audio Corp.
ITI Electronics, Inc.
Industrial Research Products
International Electro-Magnetics
International Music Co.
JBL Professional/UREI217
Klark-Teknik Electronics
Klark-Teknik PLC
Korg USA
McCurdy Radio/Ram Broadcast
McCurdy Telecommunications Products
Mitsubishi Pro Audio Group Digital Entertainment Corp.
Modular Audio Products Unit of Modular Devices, Inc.
Opamp Labs, Inc.
Orban Associates Inc. 27
Panasonic Industrial Co. Audio-Video System Products Group
Ram Broadcast Systems
Ramko Research Inc.
Rebis Audio
Richmond Sound Design, Ltd.
Russco Electronics Mfg. Inc.
S.C.V. Audio
Schafer World Communications Corp.
Sescom, Inc.
Shure Brothers Inc.
Southlake Technologies, Inc.
Spectra Sonics
Symetrix Inc.124
TASCAM198
Tonographie Apparatebau
Valley People, Inc. 92
Wheatstone Corp.
White Instruments

Yamaha International Corp. Pro Products Div.143

HEADPHONES AND HEADSETS

AKG Acoustics, Inc.
AXE (Artists X-Ponent Eng.)
AIWA Co., Ltd.
Audio-Technica U.S., Inc.
Edecor Product Assurance Corp.
Elektroimpex
Fostex Corp. of America 39
International Music Co.
McCurdy Radio/Ram Broadcast
Miles Air Products Ltd.
Mineroff Electronics, Inc. Uher Products
Nady Systems Inc.
Nagra Magnetic Recorders, Inc.
Nakamichi USA Corp.111
Pye TVT Ltd. Broadcast Co. of Philips
R-Columbia Products Co., Inc.
RTS Systems, Inc.
ROH Div. of Anchor Audio
Sennheiser Electronic Corp.
Setcom Corp.
Stanton Magnetics Inc.122
Systems Wireless Ltd.
Technical Projects
Television Equipment Associates
Telex Communications, Inc.
Uher of America
Unex, A Dynatech Co.
Vidaire Electronics Mfg. Corp.

INTERCOM SYSTEMS

ANT Telecommunications Inc.
AVS (Audio-Visuel Systems)
Aiphone Intercom Systems
B.F.E. KG
Barkway Electronics Ltd.
Birns & Sawyer Inc.
Bogen, A Lear Siegler Co.
Brabury Ltd.
Broadcasting & Related Products Div./3M
Canford Audio Ltd.
Cetec Vega
Clear-Com Intercom Systems 85
Countryman Associates Inc.
Philip Drake Electronics Ltd.
Dukane Corp.
Edecor Product Assurance Corp.
Elektroimpex
Enertec/Schlumberger Dept. Audio Professionnel
Gentner Engineering 48, 50
HM Electronics, Inc. 73
Hoppmann Corp.
McCurdy Radio/Ram Broadcast
MERET, Inc.
NTP Elektronik A/S
Nady Systems Inc.
Pacific Recorders & Eng. Corp.102
PESA America Inc.
Pye TVT Ltd. Broadcast Co. of Philips
R-Columbia Products Co., Inc.
RTS Systems, Inc.
Ram Broadcast Systems
Richmond Sound Design, Ltd.
ROH Corp.
ROH Div. of Anchor Audio
Scientific Systems, Inc.
Setcom Corp.
Soundolier
Southlake Technologies, Inc.
Swintek Enterprises, Inc.267
Systems Wireless Ltd.
Technical Projects
Telectro Systems Corp.
Television Equipment Associates
Telex Communications, Inc.
Vidaire Electronics Mfg. Corp.
Video Aids of Colorado
Ward-Beck Systems Ltd. BC

MICROPHONE ACCESSORIES

AKG Acoustics, Inc.
AIWA Co., Ltd.
Alice (Stancoil Ltd.)
Atlas Sound
Audio & Design (Audio Design Calrec, Inc.)

Experience a tape transport ready for the balance of this millenium.

After spending a few minutes with the A820 you'll know you're in touch with tomorrow. Here is everything you've ever dreamed of in a production/mastering ATR. And then some.

For openers, note these features: Four tape speeds. Reel sizes up to 14". Real time counter accurate to *tenths* of a second. Advanced phase compensation in all audio circuits. And, of course, the massive chassis, rugged construction and precision Swiss manufacturing you'd naturally expect from Studer.

And now for the unexpected. Inside the A820 you'll find the most comprehensive microprocessor control systems ever put in an ATR – by anybody. Multiple microprocessors govern all tape motion parameters, switching functions, and audio alignment settings. These innovations not only provide unprecedented operating flexibility, but also explain the A820's uncannily smooth tape shuttling and remarkable editing efficiency. When the

production pressure is on, the A820 becomes a joy and a lifesaver.

The A820 also ushers in a new era of user programmability. In a matter of minutes, by selecting from a menu of more than a dozen operating features, you can tailor an A820 to meet any application. All primary and secondary top panel buttons can be assigned to any desired function. You can practically "redesign" your machine on a day-to-day basis!

The A820 line has been augmented by the addition of 1/2" two-track and center-track time code versions. Also, interfaces for control by external computers or video editing systems are now available.

Call or write today for more information on the new Studer A820. It can transport your facility into the future.

Studer America, 1425 Elm Hill Pike, Nashville, TN 37210 / (615) 254-5651 New York (212) 255-4462 Los Angeles (818) 780-4234 Chicago (312) 526-1660 Dallas (214) 943-2239 San Francisco (415) 930-9866

STUDER REVOX

Circle (10) on Reply Card



See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
Audio Export Georg Neumann & Co. GmbH	Elektroimpex	Cetec Vega	ITI Electronics, Inc.
Audio Service Corp.	Fostex Corp. of America 39	Coherent Communications, Inc.	Industrial Research Products
Audio-Technica U.S., Inc.	Gotham Audio Corp.	Comprehensive Video Supply Corp.	International Music Co.
Beyer Dynamic	International Music Co.	Comtek Communications Technology, Inc.	ITAME, S.A.
Black Audio Devices	JVC Co. of America 177	Countryman Associates Inc.	Jensen Transformers Inc. 83
Bogen, A Lear Siegler Co.	Marti Electronics	Dukane Corp.	Johnson Electronics Inc.
Calrec Audio (Audio Design Calrec, Inc.)	Micron Audio Products Ltd.	Ecor Product Assurance Corp.	Kaitronics Corp. 175
Canford Audio Ltd.	Mineroff Electronics, Inc. Uher Products	HM Electronics, Inc. 73	Logitek Electronic Systems, Inc. 31
Countryman Associates Inc.	Panasonic Industrial Co. Audio-Video System Products Group	Marshall Electronics	McCurdy Radio/Ram Broadcast Micro-Trak Corp.
Dukane Corp.	System Products Group	Marti Electronics	Mitsubishi Pro Audio Group Digital Entertainment Corp.
Electro-Voice Inc.	Peavey Electronics Corp.	McCurdy Radio/Ram Broadcast	Modular Audio Products Unit of Modular Devices, Inc.
Elektroimpex	R-Columbia Products Co., Inc.	Micron Audio Products Ltd.	Nagra Magnetic Recorders, Inc.
Fostex Corp. of America 39	Schoeps/Posthorn Recordings	Nady Systems Inc.	Opamp Labs, Inc.
Gotham Audio Corp.	Schoeps Schalltechnik	Panasonic Industrial Co. Audio-Video System Products Group	Peirce-Phelps, Inc.
International Music Co.	Sennheiser Electronic Corp.	Peavey Electronics Corp.	ProTech Audio Corp.
Johnson Electronics Inc.	Sharp Electronics Corp. Broadcast Group 79, 81	R-Columbia Products Co., Inc.	RTS Systems, Inc.
Kulka-Smith, Inc.	Shure Brothers Inc.	RF Technology, Inc.	Ram Broadcast Systems
McCurdy Radio/Ram Broadcast	Sony Broadcast Products Co. 12-13	Samson Products Corp.	Ramko Research Inc.
Micron Audio Products Ltd.	Stanton Magnetics Inc. 122	Sennheiser Electronic Corp.	Rebis Audio
R-Columbia Products Co., Inc.	TASCAM 198	Shure Brothers Inc.	Richmond Sound Design, Ltd.
Ram Broadcast Systems	Telex Communications, Inc.	Shure Brothers Inc.	ROH Corp.
Ramko Research Inc.	TOA Electronics, Inc.	Sony Broadcast Products Co. 12-13	ROH Div. of Anchor Audio
S.C.V. Audio	Vidaire Electronics Mfg. Corp.	Swintek Enterprises, Inc. 267	S.C.V. Audio
Schoeps/Posthorn Recordings		Systems Wireless Ltd.	SCV Inc.
Sennheiser Electronic Corp.		Telex Communications, Inc.	Scientific Systems, Inc.
Sescom, Inc.			Sescom, Inc.
Shure Brothers Inc.	MICROPHONES, LAVALIER		Shure Brothers Inc.
Sony Broadcast Products Co. 12-13	AKG Acoustics, Inc.		Southlake Technologies, Inc.
Switchcraft Inc. 225	AIWA Co., Ltd.	NOISE REDUCTION, AUDIO	Spectra Sonics
Systems Wireless Ltd.	Audio-Technica U.S., Inc.	ANT Telecommunications Inc.	Straight Wire Audio, Inc.
TASCAM 198	Beyer Dynamic	Acoustic Systems 138	Tape-Athon Corp. Cavox Stereo Productions
Touch Technologies Inc.	Bogen, A Lear Siegler Co.	Arrakis Sytems Inc. 21	Tonographie Apparatebau
Videa of America	Coherent Communications, Inc.	Ashly Audio Inc.	Valley People, Inc. 92
Vidaire Electronics Mfg. Corp.	Countryman Associates Inc.	Audio & Design (Audio Design Calrec, Inc.)	Ward-Beck Systems Ltd. BC
Yamaha International Corp. Pro Products Div. 143	Crown International, Inc.	Audio Developments Ltd.	
	Dukane Corp.	CRL Audio Circuit Research Labs, Inc. 37	
	Ecor Product Assurance Corp.	Calrec Audio (Audio Design Calrec, Inc.)	
	Electro-Voice Inc.	Dolby Laboratories, Inc. 28-29	
	HM Electronics, Inc. 73	EMT-Franz GmbH	PREAMPLIFIERS, PHONO
	McCurdy Radio/Ram Broadcast	Electronic Systems Labs, Inc.	ATI-Audio Technologies Inc. 100
	Micron Audio Products Ltd.	Elektroimpex	Arrakis Sytems Inc. 21
	Nagra Magnetic Recorders, Inc.	Furman Sound, Inc.	Audio Developments Ltd.
	Panasonic Industrial Co. Audio-Video System Products Group	Gotham Audio Corp.	Audio-Metrics
	R-Columbia Products Co., Inc.	Image Transform, Inc.	B.F.E. KG
	Theodore A. Rapp Associates Inc. Tram Microphones	Kayglo Electronics	R. Barth KG
	Schoeps/Posthorn Recordings	McCurdy Radio/Ram Broadcast	Bogen, A Lear Siegler Co.
	Sennheiser Electronic Corp.	Modular Audio Products Unit of Modular Devices, Inc.	Broadcast Audio Corp.
	Shure Brothers Inc.	Precision Design	Broadcast Electronics, Inc.
	Systems Wireless Ltd.	R-Columbia Products Co., Inc.	Bryston Ltd.
	Telex Communications, Inc.	Ramko Research Inc.	Brystonvermont Ltd.
		Rebis Audio	Calrec Audio (Audio Design Calrec, Inc.)
		S.C.V. Audio	Canford Audio Ltd.
		SL Waber, Inc. Subsidiary of SL Industries	Connectronics Corp.
		Tectan, Inc.	DYMA Engineering, Inc.
		U.S. Audio Inc.	EELA Audio
		Valley People, Inc. 92	Ecor Product Assurance Corp.
		Wegener Communications Inc.	Gentner Engineering 48, 50
		White Instruments	Gotham Audio Corp.
			Harris Corp. Broadcast Div.
			Howe Audio Productions, Inc. 38
			ITAME, S.A.
			Logitek Electronic Systems, Inc. 31
			McCurdy Radio/Ram Broadcast Micro-Trak Corp.
			Modular Audio Products Unit of Modular Devices, Inc.
			Opamp Labs, Inc.
			Ortofon Inc.
			ProTech Audio Corp.
			Radio Systems Inc.
			Ram Broadcast Systems
			Ramko Research Inc.
			Rebis Audio
			Russco Electronics Mfg. Inc.
			S.C.V. Audio
			SCV Inc.
			Sescom, Inc.
			Shure Brothers Inc.
			Spectra Sonics
			Stanton Magnetics Inc. 122
			Straight Wire Audio, Inc.
			Tandberg of America, Inc.
			Tonographie Apparatebau
			Wheatstone Corp.
			RECORDER AMPLIFIERS
			B.F.E. KG
			Gotham Audio Corp.
			Inovonics Inc. 267

NEW FROM ARRAKIS SYSTEMS

5000 SERIES

The First No-Compromise
Modular Radio Console...



...At A Down-To-Earth Price: 16 Channels, Under \$10,000.

THE FEATURES YOU WANT—

- 16 Modular Stereo Channels.
- Program, Audition and Mono Mixdown Balanced Outputs.
- Telephone Mix-Minus Buss.
- Full Monitoring Facilities.
- Remote Equipment Start/Stop.
- Remote Module Control.
- Standard Digital Clock and Timer.
- Optional EQ and Effects Modules.

THE DEPENDABILITY YOU NEED—

- DC Controlled – No Audio On Pots.
- Rugged Modular Construction.
- Penny & Giles Slide Faders.
- ITT Schadow Switches.
- NE5532 IC Module Design.
- External Regulated Power Supply.
- Superb Audio Performance Specs.
- Most Important, Arrakis Systems Designed-in Ultra Reliability!

For features, performance, price and reliability,
NOBODY BUILDS CONSOLES LIKE ARRAKIS.

Call (303) 224-2248

Circle (11) on Reply Card

ARRAKIS SYSTEMS INC. 2609 RIVERBEND COURT FORT COLLINS, CO 80525



The ITC "Component System" Listeners Will Love It!



Provide impressive on-air sound for even the most discriminating listener at an unbelievable price/performance relationship.

The Best of Both Worlds

The ITC "Component System" combines the quality of digital source material with *all* the operational flexibilities of an all-cart format. Simply record from a compact disc onto a ScotchCart®II broadcast cartridge using a 99B master recorder with ELSA, then play back on a DELTA reproducer!

Separately, These ITC Components are Impressive, Together They're Awesome!

Cartridge, tape and machines have been designed by a single manufacturer to compliment each other like never before and produce uncompromising audio quality.

1. 99B Master Recorder—Loaded with features
2. ELSA—A patented automatic cartridge preparation system
3. DELTA Reproducer—Outstanding audio performance in a reliable, mid-priced cartridge machine

4. ScotchCart®II Broadcast Cartridge—Capable of frequency response equalling professional reel-to-reel performance

Allow ITC's "Component System" to provide your facility with the operational flexibilities of an all-cart format while you offer your listeners impressive on-air sound they are sure to love.

When newer technology emerges, it will come from International Tapetronics Corporation/3M, "The Leader in Reliability and Service."

Call today to discuss financial options and the unbelievable price/performance benefits of the ITC "Component System." In the U.S., call toll-free **800-447-0414**, or collect from Alaska or Illinois **309-828-1381**. In Canada, call Maruno Electronics, Ltd. **416-255-9108**. In most countries outside the U.S. and Canada, information on ITC equipment can be obtained through local distributors.

International Tapetronics Corporation/3M

2425 South Main Street
P.O. Box 241
Bloomington, Illinois 61702-0241

AUDIO PRODUCTS

	See Adv. Page
Telex Communications, Inc. Zonal Ltd.	
TAPE SPLICE FINDERS	
Cartridge Technology	
Fidelipac Corp.	75
International Tapetronics Corp./3M	23
Lauderdale Electronic Labs Sonifex Ltd.	
TELEPHONE AUDIO BANDWIDTH EXTENDERS	
AVS (Audio-Visuel Systems) Comrex Corp.	72
Electronic Systems Labs, Inc. Elektroimpex	
Gentner Engineering	48, 50
Kahn Communications, Inc. Marcom	
McCurdy Telecommunications Products	
C.N. Rood B.V. Broadcasting Div.	

TELEPHONE INTERFACE

AVS (Audio-Visuel Systems) Alice (Stancoil Ltd.)	
Auditronics, Inc.	205
B.F.E. KG Broadcast Electronics, Inc. Cetec Raymer	
Comrex Corp.	72
EELA Audio	
ESE	99, 101 103
Electronic Systems Labs, Inc. Elektroimpex	
Gentner Engineering	48, 50
Gotham Audio Corp. Granite Telecom Corp.	
Hnat Hindes Inc.	106, 249
Howe Audio Productions, Inc.	38
ITI Electronics, Inc. International Tapetronics Corp./3M	23
ITAME, S.A. Ledx Inc.	
McCurdy Radio/Ram Broadcast McCurdy Telecommunications Products	
Monroe Electronics, Inc. NTP Elektronik A/S Normex/Telnox Ltd. ROH Corp.	
ROH Div. of Anchor Audio Russo Electronics Mfg. Inc. S.C.V. Audio	
Studer Revox America	19
Switchcraft Inc.	225
Symetrix Inc.	124
Synchronous Communications, Inc. Telfax Communications Tonographie Apparatebau	

TEST RECORDS/TAPES

Bruel & Kjaer Instruments, Inc. Canford Audio Ltd. Cartridge Technology Gotham Audio Corp. JVC Cutting Center, Inc. Lauderdale Electronic Labs Sonifex Ltd.	
Sound Technology	9
Standard Tape Lab, Inc. TASCAM	198
West Coast Audio, Inc.	

TONE ARMS

Broadcast Electronics, Inc. EMT-Franz GmbH Gotham Audio Corp. LPB Inc. Micro-Trak Corp. Ortofon Inc. Russo Electronics Mfg. Inc. Schafer World Communications Corp.	
--	--

**TRANSFORMERS, AF
LINE/MICROPHONE**

Audio Export Georg Neumann & Co. GmbH Audisar Audix Corp. B.F.E. KG Beyer Dynamic Bogen, A Lear Siegler Co. Canford Audio Ltd. Cetec Raymer Edcor Product Assurance Corp. Electro-Voice Inc. Elektroimpex Gotham Audio Corp. ITI Electronics, Inc. Jensen Transformers Inc.	83
Microtran Co. Inc. Potomac Instruments, Inc. ProTech Audio Corp. Sescom, Inc. Shure Brothers Inc. TTE, Inc. Telectro Systems Corp. Vidaire Electronics Mfg. Corp.	

TURNTABLES, PHONOGRAPH

AEG Corp. AIWA Co., Ltd. Broadcast Electronics, Inc. Canford Audio Ltd. EMT-Franz GmbH Gotham Audio Corp. JVC Co. of America	177
Micro-Trak Corp. Pioneer Electronics Ortofon Inc. Ram Broadcast Systems Russo Electronics Mfg. Inc. Sims Vibration Dynamics	98

VIDEO PRODUCTS

AMPLIFIERS, CLAMPING

AVS (Audio-Visuel Systems) Aydin Radar & EW Div. B.F.E. KG Central Dynamics Datatek Corp. Di-Tech Inc.	35
Dynair Electronics, Inc.	65
Dynamic Technology Ltd. Electrocraft Consultants Ltd. Elektroimpex Graham-Patten Systems, Inc. HEDCO (Hughes Elec. Devices Corp.) International Nuclear Corp.	
Leitch Video	105
Lenco Inc. Electronics Div.	17
McCurdy Radio/Ram Broadcast Omicron Video	142
Pye TVT Ltd. Broadcast Co. of Philips Ram Broadcast Systems	
Rohde & Schwarz Sander Electronics A/S Telemet Div. A Geotel, Co. Thomson Video Equipment	137
Toshiba Corp. Video Masters, Inc. Videotek, Inc.	157
Vital Industries Inc.	

**AMPLIFIERS, PULSE/VIDEO
DISTRIBUTION**

AVS (Audio-Visuel Systems) Ampex Switcher Co. Amstel Systems Inc. Apert-Herzog Corp. Avitel Electronics Ltd. Aydin Radar & EW Div. B.F.E. KG BSM Broadcast Systems, Inc. Brabury Ltd. Broadcasting & Related Products Div./3M	
---	--

VIDEO PRODUCTS

	See Adv. Page
Central Dynamics Channelmatic, Inc. Datatek Corp. Digivision Broadcast Ltd. Di-Tech Inc.	35
Dynair Electronics, Inc.	65
Dynamic Technology Ltd. ESE	99, 101, 103
Electrocraft Consultants Ltd. Elektroimpex For-A Corp. of America	215
GBC Closed Circuit TV Corp. Graham-Patten Systems, Inc. Grass Valley Group	10
HEDCO (Hughes Elec. Devices Corp.) ICM Video	118
Intergroup Video Systems	161
International Microwave Corp. International Nuclear Corp.	
Leitch Video	105
Lenco Inc. Electronics Div.	17
Link Electronics Ltd. M/A-Com Microwave Power Devices Marconi Communication Systems Ltd. Matco Mfg. & Test Co., Inc. dba Matco Control Products McCurdy Radio/Ram Broadcast MERET, Inc. Merlin Engineering Works Mycomp Technologies Corp. (MTC)	142
Omicron Video	142
Opamp Labs, Inc. Orion Research, Inc. Panasonic Industrial Co. Audio-Video System Products Group PESA America Inc. Pye TVT Ltd. Broadcast Co. of Philips QSI Systems Inc. RMS Electronics, Inc. Ram Broadcast Systems	
Rohde & Schwarz Sander Electronics A/S Scientific-Atlanta Shintron Co. Inc. Sierra Video Systems Sigma Electronics, Inc. Robert Slye Electronics Sony Video Communications Products Div.	112-113
TRW RF Devices Div. Telemet Div. A Geotel, Co. Thomson Video Equipment	137
Toshiba Corp. Transimage International Utah Scientific, Inc.	145
Vicon Industries Inc. Video Aids of Colorado Video Masters, Inc. Videotek, Inc.	157
Vital Industries Inc.	

**AMPLIFIERS, VIDEO
PROCESSING**

AVS (Audio-Visuel Systems) Aydin Radar & EW Div. B.F.E. KG BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)	93-96
Robert Bosch Corp. Video Equipment Div.	93-96
Broadcasting & Related Products Div./3M Central Dynamics ComSonic, Inc. Crow Broadcast Systems Ltd. Electrocraft Consultants Ltd. For-A Corp. of America	215
Grass Valley Group	10
Grumman Aerospace Corp. Broadcast Systems Group	
ICM Video	118
Intergroup Video Systems	161
International Microwave Corp. Knox Video Products Kryptocom Inc. Leitch Video	105
Lenco Inc. Electronics Div.	17
MCL, Inc. Matthey Printed Products Ltd. MERET, Inc. Pye TVT Ltd. Broadcast Co. of Philips	

Rohde & Schwarz Sigma Electronics, Inc. Telemet Div. A Geotel, Co. Television Equipment Associates Thomson Video Equipment	137
Toshiba Corp. Vidicraft Inc.	

ANIMATION EQUIPMENT

AVS (Audio-Visuel Systems) Ampex Corp. Audio-Video Systems Div. Apert-Herzog Corp. Aurora Labs Breneman Systems Broadcasting & Related Products Div./3M ColorGraphics Systems, Inc. Computer Graphics Lab, Inc. Cubicomp Corp. Digital Services Corp. Dubner Computer Systems, Inc. Elicon Forox Corp. Alan Gordon Enterprises Inc. Grass Valley Group	10
Interactive Motion Control Lyon-Lamb Video Animation Systems Neilson-Hordell Ltd. Oxberry Quantel	148
Radamec-E.P.O. Toshiba Corp. Videomedia, Inc. Frank Woolley & Co. The Zei-Mark Corp.	

BATTERY PACKS/CHARGERS

AIWA Co., Ltd. Alexander Mfg. Co. Anton/Bauer, Inc.	115
Aydin Radar & EW Div. Broadcast Microwave Services, Inc. CVR Products Christie Electric Corp. Cine 60, Inc. Comprehensive Video Supply Corp. DeSisti Lighting Desmar Corp. Film/Video Equip. Service Co. Frezzolini Electronics, Inc.	90
G & M Power Products Inc. Alan Gordon Enterprises Inc. JVC Co. of America	177
Nagra Magnetic Recorders, Inc. Paco Electronics USA Inc.	120
Pag America, Ltd. PAG Ltd. Panasonic Industrial Co. Audio-Video System Products Group Perrott Eng. Labs, Inc. Portable Energy Products, Inc. Portable Power Specialists Pro Battery Co. Inc. Reliance Comm/Tec Sony Broadcast Products Co.	12-13
Sony Video Communications Products Div.	112-113
Tektronix Inc.	239, 240
Toshiba Corp. Tungstone Batteries Inc. Universal Elecon Inc. VDO-PAK Products Video Components Inc. Whitehouse Audio Visual Yardney Battery Div.	

CABLE, CAMERA

AVS (Audio-Visuel Systems) AVA Electronics B.F.E. KG BIW Cable Systems, Inc. Belden Electronic Wire & Cable Berk-Tek, Inc. Bi-Tronics, Inc. Brintec Corp. Brand-Rex Cable Systems Div. Canare Cable, Inc. Chester Cable Div. Celwax Systems, Inc. Comprehensive Video Supply Corp. Connectronics Corp.	
---	--

WHETHER IT'S NEW CONSTRUCTION OR RENOVATION ...



Your goal is to be the best in your market by building a facility that will produce operating efficiencies and a superior on-air look. Lerro Corporation can help you bring together all the pieces of the technology puzzle to create the most cost-effective physical plant you need to sell your services.

Lerro uses the interactive team approach, with you providing inputs on your marketing strategy, both short and long range sales goals and cost constraints. We offer technological solutions using our broad equipment lines, product knowledge, and advanced engineering tools.

A Lerro designed and constructed facility along with our follow-up training, maintenance program and warranties will create an environment for you to market your product with quality, efficiency, comfort, and profitability.

Call the Lerro half of your design team today!

THE
LERRO
CORPORATION

3125 N. Broad St., Philadelphia, Pa. 19132
215 - 223-8200

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

DYMA Engineering, Inc.
Elektroimpex
Frezzolini Electronics, Inc. 90
GBC Closed Circuit TV Corp.
JVC Co. of America177
Marshall Electronics
NEK Cables Ltd.
Nemal Electronics Int'l.
Pye TVT Ltd. Broadcast Co. of Philips
Sony Video Communications
Products Div. 112-113
Toshiba Corp.
Video Components Inc.
Whitmor Waveguides

CAMERA DOLLIES/STANDS/TRIPODS

Arriflex Corp.
Bogen Photo Corp.
Canon USA, Inc. Optics Div. 58-59
Cinema Products Corp.
Comprehensive Video Supply Corp.
Davis & Sanford Co. Inc.
Elektroimpex
Elemack Italia S.R.L.
Elicon
Alan Gordon Enterprises Inc.
Karl Heitz, Inc.
Innovative TV Equipment, Inc.
Peter Lisand Machine Corp.
Matthews Studio Equipment, Inc.
Miller Fluid Heads (USA) Inc.109
Miller Professional Equipment, Inc.
Mitchell Camera Corp.
Quick-Set Inc.
Sachtler Corp. of America
Toshiba Corp.
Ultimate Support Systems
Universal Fluid Heads (Aust.) Pty.
Ltd.
Velborn Int'l Corp.
Video Components Inc.
Vinten Equipment Inc.
W. Vinten Ltd. Broadcast Systems Div.
Visual Departures, Ltd.
Zellian Optics Ltd.

CAMERA PAN/TILT HEADS

Arriflex Corp.
Bogen Photo Corp.
Cinema Products Corp.
Cohu, Inc. Electronics Div.
Comprehensive Video Supply Corp.
Davis & Sanford Co. Inc.
Elektroimpex
Elicon
Frezzolini Electronics, Inc. 90
GBC Closed Circuit TV Corp.
Karl Heitz, Inc.
Innovative TV Equipment, Inc.
Matthews Studio Equipment, Inc.
Miller Fluid Heads (USA) Inc.109
Miller Professional Equipment, Inc.
O'Connor Engineering
Omnimount Systems
Panasonic Industrial Co. Audio-Video
System Products Group
Quick-Set Inc.
RCA New Products Div. Tube
Operations
Radamec-E.P.O.
Sachtler Corp. of America
Telemetrics Inc.
Toshiba Corp.
Total Spectrum Mfg. Inc.117
Universal Fluid Heads (Aust.) Pty.
Ltd.
Velborn Int'l Corp.
Vicon Industries Inc.
Video Components Inc.
Vinten Equipment Inc.
W. Vinten Ltd. Broadcast Systems Div.

CAMERA PICKUP TUBES/CCDs

Amperex Electronic Corp.
Slatersville Div. 66-67
Ampex Corp. Audio-Video Systems
Div.
Cohu, Inc. Electronics Div.
EEV141
GBC Closed Circuit TV Corp.

MII Inc.
Pye TVT Ltd. Broadcast Co. of Philips
RCA Distributor & Special Products
Div.
RCA New Products Div. Tube
Operations
Sony Video Communications
Products Div. 112-113
Thomson-CSF Electron Tube Div.
Thomson Video Equipment137
Toshiba Corp.
Vicon Industries Inc.

CAMERA/RECORDER SYSTEMS

AIWA Co., Ltd.
Ampex Corp. Audio-Video Systems
Div.
B.F.E. KG
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Robert Bosch Corp. Video
Equipment Div. 93-96
Frezzolini Electronics, Inc. 90
Ikegami Electronics (USA),
Inc. 165-172b
JVC Co. of America177
NEC America, Inc. Broadcast
Equipment Div.
Panasonic Broadcast Systems Co.
Panasonic Industrial Co. Audio-Video
System Products Group

Pye TVT Ltd. Broadcast Co. of Philips
Sony Broadcast Products Co. 12-13
Sony Video Communications
Products Div. 112-113
Thomson Video Equipment137
Toshiba Corp.

CAMERA REMOTE CONTROL EQUIPMENT

AVS (Audio-Visual Systems)
Anton/Bauer, Inc.115
BTS Broadcast Television Systems,
GmbH (A Joint Co. of Bosch &
Philips)
Robert Bosch GmbH
Cinema Products Corp.
Cohu, Inc. Electronics Div.
Dynetic Systems
Elicon
Gentner RF Products Div. of
Gentner Engineering 84
Alan Gordon Enterprises Inc.
JVC Co. of America177
Matthews Studio Equipment, Inc.
Panasonic Broadcast Systems Co.
Panasonic Industrial Co. Audio-Video
System Products Group
Precision Camera Inc.
Pye TVT Ltd. Broadcast Co. of Philips
Quick-Set Inc.
Radamec-E.P.O.
Sony Broadcast Products Co. 12-13
Sony Video Communications
Products Div. 112-113
Telemetrics Inc.
Toshiba Corp.
Total Spectrum Mfg. Inc.117
Vicon Industries Inc.
VideoTeleCom
Vinten Equipment Inc.
W. Vinten Ltd. Broadcast Systems Div.

CAMERA STABILIZERS

Arriflex Corp.
Cinema Products Corp.
Miller Fluid Heads (USA) Inc.109
Radamec-E.P.O.
Toshiba Corp.
Total Spectrum Mfg. Inc.117
Tyler Camera Systems
Zellian Optics Ltd.

CAMERAS, CCD/SOLID-STATE

AIWA Co., Ltd.

Amperex Electronic Corp.
Slatersville Div. 66-67
Ampex Corp. Audio-Video Systems
Div.
Cohu, Inc. Electronics Div.
EEV141
Fairchild Camera & Instrument Corp.
CCD Imaging Div.
GBC Closed Circuit TV Corp.
Ikegami Electronics (USA),
Inc. 165-172b
Lenzar Optics Corp.
NEC America, Inc. Broadcast
Equipment Div.
Nisus Video Inc.
Panasonic Industrial Co. Audio-Video
System Products Group
REGIS
Sierra Scientific
Sony Broadcast Products Co. 12-13
Sony Video Communications
Products Div. 112-113
Thomson Video Equipment137
Toshiba America
Toshiba Corp.

CAMERAS, ENG/EFP

Ampex Corp. Audio-Video Systems
Div.
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Robert Bosch Corp. Video
Equipment Div. 93-96
Harris Corp. Broadcast Div.
Hitachi Denshi America, Ltd. 3
Ikegami Electronics (USA),
Inc. 165-172b
JVC Co. of America177
Nisus Video Inc.
Panasonic Broadcast Systems Co.
Panasonic Industrial Co. Audio-Video
System Products Group
Philips Television Systems, Inc. 93-
96
Pioneer Technology Corp.
Pye TVT Ltd. Broadcast Co. of Philips
Sharp Electronics Corp.
Broadcast Group 79, 81
Sony Broadcast Products Co. 12-13
Sony Video Communications
Products Div. 112-113
T & G Optics
Thomson-CSF Broadcast, Inc.135
Thomson Video Equipment137
Toshiba Corp.

CAMERAS, FILM/CINE

Arnold & Richter
Arriflex Corp.
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Cinema Products Corp.
Cinematography Electronics, Inc.
Ferox Corp.
Frezzolini Electronics, Inc. 90
Alan Gordon Enterprises Inc.
Karl Heitz, Inc.
Mitchell Camera Corp.
Neilson-Hordell Ltd.
Philips Television Systems, Inc. 93-
96
Pioneer Technology Corp.
Polaroid Corp.
T & G Optics
Thomson-CSF Broadcast, Inc.135
Toshiba Corp.

CAMERAS, STUDIO TV

BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Robert Bosch Corp. Video
Equipment Div. 93-96
Elektroimpex
Harris Corp. Broadcast Div.
Hitachi Denshi America, Ltd. 3
Ikegami Electronics (USA),
Inc. 165-172b
JVC Co. of America177

Link Electronics Ltd.
Panasonic Industrial Co. Audio-Video
System Products Group
Philips Television Systems, Inc. 93-
96
Pye TVT Ltd. Broadcast Co. of Philips
Sharp Electronics Corp.
Broadcast Group 79, 81
Sony Broadcast Products Co. 12-13
Sony Video Communications
Products Div. 112-113
T & G Optics
Thomson-CSF Broadcast, Inc.135
Thomson Video Equipment137
Toshiba Corp.

CAMERAS, TV INDUSTRIAL SURVEILLANCE

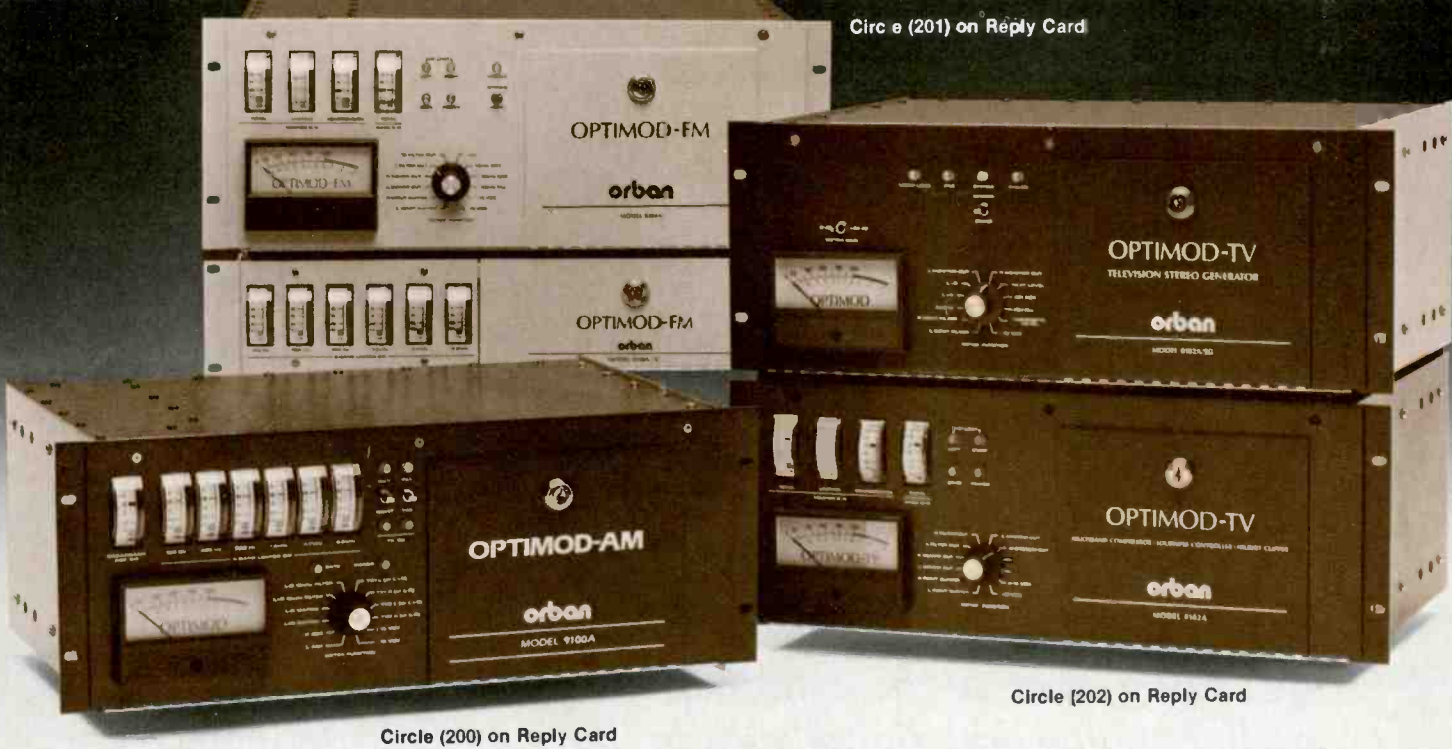
Aiphone Intercom Systems
Anton/Bauer, Inc.115
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
BTS Broadcast Television Systems,
GmbH (A Joint Co. of Bosch &
Philips)
Robert Bosch GmbH
Cohu, Inc. Electronics Div.
EEV141
Electronic Article Surveillance/3M
Elektroimpex
GBC Closed Circuit TV Corp.
Hitachi Denshi America, Ltd. 3
Ikegami Electronics (USA),
Inc. 165-172b
JVC Co. of America177
Lenzar Optics Corp.
Link Electronics Ltd.
Math Associates Inc.
Fiberlink/Fibervision Products
Group
NEC America, Inc. Broadcast
Equipment Div.
Nisus Video Inc.
Panasonic Industrial Co. Audio-Video
System Products Group
Philips Television Systems, Inc. 93-
96
RCA New Products Div. Tube
Operations
Radamec-E.P.O.
REGIS
Sierra Scientific
Sony Video Communications
Products Div. 112-113
T & G Optics
Thomson Video Equipment137
Toshiba Corp.
VMI-Visual Methods Inc.
Video Components Inc.
Westinghouse Electric Corp. Ind'l. &
Gov't. Tube Div.

CAPTIONING SYSTEMS

Aston Electronic Designs Ltd.
Broadcasting & Related Products
Div./3M
Computer Prompting Corp.
Cox Electronics Ltd.
EEG Enterprises, Inc.
Electrocraft Consultants Ltd.
LETTERON
Logica CES Ltd. Broadcast & Media
Group
Norpak Corp.
Roscor Corp.
Symtec Inc.
Toshiba Corp.

CHARACTER GENERATORS/TITLERS

AVS (Audio-Visual Systems)
Acquis Ltd.
Ampex Corp. Audio-Video Systems
Div.
Aston Electronic Designs Ltd.
Aston Electronics, Inc.



Circle (201) on Reply Card

Circle (200) on Reply Card

Circle (202) on Reply Card

Optimod /op'-tə-mod/

Op-ti-mod *n* [>Early Orbanian; deriv. of *optimum modulation*]

1. A broadcast audio processor built by Orban Associates to the highest standards of quality and reliability, incorporating patented circuitry to achieve a cleaner, brighter, louder airsound.

2. OPTIMOD-AM, Model 9100A; a high fidelity stereo or mono processor which achieves extraordinarily natural audio quality along with high loudness, remarkable source-to-source consistency, and FM-like brightness.

3. OPTIMOD-FM, Model 8100A/1 compressor/limiter/stereo generator; the industry's dominant choice for optimum FM processing, with or without the optional Studio Chassis and Six-Band Limiter Accessory Chassis.

4. OPTIMOD-TV, Model 8182A; a stereo processor that brings TV audio processing into the '80's by combining Orban's artifact-free multiband gated compressor with our clean "Hilbert Clipper" peak limiter and the commercial-taming CBS Loudness Controller. Teams with the 8182A/SG stereo generator Accessory Chassis to produce highly accurate and stable BTSC stereo transmissions.

5. OPTIMOD; a registered trademark.

Orban Associates Inc., 645 Bryant Street, San Francisco, CA 94107, Toll Free (800) 227-4498, In California (415) 957-1067, Telex: 17-1480.



ORBAN PROCESSING KEEPS YOU COMPETITIVE

Dolby spectral recording

Original master tapes recorded with Dolby SR sound exactly like line-in. That is a strong statement, but one easily proven in a studio. The purity of Dolby SR is not surpassed by any other method of

recording, even at the extremes of dynamic range, where earlier analog and digital systems have audible deficiencies.

At high signal levels... Dolby SR offers significantly greater headroom than conventional analog recording. At extreme high and low frequencies the increase in headroom is spectacular, providing uniform recording capability across the entire audio spectrum. In addition, because analog overload is gradual, there is no danger of accidental hard clipping of unexpected transient peaks. In fact, Dolby SR master tapes have greater usable dynamic range than any other method of recording (significantly more than 16-bit linear PCM, for example). The recording level can be set quickly and easily for program material with very high- and low-level passages. Because of the large dynamic range capability of Dolby SR, mixdowns from multi-track tapes remain exceptionally clean and quiet.

At low signal levels... Even the quietest signals are heard with remarkable clarity. Continuous dynamic and spectral analyses are used to assign optimal recording levels to all components of the signal, so that none of the tape hiss or modulation noise of conventional analog recording can be heard. The noise and non-linearities of low-level digital recording are simply not present.

And at every level in between... Dolby SR is not only superior at the extremes of dynamic range—a signal of exceptional purity is obtained at all signal levels. There is no tape modulation noise to be heard and no noise from the system itself. There are no staircase conversion inaccuracies, transient side effects, or phase anomalies due to steep low-pass filters, because Dolby SR does not employ digital conversion.



Listening comparison of line-in to line-out on a simultaneous basis is the ultimate test of any recording process. Dolby SR consistently passes this test.

Engineers, producers and performers all over the world are already using Dolby SR to create master recordings that match the line-in signal every time. They can freely record and edit Dolby SR tapes with any professional recorder. They have also discovered the simple, efficient and rational setup, alignment and maintenance that are possible with Dolby SR. Most important, they have confirmed the superiority of the sound of Dolby SR.

*Dolby spectral recording.
The sound of line-in.*

The new master recording process

Dolby Laboratories Inc., 100 Potrero Avenue, San Francisco, CA 94103-4813, Telephone 415 558-0200, Telex 34409
346 Clapham Road, London SW9 9AP, Telephone 01 720-1111, Telex 919109

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. 586/7162

DD Dolby[®] SR

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
 Robert Bosch GmbH
 Broadcasting & Related Products Div./3M
 Central Dynamics
 Chyron Corp. Telesystems
 Computer Prompting Corp.
 Dubner Computer Systems, Inc.
 Dynamic Technology Ltd.
 Elektroimpex
 Evertz Microsystems Ltd.
 For-A Corp. of America215
 Grass Valley Group 10
 Gray Engineering Labs, Inc.136
 H.E. Inc.
 ICM Video118
 JVC Co. of America177

Knox Video Products
 Laird Telemedia Inc.
 Lang Video Communication Inc.
 MPB Technologies Inc.
 Mycro-Tek
 Norpak Corp.
 PESA America Inc.
 Quanta Corp.
 Quantel148
 Roscor Corp.
 Ryley Communications
 Sigma Consultants
 Sony Video Communications Products Div.112-113
 Symtec Inc.
 Teledac Inc.
 Thomson-CSF Broadcast, Inc.135
 Thomson Video Equipment137
 Toshiba Corp.

United Media, Inc.
 Video Data Systems

COLOR CORRECTION EQUIPMENT

P. Albrecht Elektronik
 Applied Digital Technology, Inc.
 BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
 Robert Bosch Corp. Video Equipment Div.93-96
 Broadcast Video Systems, Ltd. 54
 Cox Electronics Ltd.
 Dubner Computer Systems, Inc.
 Electrocraft Consultants Ltd.
 Elektroimpex
 Faroudja Labs, Inc.

For-A Corp. of America215
 Fortel Inc.
 Gresham Lion (PPL) Ltd.
 International Nuclear Corp.
 Knox Video Products
 Lee Filters Ltd.
 Microtime, Inc.
 Rank Cintel
 REGIS
 Snell & Wilcox Electronic Consultants Ltd.
 Sony Broadcast Products Co. 12-13
 Thomson-CSF Broadcast, Inc.135
 Thomson Video Equipment137
 Toshiba Corp.

DIGITIZERS, COLOR VIDEO

Broadcasting & Related Products Div./3M
 Chroma Digital Systems Div. of Shintron Co. Inc.
 Colorado Video Inc.
 Electrocraft Consultants Ltd.
 Elektroimpex
 For-A Corp. of America215
 Grass Valley Group 10
 Norpak Corp.
 Shintron Co. Inc.
 Toko America Inc.
 Toshiba Corp.
 Videoplex Inc.

EDITING ACCESSORIES, MULTI-IMAGE DISPLAY

AXE (Artists X-Ponent Eng.)
 Apert-Herzog Corp.
 Audiolab Electronics, Inc.
 Broadcasting & Related Products Div./3M
 Cipher Digital, Inc. 45
 ESE 99, 101, 103
 Greco Systems
 Quantel148
 Sony Video Communications Products Div.112-113
 Toshiba Corp.
 United Media, Inc.
 Vid-Video, Inc.
 VideoLab
 Videomedia, Inc.
 Videoplex Inc.

EDITING CONTROLLERS, AUDIO/VIDEO

AXE (Artists X-Ponent Eng.)
 Acquis Ltd.
 Adams-Smith
 Advanced Music Systems
 P. Albrecht Elektronik
 Alpha Audio142
 Ampex Corp. Audio-Video Systems Div.
 BHP Inc.
 BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
 Robert Bosch Corp. Video Equipment Div.93-96
 CMX Corp.
 Calaway Engineering
 Cipher Digital, Inc. 45
 Convergence Corp.119
 The Droid Works
 EECO Inc.
 Editron USA
 Fast Forward Video
 Fostex Corp. of America 39
 Grass Valley Group 10
 Greco Systems
 Lyon-Lamb Video Animation Systems Palitex Ltd.
 Panasonic Broadcast Systems Co.
 Panasonic Industrial Co. Audio-Video System Products Group
 Pioneer Technology Corp.
 Quantel148
 Roscor Corp.
 Shintron Co. Inc.
 Sony Broadcast Products Co. 12-13

COST EFFECTIVE

System One is COST EFFECTIVE.
 System One plus PC
 (if you don't already own one)
 sells for \$7,000 to \$10,000—less than slower, lower-performance IEEE-488 automated audio test systems.
 Even more important, you'll have automated procedures running with minutes-to-hours of non-programmer setup time, compared to weeks- to-months of software effort required by conventional programmable instruments.

Audio precision

P.O. Box 2209
 Beaverton, Oregon 97075
 503/297-4837, 1-800/231-7350
 TELEX: 283957 AUDIO UR

Now, that's the way to test audio!



Circle (15) on Reply Card

See Adv. Page

Sony Video Communications
Products Div. 112-113
Toshiba Corp.
United Media, Inc.
Universal Elecon Inc.
Videomedia, Inc.

ELECTRONIC GRAPHICS SYSTEMS

AVS (Audio-Visual Systems)
Advanced Designs Corp.
Ampex Corp. Audio-Video Systems Div.
Artronics
Audio Visual Div./3M
Aurora Systems
BTS Broadcast Television
Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
Broadcasting & Related Products Div./3M
Chroma Digital Systems Div. of Shintron Co. Inc.
Chyron Corp. Telesystems
Computer Graphics Lab, Inc.
Dubner Computer Systems, Inc.
DYMA Engineering, Inc.
Electrohome Ltd.
For-A Corp. of America 215
Grass Valley Group 10
Gresham Lion (PPL) Ltd.
Harris Corp. Broadcast Div.
Integrated Technologies Interand Corp.
JVC Co. of America 177
Logica CES Ltd. Broadcast & Media Group
MPB Technologies Inc.
MERET, Inc.
Norpak Corp.
Panasonic Industrial Co. Audio-Video System Products Group
Quanta Corp. 148
Quantel 148
Shintron Co. Inc.
Sony Video Communications
Products Div. 112-113
Symtec Inc.
Thomson-CSF Broadcast, Inc. 135
Thomson Video Equipment 137
Toshiba Corp.

ENCODERS/DECODERS, COLOR VIDEO

Acron Video
Asaca/Shibasoku Corp. 57
BTS Broadcast Television
Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
Broadcast Video Systems, Ltd. 54
Central Dynamics
Cox Electronics Ltd.
DICSA-Delay TV Ingenieurs-Conseils SA
Digivision Broadcast Ltd.
Electrocraft Consultants Ltd.
Faroudja Labs, Inc.
For-A Corp. of America 215
J-Lab
Lenco Inc. Electronics Div. 17
Link Electronics Ltd.
Listec Video Corp.
Lyon-Lamb Video Animation Systems
Marconi Communication Systems Ltd.
Merlin Engineering Works
Omicron Video 142
PESA Electronica
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
Quality Video Supply
Thomson Video Equipment 137
Toshiba Corp.
Vistek Electronics Ltd.

ENHANCERS, VIDEO SIGNAL

BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)

See Adv. Page

Robert Bosch GmbH
Electrocraft Consultants Ltd.
Faroudja Labs, Inc.
For-A Corp. of America 215
Microtime, Inc.
Piclear, Inc.
Pye TVT Ltd. Broadcast Co. of Philips
Snell & Wilcox Electronic Consultants Ltd.
Telemet Div. A Geotel, Co.
Thomson-CSF Broadcast, Inc. 135
Thomson Video Equipment 137
Toshiba Corp.

EQUALIZERS, VIDEO LINE

AVS (Audio-Visual Systems)
Allen Avionics, Inc. 125
Apert-Herzog Corp.
Avitel Electronics Ltd.

See Adv. Page

B.F.E. KG
BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Robert Bosch GmbH
Central Dynamics
Crow Broadcast Systems Ltd.
Di-Tech Inc. 35
Dynair Electronics, Inc. 65
Dynamic Technology Ltd.
Electrocraft Consultants Ltd.
HEDCO (Hughes Elec. Devices Corp.)
International Nuclear Corp.
Leitch Video 105
Lenco Inc. Electronics Div. 17
Link Electronics Ltd.
Omicron Video 142
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
Sander Electronics A/S

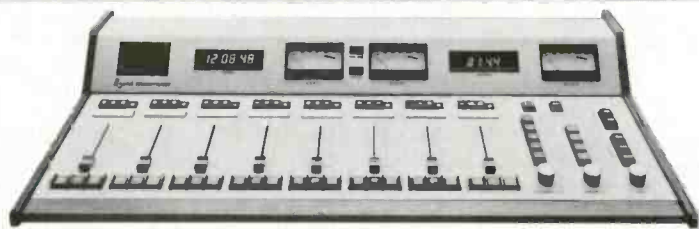
See Adv. Page

Telemet Div. A Geotel, Co.
Toshiba Corp.

FILM CHAIN/TELECINE SYSTEMS

A. F. Associates, Inc. 80
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
Buhl Optical Co.
CCI
Crow Broadcast Systems Ltd.
Ikegami Electronics (USA), Inc. 165-172b
Interactive Motion Control
J&R Film

Workhorse Reliability! Remarkable Audio Quality! Simple to Operate!



The **Logitek** PERFECTIONIST 8 and 12-Channel Broadcast Consoles

Only the Perfectionist has:

- Simple one-button operation
- Four selectable stereo inputs per fader
- S/N 88 dB, THD .008% typical
- Built-in DAs, clock, timer, machine controls
- Complete pre-wiring to punch blocks
- Exclusive five-year parts/labor warranty!

CALL 800-231-5870

(Texas, Alaska call 713-782-4592 collect)

for full information and the name of your
Logitek *Instant Action* Dealer.

Logitek Electronic Systems, Inc.

When it has to work right

VIDEO PRODUCTS

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Kalart Victor Corp.
L-W International
Laird Telemedia Inc.
Magna-Tech Electronics Co., Inc.209
Marconi Communication Systems Ltd.
Multi-Track Magnetics, Inc.
Nytone Electronics
Pioneer Technology Corp.
Rank Cintel
Sauppe Media, Inc.
Sondor Export AG
T & G Optics
Toshiba Corp.
Total Spectrum Mfg. Inc.117
The Zei-Mark Corp.

FILM INSPECTION/CLEANING EQUIPMENT

Cumming Corp. Canyon Place
The Durafilm Co.
Lipsner-Smith Co.
Neumade Products Corp.
Piclear, Inc.
Pioneer Technology Corp.
RTI-Research Tech. Int'l.
T & G Optics
Toshiba Corp.

FILM PHOTOGRAPHIC/PROCESSING EQUIPMENT

BHP Inc.
Cumming Corp. Canyon Place
Eastman Kodak Co.
Elicon
Polaroid Corp.
Toshiba Corp.

FILM-TO-TAPE TRANSFER EQUIPMENT

A. F. Associates, Inc.80
Apollo Audio Visual
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)93-96
Robert Bosch Corp. Video Equipment Div.93-96
Buhl Optical Co.
Cinematography Electronics, Inc.
Cumming Corp. Canyon Place
Dubner Computer Systems, Inc.
Editron USA
Fougerolle S.A.
J&R Film
Kalart Victor Corp.
Kintone Inc.
Laird Telemedia Inc.
Magna-Tech Electronics Co., Inc.209
Magnasync/Moviola Corp.
Marconi Communication Systems Ltd.
Multi-Track Magnetics, Inc.
Piclear, Inc.
Rank Cintel
Skotel Corp.
Steady-Film Corp.
T & G Optics
Tamron Industries Inc.
Video Components Inc.
The Zei-Mark Corp.

FILTERS, OPTICAL

Birns & Sawyer Inc.
ESS/Spectratek
Lee Filters Ltd.
Neilson-Hordell Ltd.
REGIS
Schneider Corp. of America
T & G Optics
Tamron Industries Inc.
Tiffen Mfg. Corp.
Video Components Inc.

FILTERS, VIDEO

Allen Avionics, Inc.125

BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
BAL Components Ltd.
Robert Bosch GmbH
Broadcast Video Systems, Ltd.54
ESS/Spectratek
Lee Filters Ltd.
Matthey Printed Products Ltd.
Microsonics Inc.
Microwave Filter Co., Inc.
North Hills Electronics, Inc.
Rohde & Schwarz
Synchronous Communications, Inc.
TTE, Inc.
Tectan, Inc.
Television Equipment Associates
Tiffen Mfg. Corp.
Video Components Inc.

GENERATORS, COLOR BACKGROUND

Anritsu America, Inc.
Asaca/Shibasoku Corp.57
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)93-96
Robert Bosch Corp. Video Equipment Div.93-96
Broadcast Video Systems, Ltd.54
Central Dynamics
Cox Electronics Ltd.
Datatek Corp.
Dubner Computer Systems, Inc.
DYMA Engineering, Inc.
Electrocraft Consultants Ltd.
Elektroimpex
For-A Corp. of America215
Grass Valley Group10
International Nuclear Corp.
Knox Video Products
Leader Instruments Corp.5
Scientific-Atlanta Digital Video Systems Div.
Shintron Co. Inc.
Sigma Electronics, Inc.
Tektronix Inc.239, 240

GENERATORS/INSERTERS, VITS

AVS (Audio-Visuel Systems)
Anritsu America, Inc.
Asaca/Shibasoku Corp.57
B.F.E. KG
CCI
Dynamic Technology Ltd.
Electrocraft Consultants Ltd.
Elektroimpex
Grumman Aerospace Corp. Broadcast Systems Group
H.E. Inc.
Leitch Video105
Link Electronics Ltd.
Marconi Instruments
Philips Test & Measuring Instruments
Rohde & Schwarz
Shintron Co. Inc.
Tektronix Inc.239, 240
Telemet Div. A Geotol. Co.
Thomson Video Equipment137
Video Data Systems

GENERATORS, SAFE AREA

AVS (Audio-Visuel Systems)
Asaca/Shibasoku Corp.57
Aydin Radar & EW Div.
B.F.E. KG
Broadcast Video Systems, Ltd.54
Coherent Communications, Inc.
Landy Associates, Inc.
Leitch Video105
Listec Video Corp.
Maric Industries Ltd.
Polar Video Ltd.
The Real World Tech. Group, Inc.
Scientific-Atlanta Digital Video Systems Div.
Sigma Electronics, Inc.

GENERATORS, SOURCE ID

AVS (Audio-Visuel Systems)

Anritsu America, Inc.
Asaca/Shibasoku Corp.57
Aydin Radar & EW Div.
Broadcast Video Systems, Ltd.54
Cipher Digital, Inc.45
Cox Electronics Ltd.
Datatek Corp.
Datum Inc.195
Dynamic Technology Ltd.
Evertz Microsystems Ltd.
Lang Video Communication Inc.
Leader Instruments Corp.5
Leitch Video105
Philips Test & Measuring Instruments
QSI Systems Inc.
Sigma Electronics, Inc.
Video Data Systems

GENERATORS, SYNCHRONIZING PULSE

AXE (Artists X-Ponent Eng.)
Acron Video
Anritsu America, Inc.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)93-96
Robert Bosch Corp. Video Equipment Div.93-96
Brabury Ltd.
Digivision Broadcast Ltd.
Electrocraft Consultants Ltd.
Elektroimpex
Engel Engineering
For-A Corp. of America215
Fostex Corp. of America39
GBC Closed Circuit TV Corp.
Grass Valley Group10
Grumman Aerospace Corp. Broadcast Systems Group
Kay Elemetrics Corp.
Lang Video Communication Inc.
Leitch Video105
Lenco Inc. Electronics Div.17
Link Electronics Ltd.
Listec Video Corp.
Lyon-Lamb Video Animation Systems
Magni Systems43
Nagra Magnetic Recorders, Inc.
Omicron Video142
PESA Electronica
Philips Television Systems, Inc. 93-96
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
QSI Systems Inc.
REGIS
Scientific-Atlanta Digital Video Systems Div.
Sigma Electronics, Inc.
Tektronix Inc.239, 240
Video Aids of Colorado
Videotek, Inc.157

GENERATORS, VIDEO EFFECTS/DIGITAL

AXE (Artists X-Ponent Eng.)
Abekas Video Systems, Inc.
Ampex Corp. Audio-Video Systems Div.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)93-96
CEL Electronics Ltd.
Choice Electronics, Inc.
Digital Services Corp.
ECHOlab, Inc.
Elektroimpex
Fairlight Instruments
For-A Corp. of America215
Fougerolle S.A.
GML America185
Grass Valley Group10
Harris Corp. Broadcast Div.
Knox Video Products
Microtime, Inc.
NEC America, Inc. Broadcast Equipment Div.
Philips Television Systems, Inc. 93-96
Pye TVT Ltd. Broadcast Co. of Philips
Quantel148
Questech Ltd.
REGIS
Shintron Co. Inc.

Tektronix Inc.239, 240
Thomson Video Equipment137
Vital Industries Inc.

HEADS, FILM MAGNETIC AUDIO

International Electro-Magnetics
Magna-Tech Electronics Co., Inc.209
Multi-Track Magnetics, Inc.
Re: DB Co. A Div. of Pierce Industries Inc.
Saki Magnetics, Inc.
Taber Mfg. & Eng. Co.

HEADS, VIDEO RECORDING

Ampex Corp. Audio-Video Systems Div.
BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Robert Bosch GmbH
CMC Technology
International Electro-Magnetics
Videomagnetics, Inc.

HIGH DEFINITION, TV SYSTEMS

Asaca/Shibasoku Corp.57
Barco Industries151
DigiVision, Inc.
Dynair Electronics, Inc.65
Eigen Video
Grass Valley Group10
Ikegami Electronics (USA), Inc.165-172b
Magni Systems43
MERET, Inc.
Quantel148
Rank Cintel
Sierra Scientific
Sony Broadcast Products Co. 12-13
Toshiba Corp.
ULTIMATE Corp.

HUM STOP COILS

ADC Telecommunications, Inc.
Allen Avionics, Inc.125
Audio-Video Engineering Co.98
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips)93-96
Robert Bosch Corp. Video Equipment Div.93-96
Broadcast Video Systems, Ltd.54
DYMA Engineering, Inc.
International Nuclear Corp.
North Hills Electronics, Inc.

KEYERS, VIDEO INSERT/CHROMA/DSK

BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Beaveronics, Inc.
Robert Bosch GmbH
Broadcast Video Systems, Ltd.54
Cox Electronics Ltd.
ECHOlab, Inc.
Electrocraft Consultants Ltd.
For-A Corp. of America215
Graham-Patten Systems, Inc.
Image Video Ltd.
Intergroup Video Systems161
International Nuclear Corp.
Laird Telemedia Inc.
Omicron Video142
Panasonic Industrial Co. Audio-Video System Products Group
Pye TVT Ltd. Broadcast Co. of Philips
Sander Electronics A/S
Shintron Co. Inc.
Sierra Video Systems
Telemet Div. A Geotol. Co.
Thomson Video Equipment137
ULTIMATE Corp.
Universal Elecon Inc.

professionals need professionals

and a 30 minute BetaCam[®] video cassette tape
that is virtually indestructable!

When your reputation is on the line
you want the BEST equipment available!

You want a tape engineered with
uncompromising quality control in the
most modern, hi-tech manufacturing
facility in the world.

You want a tape with a specially
formulated, virtually indestructable
backing to withstand the stresses

of editing pass after pass after pass.

You want a super-smooth tape
surface with ultra-fine cobalt treated
oxides for high recording density and
low chroma noise levels.

You want a tape that virtually eliminates
dropouts in a precision engineered case
with a special anti-static resin for extra
toughness and heat resistance.

You want the BEST...

You want RAKS...



RAKS[®]

ENGINEERED FIRST TO LAST!

201 RT. 17 - SUITE 300
RUTHERFORD, NJ 07070
(201) 438-0119

NYTV is a registered trademark of New York Television, Inc.

BetaCam[®] is a registered trademark of the Sony Corp.

Circle (17) on Reply Card

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

LAMPS, STUDIO LIGHTING

Apollo Audio Visual
 AVAB America Inc.
 R.R. Beard Ltd.
 Colortran, Inc.
 DeSisti Lighting Desmar Corp.
 DYMA Engineering, Inc.
 GTE Sylvania Lighting Products U.S. Lighting Div.
 The Great American Market
 LTM Corp. of America
 Lamp Technology Inc.
 Lighting & Shadows A Div. of Phoebus
 Lowel-Light Mfg., Inc.
 L E Nelson Sales Corp.
 Osram Corp.
 Packaged Lighting Systems, Inc.
 Philips Lighting/Westinghouse
 Pro Battery Co. Inc.
 Strand Lighting
 Teatronics Inc.
 Thorn-EMI Studio & Theatre Lamps L. E. Nelson Sales Corp.
 Toshiba Corp.
 VDO-PAK Products
 Video Components Inc.

Total Spectrum Mfg. Inc.117
 Vicon Industries Inc.
 Video Components Inc.
 The Western Group108
 The Zei-Mark Corp.

LENS SYSTEMS, TV CAMERA

Angenieux Corp. of America
 Canon USA, Inc. Optics Div. 58-59
 Century Precision Optics
 D.O. Industries, Inc. Navitar AV Div.
 DYMA Engineering, Inc.
 Fujinon Inc.121
 GBC Closed Circuit TV Corp.
 JVC Co. of America177
 Lenzer Optics Corp.
 Schneider Corp. of America
 Jos. Schneider Optische Werke
 Kreuznach GmbH & Co. KG
 Schwem Technology, Inc.
 Sony Broadcast Products Co. 12-13
 T & G Optics
 VMI-Visual Methods Inc.
 Vicon Industries Inc.
 Video Components Inc.
 The Western Group108
 The Zei-Mark Corp.

Kliegl Bros. Lighting
 Lighting Methods Inc.
 Lighting & Shadows A Div. of Phoebus
 Lumitrol, Ltd.
 Mole-Richardson Co.
 Rupert Neve Inc.197
 Packaged Lighting Systems, Inc.
 Ross-American Logic Systems Inc.
 SECOA
 Siemens
 Skantronics, Inc.
 Strand Lighting
 Teatronics Inc.
 Union Connector Co., Inc.
 VDO-PAK Products

Lamp Technology Inc.
 Lighting Methods Inc.
 Lighting & Shadows A Div. of Phoebus
 Modulight Systems Inc.
 Mole-Richardson Co.
 Nalpak Video Sales Inc.
 Packaged Lighting Systems, Inc.
 Perrott Eng. Labs, Inc.
 Pro Battery Co. Inc.
 Softube Co.
 Strand Lighting
 The Superior Electric Co.
 TBA Technology
 Teatronics Inc.
 VDO-PAK Products

LENS ADAPTERS/EXTENDERS

Angenieux Corp. of America
 Century Precision Optics
 Film/Video Equip. Service Co.
 Fujinon Inc.121
 Interactive Motion Control
 Precision Camera Inc.
 Schneider Corp. of America
 Jos. Schneider Optische Werke
 Kreuznach GmbH & Co. KG
 T & G Optics
 Tiffen Mfg. Corp.

LIGHT DIMMERS/CONTROLS

AVAB America Inc.
 R.R. Beard Ltd.
 CAE Inc.
 Colortran, Inc.
 DeSisti Lighting Desmar Corp.
 Dilor Industries Ltd.
 Dynamic Technology Ltd.
 Electro Controls
 Electronics Diversified, Inc.
 The Great American Market

LIGHT MASKING

B-W Lighting Systems
 DeSisti Lighting Desmar Corp.
 The Great American Market
 Kliegl Bros. Lighting
 Nalpak Video Sales Inc.

LIGHTING INSTRUMENTS

Arriflex Corp.
 Automatic Devices Co.
 AVAB America Inc.
 B-W Lighting Systems
 Bardwell & McAlister, Inc.
 Walter S. Brewer Co., Inc.
 Cool Light Co.
 DeSisti Lighting Desmar Corp.
 Dilor Industries Ltd.
 DYMA Engineering, Inc.
 Electro Controls
 The Great American Market
 Kliegl Bros. Lighting

LIGHTING KITS, PORTABLE

Anton/Bauer, Inc.115
 Arriflex Corp.
 AVAB America Inc.
 B-W Lighting Systems
 Bardwell & McAlister, Inc.
 R.R. Beard Ltd.
 Bogen Photo Corp.
 Cine 60, Inc.
 Colortran, Inc.
 Cool Light Co.
 DeSisti Lighting Desmar Corp.
 Dilor Industries Ltd.
 DYMA Engineering, Inc.
 Dynamic Technology Ltd.
 Electro Controls
 Frezzolini Electronics, Inc. 90
 The Great American Market
 Kliegl Bros. Lighting
 LTM Corp. of America
 Lamp Technology Inc.
 Lighting Methods Inc.

Manufacturers' Addresses begin on page 77



TC-4 DIGITAL DELAY

A great value at
\$1,645
 MONO



- 6.8 SECOND DELAY
- 15 KHZ BANDWIDTH
- 85 db DYNAMIC RANGE
- ACTIVE, BALANCED INPUTS & OUTPUTS
- ADJUSTABLE REBUILD RATE AFTER MEMORY DUMP
- FULLY REMOTEABLE
- MONO OR STEREO

For more information or name of distributor near you, call:

800-423-1082

1000 S. Bertelsen Road, Suite 4
 Eugene, OR 97402



Circle (18) on Reply Card

If you're looking for a new routing switcher...

...try Di-Tech's Expandable In-The-Field - Output Oriented 5850 Series!



More and more industry leaders have been switching to Di-Tech's expanding selection of routing switchers. We design the most reliable switchers to meet every need, every budget and every application. Our newest, the Model #5850 series, features:

- 40x20 Expandable AFV MATRIX with up to 3 levels of audio per input (within the same frame)
- No special IC's or Hybrids
- Serial RS422, RS 232, Coax or Parallel BCD Control
- Numerical and/or alpha numerical single bus control panels
- Numerical and/or CRT X-Y Controllers
- The 5850 can be used to expand Di-tech's current in-the-field 5840 series switcher

Call, write or telex for more information on the 5850 series, or request our free catalog today. Whether it be for radio, television, mobile vans or production studios, Di-Tech has the high quality, reliable, easy-to-operate answer to your present and future needs!



Illustrated below are just a few of Di-Tech's X-Y Master Controllers and Single Bus Control Panels.



di di-tech

48 JEFRYN BOULEVARD DEER PARK, N.Y. 11729

TEL. #(516) 667-6300 TELEX #971806

Circle (19) on Reply Card

1987 BG/SB Broadcast Engineering 35

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Lighting & Shadows A Div. of
Phoebus
Lowel-Light Mfg., Inc.
Modulight Systems Inc.
Mole-Richardson Co.
Musco Mobile Lighting, Ltd.
Nalpak Video Sales Inc.
Packaged Lighting Systems, Inc.
Pag America, Ltd.
Pro Battery Co. Inc.
Rosco Labs Inc.
Skyline Inc.
Softube Co.
Strand Lighting
Ultimate Support Systems
VDO-PAK Products
Video Components Inc.
Visual Departures, Ltd.

Yardney Battery Div.

MONITORS, VIDEO B&W

BTS Broadcast Television Systems,
GmbH (A Joint Co. of Bosch &
Philips)
Barco Industries 151
Robert Bosch GmbH
Conrac Div. Conrac Corp.
Digivision Broadcast Ltd.
Electrohome Ltd.
Elektroimpex
GBC Closed Circuit TV Corp.
Ikegami Electronics (USA),
Inc. 165-172b
Math Associates Inc.
Fiberlink/Fibervision Products
Group

Melford Electronics Ltd.
PESA Electronica
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
Sencore Inc. 139
Sierra Scientific
Sony Broadcast Products Co. 12-13
TDV S.A.
Tektronix Inc. 239, 240
Thomson Video Equipment 137
Vistek Electronics Ltd.

MONITORS, VIDEO COLOR

Anritsu America, Inc.
Asaca/Shibasoku Corp. 57
BTS Broadcast Television
Systems, Inc. (A Joint Co. of

Bosch & Philips) 93-96
Barco Industries 151
Brabury Ltd.
Conrac Div. Conrac Corp.
Digivision Broadcast Ltd.
Electrohome Ltd.
Electronic Visuals Ltd.
Elektroimpex
James Grunder & Associates Inc.
Heyden Int'l
Ikegami Electronics (USA),
Inc. 165-172b
JVC Co. of America 177
Lectrotech Inc.
Math Associates Inc.
Fiberlink/Fibervision Products
Group
Melford Electronics Ltd.
Minolta Corp. Industrial Meter
Div. 55
PESA Electronica
Philips Television Systems, Inc. 93-
96
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
REGIS
Rohde & Schwarz-Polarad, Inc.
Sencore Inc. 139
Sharp Electronics Corp.
Broadcast Group 79, 81
Sony Broadcast Products Co. 12-13
TDV S.A.
Tektronix Inc. 239, 240
Thomson Video Equipment 137
Videotek, Inc. 157
Vistek Electronics Ltd.
World Video Inc.

MULTIPLEXERS, TELECINE

Apollo Audio Visual
Buhl Optical Co.
Multiplex Technology
Precision Camera Inc.
T & G Optics
Videoplex Inc.
The Zei-Mark Corp.

NOISE REDUCTION, VIDEO

Acoustic Systems 138
Allen Avionics, Inc. 125
Colorado Video Inc.
Faroudja Labs, Inc.
For-A Corp. of America 215
Harris Corp. Broadcast Div.
Image Transform, Inc.
Kayglo Electronics
Microtime, Inc.
North Hills Electronics, Inc.
Rohde & Schwarz
SL Waber, Inc. Subsidiary of SL
Industries
Snell & Wilcox Electronic Consultants
Ltd.

POINTERS, VIDEO

AVS (Audio-Visual Systems)
Colorado Video Inc.
For-A Corp. of America 215
Laird Telemedia Inc.

PROJECTION SCREENS

Apollo Audio Visual
Bretford/Knox
Da-Lite Screen Co., Inc.
General Electric Co. Projection Display
Products
Panasonic Industrial Co. Audio-Video
System Products Group
Raven Screen Corp.
The Screen Works, Ltd.
Sony Video Communications
Products Div. 112-113

**PROJECTOR
LAMPS/ACCESSORIES**

Apollo Audio Visual
DeSisti Lighting Desmar Corp.
GTE Sylvania Lighting Products U.S.
Lighting Div.



**Comprehensive
Audio
Testing...**

The Amber model 5500 Programmable Audio Measurement System is quite simply the most flexible and comprehensive audio analyzer you can own. Its broad range of features, high performance and expandable modular system architecture ensure that your 5500 will meet all of your audio measurement needs today - and tomorrow.

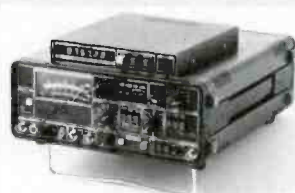
The 5500 measures absolute and relative signal level over a 160dB range in Volts, dBV, dBm or Watts. Harmonic and IM distortion measurements to IHF, DIN, SMPTE, CCIF and other standards to below 0.001% are fast and automatic. And noise measurements can be unweighted, weighted, band limited or narrow band using true rms, average or quasi-peak detectors.

Stereo balanced and unbalanced inputs and outputs allow interface to virtually any consumer, professional, broadcast or industrial device. And total computer control is possible using the IEEE-488 and RS-232 ports.

The friendly front panel and ten user-definable non-volatile setups make the 5500 at home in the R & D lab, the service bench or the production test environment.

Our detailed brochure gives the whole story - ask for one today.

Amber also makes one of the most popular portable high performance audio measurement systems - the 3501. Half the weight and size of comparable instruments, the 3501 has one of the best reliability records in the industry.



Amber Electro Design Inc.
4810 Jean Talon West
Montreal Canada H4P 2N5
Telephone (514) 735 4105
Telex 05-827598
US Toll free 800-361 3697

amber

Circle (20) on Reply Card

SEE HOW WE STACK UP.



CRL offers much more than just another limiter for your AM or FM station.

We provide you with any combination of multi-band AGC's, four channel processors, and pre-emphasizing limiter/clippers for your stereo or mono needs.

Because of this, it's no wonder we have been stacked up against the best known audio processors in the industry...and won!

All of our AGC's use multiband, patented circuitry, which avoid noise pull-up during pauses, and automatically correct errors in levels and tonal balance.

Using 6db/octave filters for precision shaping and altering of program material, our 4 channel processors will give you a powerful increase in loudness and still retain musical quality.

Our multiband limiter/clippers use patented low pass clipping filters to provide the final absolute peak and band width control. Our adjustable pre-emphasis circuits allow you to achieve the maximum in fidelity on typical receivers.

Hear for yourself why CRL has become a leader in audio processing. Call us now, toll free, at 800-535-7648, and we'll arrange for your CRL

dealer to give you a free trial so you can see for yourself how we stack up.



THE PROCESSING SPECIALISTS

Circuit Research Labs, Inc.

2522 West Geneva Drive, Tempe, Arizona 85282

(602) 894-0077

(800) 535-7648

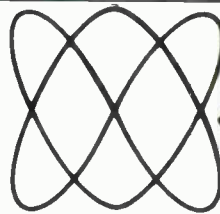
Circle (21) on Reply Card

See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
L E Nelson Sales Corp. Tamron Industries Inc. Thorn-EMI Studio & Theatre Lamps L. E. Nelson Sales Corp. VDO-PAK Products	Broadcast Developments Ltd. Autoscript Cinema Products Corp. Comprompter, Inc. Compu-Prompt Computer Prompting Corp. Dubner Computer Systems, Inc. Listec Video Corp. Q-TV Symtec Inc. Tekskil Industries Telescript, Inc. Video Data Systems	Philips) Robert Bosch GmbH Curtis & Green Ltd. JVC Co. of America .....177 Landy Associates, Inc. Lyon-Lamb Video Animation Systems Panasonic Broadcast Systems Co. Panasonic Industrial Co. Audio-Video System Products Group Sharp Electronics Corp. Broadcast Group..... 79, 81 Sony Broadcast Products Co. 12-13 Sony Video Communications Products Div. ....112-113 Thomson Video Equipment .....137	Merlin Engineering Works Neilson-Hordell Ltd. Pioneer Technology Corp. Precision Echo Sony Broadcast Products Co. 12-13
PROJECTORS, FILM/SLIDE D.O. Industries, Inc. Navitar AV Div. Eastman Kodak Co. Kinetone Inc. Laird Telemedia Inc. Sondor Export AG T & G Optics Tamron Industries Inc. Telex Communications, Inc. Video Components Inc. The Zei-Mark Corp.	PULSE/VIDEO DELAY SYSTEMS Allen Avionics, Inc. ....125 Apert-Herzog Corp. Avitel Electronics Ltd. BAL Components Ltd. Broadcast Video Systems, Ltd. 54 Central Dynamics Digivision Broadcast Ltd. Dynair Electronics, Inc. 65 ESC Electronics Corp. Elektroimpex Leitch Video .....105 Matthey Printed Products Ltd. PESA Electronica Rohde & Schwarz Sander Electronics A/S Television Equipment Associates	RECORDERS, VIDEO 3/4-INCH Alpha Video & Electronics Co. Eigen Video JVC Co. of America .....177 Landy Associates, Inc. Neilson-Hordell Ltd. Panasonic Industrial Co. Audio-Video System Products Group Pioneer Technology Corp. Sony Broadcast Products Co. 12-13 Sony Video Communications Products Div. ....112-113	RECORDERS, VIDEO 2-INCH A. F. Associates, Inc. 80 Merlin Engineering Works Pinzone Communications Products Inc.
PROJECTORS, TV LARGE SCREEN BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips) Robert Bosch GmbH D.O. Industries, Inc. Navitar AV Div. Eidophor Ltd. Electronic Systems Products General Electric Co. Projection Display Products Image Amplification Inc. Panasonic Industrial Co. Audio-Video System Products Group Sony Video Communications Products Div. ....112-113 Video Components Inc.	RECORDERS, VIDEO 1/2-INCH Ampex Corp. Audio-Video Systems Div. BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch &	RECORDERS, VIDEO 1-INCH Ampex Corp. Audio-Video Systems Div. BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96 Robert Bosch Corp. Video Equipment Div. 93-96 Hitachi Denshi America, Ltd. 3 Kudelski Nagra Marconi Communication Systems Ltd.	RECORDERS, VIDEO DIGITAL Abekas Video Systems, Inc. Ampex Corp. Audio-Video Systems Div. Sony Broadcast Products Co. 12-13
PROMPTER SYSTEMS Autocue			RECORDERS, VIDEO OTHER Dwight Cavendish Co. Curtis & Green Ltd. Landy Associates, Inc. Oktel Corp. Optical Disc Corp. Sony Video Communications Products Div. ....112-113
			RECORDERS, SLOW MOTION Oktel Corp. Precision Echo Sony Broadcast Products Co. 12-13
			REWINDERS, FILM/TAPE Audico, Inc. Alan Gordon Enterprises Inc. J&R Film Mitomo Co., Ltd.

Manufacturers' Addresses begin on page 77

PHASE CHASER

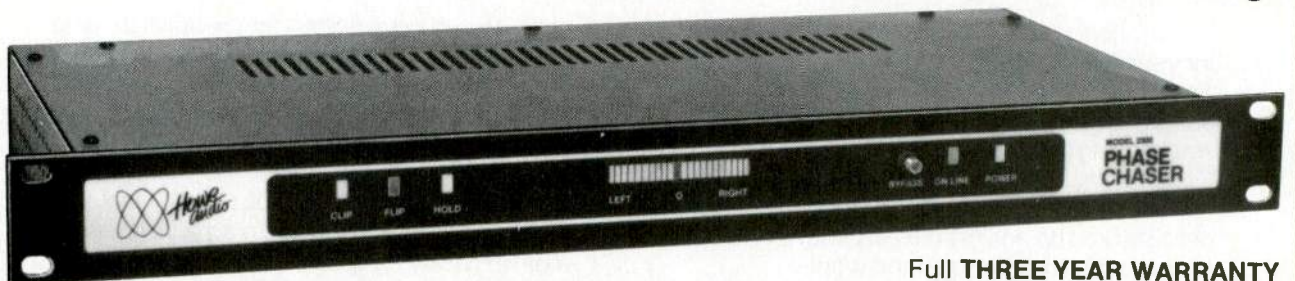
From



Howe audio

... a Sound investment

The Smart Audio Time Base Corrector ... Definitely Discriminating!



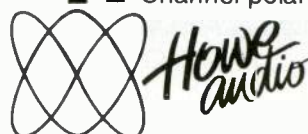
Full THREE YEAR WARRANTY

Stereo is everywhere ... except in the listener's ears. Less than 50% of all radio receivers are stereo; most televisions are mono. So mono compatibility along with high quality stereo is extremely important to your success in the marketplace.

The Howe 2300 Phase Chaser **GUARANTEES MONO COMPATIBILITY AND STEREO INTEGRITY** everywhere in your audio chain, simply*.

FEATURES:

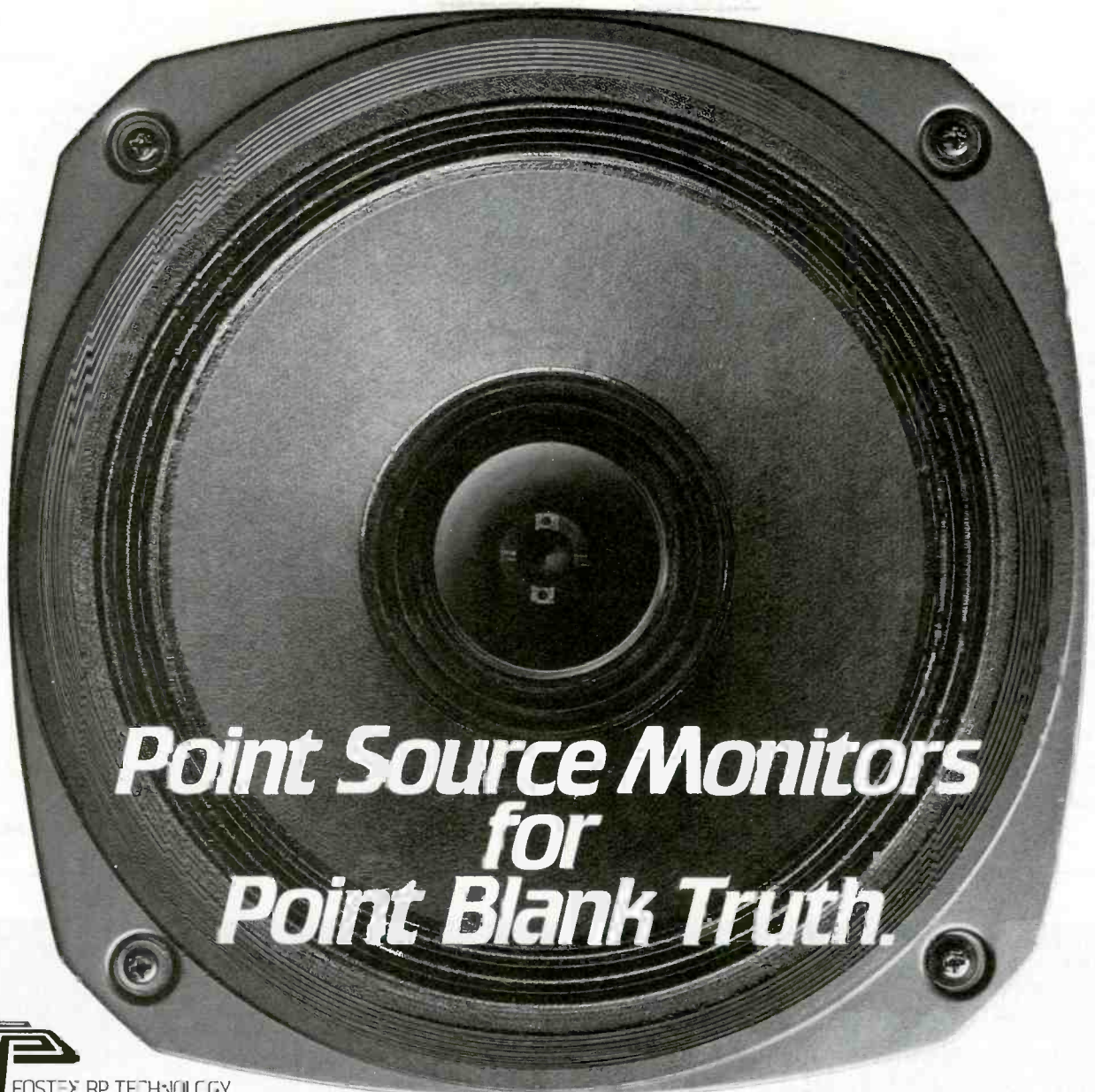
- Corrects time delay errors up to ±150 microseconds
- Original stereo information remains unchanged
- Active balanced I/O; XLR connectors
- Programmable missing channel sensing and correction
- Channel polarity error detection and correction



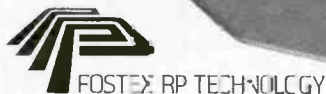
2300 Central Ave., Suite E
Boulder, Colorado 80301
Call Bill Laletin at 1-800-525-7520 to place your order.

*No pilot tone or prior encoding required.

Circle (22) on Reply Card



Point Source Monitors for Point Blank Truth.



When it comes to sound, some people get a little funny about the point blank truth, in that they don't want to hear it.

They've come to expect that low end bump around 200 Hz because it makes the kick drum punchier, or they like the phase irregularities of the typical tweeter because the highs are all tst-tst.

At Fostex, we believe that truth is stronger than fiction. That's why we made the RM-Series. Point Source. Phase Coherent. Near Field.

They are reference monitors. They tell you exactly what you have and let you hear precisely what you're doing. Period. With neither apologies nor pamperings. Just the point blank truth.

What's more, when you mix with RM-765s or 780s, tape playback remains relatively the same from studio mains, to home stereo to car.

How many times have you heard just the right sound on a mix, only to find a completely different sound when you hear the tape on other monitors?

When you work with sound, you need a truthful reference. One that lets you hear the misses as well as the hits.

We encourage you to audition these Fostex reference monitors with a known source. Because we're confident that you'll know the truth when you hear it.

Point Blank.

Circle (23) on Reply Card



RM-765/780

Fostex®

Pro Sound Division
15431 Blackburn Ave.
Norwalk, CA 90650
(213) 921-1112

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Nalpak Video Sales Inc.
Neumade Products Corp.
Recortec, Inc.
Steenbeck, Inc.

SLOW SCAN TV SYSTEMS

Eigen Video
GEC Video Systems
Interand Corp.
NEC America, Inc. Broadcast
Equipment Div.
REGIS
Sierra Scientific

**STANDARDS CONVERTERS,
VIDEO**

A. F. Associates, Inc. 80
AVS Ltd.
Brabury Ltd.
CEL Electronics Ltd.
Cox Electronics Ltd.
DICSA-Delay TV Ingenieurs-Conseils
SA
DigiVision, Inc.
Grass Valley Group 10
James Grunder & Associates Inc.
International Microwave Corp.
Marconi Communication Systems Ltd.
Merlin Engineering Works
Quantel148
Shintron Co. Inc.
Snell & Wilcox Electronic Consultants
Ltd.
Thomson Video Equipment137
Video Int'l. Development Corp.
Video Int'l GmbH

STILL STORE SYSTEMS

Abekas Video Systems, Inc.

Ampex Corp. Audio-Video Systems
Div.
Apert-Herzog Corp.
Asaca/Shibasoku Corp. 57
B.F.E. KG
Dubner Computer Systems, Inc.
For-A Corp. of America215
Harris Corp. Broadcast Div.
Interand Corp.
Logica CES Ltd. Broadcast & Media
Group
Panasonic Industrial Co. Audio-Video
System Products Group
Prime Image
Quantel148
Rank Cintel
Sony Video Communications
Products Div. 112-113
Thomson Video Equipment137

**SWITCHERS, MASTER
CONTROL**

Ampex Corp. Audio-Video Systems
Div.
Ampex Switcher Co.
Aydin Radar & EW Div.
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Robert Bosch Corp. Video
Equipment Div. 93-96
Central Dynamics
Cox Electronics Ltd.
Crosspoint Latch Corp.
Electrocraft Consultants Ltd.
Electronic Systems Products
Grass Valley Group 10
Image Video Ltd.
Intergroup Video Systems161
International Nuclear Corp.
Jasmin Electronics PLC

Kaitronics Corp.175
Mycomp Technologies Corp. (MTC)
Omnicron Video142
Pye TVT Ltd. Broadcast Co. of Philips
Ram Broadcast Systems
Sander Electronics A/S
Sony Video Communications
Products Div. 112-113
Toshiba Corp.
Transimage International
Utah Scientific, Inc.145
Vicon Industries Inc.
Video Aids of Colorado
Videomedia, Inc.
Vital Industries Inc.

SWITCHERS, ROUTING VIDEO

AVS (Audio-Visual Systems)
Amtel Systems Inc.
B.F.E. KG
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
Robert Bosch Corp. Video
Equipment Div. 93-96
Broadcasting & Related Products
Div./3M
CEL Electronics Ltd.
Central Dynamics
Channelmatic, Inc.
ComSonic, Inc.
Connolly Systems
Cox Electronics Ltd.
Curtis & Green Ltd.
Datatek Corp.
Dielectric Communications A Unit of
General Signal
Digivision Broadcast Ltd.
Di-Tech Inc. 35
Dow-Key Microwave Corp.

Dynair Electronics, Inc. 65
Dynamic Technology Ltd.
EECO Inc.
Electrocraft Consultants Ltd.
Elektroimpex
Farrtronics Ltd.
Ghielmetti Inc. Switches & Data
Devices
Grass Valley Group 10
James Grunder & Associates Inc.
HEDCO (Hughes Elec. Devices Corp.)
ICM Video118
IMS-Integrated Media Systems, Inc.
Image Video Ltd.
Intergroup Video Systems161
International Nuclear Corp.
Jasmin Electronics PLC
Kaitronics Corp.175
Landy Associates, Inc.
Leitch Video105
Matco Mfg. & Test Co., Inc. dba
Matco Control Products
Monroe Electronics, Inc.
NEC America, Inc. Broadcast
Equipment Div.
Omnicron Video142
Orion Research, Inc.
PESA Electronica
Ram Broadcast Systems
REGIS
Sander Electronics A/S
Shintron Co. Inc.
Sierra Video Systems
Sigma Electronics, Inc.
Robert Slye Electronics
Sony Video Communications
Products Div. 112-113
Telemet Div. A Geotel, Co.
Thomson Video Equipment137
Toshiba Corp.
Transimage International

Manufacturers' Addresses begin on page 77

Aphex Compellor/Aural Exciter® Indispensable Tool



Security cover available

The Compellor/Aural Exciter (Model 303) is a single, one rack height package combining two of your favorite tools. A monaural Compellor for completely automatic gain control, and the circuitry of the Aural Exciter to produce dramatically improved clarity, dimension and detail.

Once the Compellor/Aural Exciter is installed and set up in a PA or other sound system, no user adjustments are needed. The Compellor section makes your system "idiot proof" . . . levels will remain

consistent regardless of the source material or who is operating the system. The Aural Exciter increases intelligibility and penetration . . . even at reduced power levels, or in highly reverberant rooms, or under high ambient noise conditions. The 303 is an indispensable flexible tool for every new or existing system . . . from basic paging systems to complex touring sound systems.

For additional information, contact us today.

APHEX SYSTEMS LTD. 13340 Saticoy St. North Hollywood, CA 91605 (818) 765-2212

Circle (24) on Reply Card



Emcor enclosures . . .

our line-up gets high ratings from broadcasters

Leading TV and radio broadcasters, such as WCCO-TV in Minneapolis/St. Paul, put their equipment in Emcor enclosures. And our line-up is impressive — six distinct product lines featuring more than 9,000 standard items.

we meet the needs of broadcasters. For those who need it fast, Instant Emcor is ready to ship in five working days. In addition to standard products, we can manufacture modified designs for your special needs.



Crenlo, Inc.

Emcor gets high ratings because

Call us with your requirements.

EMCOR

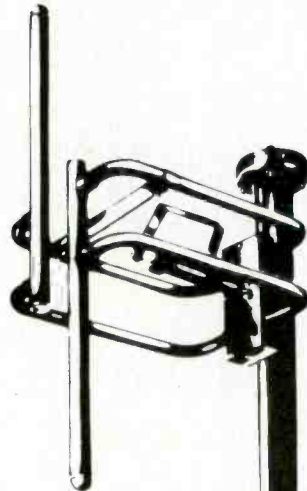
1600 Fourth Avenue N.W., Rochester, Minnesota 55901 507-289-3371

Circle (25) on Reply Card

VIDEO PRODUCTS

See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
Universal Elecon Inc. Utah Scientific, Inc. 145	Beaveronics, Inc. Robert Bosch Corp. Video Equipment Div. 93-96	Panasonic Industrial Co. Audio-Video System Products Group Polar Video Ltd. Pye TVT Ltd. Broadcast Co. of Philips QSI Systems Inc. Ram Broadcast Systems Ross Video Ltd. Sander Electronics A/S Seltech Int'l Shintron Co. Inc. Sony Video Communications Products Div. 112-113	Apert-Herzog Corp. BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips) Robert Bosch GmbH CEL Electronics Ltd. Chroma Digital Systems Div. of Shintron Co. Inc. Cox Electronics Ltd. E-MU Systems, Inc. Electrocraft Consultants Ltd. Electronic Systems Labs, Inc. For-A Corp. of America 215
Vicon Industries Inc. Video Aids of Colorado Video Masters, Inc. Videotek, Inc. 157	Central Dynamics Comprehensive Video Supply Corp. Convergence Corp. 119	Thomson Video Equipment 137	Fostex Corp. of America 39
Vital Industries Inc.	Cox Electronics Ltd. Crosspoint Latch Corp. Digital Services Corp. ECHOlab, Inc. Electrocraft Consultants Ltd. ERCA For-A Corp. of America 215	Toshiba Corp. Vital Industries Inc.	Fougerolle S.A. James Grunder & Associates Inc. Harris Corp. Broadcast Div. Hotronic Inc. 181
SWITCHERS, VIDEO PRODUCTION	Grass Valley Group 10	SYNCHRONIZERS, VIDEO FRAME	Leitch Video 105
Alta Group, Inc. Ampex Corp. Audio-Video Systems Div. Ampex Switcher Co. B.F.E. KG BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96	Intergroup Video Systems 161	Alta Group, Inc.	Marconi Communication Systems Ltd. Microtime, Inc. NEC America, Inc. Broadcast Equipment Div. Prime Image Quantel 148
	International Nuclear Corp. JVC Co. of America 177		Questech Ltd. REGIS Scientific-Atlanta Digital Video Systems Div. Shintron Co. Inc. Snell & Wilcox Electronic Consultants Ltd. Tektronix Inc. 239, 240
	Kaitronics Corp. 175		Toshiba America Toshiba Corp. Universal Elecon Inc. Vicon Industries Inc. Video Int'l GmbH
	Listec Video Corp. 142		TAPE CLEANERS/CONDITIONERS/EVALUATORS
	Omicron Video 142		Allsop, Inc. Asaca/Shibasoku Corp. 57

FM Antennas
FCC Directionals • Multistations
Rigid Transmission Line
Pattern Studies
Combiners



MULTISTATIONS

From two to nine or more stations, Shively offers multistation components which have the industry's best specs. Branched or balanced combiners, side mount or panel antennas; whatever the requirements, Shively can supply.

SPECIAL ENGINEERING

Such as helping you to conform to the new FCC/ANSI standards for non-ionizing radiation. We offer half-wave spaced FM antennas at all power levels designed to significantly and economically reduce downward radiation.

PATTERN WORK

In over a dozen years of providing formal directional patterns to both the FCC and DOC, Shively has never had a pattern rejected; ever. We've earned the trust of the industry in all aspects of pattern work. What are your requirements?

Shively Labs

a division of Howell Laboratories, Inc

51 Harrison Rd
Bridgton, ME 04009
(207) 647-3327

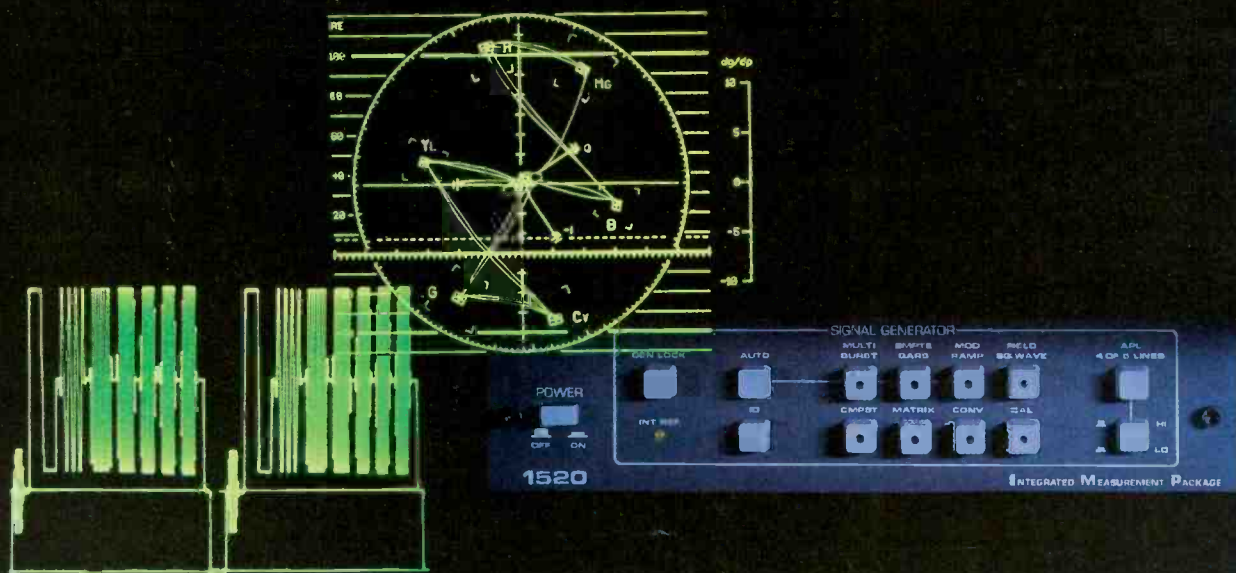
TWX-710-223-8910 SHIVELY BRGT

call or write for more information

Circle (26) on Reply Card

TELECONFERENCING EQUIPMENT

American Laser Systems, Inc. Artel Communications Corp. B.F.E. KG BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips) Robert Bosch GmbH Colorado Video Inc. Compu-Prompt Comrex Corp. 72	Asaca/Shibasoku Corp. 57
Fujinon Inc. 121	Audico, Inc. The Durafilm Co. Elcon Associates King Instrument Corp. Lipsner-Smith Co. National Video Service 136
James Grunder & Associates Inc. Hitachi Denshi America, Ltd. 3	RMS Electronics, Inc. RTI-Research Tech. Int'l. Recortec, Inc. Sonar Radio Corp. Sony Magnetic Products Co. Television Equipment Associates Video Components Inc.
Hoppmann Corp. Lighting & Shadows A Div. of Phoebus MCL, Inc. Matco Mfg. & Test Co., Inc. dba Matco Control Products Microdyne Corp. Modulation Associates Inc. Multiplex Technology NEC America, Inc. Broadcast Equipment Div. Normex/Telnox Ltd. Omicron Video 142	RTI-Research Tech. Int'l. Recortec, Inc. Sonar Radio Corp. Sony Magnetic Products Co. Television Equipment Associates Video Components Inc.
Panasonic Industrial Co. Audio-Video System Products Group Peirce-Phelps, Inc. Pinzone Communications Products Inc. Sander Electronics A/S Sharp Electronics Corp. Broadcast Group 79, 81	Taber Mfg. & Eng. Co.



WINNING COMBINATION.



Up until now if you needed a signal generator, vectorscope and waveform monitor, you had to buy three different instruments, or at the very least, two.

Not any more. With the Magni 1520/25 you get all three in one easy to use package, with the same quality and performance you'd expect from the best in the industry. All for only \$6250.*

And that's not all. Since we set out to put as much functionality as possible into one small package, we've also included a character generator overlay and differential phase and differential gain measurement, at no additional cost.

*FOB Beaverton, Oregon USA

Circle (27) on Reply Card

We also offer the Magni 1527/25 which includes all of the above, plus the first SCH phase measurement that can look at DEMOD out of a video tape recorder.

At Magni Systems we think it's time your test and measurement equipment was designed and packaged to do the job. So if you're tired of buying a piece here and a piece there, call us. We've put it all together.

MAGNI
Video Measurement

Magni Systems, Inc.
9500 S.W. Gemini Drive Beaverton, OR 97005 503/626-8400
Telex: 650-2769743 MCI

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Telemetrics Inc.
Toshiba Corp.
Total Spectrum Mfg. Inc.117
Unex, A Dynatech Co.
Video Components Inc.
The Zei-Mark Corp.

Logica CES Ltd. Broadcast & Media Group
Norpak Corp.
Peirce-Phelps, Inc.
Sony Video Communications Products Div.112-113
Toshiba Corp.
VG Electronics Ltd.

Nalpak Video Sales Inc.
Porta-Pattern Inc.
Visual Information Institute

Robert Bosch GmbH
CEL Electronics Ltd.
Chroma Digital Systems Div. of Shintron Co. Inc.
Crosspoint Latch Corp.
Electrocraft Consultants Ltd.
Electronic Systems Labs, Inc.
For-A Corp. of America215
Fortel Inc.
GEC Video Systems
GML America185
James Grunder & Associates Inc.
Harris Corp. Broadcast Div.
Hitachi Denshi America, Ltd. 3
Hotronic Inc.181
JVC Co. of America177
Lenco Inc. Electronics Div..... 17
Marconi Communication Systems Ltd.
Microtime, Inc.
Nova Systems, Inc.153
Panasonic Broadcast Systems Co.
Prime Image
REGIS
Scientific-Atlanta Digital Video Systems Div.
Shintron Co. Inc.
Snell & Wilcox Electronic Consultants Ltd.
Sony Broadcast Products Co. 12-13
Tektronix Inc. 239, 240
Transimage International
Video Int'l GmbH

TELETEXT/VISUAL TEXT SYSTEMS

P. Albrecht Elektronik
Aston Electronic Designs Ltd.
B.F.E. KG
Broadcasting & Related Products Div./3M
Compu-Prompt
EEG Enterprises, Inc.
Harris Corp. Broadcast Div.
Jasmin Electronics PLC

TEST CHARTS/SLIDES/ILLUMINATORS

BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Birns & Sawyer Inc.
Robert Bosch GmbH
Century Precision Optics
Comprehensive Video Supply Corp.

TEST TAPES, VIDEO

Porta-Pattern Inc.
Sony Magnetic Products Co.

TIME BASE CORRECTORS

Alta Group, Inc.
Ampex Corp. Audio-Video Systems Div.
Apert-Herzog Corp.
BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)



AM BROADCASTERS CHOOSE FIELD PROVEN

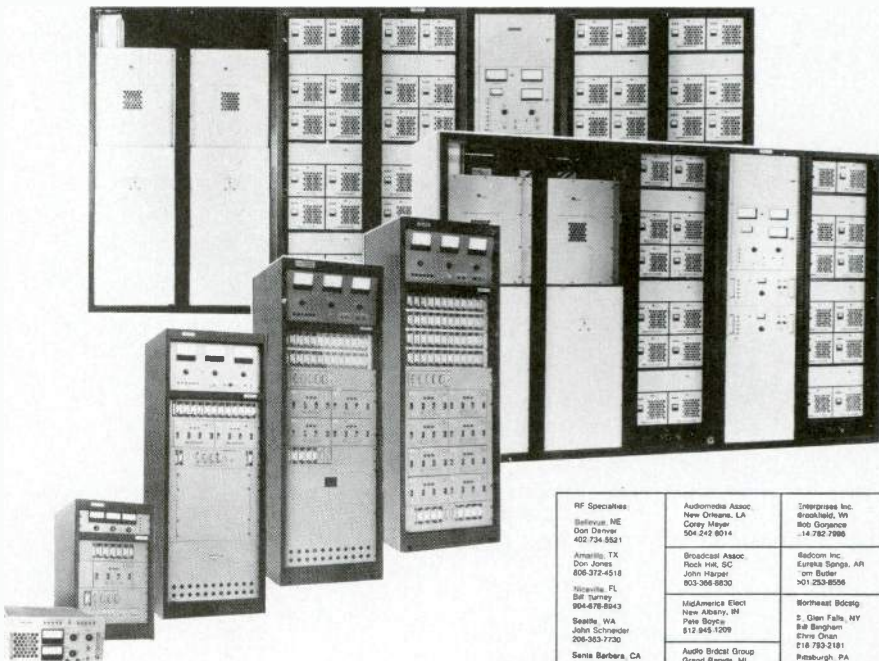
TOTALLY SOLID STATE

AMPFET

SERIES

MODULAR

ALL POWERS



RF Specialties Bellingham, ME Don Danner 402-734-5821	Audiomods Assoc. New Orleans, LA Cory Meyer 504-242-8014	Intergrass Inc. Brookfield, WI Bob Gorce 14-782-7886
Amarillo, TX Don Jones 800-372-4518	Broadcast Assoc. Rock Hill, SC John Hazel 803-268-8830	Radcom Inc. Eureka Springs, AR Tom Butler 701-253-8556
Miraville, FL Bill Turney 904-478-8543	MidAmerica Elect New Albany, IN New Bryce 812-845-1209	Wortheast Bcastg S. Glen Falls, NY Bill Bingham 716-793-2181
Seattle, WA John Schroeder 206-343-7720	Audio Brcast Group Grand Rapids, MI Steve Velonis 616-452-1598	Pittsburgh, PA Tom Mowhan 412-733-1994
Sanis Barbara, CA Sam Lane 805-462-1429		

totally solid state AM



NAUTEIL
201 Target Industrial Circle
Bangor, Maine 04401
207-947-8200

Telex 944466

Jorgen Jensen
902-823-2233



Circle (28) on Reply Card

TIME CODE SYSTEMS

(Generator, Reader, Character Generator)

AVS (Audio-Visual Systems)
AXE (Artists X-Ponent Eng.)
Acquis Ltd.
Adams-Smith
P. Albrecht Elektronik
Alpha Video & Electronics Co.
Aritel Systems Inc.
Aston Electronic Designs Ltd.
Audio Kinetics Ltd.
Avitel Electronics Ltd.
B.F.E. KG
BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Robert Bosch GmbH
Broadcast Systems Group Inc.
Cipher Digital, Inc. 45
Coherent Communications, Inc.
Convergence Corp.119
Datum Inc.195
Denecke Inc.
EECO Inc.
ESE 99, 101, 103
Electronic Systems Labs, Inc.
Evertz Microsystems Ltd.
Fast Forward Video
For-A Corp. of America215
Fostex Corp. of America 39
Giese Electronic KG
Gray Engineering Labs, Inc.136
Image Technology Corp.
Kudelski Nagra
Magna-Tech Electronics Co., Inc.209
Multi-Track Magnetics, Inc.
Peirce-Phelps, Inc.
Polar Video Ltd.
Pye TVT Ltd. Broadcast Co. of Philips
Shintron Co. Inc.
Skotel Corp.
Sony Broadcast Products Co. 12-13
Telcom Research
TimeLine, Inc.
Transimage International
United Media, Inc.
Video Data Systems
Videolab

TIME COMPRESSORS/EXPANDERS

Ampex Corp. Audio-Video Systems Div.
B.F.E. KG
Eventide Inc.

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

TIMERS, VIDEOTAPE

AVS (Audio-Visual Systems)
 Amtel Systems Inc.
 Audico, Inc.
 Audiolab Electronics, Inc.
 B.F.E. KG
 BTS Broadcast Television Systems,
 GmbH (A Joint Co. of Bosch &
 Philips)
 Robert Bosch GmbH
 CCI
 ESE 99, 101,
 103
 Evertz Microsystems Ltd.
 For-A Corp. of America215
 Lindburg Enterprises, Inc.
 Monroe Electronics, Inc.
 Torpey Controls & Eng. Ltd.

Nagra Magnetic Recorders, Inc.
 Texas Electronics, Inc.
 Torpey Controls & Eng. Ltd.

WEATHER RADAR

Advanced Designs Corp.
 Alden Electronics, Inc.
 Denrad Technical Group, Inc.
 Environmental Satellite Data, Inc.
 Jasmin Electronics PLC
 Kavouras Inc.
 Precision Echo
 R/SCAN Corp.
 Sea-Tex Div. Si-Tex Marine Electronics
 Inc.

RF PRODUCTS

ALARMS, FAULT/CARRIER

AEG Bayly Inc.
 Aydin Radar & EW Div.
 Belar Electronics Lab, Inc.210
 Bird Electronic Corp.140
 Coaxial Dynamics
 Kayglo Electronics
 Potomac Instruments, Inc.
 Sentry Systems
 Tonographie Apparatebau
 Video Aids of Colorado

AM ANTENNA SYSTEMS

AEG Communications Div. Transmitter
 Department

Aydin Radar & EW Div.
 Richard W. Burden Associates
 Elektroimpex
 Harris Corp. Broadcast Div.
 Kathrein-Werke KG
 Kintronic Labs, Inc.
 LBA Technology, Inc.
 LeBlanc & Dick Communications Inc.
 Magnum Towers, Inc.
 Marconi Communication Systems Ltd.
 Potomac Instruments, Inc.
 Vector Technology

AM DIRECTIONAL ANTENNA SYSTEMS

AEG Communications Div. Transmitter
 Department
 Audiolab Electronics, Inc.

VIDEODISC SYSTEMS

CCI
 MPO Videotronics
 Mitomo Co., Ltd.
 Oktel Corp.
 Optical Disc Corp.
 Optical Recording/3M
 Precision Echo
 Sony Video Communications
 Products Div. 112-113

VIDEOTAPE (All Formats)

Agfa-Gevaert Inc. Magnetic Tape Div.
 Ampex Corp. Audio-Video Systems
 Div.
 Ampex Corp. Magnetic Tape
 Div. 76
 BASF
 BTS Broadcast Television Systems,
 GmbH (A Joint Co. of Bosch &
 Philips)
 Robert Bosch GmbH
 Burlington Audio/Video Tapes
 Eastman Kodak Co.
 Fuji Photo Film USA, Inc. Magnetic
 Products Div.
 JVC Co. of America177
 MPO Videotronics
 Magnetic Media Div./3M
 Maxell Corp. of America
 National Video Service136
 Panasonic Broadcast Systems Co.
 Panasonic Industrial Co. Audio-Video
 System Products Group
 RCA Distributor & Special Products
 Div.
 RAKS 33
 Sony Broadcast Products Co. 12-13
 Sony Magnetic Products Co.
 TDK Electronics Corp.
 Television Systems & Services

WEATHER DISPLAY/DATA SYSTEMS

Accu-Weather, Inc.
 Advanced Designs Corp.
 Alden Electronics, Inc.
 Broadcasting & Related Products
 Div./3M
 ColorGraphics Systems, Inc.
 Denrad Technical Group, Inc.
 Dubner Computer Systems, Inc.
 Environmental Satellite Data, Inc.
 Grass Valley Group 10
 Gresham Lion (PPL) Ltd.
 Harris Corp. Broadcast Div.
 Jasmin Electronics PLC
 Kavouras Inc.
 Logica CES Ltd. Broadcast & Media
 Group
 R/SCAN Corp.
 Teledac Inc.
 Texas Electronics, Inc.
 Thomson Video Equipment137
 Video Data Systems

WEATHER INSTRUMENTS

Kavouras Inc.



The CDI-750 Time Code Reader/Generator

More
 than just
 a matter
 of time

The CDI-750 is a full function reader, generator, character inserter and programmable 16-event controller all rolled into one. In addition to simultaneously generating and reading time code, this intelligent microprocessor-based instrument offers a programmable jam sync mode, built-in time of day clock and an RS-232/422 computer interface. And with front panel controls, the CDI-750 is an easy unit to operate, affording the user greater flexibility.

Fully compatible with the Shadow II™ and Softouch™, this system's state-of-the-art software controls make it readily adaptable to future needs.

Each unit carries a 3 year warranty.

For more details contact Cipher Digital today. Call (800) 331-9066.



cipher digital, inc.
 P.O. BOX 170/FREDERICK, MD 21701
 (301) 695-0200 TELEX: 272065

Timely today, consistent with tomorrow.

Circle (29) on Reply Card

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Aydin Radar & EW Div.
 Continental Electronics A Div. of
 Varian Associates, Inc.
 Gorman-Redlich Mfg. Co.
 Harris Corp. Broadcast Div.
 Kathrein-Werke KG
 Kintronic Labs, Inc.
 LeBlanc & Dick Communications Inc.
 Magnum Towers, Inc.
 Marconi Communication Systems Ltd.
 Potomac Instruments, Inc.
 TTC Companies
 Vector Technology

Comtronix Systems
 Comwave Div. of Communication
 Microwave Corp.
 EEV 141
 Harris Corp. Broadcast Div.
 Hubbard Communications, Inc.
 International Microwave Corp.
 ITELCO
 LNR Communications, Inc.
 MCL, Inc.
 Marti Electronics
 Microwave Modules & Devices
 Mu-Del Electronics, Inc.
 North Hills Electronics, Inc.
 Nurad, Inc.
 RF Technology, Inc.
 TFT Inc.
 TEKO Telecom S.R.L.
 Varian Associates, Inc. Electron
 Device Group 131, 271

**AMPLIFIERS, RF
 POWER/CAVITIES**

AEG Bayly Inc.
 AEG Communications Div. Transmitter
 Department
 Acrian Inc.
 Aydin Microwave Div.
 Aydin Radar & EW Div.
 Broadcast Microwave Services, Inc.
 Comark Communications, Inc.
 Communitrone Ltd.
 Comtronix Systems
 Comwave Div. of Communication
 Microwave Corp.
 Continental Electronics A Div. of
 Varian Assoc. 243, 253, 257, 264
 EEV 141
 Elcom-Bauer
 Energy-Onix

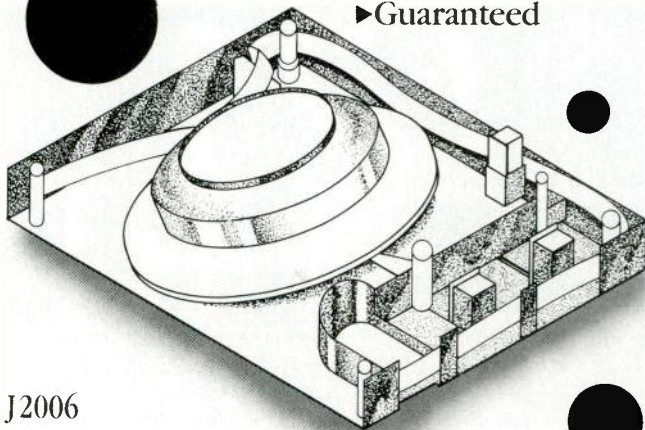
Harris Corp. Broadcast Div.
 Richard Hirschmann Electric
 International Microwave Corp.
 ITAME, S.A.
 ITELCO
 M/A-Com Microwave Power Devices
 MCL, Inc.
 Mu-Del Electronics, Inc.
 PESA Electronica
 PLISCH-Nachrichtentechnik
 Power Pak Systems A Halton Int'l.
 Co.
 Pye TVT Ltd. Broadcast Co. of Philips
 C.N. Rood B.V. Broadcasting Div.
 TFT Inc.
 TRW RF Devices Div.
 TTC Companies
 TEKO Telecom S.R.L.
 Television Technology Corp. Wilkinson
 Electronics Inc.
 Tepeco Corp.
 Thomson-CSF Electron Tube Div.
 Thomson-LGT 133
 Townsend Associates, Inc.
 Varian Associates, Inc. Electron
 Device Group 131, 271

AMPLIFIERS, MICROWAVE

Acrian Inc.
 Aydin Microwave Div.
 Aydin Radar & EW Div.
 Broadcast Microwave Services, Inc.

MORE THAN JUST RADIO SPOTS

- ▶ The Best Phase Stability
- ▶ The Flatest Frequency Response
- ▶ Dramatically Increased Tape Life
- ▶ Guaranteed



J2006

We've tilted the turntable on our new ARISTOCART 2006 cartridge. This is the most important design advance in 10 years of cartridge technology, and in combination with our new ARISTOCART HOLN 2006 tape gives you the finest tape/cart combination available today. We guarantee it.

WIC Manufactured by:
 Western International Communications Ltd.
 1950-505 Burrard Street, Vancouver, B.C. Canada V7X 1M6
 Telephone (604) 526-3214 Telex 04-54639

OUR GUARANTEE
 If any **ARISTOCART** cartridge should fail to meet NAB AM/FM performance specifications on a properly aligned cart machine, we will replace it at our sole expense.

ARISTOCART

Circle (30) on Reply Card

**ANTENNA ALIGNMENT
 SYSTEMS**

Aydin Radar & EW Div.
 Broadcast Microwave Services, Inc.
 Dynetic Systems
 Johnson Electronics Inc.
 Microdyne Corp.
 The Narda Microwave Corp.
 Nurad, Inc.
 Scientific-Atlanta

ANTENNA DE-ICER SYSTEMS

Andrew Corp.
 Environmental Technology, Inc.
 Micro-Trak Corp.
 Microdyne Corp.
 Shively Laboratories Div. of
 Howell Labs, Inc. 42

**ANTENNA REMOTE
 INDICATORS**

Gentner RF Products Div. of
 Gentner Engineering 84
 Kintronic Labs, Inc.
 Nurad, Inc.
 Potomac Instruments, Inc.
 Scientific-Atlanta
 Shively Laboratories Div. of
 Howell Labs, Inc. 42
 Vector Technology

**ANTENNA SAMPLING
 EQUIPMENT**

Andrew Corp.
 Aydin Radar & EW Div.
 Delta Electronics Inc. 123
 Gentner RF Products Div. of
 Gentner Engineering 84
 Harris Corp. Broadcast Div.
 Kintronic Labs, Inc.
 LBA Technology, Inc.
 North Hills Electronics, Inc.
 Shively Laboratories Div. of
 Howell Labs, Inc. 42
 Vector Technology

**ANTENNA TOWER GUYS AND
 HARDWARE**

Abroyd Communications Ltd.
 Andrew Corp.
 Cortland Cable Co.
 Elektroimpex
 LeBlanc & Dick Communications Inc.
 Magnum Towers, Inc.
 Marconi Communication Systems Ltd.
 Microflect Co., Inc.
 Allen Osborne Associates 52
 ROHN
 United Ropeworks (USA) Inc.
 Phillystran Div.

MAKE YOUR MOBILE 1 NUMBER ONE IN MOBILITY.

Hannay Reels Get You In And Out Fast.

Save precious seconds in set-up, tear-down time. Just pick up the durable, lightweight Hannay portable cable storage reel, and go. When the story's in the can, direct rewind makes pick-up easy. And the portable cable storage reel is compact to take up minimal storage space.

It's just one in the full line of Hannay cable reels, available in a wide selection of sizes, shapes and capacities.

When it comes to getting in and out fast, no other reel is "remotely" as efficient as a Hannay Reel!



Send Today For
Free Literature Packet.



HANNAY REELS

CLIFFORD B. HANNAY & SON, INC., 600 EAST MAIN STREET
WESTERLO, NEW YORK 12193 • TELEPHONE (518) 797-3791

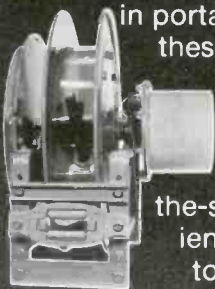
Circle (231) on Reply Card

LIGHTS! CAMERA! HANNAY!

Fast pick-up. Increased safety. Greater mobility. You get it all with Hannay Cable Reels. Available in portable or stationary models, these dependable reels safely handle electrical cable.

Count on them for time-saving rewind. Easy storage. And all the behind-the-scenes operating convenience you'll ever need. Send today for more information

on the full line of Hannay Cable Reels, available in a wide selection of sizes, shapes and capacities.



Send Today For Free
Literature Packet.



HANNAY REELS

CLIFFORD B. HANNAY & SON, INC., 600 EAST MAIN STREET
WESTERLO, NEW YORK 12193 • TELEPHONE (518) 797-3791

Circle (31) on Reply Card

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

ANTENNA TUNING UNITS

AEG Communications Div. Transmitter Department
 Audiolab Electronics, Inc.
 Aydin Radar & EW Div.
 CSI Electronics, Inc.
 Continental Electronics A Div. of Varian Assoc. 243, 253, 257, 264
 Dielectric Communications A Unit of General Signal
 Elcom-Bauer
 Harris Corp. Broadcast Div.
 ITELCO
 Kintronic Labs, Inc.
 LBA Technology, Inc.
 Marconi Communication Systems Ltd.
 SWR, Inc.
 TTC Companies
 Tri-Tronics Professional Elec., Inc.
 Vector Technology
 Western Wireless Works

ANTENNAS, C/KU BAND

Andrew Corp.
 Antenna Technology Corp.
 Antennas For Communications, Inc.
 Broadcast Microwave Services, Inc.
 Comtech Antenna Corp.
 DX Communications
 Dalsat Inc.
 Encom Telecommunications & Tech., Inc.
 GEC Video Systems
 Harris Corp. Broadcast Div.
 Hubbard Communications, Inc.
 Kathrein-Werke KG
 Luxor (North America) Corp.
 M/A-Com Cable Home Group
 Mark Antenna Products, Inc.
 McCullough Satellite Equip., Inc.

Microdyne Corp.
 Nurad, Inc.
 PESA Electronica
 Pinzone Communications Products Inc.
 Radiation Systems, Inc.
 SatCom Technologies, Inc. An RSi Co.
 Satellite Systems
 Tracor Instruments Austin Inc.
 Industrial Instruments Div.

ANTENNAS, ITFS/MDS

Andrew Corp.
 Antenna Technology Corp.
 Bogner Broadcast Equipment Corp. 251
 Comwave Div. of Communication Microwave Corp.
 Hi-Net Communications
 Mark Antenna Products, Inc.
 Micro Communications, Inc.
 Nurad, Inc.
 Townsend Associates, Inc.

ANTENNAS, RECEIVING AM/SW

Aydin Radar & EW Div.
 Delta Electronics Inc. 123
 Kintronic Labs, Inc.
 Palomar Engineers
 Potomac Instruments, Inc.

ANTENNAS, RECEIVING FM/TV

Antiference Ltd.
 Aydin Radar & EW Div.
 Blonder-Tongue Labs, Inc.
 Broadcast Microwave Services, Inc.
 DICSА-Delay TV Ingenieurs-Conseils SA

Gorman-Redlich Mfg. Co.
 ITAME, S.A.
 Johnson Electronics Inc.
 Kathrein-Werke KG
 Potomac Instruments, Inc.
 Scala Electronic Corp.
 Scientific-Atlanta
 Solway, Inc.
 TEKO Telecom S.R.L.
 Tennaplex Systems Ltd.
 Thomson-LGT 133

ANTENNAS, REMOTE PICKUP

Andrew Corp.
 Broadcast Microwave Services, Inc.
 Celwave
 Gorman-Redlich Mfg. Co.
 ITAME, S.A.
 Marti Electronics
 Moseley Associates, Inc. 231
 Motorola Communications and Electronics Inc.
 Nurad, Inc.
 RF Technology, Inc.
 Scala Electronic Corp.
 Scientific-Atlanta

ANTENNAS, STL/MICROWAVE

Andrew Corp.
 Antennas For Communications, Inc.
 Broadcast Microwave Services, Inc.
 Cable Systems Div. of Celwave Systems Inc.
 Comwave Div. of Communication Microwave Corp.
 Gabriel Electronics, Inc.
 Harris Corp. Broadcast Div.
 Harris Corp. Broadcast Microwave
 ITAME, S.A.

Kintronic Labs, Inc.
 M/A-Com Mac, Inc.
 Magnum Towers, Inc.
 Mark Antenna Products, Inc.
 Marti Electronics
 Micro Controls, Inc.
 Moseley Associates, Inc. 231
 Nurad, Inc.
 Scala Electronic Corp.
 Scientific-Atlanta
 Tennaplex Systems Ltd.
 Townsend Associates, Inc.

ANTENNAS, TRANSMITTING FM

AEG Communications Div. Transmitter Department
 Aydin Radar & EW Div.
 Bogner Broadcast Equipment Corp. 251
 Broadcast Microwave Services, Inc.
 Cable Systems Div. of Celwave Systems Inc.
 Celwave
 Comark Communications, Inc.
 Continental Electronics A Div. of Varian Assoc. 243, 253, 257, 264
 Dielectric Communications A Unit of General Signal
 Elektroimpex
 Energy-Onix
 Harris Corp. Broadcast Div.
 ITELCO
 Jampro Antennas Inc.
 Kathrein-Werke KG
 Kintronic Labs, Inc.
 LeBlanc & Dick Communications Inc.
 Magnum Towers, Inc.
 Marconi Communication Systems Ltd.
 Micro Communications, Inc.

Manufacturers' Addresses begin on page 77

Easier, better-sounding telephone remotes - Gentner makes it happen!

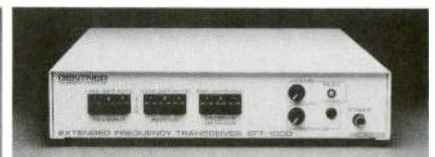
Our Extended Frequency Transceivers - EFT-900™ and EFT-1000™ - give you the high quality telephone audio you need for your remotes. We start with frequency extension - a process that recovers 2½ octaves of low frequencies, boosting the power of your announcer's voice. Then we add sharp filtering, noise reduction and Aphex® enhancing to further improve the sound.

The real beauty of an EFT, though, is its easy set-up and operation. Your mic, headset, phone line and telephone set connect directly to the unit. And because the EFT can operate full duplex, the studio and remote site can easily communicate with each other.

With the EFT advantage, your station can gain the competitive edge in all types of remotes - games, advertising, news interviews and more!



EFT-900™
Low-cost, high-quality telephone audio!



EFT-1000™
Advanced features for the demanding P.D.I

Teleprocessor™ - the perfect companion to your EFT units!



- High and low band EQ, Aphex Aural Exciter® maximize your telephone audio.
- Built-in cue switch/mic allows you to send instant cues down the phone line.

The Clear Choice.™

GENTNER™
 ENGINEERING COMPANY, INC.

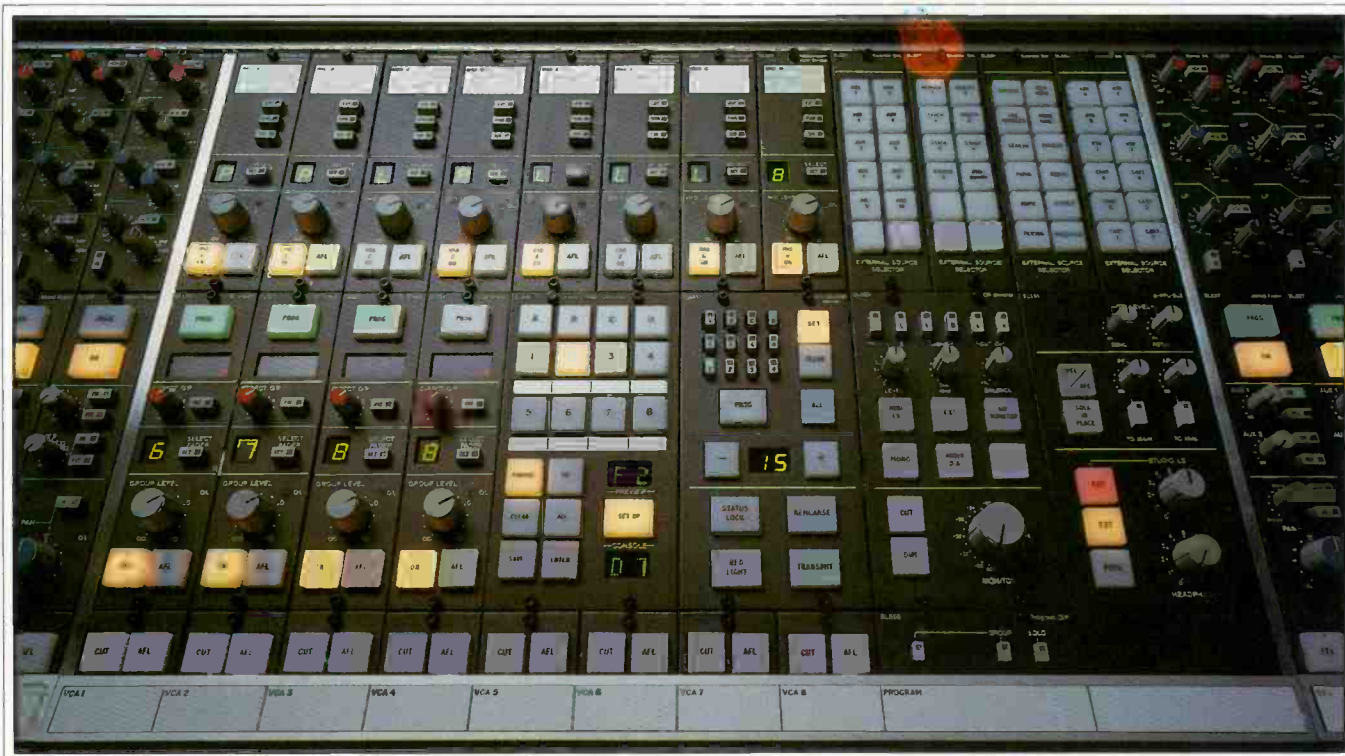
540 West 3560 South · Salt Lake City, Utah 84115
 (801) 268-1117

"Aphex Aural Exciter" is a registered trademark of Aphex Systems, Ltd.

Visit Us In Booths 426 & 513 at SBE

Circle (32) on Reply Card

REALWARE



SL 5000 M Series Central Controls

Vital broadcast production facilities cannot be equipped with promises, prototypes or possibilities. Critical technical decisions cannot be based on imagination alone. Major capital planning cannot depend on guesswork and clever turns of phrase.

The facts are simple. Broadcast audio management is faced with pressing technical and creative problems that require practical, long-term solutions. And one company, Solid State Logic, is prepared for your future. Today. With real hardware, proven software, and a world of experience in advanced radio and television sound.

If you are holding out for computerised Instant Reset™, advanced centralised assignment, sensible human engineering, incredible custom flexibility, superior audio performance, simplified multichannel facilities, rational engineering and realistic prices . . . you could find your next trade show visit very frustrating.

Or you could visit the Solid State Logic stand where we'll be happy to show you the SL 5000 M Series, which features all of the above and more.

Solid State Logic Realware. It's more than a concept — it's an accomplishment!

Solid State Logic

Oxford · New York · Los Angeles

Begbroke, Oxford, England OX5 1RU · (08675) 4353
200 West 57th Street · New York, New York 10019 · (212) 315-1111
6255 Sunset Boulevard · Los Angeles, California 90028 · (213) 463-4444

See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
Rohde & Schwarz SWR, Inc. Scala Electronic Corp. Shively Laboratories Div. of Howell Labs, Inc. 42 Tennaplex Systems Ltd. Thomson-LGT 133 Toshiba Corp.	ATTENUATORS, MICROWAVE Antennas For Communications, Inc. Aydin Radar & EW Div. Bird Electronic Corp. 140 Dow-Key Microwave Corp. General Microwave Corp. The Narda Microwave Corp. RF Technology, Inc. Tennaplex Systems Ltd. Texscan Instruments Thomson-CSF Electron Tube Div. Weinschel Engineering	VIZ Test Equipment Div. of VIZ Mfg. Co. Weinschel Engineering	Television Technology Corp. Wilkinson Electronics Inc. Tennaplex Systems Ltd. Thomson-LGT 133 Toshiba Corp. Townsend Associates, Inc. Vector Technology
ANTENNAS, TRANSMITTING UHF/VHF TV AEG Communications Div. Transmitter Department Andrew Corp. Bogner Broadcast Equipment Corp. 251 Comwave Div. of Communication Microwave Corp. Dielectric Communications A Unit of General Signal Harris Corp. Broadcast Div. ITAME, S.A. ITELCO Jampro Antennas Inc. Kathrein-Werke KG Kintronic Labs, Inc. Larcam Communications Equip. Inc. LeBlanc & Dick Communications Inc. Micro Communications, Inc. PESA America Inc. Rohde & Schwarz SWR, Inc. Scala Electronic Corp. Shively Laboratories Div. of Howell Labs, Inc. 42 TEKO Telecom S.R.L. Tennaplex Systems Ltd. Thomson-LGT 133 Toshiba Corp. Townsend Associates, Inc.	ATTENUATORS, RF Acrian Inc. Allen Avionics, Inc. 125 Augat/LRC-Vitek AVA Electronics Aydin Radar & EW Div. Bird Electronic Corp. 140 Blonder-Tongue Labs, Inc. Coaxial Dynamics Comark Communications, Inc. DX Communications Delta-Benco-Cascade A Sub. of Triple Crown Elec. Inc. Dow-Key Microwave Corp. Electro Impulse Lab, Inc. General Microwave Corp. ITAME, S.A. Jennings A Div. of FL Industries Inc. Kay Elemetrics Corp. Marshall Electronics Mu-Dei Electronics, Inc. The Narda Microwave Corp. PESA Electronica Tech Laboratories Inc. 116 Tennaplex Systems Ltd. Texscan Instruments Trompeter Electronics, Inc.	COMBINERS, POWER AEG Bayly Inc. AEG Communications Div. Transmitter Department Aydin Radar & EW Div. Comark Communications, Inc. ComSonic, Inc. Comwave Div. of Communication Microwave Corp. Continental Electronics A Division of Varian Associates, Inc. 253, 257, 264 Dielectric Communications A Unit of General Signal Harris Corp. Broadcast Div. Richard Hirschmann Electric ITAME, S.A. ITELCO Kintronic Labs, Inc. M/A-Com Cable Home Group Marti Electronics Micro Communications, Inc. Micro Controls, Inc. Microwave Filter Co., Inc. The Narda Microwave Corp. Nexus Engineering Corp. North Hills Electronics, Inc. PESA Electronica Pye TVT Ltd. Broadcast Co. of Philips RMS Electronics, Inc. Rohde & Schwarz SWR, Inc. Shively Laboratories Div. of Howell Labs, Inc. 42 TTC Companies	COMMUNICATION SYSTEMS, LAND MOBILE/NARROW BAND FM AEG Communications Div. Transmitter Department American Laser Systems, Inc. Celwave Communitronics Ltd. Fairchild Data Corp. Gentner RF Products Div. of Gentner Engineering 84 International Microwave Corp. ITAME, S.A. M/A-Com Microwave Power Devices Marti Electronics MERET, Inc. Micro Controls, Inc. Microdyne Corp. Microwave Communications Ltd. Nurad, Inc. OKI Telecom Cellular Telephone Div. Pye TVT Ltd. Broadcast Co. of Philips Solartron Instruments Solid Electronics Labs Sonar Radio Corp. Spectrum Communications Corp. 108 Standard Communications TFT Inc. Teleindustri AB Toshiba Corp.

Manufacturers' Addresses begin on page 77

Gentner Engineering - your source for broadcast telephone equipment!

- **Microtel™** - portable telephone interface for field reporters, sportscasts, IFB
- **TC-100™** - auto-answer, auto-disconnect telephone system for tape playing/recording, on-air use
- **SPH-3A™** - telephone system for on-air use, talk shows, news interviews
- **SPH-4™** - full-featured telephone system for on-air use, talk shows, news interviews

- **EFT-900™** - duplex "frequency extension" system for high-quality remotes, interviews
- **EFT-1000™** - fully automatic, duplex "frequency extension" system for remotes, interviews, teleconferencing
- **Teleprocessor™** - telephone audio processor with high/low EQ adjustments, Aphex® enhancing - use with any telephone system to maximize telephone audio

The Clear Choice.™

Visit Us In Booths 426 & 513 at SBE

GENTNER™
ENGINEERING COMPANY, INC.

540 West 3560 South • Salt Lake City, Utah 84115
(801) 268-1117

Circle (34) on Reply Card



**Hector Munoz,
Distribution Services
Manager**

“Our purpose is to keep you on the air.”

Our extensive inventory of broadcast tubes, RF transistors and related components ensures delivery of the product to you on time—even if I have to run the package to the airport myself. Last year our company made over 7500 overnight deliveries, so we take emergencies seriously!”



**\$30 Million Inventory—
98% Same Day Shipment**

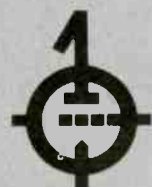


**Technical knowledge to
help you save time and
money by choosing the
right component.**



PRODUCTS: Cathode Ray Tubes ■ Diodes ■ Klystrons ■ Monitor Tubes ■ Plumbicon® Tubes ■ Receiving Tubes ■ RF Ceramic Capacitors ■ RF Transistors ■ Saticons ■ Solid State Replacements ■ Transmitter/Power Tubes ■ Tube Sockets ■ Accessories ■ TV Linear Devices ■ Vacuum Capacitors ■ Vidicons ■ Vistacons

MANUFACTURERS: Acrian ■ Amperex ■ Cetron ■ EEV ■ Eimac ■ GE ■ Hitachi ■ ITT ■ Jennings ■ Machlett ■ National ■ Philips ■ RCA ■ Raytheon ■ Thomson CSF ■ Varian ■ Westinghouse



800-323-1770

Circle (35) on Reply Card

Richardson Electronics, Ltd.

Broadcast Division — Calvert Electronics, Inc

Convenient Sales Offices: Franklin Park, IL ■ Woodland Hills, CA ■ Belmont, CA ■ Dallas, TX ■ Norwell, MA ■ Rockville Centre, NY ■ East Rutherford, NJ ■ Winter Park, FL ■ Brampton, Ontario, Canada ■ Lincoln, England ■ Gennevilliers, France

Get It Up —

Get your sensors,
antennas or il-
lumination sys-
tems up to
where they can
work best with

an Allen
Osborne
Associates

telescopic hilomasts

If you need to elevate your com-
munications, jamming, or surveil-
lance antenna or other type of sen-
sor, the convenient, compact and
portable family of Allen Osborne
Associates telescopic masts is the
answer. Osborne masts come in a
variety of configurations with pneu-
matic, electric or manual drives.
Adaptable for easy installation on
vehicles or in fixed facilities, Osborne
masts are also available as a self
contained trailer system that can
be towed behind your vehicles.

MIL STD 810D QUALIFIED.

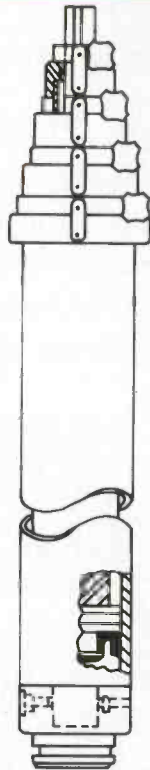
**With retracted sizes from three to
fifteen feet,
Osborne masts can extend to over
90 feet above intervening terrain.**

*For details on how
Allen Osborne Asso-
ciates can help you
get it up, contact*

**ALLEN OSBORNE
ASSOCIATES**
756 Lakeland Road,
Building J
Westlake Village,
California 91361
(805) 495-8420
TWX: 910-494-1710



Circle (36) on Reply Card



RF PRODUCTS

See Adv. Page

See Adv. Page

CONTACTORS, VACUUM

Dielectric Communications A Unit of
General Signal
ITAME, S.A.
Jennings A Div. of FL Industries Inc.
Townsend Associates, Inc.
Vector Technology

CONVERTERS, FREQUENCY

Aydin Radar & EW Div.
Communitronics Ltd.
Comwave Div. of Communication
Microwave Corp.
Datel A Div. of General Electric Co.
Dielectric Communications A Unit of
General Signal
International Microwave Corp.
ITAME, S.A.
ITELCO
Mu-Del Electronics, Inc.
Nexus Engineering Corp.
Oak Communications Inc.
Reliance Comm/Tec
Rohde & Schwarz

DIPLEXERS

Aydin Radar & EW Div.
Blonder-Tongue Labs, Inc.
Comark Communications, Inc.
Communitronics Ltd.
**Continental Electronics A Div. of
Varian Assoc. 243, 253, 257, 264**
Dielectric Communications A Unit of
General Signal
Dow-Key Microwave Corp.
Elcom-Bauer
Harris Corp. Broadcast Div.
Richard Hirschmann Electric
International Microwave Corp.
ITAME, S.A.
ITELCO
Jampro Antennas Inc.
Kintronic Labs, Inc.
LeBlanc & Dick Communications Inc.
Micro Communications, Inc.
Mu-Del Electronics, Inc.
The Narda Microwave Corp.
North Hills Electronics, Inc.
PESA Electronica
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
**Shively Laboratories Div. of
Howell Labs, Inc. 42**
TTC Companies
Tectan, Inc.
Townsend Associates, Inc.
Vector Technology
Wide Band Engineering Co., Inc.
The Zei-Mark Corp.

DIVIDERS, POWER

AVCOM of Virginia, Inc.
Blonder-Tongue Labs, Inc.
Comark Communications, Inc.
DX Communications
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
Dielectric Communications A Unit of
General Signal
Elcom-Bauer
Richard Hirschmann Electric
Jampro Antennas Inc.
Kintronic Labs, Inc.
Micro Communications, Inc.
Microdyne Corp.
The Narda Microwave Corp.
Nexus Engineering Corp.
North Hills Electronics, Inc.
PESA Electronica
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
SWR, Inc.
Scala Electronic Corp.
**Shively Laboratories Div. of
Howell Labs, Inc. 42**
TTC Companies
Tennaplex Systems Ltd.
Trompeter Electronics, Inc.
Vector Technology
Weinschel Engineering
Wide Band Engineering Co., Inc.

EBS AND WEATHER ALERT EQUIPMENT

Emergency Alert Receiver Inc. Also
known as EAR Inc.
Gorman-Redlich Mfg. Co.
International Nuclear Corp.
Johnson Electronics Inc.
Monroe Electronics, Inc.
TFT Inc.

ENG EQUIPMENT

American Laser Systems, Inc.
Andrew Corp.
Anritsu America, Inc.
BTS Broadcast Television Systems,
GmbH (A Joint Co. of Bosch &
Philips)
Robert Bosch GmbH
Brabury Ltd.
Broadcast Microwave Services, Inc.
The Camera Mart, Inc. 128
Comrex Corp. 72
Comtek Communications Technology,
Inc.
Comwave Div. of Communication
Microwave Corp.
Continental Microwave
E-N-G Corp.
Ethereum Scientific Corp.
Faroudja Labs, Inc.
Gray Communications Consultants,
Inc.
Harris Corp. Broadcast Div.
Harris Corp. Broadcast Microwave
**Ikegami Electronics (USA),
Inc. 165-172b**
ITELCO
M/A-Com Mac, Inc.
M/A-Com Microwave Power Devices
Mart Electronics
Microwave Communications Ltd.
Motorola Communications and
Electronics Inc.
North Hills Electronics, Inc.
Nurad, Inc.
RF Technology, Inc.
Sennheiser Electronic Corp.
**Spectrum Communications
Corp. 108**
Tennaplex Systems Ltd.
Thomson-LGT 133

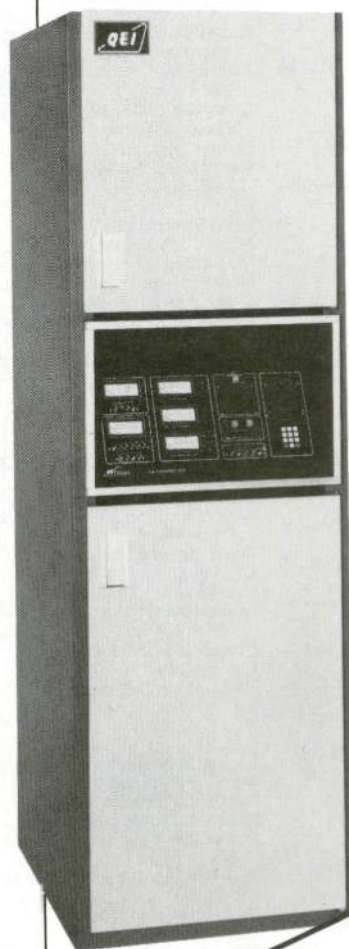
EXCITERS, AM STEREO

Aydin Radar & EW Div.
Broadcast Electronics, Inc.
**Continental Electronics A Div. of
Varian Assoc. 243, 253, 257, 264**
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
Delta Electronics Inc. 123
Harris Corp. Broadcast Div.
Kahn Communications, Inc.
Motorola Inc. AM Stereo
TFT Inc.
Toshiba Corp.

EXCITERS, FM

AEG Bayly Inc.
AEG Communications Div. Transmitter
Department
Aydin Radar & EW Div.
**BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96**
Broadcast Electronics, Inc.
Continental Electronics A Div. of
Varian Associates, Inc.
Elcom-Bauer
Energy-Onix
Harris Corp. Broadcast Div.
ITAME, S.A.
ITELCO
LNR Communications, Inc.
Larcam Communications Equip. Inc.
Micro Controls, Inc.
NEC America, Inc. Broadcast
Equipment Div.
Nexus Engineering Corp.
**Philips Television Systems, Inc. 93-
96**

QEI OFFERS EVERYTHING YOU EXPECT IN A HIGH TECHNOLOGY FM TRANSMITTER WITHOUT THE HIGH PRICE TAG



**ASK ABOUT
QEI'S 15000 HOUR
TUBE WARRANTY!**

With a QEI FM transmitter you won't have to compromise quality to meet your budget.

A one-kilowatt transmitter that is completely solid-state. Higher power models that have only one tube . . . a stable, reliable, efficient grounded grid triode.

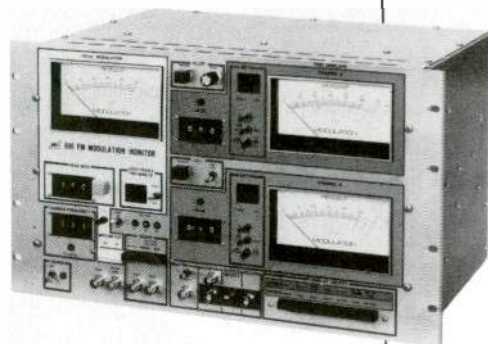
A full remote control system along with microprocessor-based diagnostics built into every transmitter.

A super-low distortion "transparent" exciter with automatic power and modulation control.

Advanced technology at a price you can afford. Why settle for anything else?

For more information contact John Tiedeck at 609-728-2020. He will describe the many features of these unique transmitters.

We make the famous 691 too! A stereo and SCA monitor that can give you accurate readings, even on clipped composite. Over 40 tests performed in minutes on your station, or the competition.



QEI Corporation
One Airport Drive
P.O. Box D
Williamstown, NJ 08094
Phone: 609-728-2020
Telex: 510-686-9402

**Call Toll Free
800-334-9154**

QEI Corporation

VIDEO DELAYS & FILTERS

from

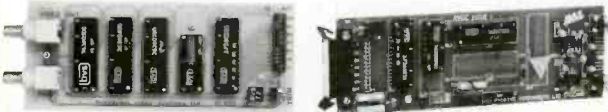
BAL - bvs



PC MOUNT



BOXED



DL505 SERIES
10-1945 ns
PASSIVE

DL 605 SERIES
10-1945 ns
UNITY GAIN, ACTIVE



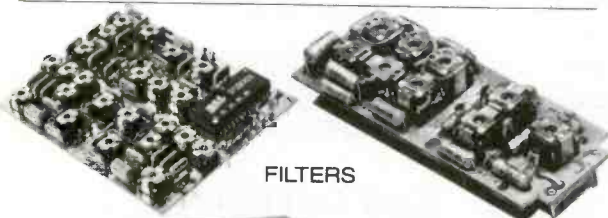
RACK MOUNT



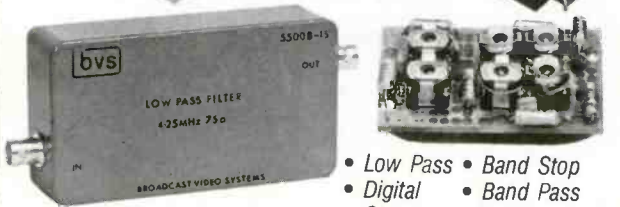
ASD 2000
25-2125 ns via switches
and fine trim.
Automatically maintains unity gain.



ESD 500
40-540 ns via digital control
(local or remote) LED delay readout.
Unity gain.



FILTERS



- Low Pass
- Digital
- Gaussian
- Band Stop
- Band Pass
- Custom Design

broadcast video systems Ltd.

1050 McNicoll Avenue, Agincourt, Ontario M1W 2L8
Telephone: (416) 497-1020 Telex: 065-25329

Circle (38) on Reply Card

RF PRODUCTS

See Adv. Page

See Adv. Page

Power Pak Systems A Haltom Int'l. Co.
Pye TVT Ltd. Broadcast Co. of Philips
QEI Corp. 53,107
Rohde & Schwarz
C.N. Rood B.V. Broadcasting Div.
TTC Companies
TEKO Telecom S.R.L.
Television Technology Corp. Wilkinson Electronics Inc.
Thomson-LGT 133
Toshiba Corp.

EXCITERS, TV

Acrodyne Industries Inc.
Aydin Radar & EW Div.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Broadcast Electronics, Inc.
Comark Communications, Inc.
Comtronix Systems
Comwave Div. of Communication Microwave Corp.
Delta-Benco-Cascade A Sub. of Triple Crown Elec. Inc.
Harris Corp. Broadcast Div.
Richard Hirschmann Electric
Information Transmission Systems, Corp.
ITELCO
Larcan Communications Equip. Inc.
NEC America, Inc. Broadcast Equipment Div.
Nexus Engineering Corp.
PESA Electronica
Philips Television Systems, Inc. 93-96
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
TEKO Telecom S.R.L.
Television Technology Corp. Wilkinson Electronics Inc.
Thomson-LGT 133
Toshiba Corp.
Townsend Associates, Inc.

FILTERS, ANTENNA

Aydin Radar & EW Div.
Blonder-Tongue Labs, Inc.
Celwave
Continental Electronics A Div. of Varian Assoc. 243, 253, 257, 264
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Div.
Richard Hirschmann Electric
ITAME, S.A.
ITELCO
Jampro Antennas Inc.
Kintronic Labs, Inc.
LeBlanc & Dick Communications Inc.
Micro Communications, Inc.
Mu-Del Electronics, Inc.
PESA Electronica
Rohde & Schwarz
Shively Laboratories Div. of Howell Labs, Inc. 42
TTE, Inc.
TEKO Telecom S.R.L.
Tennaplex Systems Ltd.
Tepco Corp.
Texscan Instruments
Thomson-LGT 133
Townsend Associates, Inc.
Vector Technology

FILTERS, MICROWAVE

Aydin Radar & EW Div.
Coaxial Dynamics
ComSonic, Inc.
Comwave Div. of Communication Microwave Corp.
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Div.
International Microwave Corp.
ITELCO
Micro Communications, Inc.
Microdyne Corp.
Microwave Communications Ltd.

Microwave Filter Co., Inc.
Mu-Del Electronics, Inc.
North Hills Electronics, Inc.
Rohde & Schwarz
TTE, Inc.
TEKO Telecom S.R.L.
Texscan Instruments
UTE Microwave, Inc.

GENERATORS, SCA, SAP

AEG Bayly Inc.
American Diversified
Asaca/Shibasoku Corp. 57
Broadcast Electronics, Inc.
CRL Audio Circuit Research Labs, Inc. 37
Comwave Div. of Communication Microwave Corp.
Continental Electronics A Div. of Varian Assoc. 243, 253, 257, 264
Delta-Benco-Cascade A Sub. of Triple Crown Elec. Inc.
Energy-Onix
Harris Corp. Broadcast Div.
ITAME, S.A.
ITELCO
Marti Electronics
Micro Controls, Inc.
Modulation Sciences, Inc.
Moseley Associates, Inc. 231
Orban Associates Inc. 27
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
C.N. Rood B.V. Broadcasting Div.
TTC Companies
Teleindustri AB
Universal Elecon Inc.

GENERATORS, STEREO FM

AEG Bayly Inc.
AEG Communications Div. Transmitter Department
Broadcast Electronics, Inc.
CRL Audio Circuit Research Labs, Inc. 37
Continental Electronics A Div. of Varian Assoc. 243, 253, 257, 264
Dorough Electronics
Energy-Onix
Harris Corp. Broadcast Div.
Inovonics Inc. 267
ITAME, S.A.
ITELCO
Leader Instruments Corp. 5
Moseley Associates, Inc. 231
Nexus Engineering Corp.
Orban Associates Inc. 27
Power Pak Systems A Haltom Int'l. Co.
Pye TVT Ltd. Broadcast Co. of Philips
QEI Corp. 53,107
RE Instruments Corp.
Rohde & Schwarz
C.N. Rood B.V. Broadcasting Div.
TTC Companies
Television Technology Corp. Wilkinson Electronics Inc.

GENERATORS, STEREO TV AURAL

Asaca/Shibasoku Corp. 57
Broadcast Electronics, Inc.
CRL Audio Circuit Research Labs, Inc. 37
Delta-Benco-Cascade A Sub. of Triple Crown Elec. Inc.
ITELCO
Leader Instruments Corp. 5
Marcom
Modulation Sciences, Inc.
Orban Associates Inc. 27
RE Instruments Corp.
Rohde & Schwarz
Townsend Associates, Inc.
Triple Crown Electronics
Universal Elecon Inc.

HEAT EXCHANGERS

Coaxial Dynamics
Harris Corp. Broadcast Div.

MINOLTA INDUSTRIAL METERS

REMARKABLE VERSATILITY COMBINED WITH SUPERB ACCURACY—
MINOLTA METERS CONFORM TO CIE SPECTRAL RESPONSE STANDARDS.



MINOLTA TV COLOR ANALYZER II

- Enables objective white-balance measurement and adjustment of color monitors.
- Clear, accurate digital and analog displays simplify adjustment of monitors on production lines.
- The analyzer has four memory channels for white standard plus four CRT memory channels. This enables measurement and adjustment of different models of CRT's.



LUMINANCE METERS

- The Luminance Meter ft-1°, nt-1°, or nt-1/3° is the perfect choice for readings of light source or surface brightness. The single-lens-reflex viewing system provides a bright, magnified circular view with a clearly marked 1° or 1/3° center spot to measure the light with no influence from surrounding areas.
- The meter instantly displays foot-lamberts (or cd/m²) on the viewfinder's LED digital display.
- The ability to read flickering sources makes the Luminance Meter ideal for measuring TV and movie screens, cathode-ray tubes, etc.



ILLUMINANCE METERS

- Accurate light measuring capabilities in a versatile, hand-held meter.
- A custom-designed liquid crystal display indicates illuminance in either foot-candles or lux.
- Measuring range of .001 fcd to 9,990 fcd enables measurements in virtually any situation.
- Stores a single reading for simplified comparison with other sources or monitoring of single source illumination.



CHROMA METER CL-100

- Ability to measure light source color and color difference between sources.
- Chromaticity and color difference are measured instantly and displayed as Yxy (CIE 1931), Yu'v' (CIE 1976), or Δ (Yxy), Δ (Yu'v'), or Δ u'v'.
- The user can calibrate the meter to their own standard. Once input into memory, the user calibration value remains until changed. Several meters can be unified to eliminate any variations in their spectral response.
- Built-in terminals for remote operation or attachment to Minolta Data Processor DP-100.

For more information, write Minolta Corporation, Industrial Meter Division, 101 Williams Drive, Ramsey, N.J. 07446. Or, call (201) 825-4000.
© 1985 Minolta Corporation.

ONLY FROM THE MIND OF MINOLTA

Circle (39) on Reply Card



MINOLTA

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

ITELCO
Shively Laboratories Div. of
Howell Labs, Inc. 42
Townsend Associates, Inc.

**INSULATORS, ANTENNA
BASE/GUY STRAIN**

LeBlanc & Dick Communications Inc.
Magnum Towers, Inc.
Racal-Decca Canada Inc. Insulators
Div.
Utility Tower Co.

ISOCOUPERS

Continental Electronics A Div. of
Varian Assoc. 243, 253, 257, 264
Dielectric Communications A Unit of
General Signal
Kintronic Labs, Inc.
Magnum Towers, Inc.
MERET, Inc.
Moseley Associates, Inc. 231
Shively Laboratories Div. of
Howell Labs, Inc. 42
Vector Technology
Western Wireless Works

**ITFS/MDS SYSTEM
ELECTRONICS**

Comwave Div. of Communication
Microwave Corp.
Information Transmission Systems,
Corp.
Microwave Filter Co., Inc.
Townsend Associates, Inc.

**LIGHTNING PROTECTION
SYSTEMS**

Andrew Corp.
Control Concepts Corp.
International Microwave Corp.
Kayglo Electronics
LEA Dynatech, Inc. 247
Lightning Deterrent Corp.
Lightning Eliminators &
Consultants 126
Lightning Sciences
MCG Electronics, Inc. 61
Magnum Towers, Inc.
SWR, Inc.
TTC Companies
Television Technology Corp. Wilkinson
Electronics Inc.
Topaz Electronics
XIT Grounding Systems

LOW NOISE AMPS, LNA/LNC

Broadcast Microwave Services, Inc.
DX Communications
Hughes Aircraft Co. Microwave
Communications Products
International Microwave Corp.
Marti Electronics
Microdyne Corp.
North Hills Electronics, Inc.
PESA Electronica
Pinzone Communications Products Inc.
RF Technology, Inc.
Standard Communications
Starlight Communications, Inc.
Toshiba Corp.

MICROWAVE COMPONENTS

Andersen Labs, Inc.
AVCOM of Virginia, Inc.
Aydin Radar & EW Div.
Bird Electronic Corp. 140
Cable Systems Div. of Celwave
Systems Inc.
Comwave Div. of Communication
Microwave Corp.
Continental Microwave
DX Communications
EEV 141
General Microwave Corp.
Harris Corp. Broadcast Microwave
International Microwave Corp.

ITELCO
M/A-Com Mac, Inc.
MCL, Inc.
Microwave Communications Ltd.
Microwave Modules & Devices
Motorola Communications and
Electronics Inc.
The Narda Microwave Corp.
North Hills Electronics, Inc.
Nurad, Inc.
Radiation Systems, Inc.
Rockwell Int'l. Collins Transmission
Sys. Div.
SED Systems Inc.
TEKO Telecom S.R.L.
Tepeco Corp.
Thomson-CSF Electron Tube Div.
Toshiba Corp.
Townsend Associates, Inc.
UTE Microwave, Inc.
Varian Associates, Inc. Electron
Device Group 131, 271
Weinschel Engineering

MODULATORS, TV

Asaca/Shibasoku Corp. 57
Aydin Radar & EW Div.
Barco Industries 151
Blonder-Tongue Labs, Inc.
Comark Communications, Inc.
ComSonic, Inc.
Comwave Div. of Communication
Microwave Corp.
DX Communications
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
Hi-Net Communications
Richard Hirschmann Electric
Information Transmission Systems,
Corp.
ITELCO
Kathrein-Werke KG
M/A-Com Cable Home Group
Marshall Electronics
Microdyne Corp.
Multiplex Technology
Nexus Engineering Corp.
PESA Electronica
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
Scientific-Atlanta
Standard Communications
Starlight Communications, Inc.
Synchronous Communications, Inc.
TEKO Telecom S.R.L.
Telemet Div. A Geotol, Co.
Television Technology Corp. Wilkinson
Electronics Inc.
Toshiba Corp.
Townsend Associates, Inc.
Universal Elecon Inc.

PRESSURIZATION EQUIPMENT

Andrew Corp.
Cable Systems Div. of Celwave
Systems Inc.
Dielectric Communications A Unit of
General Signal
Environmental Technology, Inc.
Gabriel Electronics, Inc.
Shively Laboratories Div. of
Howell Labs, Inc. 42

**RADOMES, ANTENNA
PROTECTION**

Andrew Corp.
Aydin Radar & EW Div.
Cable Systems Div. of Celwave
Systems Inc.
Continental Electronics A Div. of
Varian Assoc. 243, 253, 257, 264
Gabriel Electronics, Inc.
Harris Corp. Broadcast Div.
Jampro Antennas Inc.
LeBlanc & Dick Communications Inc.
M/A-Com Mac, Inc.
Magnum Towers, Inc.
Nurad, Inc.
SWR, Inc.

Shively Laboratories Div. of
Howell Labs, Inc. 42
Tennaplex Systems Ltd.

RECEIVERS, AM

Aiphone Intercom Systems
Aydin Radar & EW Div.
Bogen, A Lear Siegler Co.
Cetec Raymer
Curtis & Green Ltd.
Emergency Alert Receiver Inc. Also
known as EAR Inc.
International Microwave Corp.
Kahn Communications, Inc.
Potomac Instruments, Inc.
Sansui Electronics
Telespec

RECEIVERS, COMMUNICATION

Anritsu America, Inc.
AVCOM of Virginia, Inc.
Aydin Radar & EW Div.
Broadcast Microwave Services, Inc.
Communitronics Ltd.
Fairchild Data Corp.
Gorman-Redlich Mfg. Co.
International Microwave Corp.
LNR Communications, Inc.
Marti Electronics
Math Associates Inc.
Fiberlink/Fibervision Products
Group
Micro Controls, Inc.
Nagra Magnetic Recorders, Inc.
Nurad, Inc.
Spectrum Communications
Corp. 108
Standard Communications
Telespec
Tonographie Apparatebau

RECEIVERS, EARTH STATION

Andrew Corp.
AVCOM of Virginia, Inc.
Aydin Radar & EW Div.
Barrett Associates Inc.
Broadcast Microwave Services, Inc.
California Microwave
ComSonic, Inc.
DX Communications
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
Electrohome Ltd.
Elektroimpex
Harris Corp. Broadcast Div.
Hi-Net Communications
Hubbard Communications, Inc.
LNR Communications, Inc.
Luxor (North America) Corp.
M/A-Com Cable Home Group
McCullough Satellite Equip., Inc.
Microdyne Corp.
Modulation Associates Inc.
Nexus Engineering Corp.
Panasonic Industrial Co. Audio-Video
System Products Group
PESA Electronica
Pinzone Communications Products Inc.
Rohde & Schwarz
SED Systems Inc.
Solway, Inc.
Standard Communications
Starlight Communications, Inc.
Telespec
Thomson-LGT 133
Tracor Instruments Austin Inc.
Industrial Instruments Div.

RECEIVERS, FM

AEG Bayly Inc.
AEG Communications Div. Transmitter
Department
Aiphone Intercom Systems
AVCOM of Virginia, Inc.
Aydin Radar & EW Div.
Bogen, A Lear Siegler Co.
Cetec Raymer
Communitronics Ltd.
Curtis & Green Ltd.

Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
Emergency Alert Receiver Inc. Also
known as EAR Inc.
International Microwave Corp.
ITELCO
Johnson Electronics Inc.
LNR Communications, Inc.
Marti Electronics
Rohde & Schwarz
Sansui Electronics
Spectrum Communications
Corp. 108
Tectan, Inc.
TEKO Telecom S.R.L.
Telespec
Tonographie Apparatebau

RECEIVERS, MICROWAVE

Anritsu America, Inc.
AVCOM of Virginia, Inc.
Aydin Microwave Div.
Aydin Radar & EW Div.
Broadcast Microwave Services, Inc.
Harris Corp. Broadcast Div.
Hughes Aircraft Co. Microwave
Communications Products
International Microwave Corp.
ITELCO
M/A-Com Mac, Inc.
Marti Electronics
Microwave Communications Ltd.
Nurad, Inc.
RF Technology, Inc.
Rohde & Schwarz
Scientific-Atlanta
TFT Inc.
TEKO Telecom S.R.L.
Varian Associates, Inc. Electron
Device Group 131, 271
Wegener Communications Inc.
Weinschel Engineering

RECEIVERS, SCA

AEG Bayly Inc.
Aydin Radar & EW Div.
Communitronics Ltd.
Emergency Alert Receiver Inc. Also
known as EAR Inc.
ITAME, S.A.
Johnson Electronics Inc.
Marti Electronics
Micro Controls, Inc.
Modulation Sciences, Inc.
Moseley Associates, Inc. 231
Rohde & Schwarz

RECEIVERS, TIME STANDARD

Harris Corp. Broadcast Microwave
Kinematics/Truetime
Tracor Instruments Austin Inc.
Industrial Instruments Div.

**REMOTE PICKUP SYSTEMS,
RADIO**

Celwave
Gentner RF Products Div. of
Gentner Engineering 84
Gorman-Redlich Mfg. Co.
ITAME, S.A.
Marti Electronics
Moseley Associates, Inc. 231
Motorola Communications and
Electronics Inc.
Spectrum Communications
Corp. 108
TFT Inc.

SNG EQUIPMENT

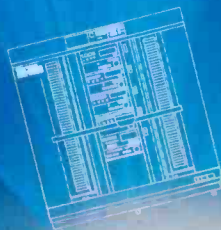
Andrew Corp.
Anritsu America, Inc.
Broadcast Microwave Services, Inc.
Comrex Corp. 72
DX Communications
Dalsat Inc.
Ethereum Scientific Corp.
GEC Video Systems
Gray Communications Consultants,
Inc.

EVERY SECOND COUNTS!!



THE ASACA ACL-6000C RANDOM ACCESS AUTOMATIC VIDEO CART SYSTEM IS THE MOST SOPHISTICATED AND VERSATILE CART SYSTEM IN THE WORLD TODAY

- ▶ 600 1/2" Cassette Capacity
- ▶ Sophisticated Bar Code Reader/ Identification System
- ▶ Side Door Load/Eject System for Last Minute Changes and Complete User Safety
- ▶ State-of-the-Art Software Designed by Dubner Computer Systems
- ▶ Software Support and Modification by Dubner Computer Systems
- ▶ The ACL-6000C is Controlled by a Charles River Universe 6835 Computer
- ▶ SMPTE Time Code is Utilized for Precise Cueing
- ▶ The ACL-6000C is Capable of Multiple Segments on Cassettes for Total Programming Automation and Library Storage
- ▶ The ACL-6000C is Capable of Stand Alone Remote Control Operations or May Be Interfaced With a Station Automation System
- ▶ Complete Flexibility Using Either Sony Betacam or Panasonic M-II Formats



ASACA
ASACA/SHIBASOKU
CORP. OF AMERICA

12509 Beatrice Street, Los Angeles, California 90066
213-827-7144/800-423-6347/Telex-182089

Circle (40) on Reply Card

Canon Broadcast

Designed to meet all your



PV40x13.5B1E for 30mm and 25mm cameras. The Olympian—proven at the 1984 Olympic Games, its 40X reach is perfect for sports and all outdoor broadcast operations.

Focal length: 13.5-540mm (27-1080mm w/built-in extender)

Max. Relative Aperture*: 1:1.7 through 270mm
*25mm format 1:2.8 at 540mm



P18x15B1E for 30mm and 25mm cameras.

The Widest—a very wide 60° angle of view plus incredible edge-to-edge sharpness, fidelity and sensitivity. Supplied with 1.5X and 2X built-in extenders plus pattern projector.

Focal length: 15-270mm (30-540mm w/2X extender)

Max. Relative Aperture*: 1:2.1 through 218mm
*25mm format 1:2.7 at 270mm



PV14x12.5B1E High Resolution Lens for 30mm and 25mm cameras.

A Unique Design—featuring extensive use of Fluorite lens elements, this lightweight, compact 14X studio lens provides high sensitivity and critical sharpness at all focal lengths.

Focal length: 12.5-175mm (1.5X and 2X extenders built-in)

Max. Relative Aperture*: 1:1.6 at all focal lengths
*25mm format



J15x8.5B1E for 2/3" cameras.

2/3" Economy—full utility for all studio situations, combining a 15X zoom ratio with an M.O.D. of under two feet, a 54° angle of view and high sensitivity throughout the range.

Focal length: 8.5-128mm (17-256mm w/built-in extender)

Max. Relative Aperture: 1:1.6 at all focal lengths



J18x9B1E for 2/3" cameras.

Greater Reach, Lighter Weight—nothing matches the 18X zoom power of this lens—and it weighs less than 4 lbs.! It increases the flexibility of any portable camera.

Focal length: 9-162mm (18-324mm w/2X extender)

Max. Relative Aperture: 1:1.7 through 116mm
1:2.4 at 162mm



J14x8 B1E High Resolution Lens for 2/3" cameras.

Super wide (60°) and super sharp from corner-to-corner. This compact lens also provides a 14X zoom ratio and built-in 2X extender.

Focal length: 8-112mm (16-224mm w/built-in extender)

Max. Relative Aperture: 1:1.7 through 91mm
1:2.2 at 112mm

Television Lenses.

needs. Now and in the future.



J45x9.5 BIE for 2/3" cameras.
Incredible 45X reach with your 2/3" cameras!
Perfect for sports and all outdoor E.F.P.
applications.

Focal length: 9.5-430mm (19-860mm w/built-in extender)
Max. Relative Aperture: 1:1.7 through 201mm
1:3.0 at 430mm



J25x11.5BIE for 2/3" cameras.
Greater Reach—a 25X zoom lens designed specifically for 2/3" cameras. The power and scope of 1" systems, the economy and efficiency of your 2/3" cameras.

Focal length: 11.5-288mm (23-576mm w/2X extender)
Max. Relative Aperture: 1:1.6 through 220mm
1:2.1 at 288mm



J20x8.5BIE for 2/3" cameras.
Two Assignments—use a 13X zoom for ENG, use the J20x8.5BIE for studio or outdoor broadcast assignments—with the same 2/3" camera!

Focal length: 8.5-170mm (17-340mm w/2X extender)
Max. Relative Aperture: 1:1.6 through 130mm
1:2.1 at 170mm



J13x9BIE for 2/3" cameras.
The Portable Standard—used by cameramen around the world under all conditions, the J13x9BIE is a proven performer with superior sharpness and sensitivity.

Focal length: 9-118mm (18-236mm w/2X extender)
Max. Relative Aperture: 1:1.6 through 99mm
1:1.9 at 118mm



J15x9.5 for 2/3" cameras.
Quality plus Economy—you can't buy more lens for less money. Lightweight and sensitive, it meets the needs of both cameramen and accountants yet lives up to its Canon name.

Focal length: 9.5-143mm
Max. Relative Aperture: 1:1.8 through 112mm
1:2.3 at 143mm



J8x6 B Ultra Wide-Angle Lens for 2/3" cameras.
The widest of the ultra-wide zooms at 72.5°, this incredible 8X lens also has a M.O.D. on only 11"—it's great for interviews!

Focal length: 6-48mm
Max. Relative Aperture: 1:1.7 through 33mm
1:1.9 at 48mm

Canon[®]

Optics Division

Canon USA, Inc., Head Office: One Canon Plaza, Lake Success, NY 11042 (516) 488-6700
Dallas Office: 3200 Regent Blvd., Irving, TX 75063 (214) 830-9600. Chicago Office: 100 Park Blvd., Itasca, IL 60143 (312) 250-6200
West Coast Office: 123 Paularino Avenue East, Costa Mesa, CA 92626 (714) 979-6000
Canon Canada, Inc., 6390 Dixie Road, Mississauga, Ontario L5T1P7, Canada (416) 678-2730

© 1985 Canon U.S.A. Inc.

Circle (41) on Reply Card

Harris Corp. Broadcast Microwave
Hubbard Communications, Inc.
LNR Communications, Inc.
MCL, Inc.
Midwest Communications Corp. .. 1
Modulation Associates Inc.
Nurad, Inc.
Pinzone Communications Products Inc.
SatCom Technologies, Inc. An RSi Co.
Standard Communications
Toshiba Corp.
Wegener Communications Inc.

STL EQUIPMENT/ELECTRONICS

American Laser Systems, Inc.
Andrew Corp.
Artel Communications Corp.
Broadcast Microwave Services, Inc.
Comwave Div. of Communication
Microwave Corp.
Harris Corp. Broadcast Div.
Harris Corp. Broadcast Microwave
Hughes Aircraft Co. Microwave
Communications Products
ITAME, S.A.
Marti Electronics
Micro Controls, Inc.
Microwave Communications Ltd.
Modulation Sciences, Inc.
Moseley Associates, Inc.231
RF Technology, Inc.
Rockwell Int'l. Collins Transmission
Sys. Div.
S.C.V. Audio
Synchronous Communications, Inc.
TFT Inc.
Telemet Div. A Geotel Co.
Telescript Industries Corp.

SWITCHES, COAXIAL/RF

AEG Bayly Inc.
AEG Communications Div. Transmitter
Department
Aydin Radar & EW Div.
Bird Electronic Corp.140
Channelmatic, Inc.
Comark Communications, Inc.
ComSonic, Inc.
DX Communications
Delta Electronics Inc.123
Dielectric Communications A Unit of
General Signal
Dow-Key Microwave Corp.
Dynatech Microwave Switches Div.
Dynatech/UZ, Inc.
General Microwave Corp.
Harris Corp. Broadcast Div.
ITAME, S.A.
Jennings A Div. of FL Industries Inc.
Kay Elemetrics Corp.
Kintronic Labs, Inc.
Marshall Electronics
Micro Communications, Inc.
Pye TVT Ltd. Broadcast Co. of Philips
RMS Electronics, Inc.
Rohde & Schwarz
**Shively Laboratories Div. of
Howell Labs, Inc.**42
Tennaplex Systems Ltd.
Townsend Associates, Inc.
Vector Technology
Weinschel Engineering

TOWER LIGHTING EQUIPMENT

Abroyd Communications Ltd.
Aluma Tower Co. Inc.
Andrew Corp.
Crouse-Hinds Co. Aviation Lighting
EG&G Inc.
Flash Technology
Hughey & Phillips Inc.100
LeBlanc & Dick Communications Inc.
Magnum Towers, Inc.
Microflect Co., Inc.
Racal-Decca Canada Inc. Insulators
Div.
ROHN
SSAC Inc.
Transmission Structures, Ltd.
Trylon Towers

TOWERS, ANTENNA

Abroyd Communications Ltd.
Allied Tower Co., Inc.
Aluma Tower Co. Inc.
Andrew Corp.
Aydin Radar & EW Div.
Central Tower Inc.
Elektroimpex
Kline Iron & Steel Co.
LeBlanc & Dick Communications Inc.
Magnum Towers, Inc.
Marconi Communication Systems Ltd.
Microflect Co., Inc.
Tommy Moore, Inc. dba Fort Worth
Tower Co.
Motorola Communications and
Electronics Inc.
Fred A. Nudd Corp.
Allen Osborne Associates52
PESA Electronica
ROHN
Stainless, Inc.91
Transmission Structures, Ltd.
Trylon Towers
Utility Tower Co.
The Will-Burt Co. TMD Div.

TOWERS, MOBILE/MAST

Abroyd Communications Ltd.
Aluma Tower Co. Inc.
Broadcast Microwave Services, Inc.
E-N-G Corp.
Allen Osborne Associates52
ROHN
Trylon Towers
The Will-Burt Co. TMD Div.

TRANSFORMERS, POWER MODULATION

Peter W. Dahl Co., Inc.
Federal Pacific/Reliance Electric
LTM Corp. of America
Microtran Co. Inc.
Toshiba Corp.

TRANSLATOR SYSTEMS, FM

AEG Bayly Inc.
Elektroimpex
Energy-Onix
ITAME, S.A.
ITELCO
D. N. Latus & Co., Inc.
M/A-Com Microwave Power Devices
Nexus Engineering Corp.
Rohde & Schwarz
TTC Companies
TEKO Telecom S.R.L.
Television Technology Corp. Wilkinson
Electronics Inc.
Tennaplex Systems Ltd.
Tepco Corp.
Thomson-LGT133
Toshiba Corp.

TRANSLATOR SYSTEMS, TV

Acrodyne Industries Inc.
Comtronix Systems
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
EMCEE Broadcast Products
Elektroimpex
Richard Hirschmann Electric
ITELCO
Larcam Communications Equip. Inc.
M/A-Com Microwave Power Devices
Multiplex Technology
Nexus Engineering Corp.
PESA America Inc.
PLISCH-Nachrichtentechnik
Rohde & Schwarz
Scientific-Atlanta
TTC Companies
TEKO Telecom S.R.L.
Television Technology Corp. Wilkinson
Electronics Inc.
Tennaplex Systems Ltd.
Tepco Corp.
Thomson-LGT133
Toshiba Corp.

Townsend Associates, Inc.

TRANSMISSION LINE ACCESSORIES

Andrew Corp.
Aydin Radar & EW Div.
Bird Electronic Corp.140
Cable Systems Div. of Celwave
Systems Inc.
Celwave
Comwave Div. of Communication
Microwave Corp.
Delta Electronics Inc.123
Dielectric Communications A Unit of
General Signal
Gabriel Electronics, Inc.
LeBlanc & Dick Communications Inc.
Micro Communications, Inc.
Microflect Co., Inc.
Pinzone Communications Products Inc.
SWR, Inc.
**Shively Laboratories Div. of
Howell Labs, Inc.**42
Toshiba Corp.
Townsend Associates, Inc.
Vector Technology

TRANSMISSION LINES/WAVEGUIDES

Andrew Corp.
Artel Communications Corp.
Aydin Radar & EW Div.
Cable Systems Div. of Celwave
Systems Inc.
Comark Communications, Inc.
Comwave Div. of Communication
Microwave Corp.
Dielectric Communications A Unit of
General Signal
Gabriel Electronics, Inc.
LeBlanc & Dick Communications Inc.
MCL, Inc.
Magnum Towers, Inc.
Marconi Communication Systems Ltd.
Mark Antenna Products, Inc.
MERET, Inc.
Micro Communications, Inc.
Motorola Communications and
Electronics Inc.
The Narda Microwave Corp.
Nemal Electronics Int'l.
Pinzone Communications Products Inc.
Pye TVT Ltd. Broadcast Co. of Philips
SWR, Inc.
**Shively Laboratories Div. of
Howell Labs, Inc.**42
Tennaplex Systems Ltd.
Thomson-CSF Electron Tube Div.
Townsend Associates, Inc.

TRANSMITTER PULSER/HV POWER SUPPLIES

Aydin Radar & EW Div.
**BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips)**93-96
Comark Communications, Inc.
Comtronix Systems
Harris Corp. Broadcast Div.
Philips Television Systems, Inc. 93-
96
Plastic Capacitors, Inc.
Townsend Associates, Inc.

TRANSMITTERS, AM CARRIER CURRENT

AEG Communications Div. Transmitter
Department
CSI Electronics, Inc.
Comark Communications, Inc.
LPB Inc.
NAUTEL44
Philips/Pye TVT Ltd.

TRANSMITTERS, AM/SW

AEG Bayly Inc.
AEG Communications Div. Transmitter
Department

CSI Electronics, Inc.
Comark Communications, Inc.
**Continental Electronics A Div. of
Varian Assoc.**243, 253, 257, 264
Elcom-Bauer
Harris Corp. Broadcast Div.
International Microwave Corp.
ITAME, S.A.
Marconi Communication Systems Ltd.
TTC Companies
Television Technology Corp. Wilkinson
Electronics Inc.
Toshiba Corp.

TRANSMITTERS, FM

AEG Bayly Inc.
AEG Communications Div. Transmitter
Department
AEG Corp.
**BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips)**93-96
Broadcast Electronics, Inc.
Broadcast Microwave Services, Inc.
CSI Electronics, Inc.
**Continental Electronics A Div. of
Varian Assoc.**243, 253, 257, 264

Elcom-Bauer
Elektroimpex
Energy-Onix
Harris Corp. Broadcast Div.
International Microwave Corp.
ITAME, S.A.
ITELCO
Larcam Communications Equip. Inc.
M/A-Com Mac, Inc.
M/A-Com Microwave Power Devices
MCL, Inc.
Marconi Communication Systems Ltd.
NEC America, Inc. Broadcast
Equipment Div.
Nexus Engineering Corp.
Philips/Pye TVT Ltd.
Philips Television Systems, Inc. 93-
96
Power Pak Systems A Haltom Int'l.
Co.
QEI Corp.
Rohde & Schwarz
C.N. Rood B.V. Broadcasting Div.
**Spectrum Communications
Corp.**10B
TTC Companies
Tectan, Inc.
TEKO Telecom S.R.L.
Television Technology Corp. Wilkinson
Electronics Inc.
Thomson-LGT133
Toshiba Corp.

TRANSMITTERS, ITFS/MDS

Comwave Div. of Communication
Microwave Corp.
EMCEE Broadcast Products
Information Transmission Systems,
Corp.
M/A-Com Microwave Power Devices
Philips/Pye TVT Ltd.
Townsend Associates, Inc.

TRANSMITTERS, TV/LPTV

AEG Communications Div. Transmitter
Department
Acrodyne Industries Inc.
Aydin Radar & EW Div.
**BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips)**93-96
Comark Communications, Inc.
Comtronix Systems
Delta-Benco-Cascade A Sub. of Triple
Crown Elec. Inc.
EMCEE Broadcast Products
Richard Hirschmann Electric
Information Transmission Systems,
Corp.
ITAME, S.A.
ITELCO
Larcam Communications Equip. Inc.
M/A-Com Microwave Power Devices

SURGE PROTECTORS



Widest Range of Protectors Available Anywhere!

Data Line Protection

MCG provides a sophisticated blend of high speed (less than 5ns) and brute force protection for the sensitive equipment on your data lines. Guards computers and terminals, video cameras and cable, video wideband equipment, modems, and more, against induced transient voltage surges. Available in multiple configurations, they are designed to be used with coaxial cable, single or twisted pairs, RS-232, -422 and -423, 20 ma loops, etc.

MCG is your one complete source for cost-effective protection against voltage surges and transients.
SEND COUPON FOR FREE CATALOG.



AC Power Line Protection

MCG Surge-Master™ protectors are heavy-duty, bipolar clamping devices that limit AC overvoltage spikes to safe levels. Available as service panel protectors, plug-in devices and power strips, they guard everything from individual pieces of equipment to complete buildings. A variety of models handle the full range of AC voltage and current levels.

MCG Electronics Inc.

12 Burt Drive, Deer Park, NY 11729

- I have an immediate need, please contact me.
 Yes, send me your free full-line catalog on:
 AC Power Line Protection Data Line Protection

Name _____ Title _____

Company _____

Address _____

City/State/Zip _____

Telephone _____



*Specialists in Circuit Protectors,
 Transients, Lightning & Surges.*

12 Burt Drive, Deer Park, NY 11729
 Nationwide (800) 851-1508
 In N.Y.: 516-586-5125 Telex: 645518

See Adv. Page

MCL, Inc.
 Marconi Communication Systems Ltd.
 NEC America, Inc. Broadcast
 Equipment Div.
 Nexus Engineering Corp.
 PESA America Inc.
 Philips/Pye TVT Ltd.
 Philips Television Systems, Inc. 93-
 96
 Rohde & Schwarz
 TTC Companies
 TEKO Telecom S.R.L.
 Television Technology Corp. Wilkinson
 Electronics Inc.
 Thomson-LGT133
 Townsend Associates, Inc.

TVRO

Andrew Corp.
 AVCOM of Virginia, Inc.
 Blonder-Tongue Labs, Inc.
 Broadcast Microwave Services, Inc.
 CommTek Publishing Satellite Orbit &
 Dealers
 ComSonic, Inc.
 DX Communications
 Delta-Benco-Cascade A Sub. of Triple
 Crown Elec. Inc.
 Encom Telecommunications & Tech.,
 Inc.
 GEC Video Systems
 Harris Corp. Broadcast Div.
 Hi-Net Communications
 Hubbard Communications, Inc.
 Marconi Communication Systems Ltd.
 McCullough Satellite Equip., Inc.
 Microdyne Corp.
 North Hills Electronics, Inc.
 Panasonic Industrial Co. Audio-Video
 System Products Group
 PESA America Inc.
 Pinzone Communications Products Inc.
 Radiation Systems, Inc.
 ROHN
 SatCom Technologies, Inc. An RSi Co.
 Satellite Systems
 Standard Communications
 Starlight Communications, Inc.
 Telespec
 Thomson-LGT133
 Toshiba Corp.

TV SATELLITE UPLINKS

Andrew Corp.
 Artel Communications Corp.
 Broadcast Microwave Services, Inc.
 Encom Telecommunications & Tech.,
 Inc.
 Ethereum Scientific Corp.
 Harris Corp. Broadcast Div.
 Harris Corp. Broadcast Microwave
 Hubbard Communications, Inc.
 ITELCO
 Lang Video Communication Inc.
 MCL, Inc.
 Marconi Communication Systems Ltd.
 Microdyne Corp.
 Pinzone Communications Products Inc.
 SatCom Technologies, Inc. An RSi Co.
 SED Systems Inc.
 Standard Communications
 Telespec
 Thomson-LGT133
 Toshiba Corp.
 Tracor Instruments Austin Inc.
 Industrial Instruments Div.
 Varian Associates, Inc. Electron
 Device Group 131, 271

**VACUUM TUBES,
 KLYSTRONS/CAVITIES**

Amperex Electronic Corp. Klystron
 Div.
 Amperex Electronic Corp.
 Slatersville Div. 66-67
 Comark Communications, Inc.
 EEV141
 Freeland Products, Inc.
 Panasonic Industrial Co. Audio-Video
 System Products Group
 Thomson-CSF Electron Tube Div.

See Adv. Page

Townsend Associates, Inc.
 Valvo Unternehmensbereich Gmbh
 Varian Associates, Inc. Electron
 Device Group 131, 271

**VACUUM TUBES,
 RECTIFIER/TRANSMITTING**

Amperex Electronic Corp. Klystron
 Div.
 Amperex Electronic Corp.
 Slatersville Div. 66-67
 EEV141
 Econco Broadcast Service Inc.
 Freeland Products, Inc.
 R. F. Gain, Ltd.
 Motorola Communications and
 Electronics Inc.
 RCA Distributor & Special Products
 Div.
 Thomson-CSF Electron Tube Div.
 Townsend Associates, Inc.
 Valvo Unternehmensbereich Gmbh
 Westinghouse Electric Corp. Ind'l. &
 Gov't. Tube Div.

**WAVEGUIDE SUPPORT
 EQUIPMENT**

Andrew Corp.
 Aydin Radar & EW Div.
 Cable Systems Div. of Celwave
 Systems Inc.
 Dielectric Communications A Unit of
 General Signal
 Gabriel Electronics, Inc.
 Magnum Towers, Inc.
 Mark Antenna Products, Inc.
 Microlect Co., Inc.
 The Narda Microwave Corp.
 Pinzone Communications Products Inc.
 SWR, Inc.
 Shively Laboratories Div. of
 Howell Labs, Inc. 42
 Townsend Associates, Inc.
 Trylon Towers

**METERS/MONITORS
 TEST EQUIPMENT**

ANALYZERS, AF SPECTRUM

Amber Electro Design Inc. 36
 Anritsu America, Inc.
 Aydin Radar & EW Div.
 Bruel & Kjaer Instruments, Inc.
 Cetec Ivie
 EMT-Franz GmbH
 Hewlett-Packard Co. 89
 Klark-Teknik Electronics
 Klark-Teknik PLC
 RE Instruments Corp.
 Solartron Instruments
 Sound Technology 9
 Technical Projects
 Tektronix Inc. 239, 240
 Wandel & Goltermann, Inc.
 White Instruments

ANALYZERS, AUDIO SYSTEM

Amber Electro Design Inc. 36
 Audio Precision 30
 Aydin Radar & EW Div.
 Boonton Electronics Corp.265
 Bruel & Kjaer Instruments, Inc.
 Cetec Ivie
 Hewlett-Packard Co. 89
 Klark-Teknik PLC
 Panasonic Industrial Co. Audio-Video
 System Products Group
 Ortofon Inc.
 RE Instruments Corp.
 Rohde & Schwarz-Polarad, Inc.
 Schmid Fernmeldetechnik Zuerich
 Scip Electronic Systems
 Sencore Inc.139
 Sennheiser Electronic Corp.
 Sound Technology 9
 Sounder Electronics Inc.

See Adv. Page

TFT Inc.
 Technical Projects
 Wandel & Goltermann, Inc.

ANALYZERS, DISTORTION

Amalgamated Wireless (Australia
 Ltd.)
 Amber Electro Design Inc. 36
 Audio Precision 30
 Aydin Radar & EW Div.
 B.F.E. KG
 Boonton Electronics Corp.265
 Bruel & Kjaer Instruments, Inc.
 Hewlett-Packard Co. 89
 Potomac Instruments, Inc.
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 Sound Technology 9
 TFT Inc.
 Technical Projects
 Tonographie Apparatebau
 Wandel & Goltermann, Inc.

ANALYZERS, RF SPECTRUM

Anritsu America, Inc.
 AVCOM of Virginia, Inc.
 Aydin Radar & EW Div.
 ComSonic, Inc.
 Hewlett-Packard Co. 89
 Marconi Instruments
 Motorola Communications and
 Electronics Inc.
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 Sencore Inc.139
 Texscan Instruments
 Wandel & Goltermann, Inc.

ANALYZERS, SIDEBAND

Aydin Radar & EW Div.
 Kahn Communications, Inc.
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 Telemet Div. A Geotel, Co.
 Wandel & Goltermann, Inc.

ANALYZERS, VIDEO

Anritsu America, Inc.
 Asaca/Shibasoku Corp. 57
 Avitel Electronics Ltd.
 Colorado Video Inc.
 EMT-Franz GmbH
 Elektroimpex
 PESA America Inc.
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 Sencore Inc.139

**ANTENNA IMPEDANCE
 BRIDGE**

Anritsu America, Inc.
 Delta Electronics Inc.123
 Tennaplex Systems Ltd.
 Wide Band Engineering Co., Inc.

ANTENNA VSWR INDICATORS

Bird Electronic Corp. 140
 PESA Electronica
 Pye TVT Ltd. Broadcast Co. of Philips
 Rohde & Schwarz
 Shively Laboratories Div. of
 Howell Labs, Inc. 42

AUDIO LEVEL INDICATORS

ATI-Audio Technologies Inc.100
 Amalgamated Wireless (Australia
 Ltd.)
 Audio Export Georg Neumann & Co.
 GmbH
 B&B Systems, Inc.
 B.F.E. KG
 Bald Mountain Lab
 Canford Audio Ltd.
 Dixon Instruments
 Dorrrough Electronics

See Adv. Page

ESE 99, 101,
 103
 Gaines Audio
 Gotham Audio Corp.
 Inovonics Inc.267
 Logitek Electronic Systems,
 Inc. 31
 Marcom
 NTP Elektronik A/S
 Peirce-Phelps, Inc.
 Pye TVT Ltd. Broadcast Co. of Philips
 RTS Systems, Inc.
 Radio Systems Inc.
 Ram Broadcast Systems
 Ramko Research Inc.
 The Real World Tech. Group, Inc.
 ROH Corp.
 ROH Div. of Anchor Audio
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 C.N. Rood B.V. Broadcasting Div.
 Schmid Fernmeldetechnik Zuerich
 Scip Electronic Systems
 Selco Products Co.
 Sescom, Inc.
 Technical Projects
 Tonographie Apparatebau
 Videotek, Inc.157

**AUTOMATED TESTING
 SYSTEMS**

Amber Electro Design Inc. 36
 Asaca/Shibasoku Corp. 57
 Audio Precision 30
 Avitel Electronics Ltd.
 Grumman Aerospace Corp. Broadcast
 Systems Group
 Hewlett-Packard Co. 89
 Monroe Electronics, Inc.
 NTP Elektronik A/S
 The Narda Microwave Corp.
 Photo Research Div. of Kollmorgen
 Corp.
 Ortofon Inc.
 Rohde & Schwarz
 Rohde & Schwarz-Polarad, Inc.
 Schmid Fernmeldetechnik Zuerich
 Sound Technology 9
 Technical Projects
 Tektronix Inc. 239, 240
 Wandel & Goltermann, Inc.

BLANKING INTERVAL

A. F. Associates, Inc. 80
 Crow Broadcast Systems Ltd.
 The Real World Tech. Group, Inc.
 Rohde & Schwarz

CALORIMETERS, RF

Bird Electronic Corp. 140
 Electro Impulse Lab, Inc.

COMPARATORS, VIDEO

Anritsu America, Inc.
 Colorado Video Inc.

COUNTERS, FREQUENCY

Anritsu America, Inc.
 Audio Precision 30
 Aydin Radar & EW Div.
 B & K Precision Dynascan Corp.
 Beckman Industrial Corp.
 Black Star Ltd.
 ComSonic, Inc.
 Global Specialties An Interplex
 Electronics Co.
 Hewlett-Packard Co. 89
 Lectrotech Inc.
 Marconi Instruments
 Motorola Communications and
 Electronics Inc.
 North American Soar Corp.
 Philips Test & Measuring Instruments
 Scientific-Atlanta
 Sencore Inc.139
 Tektronix Inc. 239, 240

See Adv. Page	See Adv. Page	See Adv. Page	See Adv. Page
Texscan Instruments Triplett Corp. VIZ Test Equipment Div. of VIZ Mfg. Co.			
DEMODULATORS, TV			
Anritsu America, Inc. Barco Industries 151 Comark Communications, Inc. ComSonics, Inc. Elektroimpex Heyden Int'l Nexus Engineering Corp. Philips Test & Measuring Instruments Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Scientific-Atlanta TFT Inc. Tektronix Inc. 239, 240 Telemet Div. A Geotel, Co. Universal Elecon Inc. Vicon Industries Inc. Videotek, Inc. 157			
DETECTORS, MICROWAVE			
Boonton Electronics Corp. 265 General Microwave Corp. Holaday Industries Leader Instruments Corp. 5 The Narda Microwave Corp. Simpson Electric Tektronix Inc. 239, 240 Vicon Industries Inc.			
DETECTORS, RF			
Anritsu America, Inc. Boonton Electronics Corp. 265 ComSonics, Inc. EEV 141 Harris Corp. Broadcast Div. Holaday Industries ITAME, S.A. Leader Instruments Corp. 5 The Narda Microwave Corp. PESA Electronica Potomac Instruments, Inc. Shively Laboratories Div. of Howell Labs, Inc. 42 Tektronix Inc. 239, 240 Texscan Instruments Wide Band Engineering Co., Inc.			
DETECTORS, VIDEO PRESENCE			
Anritsu America, Inc. Aydin Radar & EW Div. ComSonics, Inc. Di-Tech Inc. 35			
DIAGNOSTIC SYSTEMS, DIGITAL LOGIC			
Anton/Bauer, Inc. 115 Comwave Div. of Communication Microwave Corp. Lenco Inc. Electronics Div. 17 Pinzone Communications Products Inc. Tektronix Inc. 239, 240 Wandel & Goltermann, Inc.			
DIFFERENTIAL PHASE/GAIN MEASUREMENT SETS			
Anritsu America, Inc. Asaca/Shibasoku Corp. 57 Kintek Inc. 102 Link Electronics Ltd. PESA Electronica Potomac Instruments, Inc. Rohde & Schwarz Tektronix Inc. 239, 240 Telemet Div. A Geotel, Co. Thomson Video Equipment 137 Wandel & Goltermann, Inc.			
DUMMY LOADS, RF			
AEG Communications Div. Transmitter Department Altronic Research Inc. Audiolab Electronics, Inc. Bird Electronic Corp. 140 Coaxial Dynamics Electro Impulse Lab, Inc. Harris Corp. Broadcast Div. Kintronic Labs, Inc. Motorola Communications and Electronics Inc. The Narda Microwave Corp. North Hills Electronics, Inc. Vector Technology			
ENVELOPE DELAY MEASUREMENT EQUIPMENT			
Anritsu America, Inc. Asaca/Shibasoku Corp. 57 Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Tektronix Inc. 239, 240 Telemet Div. A Geotel, Co. Tennaplex Systems Ltd.			
FIELD STRENGTH			
R. B. Annis, Co. Anritsu America, Inc. BBC/Metrawatt B & K Precision Dynascan Corp. Bird Electronic Corp. 140 Blonder-Tongue Labs, Inc. Coaxial Dynamics ComSonics, Inc. General Microwave Corp. Holaday Industries Johnson Electronics Inc. The Narda Microwave Corp. Potomac Instruments, Inc. Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Texscan Instruments			
FLUTTER/WOW			
Asaca/Shibasoku Corp. 57 Audio Precision 30 B & K Precision Dynascan Corp. Bruel & Kjaer Instruments, Inc. EMT-Franz GmbH Elektroimpex Gotham Audio Corp. Leader Instruments Corp. 5 Potomac Instruments, Inc. Rohde & Schwarz-Polarad, Inc. Sound Technology 9 Technical Projects Wandel & Goltermann, Inc.			
GENERATORS, AF SIGNAL			
Amalgamated Wireless (Australia Ltd.) Amber Electro Design Inc. 36 Audio Precision 30 Bald Mountain Lab Boonton Electronics Corp. 265 Cetec Ivie Dynatech Nevada, Inc. Exact Electronics Div. HEDCO (Hughes Elec. Devices Corp.) Hewlett-Packard Co. 89 MEI Electronics/Microprobe Omicron Video 142 Peirce-Phelps, Inc. Plum Valley Engineering Potomac Instruments, Inc. Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Schmid Fernmeldetechnik Zuerich Sencore Inc. 139 Sescom, Inc. Sound Technology 9 Technical Projects Tonographie Apparatebau Videotek, Inc. 157 Wandel & Goltermann, Inc. White Instruments			
GENERATORS, CROSS PULSE			
Asaca/Shibasoku Corp. 57 Aydin Radar & EW Div. BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips) Robert Bosch GmbH Colorado Video Inc. Pulse Instruments The Real World Tech. Group, Inc. Video Aids of Colorado			
GENERATORS, RF SIGNAL			
Anritsu America, Inc. AVCOM of Virginia, Inc. Aydin Radar & EW Div. B & K Precision Dynascan Corp. Boonton Electronics Corp. 265 Delta Electronics Inc. 123 John Fluke Mfg. Co., Inc. Hewlett-Packard Co. 89 Leader Instruments Corp. 5 MCL, Inc. Marconi Instruments Potomac Instruments, Inc. RE Instruments Corp. Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Scientific-Atlanta Sencore Inc. 139 Solartron Instruments Spectra Sonics Texscan Instruments VIZ Test Equipment Div. of VIZ Mfg. Co.			
GENERATORS, VIDEO TEST PATTERN			
Acron Video Anritsu America, Inc. Asaca/Shibasoku Corp. 57 Aydin Radar & EW Div. B & K Precision Dynascan Corp. BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips) Robert Bosch GmbH Colorado Video Inc. Crow Broadcast Systems Ltd. Delta Electronics Inc. Electrocraft Consultants Ltd. Elektroimpex For-A Corp. of America 215 Lang Video Communication Inc. Leader Instruments Corp. 5 Lectrotech Inc. Leitch Video 105 Lenco Inc. Electronics Div. 17 Link Electronics Ltd. Magni Systems 43 Philips Test & Measuring Instruments Pye TVT Ltd. Broadcast Co. of Philips Rohde & Schwarz Sencore Inc. 139 Sierra Video Systems Sigma Electronics, Inc. Simpson Electric Thomson Video Equipment VG Electronics Ltd. Video Aids of Colorado Videotek, Inc. 157 Visual Information Institute World Video Inc.			
HEAD ALIGNMENT/TIP PROJECTION GAUGES			
Nagra Magnetic Recorders, Inc. Tentel			
LIGHT/PHOTOGRAPHIC			
LTM Corp. of America Lighting & Shadows A Div. of Phoebus Minolta Corp. Industrial Meter Div. 55 Photo Research Div. of Kollmorgen Corp. Tektronix Inc. 239, 240			
LINE SELECTORS, TV HORIZONTAL			
Broadcast Video Systems, Ltd. 54 Crow Broadcast Systems Ltd. Elektroimpex Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. Tektronix Inc. 239, 240			
LOAD RESISTORS			
Aydin Radar & EW Div. Bird Electronic Corp. 140 ITAME, S.A. Panasonic Industrial Co. Audio-Video System Products Group Sigma Electronics, Inc.			
MODULATION MONITORS, AM			
Belar Electronics Lab, Inc. 210 Boonton Electronics Corp. 265 Broadcast Electronics, Inc. Delta Electronics Inc. 123 Harris Corp. Broadcast Div. Hewlett-Packard Co. 89 ITAME, S.A. Kahn Communications, Inc. Marconi Instruments Motorola Inc. AM Stereo Rohde & Schwarz-Polarad, Inc. TFT Inc.			
MODULATION MONITORS, FM			
Belar Electronics Lab, Inc. 210 Boonton Electronics Corp. 265 Hewlett-Packard Co. 89 Marconi Instruments QEI Corp. 53,107 Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. C.N. Rood B.V. Broadcasting Div. TFT Inc.			
MODULATION MONITORS, TV			
Aydin Radar & EW Div. Barco Industries 151 Belar Electronics Lab, Inc. 210 Marcom Rohde & Schwarz Rohde & Schwarz-Polarad, Inc. TFT Inc. Universal Elecon Inc.			
OSCILLOSCOPE CAMERAS			
Karl Heitz, Inc. Philips Test & Measuring Instruments Rohde & Schwarz Tektronix Inc. 239, 240			
OSCILLOSCOPE X-Y/VECTOR DISPLAYS			
B&B Systems, Inc. B & K Precision Dynascan Corp. Electronic Visuals Ltd. Elektroimpex Gotham Audio Corp. Leader Instruments Corp. 5 Magni Systems 43 Rohde & Schwarz Simpson Electric Tektronix Inc. 239, 240			
OSCILLOSCOPES, TEST			
Aydin Radar & EW Div. BBC/Metrawatt B & K Precision Dynascan Corp. Beckman Industrial Corp. Black Star Ltd. Elektroimpex James Grunder & Associates Inc. Hewlett-Packard Co. 89 Hitachi Denshi America, Ltd. 3 Kikusui International Leader Instruments Corp. 5 Motorola Communications and Electronics Inc. North American Soar Corp.			

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Panasonic Industrial Co. Audio-Video System Products Group
Philips Test & Measuring Instruments
Ram Broadcast Systems
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
Sencore Inc. 139
Simpson Electric
A.W. Sperry Instruments
Tektronix Inc. 239, 240

PEAK PROGRAM, VU/RTW

ATI-Audio Technologies Inc. 100
B&B Systems, Inc.
B.F.E. KG
Benchmark Media Systems, Inc.
Canford Audio Ltd.
Dixon Instruments
Gaines Audio
Gotham Audio Corp.
Graham-Patten Systems, Inc.
NTP Elektronik A/S
Ram Broadcast Systems
Ramko Research Inc.
The Real World Tech. Group, Inc.
ROH Corp.
ROH Div. of Anchor Audio
Selco Products Co.
Technical Projects
Tonographie Apparatebau
Videotek, Inc. 157

PHASE

Anritsu America, Inc.
Audio Precision 30
B&B Systems, Inc.
BBC/Metrawatt
Bruel & Kjaer Instruments, Inc.
Electro Industries
Gorman-Redlich Mfg. Co.
Gotham Audio Corp.
Potomac Instruments, Inc.
Ram Broadcast Systems
Ramko Research Inc.
The Real World Tech. Group, Inc.
S.C.V. Audio
Sigma Electronics, Inc.
Sound Technology 9
Sounder Electronics Inc.
Technical Projects

POWER, AC

Anton/Bauer, Inc. 115
Aydin Radar & EW Div.
Dixon Instruments
Motorola Communications and Electronics Inc.
Nova Electric Mfg. Co., Inc.
SL Waber, Inc. Subsidiary of SL Industries
Sencore Inc. 139
Sorensen Co., Div. of Switchcraft A Raytheon Co.
Spectra Sonics
Technical Projects
VIZ Test Equipment Div. of VIZ Mfg. Co.

POWER, RF/WATT

Anritsu America, Inc.
Aydin Radar & EW Div.
Bird Electronic Corp. 140
Boonton Electronics Corp. 265
Coaxial Dynamics
DX Communications
Delta Electronics Inc. 123
Dixon Instruments
Electro Impulse Lab, Inc.
General Microwave Corp.
Hewlett-Packard Co. 89
Spectra Sonics
VIZ Test Equipment Div. of VIZ Mfg. Co.

POWER SUPPLIES, TEST BENCH

Anton/Bauer, Inc. 115
Aydin Radar & EW Div.
B & K Precision Dynascan Corp.

Gaines Audio
Global Specialties An Interplex Electronics Co.
Hewlett-Packard Co. 89
Hipotronics Inc.
Leader Instruments Corp. 5
M/A-Com Microwave Power Devices
North American Soar Corp.
Plastic Capacitors, Inc.
Rohde & Schwarz-Polarad, Inc.
Sencore Inc. 139
Sorensen Co., Div. of Switchcraft A Raytheon Co.
Spectra Sonics
Tektronix Inc. 239, 240
Tonographie Apparatebau
VIZ Test Equipment Div. of VIZ Mfg. Co.

PROBES, OSCILLOSCOPE/TEST

BBC/Metrawatt
B & K Precision Dynascan Corp.
Beckman Industrial Corp.
Black Star Ltd.
Elektroimpex
Global Specialties An Interplex Electronics Co.
Leader Instruments Corp. 5
North American Soar Corp.
Philips Test & Measuring Instruments
Sencore Inc. 139
Simpson Electric
Tektronix Inc. 239, 240

RECORDER TENSION CONTROLS/GAUGES

Nagra Magnetic Recorders, Inc.
Tentel
Wandel & Goltermann, Inc.

RF RADIATION

Anritsu America, Inc.
ComSonics, Inc.
General Microwave Corp.
The Narda Microwave Corp.
Rohde & Schwarz-Polarad, Inc.
Tektronix Inc. 239, 240
Texscan Instruments

SC/H PHASE AND DISPLAY/BURST PHASE

Acron Video
Anritsu America, Inc.
Digivision Broadcast Ltd.
Evertz Microsystems Ltd.
Grass Valley Group 10
Leitch Video 105
Lenco Inc. Electronics Div. 17
Magni Systems 43
PESA America Inc.
Sigma Electronics, Inc.
Tektronix Inc. 239, 240
World Video Inc.

SETUP AND MATCHING, VIDEO

Conrac Div. Conrac Corp.
Sony Broadcast Products Co. 12-13

SPINDLE HEIGHT GAUGES

Tentel

TERMINATION UNITS

Bird Electronic Corp. 140
HEDCO (Hughes Elec. Devices Corp.)
Rohde & Schwarz-Polarad, Inc.
Weinschel Engineering

TEST INSERTER/READER, VITS

Asaca/Shibasoku Corp. 57
Grumman Aerospace Corp. Broadcast Systems Group
Leitch Video 105
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
Thomson Video Equipment 137

TEST SYSTEMS, TAPE RECORDER

Amber Electro Design Inc. 36
Audio Precision 30
BBC/Metrawatt
Electronic Systems Labs, Inc.
Rohde & Schwarz-Polarad, Inc.
Solder Absorbing Technology
Sound Technology 9
Technical Projects
Wandel & Goltermann, Inc.

TESTERS, SEMICONDUCTOR

B & K Precision Dynascan Corp.
Beckman Industrial Corp.
Leader Instruments Corp. 5
Motorola Communications and Electronics Inc.
Sencore Inc. 139
Solder Absorbing Technology
Tektronix Inc. 239, 240

TIME DOMAIN REFLECTOMETERS (TDR)

Anritsu America, Inc.
Biddle Instruments
North American Soar Corp.
Riser-Bond Instruments
Siecor Corp.
Tektronix Inc. 239, 240

VIDEO LEVEL/NOISE

Anritsu America, Inc.
Asaca/Shibasoku Corp. 57
Digivision Broadcast Ltd.
Elektroimpex
Lenco Inc. Electronics Div. 17
Link Electronics Ltd.
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
Tektronix Inc. 239, 240
Thomson Video Equipment 137
Wandel & Goltermann, Inc.

VOLTMETER TEST SETS (All Types)

Anritsu America, Inc.
BBC/Metrawatt
B & K Precision Dynascan Corp.
Beckman Industrial Corp.
Black Star Ltd.
Boonton Electronics Corp. 265
Electro Industries
Hipotronics Inc.
Jennings A Div. of FL Industries Inc.
North American Soar Corp.
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
Sencore Inc. 139
Solartron Instruments
Technical Projects
Triplett Corp.
Vidaire Electronics Mfg. Corp.

WAVEFORM/VECTOR

Anritsu America, Inc.
BBC/Metrawatt
B & K Precision Dynascan Corp.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Broadcast Video Systems, Ltd. 54
Cox Electronics Ltd.
Electronic Visuals Ltd.
James Grunder & Associates Inc.
Hitachi Denshi America, Ltd. 3
Leader Instruments Corp. 5
Magni Systems 43
Philips Television Systems, Inc. 93-96
Philips Test & Measuring Instruments
Pye TVT Ltd. Broadcast Co. of Philips
Rohde & Schwarz
Rohde & Schwarz-Polarad, Inc.
System Video Ltd.
Tektronix Inc. 239, 240
Thomson Video Equipment 137
Videotek, Inc. 157

AUTOMATION COMPUTER PRODUCTS

AUTOMATIC TRANSMISSION SYSTEMS (ATS)

B.F.E. KG
CCI
Cat Systems Inc.
Delta Electronics Inc. 123
Gentner Engineering 48, 50
Gentner RF Products Div. of Gentner Engineering 84
Hallikainen & Friends, Inc.
Harris Corp. Broadcast Div.
National Teleconsultants
Potomac Instruments, Inc.
Soll, Inc.

AUTOMATION, BUSINESS SYSTEMS

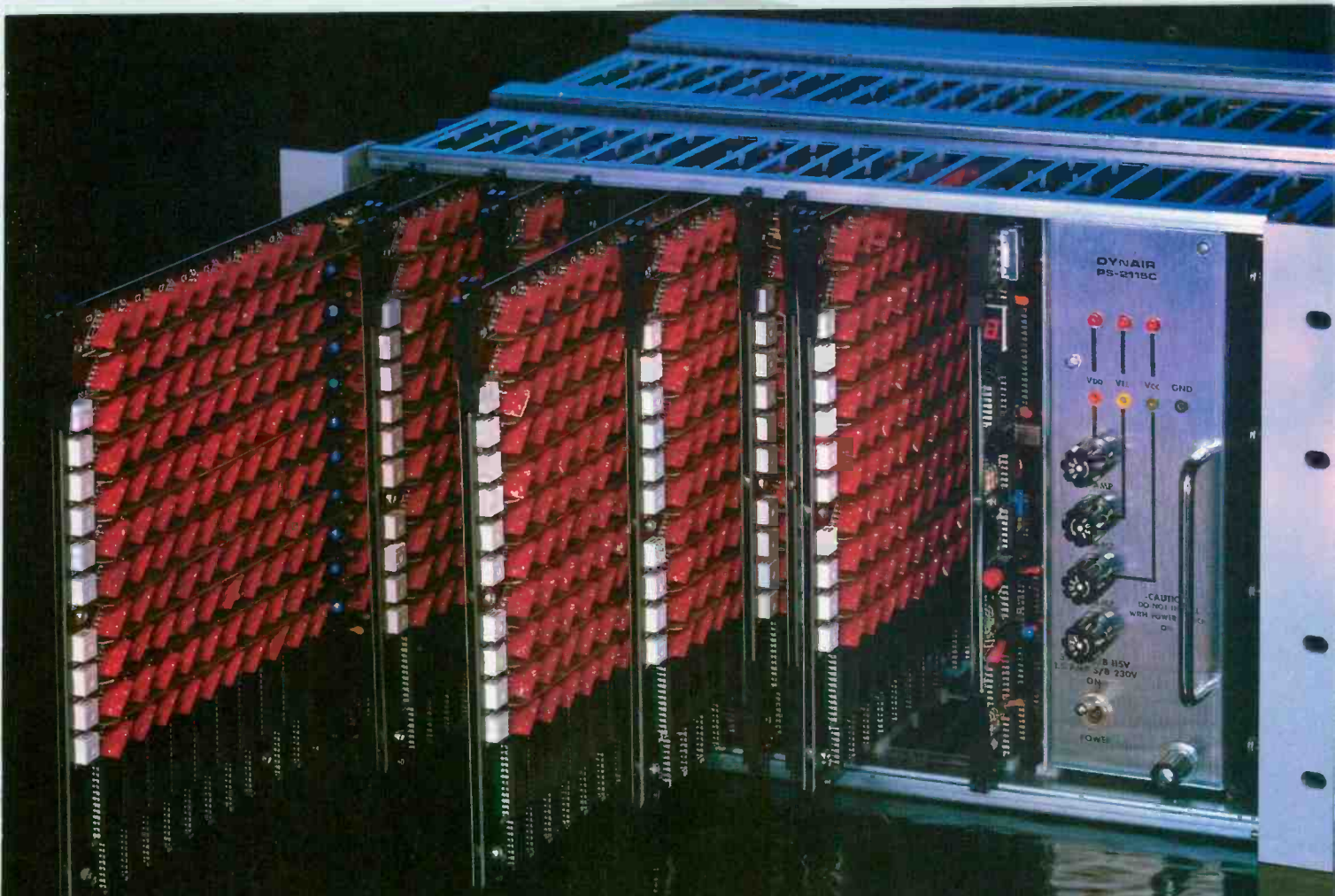
Adams-Russell Co. Video Info. Systems Div.
B.F.E. KG
CBSI-Custom Business Systems, Inc.
CCI
Columbine Systems, Inc.
Data Communications Corp. Broadcast Div.
Digalogic Communications Corp.
Groton Computer Inc.
Jefferson Pilot Data Systems
Jones Broadcasting System
Kaman Sciences Corp.
The Management
Normex/Telnox Ltd.
Register Data Systems
Schafer World Communications Corp.
Summit Software Systems Inc.
Sunspot

AUTOMATION, NEWSROOM SYSTEMS

ANT Telecommunications Inc.
Basys Inc.
Broadcast Developments Ltd. Autodescript
Columbine Systems, Inc.
Comprompter, Inc.
Computer Prompting Corp.
Data Communications Corp. Broadcast Div.
Dynatech NewStar, Inc.
Elicon
Jefferson Pilot Data Systems
Media Computing
Normex/Telnox Ltd.
Pegasus Systems Ltd.
Roscor Corp.
Total Spectrum Mfg. Inc. 117
Videomeia, Inc.

AUTOMATION, PROGRAM LOGGING

Adams-Russell Co. Video Info. Systems Div.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
Broadcast Electronics, Inc.
CCI
Columbine Systems, Inc.
Data Communications Corp. Broadcast Div.
Grass Valley Group 10
Groton Computer Inc.
IGM Communications
Kaman Sciences Corp.
MEI Electronics/Microprobe
The Management
National Teleconsultants
Odetics, Inc. 191
Pegasus Systems Ltd.
Schafer World Communications Corp.
Sono-Mag Corp.
Systemation Corp.



Only the beginning

A thing of beauty . . . this Dynair System 21.

Begin with this single, high density frame using as few as 10 inputs and 10 outputs. Select combinations of video, audio, time code, data, tally, or machine control switch modules.

Grow sensibly, easily and cost effectively to impressive matrices of one thousand inputs and one thousand outputs of every module type by simply adding frames and modules.

Grow into high definition TV, if this possibility is in your future, without changing a thing. Bandwidth of the System 21 is already 30 MHz.

Write or phone. We would like to send you additional information. Give us a chance to begin with you as you upgrade your plant.

DYNAIR

5275 Market Street, San Diego, CA 92114 U.S.A. Phone (619) 263-7711 TWX (910) 335-2040

Circle (44) on Reply Card

With low key lighting, differential lag can be a problem. Amperex Plumbicon tubes with built in bias light increase the speed of response of the layer, and lag is virtually eliminated.



Comet tailing and loss of detail in highlights are minimized by using the Amperex patented Diode Gun or anti-comet tail (ACT) tube. Both solve this problem by providing high beam current to stabilize highlights.



High audio levels can produce the annoying problem of microphonics. Amperex attacked this at its source, and all Amperex Plumbicon tubes have a unique mesh designed to prevent the build-up of mesh vibrations—not just to dampen them.



Six of TV's toughest shots and how

The problem of image retention. By reexamining layer physics and semiconductor properties Amperex developed a new extended red layer. Now you can include brilliant reds in your scene without concern for image retention.



Low output capacitance Amperex Plumbicon tubes help maintain high signal to noise performance. This helps prevent loss of detail and increased video noise in low light areas of high contrast scenes.



Because of special photoconductive layers for each color and an optimized electron optics design, the Amperex Plumbicon tubes provide the highest resolution for each image format. This resolution is measurably higher than earlier tubes.



Amperex Plumbicon® camera tubes handle them.

Ordinary pick up tubes can handle ordinary TV shots. But when you have to contend with low light levels and bright highlights... the glare of reds and the blare of trumpets... you need the extended performance of Amperex Plumbicon® TV Camera Tubes.

Amperex invented and refined the pick up tube technology that makes it possible to handle the 6 toughest shots in TV. Since the original Plumbicon cameras were introduced, your business has become more competitive, more demanding. Camera designs have become more complex. That's why we continued to invest in improving the performance of the Plumbicon tubes. That's why we offer today's range of extended performance Plumbicon tubes.

Today, virtually every TV camera system—domestic or imported—is designed to use the Plumbicon tube. And that makes the handling of the toughest shots in TV very easy. Simply specify Amperex Plumbicon TV camera tubes.

Made in Rhode Island, U.S.A. Delivered to you in twenty-four hours or less.

For more information call or write Imaging Products Group, Amperex Electronic Corporation, Slatersville, Rhode Island 02876. (401) 762-3800. A North American Philips Company. Outside the U.S.A. contact: Philips Electronic Components and Materials Division, 5600 MD Eindhoven, The Netherlands.

Amperex®

*Amperex Imaging Products
... we see things your way.*

Circle (45) on Reply Card

See Adv. Page

See Adv. Page

Utah Scientific, Inc. 145
 Videomedia, Inc.
 Vital Industries Inc.

AUTOMATION, TAPE DECK CONTROL

Adams-Russell Co. Video Info. Systems Div.
 Auburn Instruments
 Autogram Corp.
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
 Broadcast Electronics, Inc.
 Broadcast Programming
 Broadcast Systems Group Inc.
 CCI
 CaVox/Tape-Athon Corp.
 Century 21 Programming Inc.
 Channelmatic, Inc.
 Dynamic Technology Ltd.
 The Engineering Lab, Inc.
Grass Valley Group 10
 IGM Communications
 Image Video Ltd.
Kaitronics Corp. 175
 Lake Systems Corp.
 MEI Electronics/Microprobe
 The Management
 Matco Mfg. & Test Co., Inc. dba
 Matco Control Products
 Merlin Engineering Works
 Mid-America Automation Corp.
 Mycomp Technologies Corp. (MTC)
Odetics, Inc. 191
 Pegasus Systems Ltd.
 Richmond Sound Design, Ltd.
 Schafer World Communications Corp.
 SENTRY Systems
 Sono-Mag Corp.
 Systemation Corp.
 Tandberg of America, Inc.
 Tape-Athon Corp. Cavox Stereo
 Productions
 Tonographie Apparatebau
 Touch Technologies Inc.
 Videomagnetics, Inc.
 Weisel Technologies

AUTOMATION, TRANSMITTER LOGGING

Adams-Russell Co. Video Info. Systems Div.
Alamar Electronics USA, Inc. 116
BTS Broadcast Television Systems, Inc. (A Joint Co. of Bosch & Philips) 93-96
Robert Bosch Corp. Video Equipment Div. 93-96
 Broadcast Electronics, Inc.
 Cat Systems Inc.
 Comwave Div. of Communication
 Microwave Corp.
Gentner RF Products Div. of Gentner Engineering 84
 Hallikainen & Friends, Inc.
 Logica CES Ltd. Broadcast & Media
 Group
 Potomac Instruments, Inc.
 Soll, Inc.

AUTOMATION, VIDEO DISPLAY TERMINALS

Adams-Russell Co. Video Info. Systems Div.
 Broadcast Electronics, Inc.
 Jasmin Electronics PLC
 The Management
 Potomac Instruments, Inc.
 Schafer World Communications Corp.
 Sono-Mag Corp.
 Teledac Inc.

BAR CODE EQUIPMENT

Rohde & Schwarz

CLOCKS, DIGITAL/LOGIC

Amtel Systems Inc.

Audiolab Electronics, Inc.
 Autogram Corp.
 B.F.E. KG
 CCI
 Canford Audio Ltd.
 Channelmatic, Inc.
Cipher Digital, Inc. 45
 Cox Electronics Ltd.
ESE 99, 101, 103
 Evertz Microsystems Ltd.
 Lindburg Enterprises, Inc.
 Jules Racine & Co., Inc.
 Radio Systems Inc.
 Solder Absorbing Technology
 Tonographie Apparatebau
 Torpey Controls & Eng. Ltd.

COMMERCIAL INSERTION SYSTEMS

A. F. Associates, Inc. 80
 Adams-Russell Co. Video Info. Systems Div.
Alamar Electronics USA, Inc. 116
 Broadcast Systems, Inc.
 CCI
 Channelmatic, Inc.
 Grumman Aerospace Corp. Broadcast
 Systems Group
 Hubbard Communications, Inc.
 Image Video Ltd.
 MEI Electronics/Microprobe
 The Management
 Matco Mfg. & Test Co., Inc. dba
 Matco Control Products
 Merlin Engineering Works
 Monroe Electronics, Inc.
 National Teleconsultants
Odetics, Inc. 191
 Pegasus Systems Ltd.
H. A. Solutec Ltd. 140
 Symtec Inc.
 Telecommunication Products Corp.

COMPUTER HARDWARE/PERIPHERALS

Adams-Russell Co. Video Info. Systems Div.
Audio/Digital, Inc. 34
 AVA Electronics
 Aydin Controls
 B.F.E. KG
 Basys Inc.
 CCI
 Cat Systems Inc.
 Columbine Systems, Inc.
 Compu-Prompt
 Computer Concepts Corp.
 Data Communications Corp. Broadcast
 Div.
 Digalogic Communications Corp.
 Electrocraft Consultants Ltd.
 Elicon
 Eventide Inc.
 Integrated Technologies
Kaitronics Corp. 175
 Kayglo Electronics
 Lectrotech Inc.
 The Management
 Media Computing
 Neilson-Hordell Ltd.
 New England Digital Corp.
 Normex/Telnox Ltd.
 Panasonic Industrial Co. Audio-Video
 System Products Group
 Peirce-Phelps, Inc.
 Programming Plus
 Quality Video Supply
 Recortec, Inc.
 Richmond Sound Design, Ltd.
 Rohde & Schwarz
 SL Waber, Inc. Subsidiary of SL
 Industries
 Soll, Inc.
 Symtec Inc.
 Systemation Corp.
 Wavefront Technologies
 Weisel Technologies
 World Video Inc.

COMPUTER SOFTWARE

Adams-Russell Co. Video Info. Systems Div.
 Alias Research Inc.
Audio/Digital, Inc. 34
 B.F.E. KG
 Basys Inc.
 Breneman Labs
 CBSI-Custom Business Systems, Inc.
 CCI
 Cat Systems Inc.
 Columbine Systems, Inc.
 Comprehensive Video Supply Corp.
 Compu-Prompt
 Computer Concepts Corp.
 Computer Prompting Corp.
 Data Communications Corp. Broadcast
 Div.
 Digalogic Communications Corp.
 Dubner Computer Systems, Inc.
 EDX Engineering, Inc.
 Eventide Inc.
Fostex Corp. of America 39
 Generic Computer Systems
 Groton Computer Inc.
 IGM Communications
 Integrated Technologies
 Jefferson Pilot Data Systems
 Jones Broadcasting System
 Kaman Sciences Corp.
 Logica CES Ltd. Broadcast & Media
 Group
 Magnetic Media Div./3M
 The Management
 Media Computing
 Mycomp Technologies Corp. (MTC)
 Neilson-Hordell Ltd.
 New England Digital Corp.
Orcad Systems Corp. 100
 Peirce-Phelps, Inc.
 Programming Plus
 Register Data Systems
 Richmond Sound Design, Ltd.
 Rohde & Schwarz
 Rosco Labs Inc.
 Howard W. Sams & Co., Inc.
 Robert Slye Electronics
 Softpedal Inc. Microsoftware for TV
 Sales
 Soll, Inc.
 Sunspot
 Symtec Inc.
 Systemation Corp.
 Technical Projects
 Telecommunication Products Corp.
 Touch Technologies Inc.
 Video Design Pro
 Wavefront Technologies
 Weisel Technologies

CONTROLLERS, SEQUENTIAL

A. F. Associates, Inc. 80
Alamar Electronics USA, Inc. 116
 CCI
 Channelmatic, Inc.
 Choice Electronics, Inc.
 The Engineering Lab, Inc.
 HEDCO (Hughes Elec. Devices Corp.)
 Hubbard Communications, Inc.
 IGM Communications
 Image Video Ltd.
 Lindburg Enterprises, Inc.
 MEI Electronics/Microprobe
 Matco Mfg. & Test Co., Inc. dba
 Matco Control Products
 Pegasus Systems Ltd.
 Richmond Sound Design, Ltd.
H. A. Solutec Ltd. 140
 Touch Technologies Inc.

CONTROLLERS, TONE ACTIVATED EQUIPMENT

Adams-Russell Co. Video Info. Systems Div.
Alamar Electronics USA, Inc. 116
 Broadcast Programming
 CCI
 Cat Systems Inc.
 Channelmatic, Inc.
 The Engineering Lab, Inc.
Gentner Engineering 48, 50

HEDCO (Hughes Elec. Devices Corp.)
 Hubbard Communications, Inc.
 IGM Communications
 Image Video Ltd.
 MEI Electronics/Microprobe
 Monroe Electronics, Inc.
 Richmond Sound Design, Ltd.
 Soll, Inc.
 Telecommunication Products Corp.
 Touch Technologies Inc.

REMOTE CONTROL/TELEMETRY SYSTEMS

Advanced Micro-Dynamics, Inc.
 American Laser Systems, Inc.
 Auburn Instruments
 BTS Broadcast Television Systems,
 GmbH (A Joint Co. of Bosch &
 Philips)
 Robert Bosch GmbH
 Cat Systems Inc.
 Channelmatic, Inc.
 Communitratics Ltd.
 Elicon
 The Engineering Lab, Inc.
Fostex Corp. of America 39
Gentner Engineering 48, 50
Gentner RF Products Div. of Gentner Engineering 84
 Giese Electronic KG
 Grumman Aerospace Corp. Broadcast
 Systems Group
 Hallikainen & Friends, Inc.
 Harris Corp. Broadcast Div.
 HEDCO (Hughes Elec. Devices Corp.)
 Logica CES Ltd. Broadcast & Media
 Group
 MERET, Inc.
Moseley Associates, Inc. 231
 Potomac Instruments, Inc.
 Pye TVT Ltd. Broadcast Co. of Philips
 Rohde & Schwarz
 Soll, Inc.
 TFT Inc.
 Telemetrics Inc.
 The Zei-Mark Corp.

SYNCHRONIZERS, ATR/VTR

Adams-Smith
 Amtel Systems Inc.
 Audio Kinetics Ltd.
Cipher Digital, Inc. 45
 EECO Inc.
 Editron USA
 Electrocraft Consultants Ltd.
 Evertz Microsystems Ltd.
Fostex Corp. of America 39
 Fougerolle S.A.
 Giese Electronic KG
 Omni Q Inc.
 Peirce-Phelps, Inc.
 Pye TVT Ltd. Broadcast Co. of Philips
Studer Revox America 19
 TimeLine, Inc.

MISCELLANEOUS PRODUCTS

ACOUSTIC MATERIALS

Acoustic Systems 138
Alpha Audio 142
 Canford Audio Ltd.
 Discrete Technology Labs, Inc.
 Industrial Acoustics Co.
 RPG Difuser Systems
 SENTRY Systems
Sims Vibration Dynamics 98

ALARMS, FIRE/SMOKE/SUPPRESSION SYSTEM

Atlas Sound

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Fenwal Inc. Div. of Kidde, Inc.
**Gentner RF Products Div. of
 Gentner Engineering** 84
 Micro Controls, Inc.
 Potomac Instruments, Inc.
 Reliance Comm/Tec
 Sentry Systems
 Soundolier

**ATTENUATORS,
 FIXED/IMPEDANCE
 MATCHING**

Alice (Stancoil Ltd.)
Allen Avionics, Inc.125
 Atlas Sound
 Aydin Radar & EW Div.
 Canford Audio Ltd.
 DX Communications
 Jennings A Div. of FL Industries Inc.
 Larus Corp.
 Marshall Electronics
 Modular Audio Products Unit of
 Modular Devices, Inc.
 North Hills Electronics, Inc.
 Peirce-Phelps, Inc.
 RMS Electronics, Inc.
 Soundolier
 Trompeter Electronics, Inc.
 Weinschel Engineering

BLOWERS/FANS

Amco Engineering Co.
 Bud Industries, Inc.
Emcor Products Crenlo, Inc. 41
 Scientific-Atlanta Optima Div.
 Soundolier
 Stantron Unit of Zero Corp.

BOOKS, TEXT/REFERENCE

CommTek Publishing Satellite Orbit &
 Dealers
 Alan Gordon Enterprises Inc.
 R. K. Morrison Co.
 Pace, Inc.
 Howard W. Sams & Co., Inc.
 Skyline Inc.

**CABINETS,
 CARTRIDGE/RECORD**

Advance Products Co.
 B.F.E. KG
 Bretford/Knox
 Broadcast Cartridge Service
 Canford Audio Ltd.
 Dacobas, Inc. A Subsidiary of Zero
 Corp.
Fidellipac Corp. 75
 The Graphic Express Corp.
 Harrison Systems Ltd.
 Luxor Corp.
 Marathon Products Corp.
 Micro-Trak Corp.
 Neumade Products Corp.
 RCI (Recording Consultants Inc.)
 Ram Broadcast Systems
 Ruslang Corp.
 Stantron Unit of Zero Corp.
 Wallach & Associates Inc.
 Western Wireless Works

**CABINETS, CONSOLES/RACKS
 (Enclosures Only)**

AVS (Audio-Visuel Systems)
 Advance Products Co.
 Amco Engineering Co.
 Anvil Cases, Inc.
 Arben Design
 B.F.E. KG
 R. Barth KG
 Brabury Ltd.
 Bretford/Knox
 Broadcast Systems, Inc.
 Bud Industries, Inc.
 Calzone Case Co.
 Canford Audio Ltd.
Centro Corp. 127, 213
 Dacobas, Inc. A Subsidiary of Zero
 Corp.

Dago Cases
 Delcom Corp.
 Dukane Corp.
Emcor Products Crenlo, Inc. 41
 Equipto Electronics Corp.
 GKM Mfg. Corp.
 Gaines Audio
 The Graphic Express Corp.
 Harrison Systems Ltd.
 Laird Telemedia Inc.
 Luxor Corp.
 McCurdy Radio/Ram Broadcast
 Micro-Trak Corp.
 Neumade Products Corp.
**Pacific Recorders & Eng.
 Corp.**102
 Packaged Lighting Systems, Inc.
 Parsons Mfg. Corp.
 R.A.C. Corp.
 RCI (Recording Consultants Inc.)
 Ram Broadcast Systems
 Roscor Corp.
 Ruslang Corp.
 Schafer World Communications Corp.
 Scientific-Atlanta
 Scientific-Atlanta Optima Div.
 Soundolier
 Stantron Unit of Zero Corp.
 Storeel Corp.
 Video Components Inc.
 West Coast Audio, Inc.
 Western Wireless Works
 Winsted Corp.

**CABINETS, CUSTOM
 EQUIPMENT**

AVS (Audio-Visuel Systems)
 Amco Engineering Co.
 Anvil Cases, Inc.
 Arben Design
Arrakis Sytems Inc. 21
 B.F.E. KG
 Brabury Ltd.
 Broadcast Systems, Inc.
 Bud Industries, Inc.
 Calzone Case Co.
 Canford Audio Ltd.
 Center Video Industrial Co., Inc.
 Curtis & Green Ltd.
 Dacobas, Inc. A Subsidiary of Zero
 Corp.
 Dago Cases
 Delcom Corp.
 Drummex Inc.
Emcor Products Crenlo, Inc. 41
 Equipto Electronics Corp.
 Excalibur Industries
 GKM Mfg. Corp.
 The Graphic Express Corp.
 Harrison Systems Ltd.
 Keystone Metal Products, Inc.
 Lakeside Associates Inc.
 McCurdy Radio/Ram Broadcast
 Micro-Trak Corp.
 Modular Sound Systems Inc. dba-Bag
 End
 Neumade Products Corp.
**Pacific Recorders & Eng.
 Corp.**102
 Parsons Mfg. Corp.
 Peirce-Phelps, Inc.
 R.A.C. Corp.
 RCI (Recording Consultants Inc.)
 Ram Broadcast Systems
 The Real World Tech. Group, Inc.
 Roscor Corp.
 Ruslang Corp.
 Skyline Inc.
 Soundolier
 Stantron Unit of Zero Corp.
 Touch Technologies Inc.
 Video Components Inc.
 Western Wireless Works

CABLE, COAXIAL

AVS (Audio-Visuel Systems)
 Andrew Corp.
 Aydin Radar & EW Div.
 BIW Cable Systems, Inc.
 Belden Electronic Wire & Cable
 Bi-Tronics, Inc.
 Brintec Corp. Brand-Rex Cable
 Systems Div.

Broadcast Systems, Inc.
 Cable Systems Div. of Celwave
 Systems Inc.
 Canare Cable, Inc.
 Canford Audio Ltd.
 Celwave
 Chester Cable Div. Celwave Systems,
 Inc.
 Comprehensive Video Supply Corp.
 Elektroimpex
 GBC Closed Circuit TV Corp.
 M/A-Corn Cable Home Group
 Marshall Electronics
 Microdyne Corp.
 NEK Cables Ltd.
 NKT Elektronik
 Nagra Magnetic Recorders, Inc.
 Nema Electronics Int'l.
 Nurad, Inc.
 Pinzone Communications Products Inc.
 Pye TVT Ltd. Broadcast Co. of Philips
 Rohde & Schwarz
 Sigma Electronics, Inc.
 Times Fiber Communications
 Trimm Inc.
 Trompeter Electronics, Inc.
 Video Components Inc.
 Wireworks Corp.

CABLE LAYING EQUIPMENT

Aqua-Tronics, Inc.
 R. Barth KG
 Roll-A-Reel Co. Inc.

CABLE TOOLS

AMP Special Industries
 Andrew Corp.
 Bi-Tronics, Inc.
 Canford Audio Ltd.
 Comprehensive Video Supply Corp.
 Electrical Products Div./3M
 Pace, Inc.
 Paladin Corp.
 Trompeter Electronics, Inc.
 Veam/Litton Systems, Inc.
 Video Components Inc.
**Western Electronic Products
 Co.**210
 Wireworks Corp.

CAPACITORS, HIGH VOLTAGE

Aydin Radar & EW Div.
 Jennings A Div. of FL Industries Inc.
 Panasonic Industrial Co. Audio-Video
 System Products Group
 Plastic Capacitors, Inc.
Surcom Associates, Inc.267

CARTS, EQUIPMENT

Advance Products Co.
 Anvil Cases, Inc.
 Audio Service Corp.
 Bretford/Knox
 Excalibur Industries
 Ferno Salesmaker Div. of
 Ferno-Washington, Inc.
 K&H Products-Porta-Brace
 Keystone Metal Products, Inc.
Leader Instruments Corp. 5
 Luxor Corp.
 Nalpak Video Sales Inc.
 Parsons Mfg. Corp.
 Storeel Corp.
 Ultimate Support Systems
 Video Components Inc.
 Wheelit, Inc.
 Whitehouse Audio Visual

CASES, EQUIPMENT

Alabama Case
 Anvil Cases, Inc.
 B.F.E. KG
 William Bal Corp.
 Bogen Photo Corp.
 Bud Industries, Inc.
 Calzone Case Co.
 Canford Audio Ltd.
 Center Video Industrial Co., Inc.
 Century Precision Optics

ComSonics, Inc.
 Dacobas, Inc. A Subsidiary of Zero
 Corp.
 Dago Cases
Emcor Products Crenlo, Inc. 41
 Excalibur Industries
 Fiberbilt Cases
 Hardigg Industries Inc.
 K&H Products-Porta-Brace
 Kangaroo Video Products
 Keystone Metal Products, Inc.
 Modulight Systems Inc.
 Nalpak Video Sales Inc.
 Nurad, Inc.
 Parsons Mfg. Corp.
 Peirce-Phelps, Inc.
 RCI (Recording Consultants Inc.)
 Schuessler Case Co., Inc.
 Star Case
 Telepak San Diego
 Thermodyne Int'l
 Video Components Inc.
 Viking Cases

CASES, FILM/TAPE

Anvil Cases, Inc.
 Dago Cases
 Alan Gordon Enterprises Inc.
 J&R Film
 Kangaroo Video Products
 Neumade Products Corp.
 Parsons Mfg. Corp.
 Plastic Reel Corp. of America
 Reliance Plastics & Packaging Div.
 Schuessler Case Co., Inc.
 Star Case

CIRCUIT BREAKERS/FUSES

Federal Pacific/Reliance Electric
 Keystone Metal Products, Inc.

CLOCKS, MASTER TIME

AVS (Audio-Visuel Systems)
 Amtel Systems Inc.
 B.F.E. KG
 Beaveronics, Inc.
 Canford Audio Ltd.
Cipher Digital, Inc. 45
 Dukane Corp.
ESE 99, 101,
 103
 Evertz Microsystems Ltd.
 Kinematics/Truetime
Leitch Video105
 Lindburg Enterprises, Inc.
 Rohde & Schwarz
 Torpey Controls & Eng. Ltd.
 Tracor Instruments Austin Inc.
 Industrial Instruments Div.

CLOCKS, TIMER/COUNTER

Amtel Systems Inc.
 Audiolab Electronics, Inc.
Auditronics, Inc.205
 B.F.E. KG
 Broadcast Aids, Inc.
Cipher Digital, Inc. 45
 Dukane Corp.
ESE 99, 101,
 103
 Evertz Microsystems Ltd.
 Lindburg Enterprises, Inc.
**Logitek Electronic Systems,
 Inc.** 31
 Marconi Instruments
**Pacific Recorders & Eng.
 Corp.**102
 Jules Racine & Co., Inc.
 Ram Broadcast Systems
 Seiko/KMD Sound Electronics
 Solder Absorbing Technology
 Torpey Controls & Eng. Ltd.
 Wide Range Electronics Corp.

CONNECTORS (All Types)

ADC Telecommunications, Inc.
 AMP Special Industries
 Abbott & Co.
 Alpha Products, Inc.

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Andrew Corp.
Augat/LRC-Vitek
AVA Electronics
AVCOM of Virginia, Inc.
BIW Cable Systems, Inc.
Bardwell & McAlister, Inc.
Bi-Tronics, Inc.
Cable Systems Div. of Celwave Systems Inc.
Cambridge Products Corp.
Canford Audio Ltd.
Comprehensive Video Supply Corp.
Jerry Conn Associates Inc.
Electrical Products Div./3M
ITT Cannon
Kings Electronics
Kulka-Smith, Inc.
LEMO USA Inc.
Microdyne Corp.
Nemal Electronics Int'l.
RMS Electronics, Inc.
Trimm Inc.
Trompeter Electronics, Inc.
Union Connector Co., Inc.
Veam/Litton Systems, Inc.
Vidaire Electronics Mfg. Corp.
Video Components Inc.
Weinschel Engineering
Wireworks Corp.

CONTACT CLEANING PRODUCTS

Caig Labs, Inc.

CRYSTALS, QUARTZ

Marti Electronics
Motorola Communications and Electronics Inc.
Perrott Eng. Labs, Inc.
PESA Electronica
Tracor Instruments Austin Inc.
Industrial Instruments Div.
Western Wireless Works

CUSTOM CONTROL SYSTEMS/PANELS

Alice (Stancoil Ltd.)
Audio Service Corp.
Breneman Labs
Channematic, Inc.
Communitronics Ltd.
Curtis & Green Ltd.
Dacobas, Inc. A Subsidiary of Zero Corp.
Delcom Corp.
Gentner RF Products Div. of Gentner Engineering 84
Harrison Systems Ltd.
Lumitrol, Ltd.
Mycomp Technologies Corp. (MTC)
Peirce-Phelps, Inc.
ROH Div. of Anchor Audio
Robert Slye Electronics
Union Connector Co., Inc.
Vicon Industries Inc.

DEGAUSSERS, BULK TAPE

R. B. Annis, Co.
Audiolab Electronics, Inc.
Canford Audio Ltd.
Christie Electric Corp.
Fidelipac Corp. 75
Garner Industries
The Geneva Group of Companies
International Tapetronics Corp./3M 23
Magnefax International Inc.
Microtran Co. Inc.
Sonar Radio Corp.
Taber Mfg. & Eng. Co.
West Coast Audio, Inc.
Wide Range Electronics Corp.

DEGAUSSERS, HEAD

R. B. Annis, Co.
Canford Audio Ltd.
The Geneva Group of Companies
Marathon Products Corp.
Microtran Co. Inc.

Nakamichi USA Corp. 111
West Coast Audio, Inc.
Wide Range Electronics Corp.

FIBER-OPTIC PRODUCTS

ADC Telecommunications, Inc.
AMP Special Industries
Andrew Corp.
Anritsu America, Inc.
Artel Communications Corp.
BIW Cable Systems, Inc.
BTS Broadcast Television Systems, GmbH (A Joint Co. of Bosch & Philips)
Barkway Electronics Ltd.
Biddle Instruments
Robert Bosch GmbH
Catel Telecommunications, Inc.
Comprehensive Video Supply Corp.
Grass Valley Group 10
ITT Electro-Optical Products
Intelco Corp.
Larus Corp.
Lightwave Communications, Inc.
Math Associates Inc.
Fiberlink/Fibervision Products Group
MERET, Inc.
Nemal Electronics Int'l.
North American Soar Corp.
Paladin Corp.
Pye TVT Ltd. Broadcast Co. of Philips
Quante Corp.
Rockwell Int'l. Collins Transmission Sys. Div.
Siecor Corp.
Standard Telephone und Radio AG
Telemet Div. A Geotel, Co.
Times Fiber Communications
Veam/Litton Systems, Inc.
Vicon Industries Inc.
The Zei-Mark Corp.

FILTERS, VARIABLE/FIXED

Bird Electronic Corp. 140
Birns & Sawyer Inc.
ESC Electronics Corp.
ESS/Spectratek
Lee Filters Ltd.
Mu-Del Electronics, Inc.
North Hills Electronics, Inc.
Potomac Instruments, Inc.
Technical Projects

GENERATORS, POWER CONVERTER/INVERTER

AVS (Audio-Visual Systems)
Dynamote Corp.
Norac Broadcast Power Systems
Vanner, Inc.

GENERATORS, POWER (Engine, Motor, Solar, Thermoelectric, Wind)

Dynamote Corp.
Lighting & Shadows A Div. of Phoebus
Norac Broadcast Power Systems
North Wind Power Co., Inc.
Reliance Electric Co.
Teledyne Energy Systems

HEAD CLEANING PRODUCTS

Allsop, Inc.
Birns & Sawyer Inc.
Comprehensive Video Supply Corp.
The Geneva Group of Companies
Marathon Products Corp.
RMS Electronics, Inc.

KNOBS, EQUIPMENT/CONTROL

Kulka-Smith, Inc.
Selco Products Co.

LABELS, GUMMED

Audico, Inc.
Canford Audio Ltd.

LIGHTS, STUDIO WARNING

B.F.E. KG
Canford Audio Ltd.
Fidelipac Corp. 75
Lamp Technology Inc.
Mole-Richardson Co.
Titus Technological Labs

LINE SURGE PROTECTORS

Bud Industries, Inc.
ComSonics, Inc.
Control Concepts Corp.
EEV 141
Eagle Hill Electronics, Inc.
Electro Controls
Furman Sound, Inc.
The Geneva Group of Companies
Lamp Technology Inc.
LEA Dynatech, Inc. 247
Lightning Eliminators & Consultants 126
Lucas Stability Electronics Semiconductor Div.
MCG Electronics, Inc. 61
Marshall Electronics
Nemal Electronics Int'l.
North Hills Electronics, Inc.
Perma Power Electronics, Inc.
Power Integrity Corp.
Reliance Comm/Tec
TTC Companies
Topaz Electronics
Townsend Associates, Inc.
Transtector Systems Inc.

MOUNTING HARDWARE, EQUIPMENT

Andrew Corp.
Bretford/Knox
Walter S. Brewer Co., Inc.
Kulka-Smith, Inc.
Omnimount Systems
Peerless Sales Co.
ROHN
Sims Vibration Dynamics 98
Skyline Inc.
Total Spectrum Mfg. Inc. 117
Trimm Inc.
Ultimate Support Systems
Vicon Industries Inc.
Video Masters, Inc.
W. Vinten Ltd. Broadcast Systems Div.

PARTS/COMPONENTS, ELECTRONIC

Anton/Bauer, Inc. 115
Bud Industries, Inc.
DX Communications
Datel A Div. of General Electric Co.
EEV 141
Eagle Hill Electronics, Inc.
International Microwave Corp.
Jennings A Div. of FL Industries Inc.
Kulka-Smith, Inc.
Lamp Technology Inc.
Marshall Electronics
Motorola Communications and Electronics Inc.
Panasonic Industrial Co. Audio-Video System Products Group
RCA Distributor & Special Products Div.
Siecor Corp.
Trimm Inc.
Vidaire Electronics Mfg. Corp.

PATCH PANELS, JACKS/PLUGS A/V

ADC Telecommunications, Inc.
A. F. Associates, Inc. 80
AMP Special Industries
AVS (Audio-Visual Systems)
Alpha Products, Inc.
Audio Accessories, Inc. 106
Auditronics, Inc. 205
Avitel Electronics Ltd.
B.F.E. KG
Bi-Tronics, Inc.
Brabury Ltd.

Broadcast Systems, Inc.
Canare Cable, Inc.
Canford Audio Ltd.
Comprehensive Video Supply Corp.
Philip Drake Electronics Ltd.
Dynatech Data Systems
Furman Sound, Inc.
Gaines Audio
Gentner Engineering 48, 50
Ghielmetti Inc. Switches & Data Devices
Harrison Systems Ltd.
ITI Electronics, Inc.
Image Video Ltd.
Kulka-Smith, Inc.
Link Electronics Ltd.
Marshall Electronics
Patch Bay Designation
Peirce-Phelps, Inc.
Potomac Instruments, Inc.
Pye TVT Ltd. Broadcast Co. of Philips
RCI (Recording Consultants Inc.)
Ram Broadcast Systems
ROH Div. of Anchor Audio
Sescom, Inc.
Shively Laboratories Div. of Howell Labs, Inc. 42
Siecor Corp.
Symetrix Inc. 124
Telfax Communications
Trimm Inc.
Trompeter Electronics, Inc.
Union Connector Co., Inc.
Vidaire Electronics Mfg. Corp.
Ward-Beck Systems Ltd. BC
West Coast Audio, Inc.

PHASE CONVERTERS, 1-TO-3 PHASE

International Microwave Corp.
Kay Industries, Inc.

POWER SUPPLIES, AC

AVS (Audio-Visual Systems)
Abbott & Co.
Anton/Bauer, Inc. 115
Audio Service Corp.
8.F.E. KG
R. Barth KG
Blonder-Tongue Labs, Inc.
Datel A Div. of General Electric Co.
Furman Sound, Inc.
International Microwave Corp.
Kikusui International
Leader Instruments Corp. 5
Lighting & Shadows A Div. of Phoebus
M/A-Com Microwave Power Devices
Modular Audio Products Unit of Modular Devices, Inc.
Motorola Communications and Electronics Inc.
Nagra Magnetic Recorders, Inc.
Nova Electric Mfg. Co., Inc.
Panasonic Industrial Co. Audio-Video System Products Group
Perrott Eng. Labs, Inc.
Plastic Capacitors, Inc.
RMS Electronics, Inc.
Reliance Comm/Tec
Soia/General Signal
Sorensen Co., Div. of Switchcraft A Raytheon Co.
Soundlier
Spectrum Communications Corp. 108
The Superior Electric Co.
Toko America Inc.
VIZ Test Equipment Div. of VIZ Mfg. Co.
West Coast Audio, Inc.

POWER SUPPLIES, UNINTERRUPTIBLE

R. Barth KG
Marti Electronics
Modular Audio Products Unit of Modular Devices, Inc.
North Hills Electronics, Inc.
Nova Electric Mfg. Co., Inc.
Perma Power Electronics, Inc.
Portable Power Specialists

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

The Superior Electric Co.

RECORD CARE PRODUCTS

Allsop, Inc.
Canford Audio Ltd.
Stanton Magnetics Inc.122
Static Control Systems/3M
Wide Range Electronics Corp.

RECORDER REPLACEMENT MOTORS

Merlin Engineering Works
West Coast Audio, Inc.

REELS, CABLE

Andrew Corp.
B.F.E. KG
Bi-Tronics, Inc.
Brabury Ltd.
Canare Cable, Inc.
Canford Audio Ltd.
Connectronics Corp.
Hannay Reels 47
Nalpak Video Sales Inc.
RCI (Recording Consultants Inc.)
Wireworks Corp.

REELS, TAPE

Canford Audio Ltd.
Fostex Corp. of America 39
J&R Film
Magnasync/Moviola Corp.
National Video Service136
Plastic Reel Corp. of America
Polyline Corp.
West Coast Audio, Inc.

REGULATORS, VOLTAGE

Biddle Instruments
Control Concepts Corp.
Hipotronics Inc.
LEA Dynatech, Inc.247
Lightning Eliminators &
Consultants126
Lucas Stability Electronics
Semiconductor Div.
Perma Power Electronics, Inc.
Reliance Electric Co.
Topaz Electronics
Townsend Associates, Inc.

RFI/EMI SHIELDING

Atlantic Research Corp.
Bud Industries, Inc.
Curtis & Green Ltd.
Electrical Products Div./3M
Emcor Products Crenlo, Inc. 41
Equipto Electronics Corp.
Microwave Filter Co., Inc.
Scientific-Atlanta Optima Div.

SEMICONDUCTORS

Amperex Electronic Corp.
Slatersville Div. 66-67
Datel A Div. of General Electric Co.
Lucas Stability Electronics
Semiconductor Div.
Powerex Inc. (Joint Venture of GE,
Mitsubishi & Westinghouse)
RCA Distributor & Special Products
Div.
TRW LSI Products Div.
TRW RF Devices Div.
Toko America Inc.

STATIC SUPPRESSORS/ ENVIRONMENTAL CONTROL PRODUCTS

Cumming Corp. Canyon Place
The Geneva Group of Companies
Nu-Concept Systems, Inc.
Reliance Electric Co.
Static Control Systems/3M

STORAGE RACKS, RETRIEVE SYSTEMS REEL/CONTAINER

Anvil Cases, Inc.
Bretford/Knox
Broadcast Electronics, Inc.
Canford Audio Ltd.
Drummex Inc.
Hardigg Industries Inc.
J&R Film
Luxor Corp.
Micro-Trak Corp.
Neumade Products Corp.
Plastic Reel Corp. of America
Stantron Unit of Zero Corp.
Storeel Corp.
Wallach & Associates Inc.
Winsted Corp.

STUDIO SCENERY/DRAPERIES

American Studio Equipment
Arben Design
Automatic Devices Co.
Walter S. Brewer Co., Inc.
Cruz Bay
Grosh Scenic Studios
Lumitrol, Ltd.
Olesen
Theatre Service & Supply Corp.

TAPE LOADERS, CARTRIDGE/CASSETTE

Audico, Inc.
Auditronics, Inc.205
Broadcast Electronics, Inc.
KEM Elektronik Mechanik GmbH
King Instrument Corp.
Marathon Products Corp.
National Video Service136
Re-Play Video Cartridge Service
Recortec, Inc.
Television Systems & Services

TAPE RECORDING ACCESSORIES

R. B. Annis, Co.
Audico, Inc.
Audiolab Electronics, Inc.
Black Audio Devices
Broadcast Cartridge Service
Fidelipac Corp. 75
Fostex Corp. of America 39
Garner Industries
The Geneva Group of Companies
International Music Co.
International Tapetronics
Corp./3M 23
King Instrument Corp.
Magnetic Media Div./3M
R. K. Morrison Co.
Nagra Magnetic Recorders, Inc.
Plastic Reel Corp. of America
RMS Electronics, Inc.
Stellavox
Tentel

TOOL KITS/HAND TOOLS

AVA Electronics
Bi-Tronics, Inc.
Black Audio Devices
Comprehensive Video Supply Corp.
Contact East
Electrical Products Div./3M
Jensen Tools Inc.
Nu-Concept Systems, Inc.
Pace, Inc.
Paladin Corp.
Rohde & Schwarz
Western Electronic Products
Co.210

VANS, ENG/EFP/SNG

A. F. Associates, Inc. 80
Alpha Video & Electronics Co.
BAF Communications Corp.
B.F.E. KG
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96

Brabury Ltd.
Centro Corp. 127, 213
Crow Broadcast Systems Ltd.
E-N-G Corp.
Gray Communications Consultants,
Inc.
Harrison Systems Ltd.
Hubbard Communications, Inc.
Lerro Electrical Corp. 25, 237
Link Electronics Ltd.
Midwest Communications Corp. .. 1
Peirce-Phelps, Inc.
PESA America Inc.
Philips Television Systems, Inc. 93-96
Pye TVT Ltd. Broadcast Co. of Philips
The Real World Tech. Group, Inc.
Roscor Corp.
Shook Electronic Enterprises, Inc.
Thomson Video Equipment137
Wolf Coach Inc.

DICSA-Delay TV Ingenieurs-Conseils
SA
Devlin Productions, Inc.
Image Transform, Inc.
Jamieson & Associates, Inc.
Johnson-Nyquist Production Inc.
Lang Video Communication Inc.
Laser Edit, Inc.
Macrotel, Inc.
Media Concepts, Inc.
Multi-Video Productions, Inc.
One Pass Film & Video
Roscor Corp.
Skyline Inc.

EMPLOYMENT SERVICES

James Lloyd Group

ENGINEERING CONSULTING, DESIGN/PLANS

A. F. Associates, Inc. 80
AVS (Audio-Visual Systems)
John Aalto, P.E. Consulting Engineer
John P. Allen Airspace Consultant
Allied Tower Co., Inc.
Alpha Video & Electronics Co.
Eric Neil Angevine, P.E.
Antek Analysis Technologies, Inc.
Applied Digital Technology, Inc.
Atlantic Research Corp.
BAF Communications Corp.
B.F.E. KG
BTS Broadcast Television
Systems, Inc. (A Joint Co. of
Bosch & Philips) 93-96
R. Barth KG
John H. Battison, P.E.
Blair Benson Engineering Consultant
Bi-Tronics, Inc.
Brabury Ltd.
Breneman Labs
Walter S. Brewer Co., Inc.
Broadcast Systems Group Inc.
Broadcast Systems Installations
Richard W. Burden Associates
The Camera Mart, Inc.128
Cat Systems Inc.
Centro Corp. 127, 213
Jules Cohen & Associates
Communtronics Ltd.
Comsearch, Inc.
ComSonic, Inc.
Cornwall Associates Inc.
Crow Broadcast Systems Ltd.
DICSA-Delay TV Ingenieurs-Conseils
SA
Dataworld
John J. Davis & Associates Consulting
Engineers
Delcom Corp.
Dielectric Communications A Unit of
General Signal
Philip Drake Electronics Ltd.
DYMA Engineering, Inc.
EDX Engineering, Inc.
Elektroimpex
Enterprise Engineering P.C.
Ethereum Scientific Corp.
Evans Associates Consulting Telecom,
Engineers
R.J. Grandmaison, P.E.
Gray Communications Consultants,
Inc.
HN Engineering Inc.
Floyd Hall, E.E. Consulting Radio
Engineers
Hammett & Edison
Harris Corp. Broadcast Div.
Harrison Systems Ltd.
R. L. Hoover Consulting
Telecommunications Eng.
Hoppmann Corp.
J. Boyd Ingram & Associates
International Microwave Corp.
Jamieson & Associates, Inc.
Jenel Systems & Design Corp.
Knudson-Benson Associates Inc.
Lakeside Associates Inc.
Lang Video Communication Inc.
Lerro Electrical Corp. 25, 237
Lightning Eliminators &
Consultants 126

SERVICES

ANTENNA/TOWER INSTALLATION/ MAINTENANCE

Abroyd Communications Ltd.
Allied Tower Co., Inc.
Andrew Corp.
Antenna Technology Corp.
Aries Antennas, Inc.
Cable Systems Div. of Celwave
Systems Inc.
DICSA-Delay TV Ingenieurs-Conseils
SA
Dielectric Communications A Unit of
General Signal
DYMA Engineering, Inc.
EMCEE Broadcast Products
Elektroimpex
Flash Technology
Gabriel Electronics, Inc.
Floyd Hall, E.E. Consulting Radio
Engineers
Harris Corp. Broadcast Div.
Horizon Towerz, Inc.
Jamieson & Associates, Inc.
Fred A. Nudd Corp.
ROHN
SWR, Inc.
Shively Laboratories Div. of
Howell Labs, Inc. 42
Steiger, Hurray & Associates Inc.
Broadcast Tech. Consultants
Transmission Structures, Ltd.
Utility Tower Co.
Western Wireless Works

CALIBRATION, INSTRUMENT

Antenna Technology Corp.
Audiolab Electronics, Inc.
ComSonic, Inc.
Delta Electronics Inc.123
Newman-Kees Measurements
Engineering & Installations
Photo Research Div. of Kollmorgen
Corp.
Potomac Instruments, Inc.
Radio Engineering Co. Consultants
Radiotechniques Consulting Engineers
Tracor Instruments Austin Inc.
Industrial Instruments Div.
Western Wireless Works

EDITING/TELEPRODUCTION FACILITIES

Admark Inc.
All Mobile Video, Inc.
Allied Film & Video/IL
Allied + WBS Film & Video Services
Alpha Video & Electronics Co.
The Camera Mart, Inc.128
Center Video Industrial Co., Inc.
Centro Corp. 127, 213
Creative Video Services
John Crowe Productions

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Lumitrol, Ltd.
 MBI Broadcast Systems
 D. L. Markley & Associates, Inc.
 Consulting Engineers
 Matco Mfg. & Test Co., Inc. dba
 Matco Control Products
 Kenneth R. Meades
 Micro Communications, Inc.
 Microwave Filter Co., Inc.
 Modular Sound Systems Inc. dba-Bag
 End
 Mycomp Technologies Corp. (MTC)
 National Teleconsultants
 L E Nelson Sales Corp.
 Newman-Kees Measurements
 Engineering & Installations
 Old Dominion Broadcast Eng. Service
 Peirce-Phelps, Inc.
Philips Television Systems, Inc. 93-96
 Precision Camera Inc.
 R.A.C. Corp.
 RCI (Recording Consultants Inc.)
 Radio Engineering Co. Consultants
 Radiotechniques Consulting Engineers
 Raines Engineering
 Ram Broadcast Systems
 Readdy, Begley & Martin
 Rees Associates, Inc.
 Reliance Electric Co.
 A.D. Ring & Associates
 Rohde & Schwarz
 Roscor Corp.
 Rosner TV Systems, Inc.
 SWR, Inc.
 Edward A. Schober, P.E. Radio
 Consulting Engineer
 Sellmeyer & Kramer, Inc.
 Jack Shearer & Associates, Inc.
 Siecor Corp.
 Skyline Inc.
 Smith & Powstenko

Soll, Inc.
 Spectrum Planning, Inc.
 Standard Frequency Measuring
 Service
 Steiger, Hurray & Associates Inc.
 Broadcast Tech. Consultants
 Systems Wireless Ltd.
 TTC Companies
 Transmission Structures, Ltd.
 Transtector Systems Inc.
 Tri-Tronics Professional Elec., Inc.
 Video Design Pro
 Videomedia, Inc.
 Vir James Consulting Engineers
 West Coast Audio, Inc.
 Western Union Video Services
 Western Wireless Works
 The Wilke Organization
 Wireworks Corp.
 Wold Communications
 Z-Comm Zaiser Communications

EQUIPMENT LEASING/RENTALS

Accu-Weather, Inc.
 All Mobile Video, Inc.
 American Laser Systems, Inc.
Asaca/Shibasoku Corp. 57
 Audio Service Corp.
 Audio Visual Div./3M
 Audiolab Electronics, Inc.
 BBC/Metrawatt
 Broadcast Systems, Inc.
 Broadcasting & Related Products
 Div./3M
The Camera Mart, Inc. 128
 Center Video Industrial Co., Inc.
 Comprompter, Inc.
 ComSonics, Inc.
 Control Technology, Inc.
 Court Acoustics Sales Ltd.

Creative Video Services
 DICSА-Delay TV Ingenieurs-Conseils
 SA
 Eidophor Ltd.
 Ethereum Scientific Corp.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Div.
 Harrison Systems Ltd.
 Interactive Motion Control
 Lang Video Communication Inc.
 Leasametric, Inc.
 Lighting & Shadows A Div. of
 Phoebus
 Link Electronics Ltd.
 Matthews Studio Equipment, Inc.
 Microwave Filter Co., Inc.
Midwest Communications Corp. 1
 Multi-Video Productions, Inc.
 NETCOM
 RCI (Recording Consultants Inc.)
 RF Technology, Inc.
 Ram Broadcast Systems
 ROH Corp.
 Roscor Corp.
 Schneider Corp. of America
 Skyline Inc.
 Solid Electronics Labs
 Starlight Communications, Inc.
 Systems Wireless Ltd.
 Teledac Inc.
 Transtector Systems Inc.
 Tyler Camera Systems
 VideoTeleCom
 W. Vinten Ltd. Broadcast Systems Div.
 West Coast Audio, Inc.
 Western Wireless Works
 Zellan Optics Ltd.

EQUIPMENT SALES, USED/RECONDITIONED

Accu-Weather, Inc.

Audio Service Corp.
 Audiolab Electronics, Inc.
The Camera Mart, Inc. 128
 Center Video Industrial Co., Inc.
 ComSonics, Inc.
 Control Technology, Inc.
 DICSА-Delay TV Ingenieurs-Conseils
 SA
 Delcom Corp.
 Ethereum Scientific Corp.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Div.
 J. Boyd Ingram & Associates
 Lang Video Communication Inc.
Lerro Electrical Corp. 25, 237
 Lighting & Shadows A Div. of
 Phoebus
 Maze Broadcast
 Old Dominion Broadcast Eng. Service
 Pioneer Technology Corp.
 RCI (Recording Consultants Inc.)
 Roscor Corp.
 Schneider Corp. of America
 Skyline Inc.
 Townsend Associates, Inc.
 West Coast Audio, Inc.
 Western Wireless Works
 Whitehouse Audio Visual

FILM CLEANING/INSPECTION/PROCESSING

Allied Film & Video/IL
 Allied + WBS Film & Video Services
 Diner + Allied Film & Video Services
 Image Transform, Inc.
 T & G Optics

FILM-TO-TAPE TRANSFERS

All Mobile Video, Inc.

Manufacturers' Addresses begin on page 77



COMREX EXTENDER—\$495!

Finally there's a frequency extender that's really affordable. And, it's a Comrex. Frequency extension is a way to send broadcast-quality program over a standard telephone line. It's an encode/decode system that restores the lower frequencies that the phone can't handle.

We've been building these systems for years, but a lot of people who should have been using them simply couldn't afford them. That's why we developed the Basic extender. Each component (encoder and decoder) sells for \$495, so your complete system is less than \$1,000.

The Comrex Basic may not offer some of the "extras" available on our other models. What it does offer is a distinct improvement in program quality sent over telephone lines.

Call Comrex for a demo tape, at 1-800-237-1776. Or write Comrex Corporation, 65 Nonset Path, Acton, MA 01720. Tel. (617) 263-1800. TWX 710-347-1049.

COMREX®
 BUILT FOR BROADCAST

When You Have to Get it Right the First Time—Reach for HME.

There are very sound reasons why professionals reach for HME when the show goes on.

Dependability. HME knows the vital need in your business for reliable equipment. We think we build the best wireless microphones, as well as the best wireless intercoms and cabled intercoms available anywhere. They're rugged, built from top quality components, and assembled with HME's Pride in Excellence.

Performance. You'll please the most demanding performers with an audio quality that's second to

none. Dynamic range and immunity to interference are unsurpassed.

Service after the sale. No one reacts like HME in the event you need assistance. Now we have direct telephone lines to Customer Service—the people with the answers. Should your system ever require repair we'll turn it around faster than anyone in the business.

Call us today for all the details. See why more professional sound engineers rely on HME when performance is on the line.



HME manufactures:
Wireless microphones
Wireless Intercoms
Cabled Intercoms

h m e
HM ELECTRONICS, INC.

9675 Business Park Avenue, San Diego, CA 92131, U.S.A.
Phone (619) 578-8300 Telex: 350-771

Circle (50) on Reply Card

See Adv. Page

See Adv. Page

See Adv. Page

See Adv. Page

Allied Film & Video/DC
Allied Film & Video/IL
Allied + WBS Film & Video Services
Center Video Industrial Co., Inc.
DICSА-Delay TV Ingenieurs-Conseils SA
Devlin Productions, Inc.
Diner + Allied Film & Video Services
Image Transform, Inc.
J&R Film
Johnson-Nyquist Production Inc.
Media Concepts, Inc.
Multi-Video Productions, Inc.
One Pass Film & Video
T & G Optics
West Coast Audio, Inc.
Wold Communications

Newman-Kees Measurements
Engineering & Installations
Old Dominion Broadcast Eng. Service
Radio Engineering Co. Consultants
Radiotechniques Consulting Engineers
Rohde & Schwarz
Edward A. Schober, P.E. Radio
Consulting Engineer
Steiger, Hurray & Associates Inc.
Broadcast Tech. Consultants
Tri-Tronics Professional Elec., Inc.
Western Wireless Works

Network Production Music, Inc.
Omnimusic
Soper Sound Music Library Soper
Sound Media Music
Sound Ideas Sound Effects Library
Tape-Athon Corp. Cavox Stereo
Productions
Thomas Valentino Inc.

Antenna Technology Corp.
DICSА-Delay TV Ingenieurs-Conseils SA
Devlin Productions, Inc.
Diner + Allied Film & Video Services
Image Transform, Inc.
Merlin Engineering Works
NETCOM

FREQUENCY MEASUREMENTS

Apple Frequency Measuring Service
Audio Service Corp.
Audiolab Electronics, Inc.
Comsearch, Inc.
ComSonics, Inc.
Frequency Measuring Service Inc.
Claude M. Gray
Floyd Hall, E.E. Consulting Radio
Engineers
J. Boyd Ingram & Associates
Johnson Measurement Service
Phil McQuatters Frequency
Measurement Service
Newman-Kees Measurements
Engineering & Installations
Northwest Monitoring Service
Old Dominion Broadcast Eng. Service
R & D Station Service
Rohde & Schwarz
Spectrum Planning, Inc.
Standard Frequency Measuring
Service
Tracor Instruments Austin Inc.
Industrial Instruments Div.
Western Wireless Works
Ziehl Electronic Service

**MAINTENANCE,
MICROWAVE/EARTH
STATION**

Antenna Technology Corp.
Comsearch, Inc.
Ethereum Scientific Corp.
Gabriel Electronics, Inc.
Harris Corp. Broadcast Div.
Harrison Systems Ltd.
Horizon Towerz, Inc.
Hubbard Communications, Inc.
International Microwave Corp.
M/A-Com Mac, Inc.
Microdyne Corp.
NETCOM
Newman-Kees Measurements
Engineering & Installations
Pinzone Communications Products Inc.
Rohde & Schwarz
Roscor Corp.
Western Wireless Works

**REBUILDING/RECONDITIONING
EQUIPMENT**

Acorn Engineering, Inc.
Audio Service Corp.
R. Barth KG
Center Video Industrial Co., Inc.
ComSonics, Inc.
Control Technology, Inc.
Harris Corp. Broadcast Div.
J. Boyd Ingram & Associates
Lumitrol, Ltd.
Lunar Video Ltd.
Merlin Engineering Works
Multi Electronic Services Ltd.
Nagra Magnetic Recorders, Inc.
Newman-Kees Measurements
Engineering & Installations
Perrott Eng. Labs, Inc.
Pinzone Communications Products Inc.
RCI (Recording Consultants Inc.)
Radio Engineering Co. Consultants
Reliance Electric Co.
Roscor Corp.
Schafer World Communications Corp.
Townsend Associates, Inc.
Tri-Tronics Professional Elec., Inc.
VideoLab
W. Vinten Ltd. Broadcast Systems Div.
West Coast Audio, Inc.
Western Wireless Works

**TAPE
RECORDING/DUPLICATING**

Allied Film & Video/DC
Allied Film & Video/IL
Allied + WBS Film & Video Services
Broadcast Programming
CaVox/Tape-Athon Corp.
Center Video Industrial Co., Inc.
Century 21 Programming Inc.
Continental Recordings Inc.
Creative Video Services
DICSА-Delay TV Ingenieurs-Conseils SA
Devlin Productions, Inc.
Forge Recording Studios, Inc.
Johnson-Nyquist Production Inc.
Media Concepts, Inc.
Merlin Engineering Works
Multi-Video Productions, Inc.
The Musicworks, Inc.
Mycomp Technologies Corp. (MTC)
NETCOM
Omnimusic
Roscor Corp.
Schoeps/Posthorn Recordings
Skyline Inc.
Tape-Athon Corp. Cavox Stereo
Productions
The Truck-Mobile Audio
Video Masters, Inc.

**HEAD
REFURBISHING/RELAPPING**

JRF Magnetic Sciences Inc.
Northern Magnetics, Inc.
Spin Physics Eastman Kodak Co.
Videomagnetics, Inc.
West Coast Audio, Inc.

MAINTENANCE, TV

Alpha Video & Electronics Co.
Aries Antennas, Inc.
Breneman Labs
Broadcast Aids, Inc.
Center Video Industrial Co., Inc.
Comtronix Systems
Crow Broadcast Systems Ltd.
DICSА-Delay TV Ingenieurs-Conseils SA
Electrohome Ltd.
Elektroimpex
Harris Corp. Broadcast Div.
Harrison Systems Ltd.
Horizon Towerz, Inc.
Jenel Systems & Design Corp.
Lunar Video Ltd.
D. L. Markley & Associates, Inc.
Consulting Engineers
Multi Electronic Services Ltd.
Newman-Kees Measurements
Engineering & Installations
Radio Engineering Co. Consultants
Rohde & Schwarz
Roscor Corp.
Steiger, Hurray & Associates Inc.
Broadcast Tech. Consultants
T & G Optics
Townsend Associates, Inc.
VIZ Test Equipment Div. of VIZ Mfg.
Co.

**RELOADING,
CARTRIDGE/CASSETTE**

Aristocart Div., Western Int'l.
Communications, Ltd. 46
Audico, Inc.
Broadcast Cartridge Service
Century 21 Programming Inc.
COARC 140
National Video Service 136
Pinzone Communications Products Inc.
Re-Play Video Cartridge Service

**VIDEO LIBRARIES/STOCK
FOOTAGE PROGRAMS**

Macrotel, Inc.

HELICOPTER SALES/RENTALS

MBB Helicopter Corp.
Pumpkin Air Inc.

LENS REPAIR

Century Precision Optics
Alan Gordon Enterprises Inc.
Precision Camera Inc.
Schneider Corp. of America
Jos. Schneider Optische Werke
Kreuznach GmbH & Co. KG
T & G Optics
Total Spectrum Mfg. Inc. 117
Vicon Industries Inc.

PROGRAMMING SERVICES

(Music, Sound Effects,
Syndication Radio Formats,
Gingles, IDs)

Allied + WBS Film & Video Services
Associated Production Music
Broadcast Programming
Broadcasting & Related Products
Div./3M
CBS Special Products
Capitol Production Music
CaVox/Tape-Athon Corp.
Century 21 Programming Inc.
Continental Recordings Inc.
KalaMusic
The Music Director Programming
Service
The Musicworks, Inc.

**SATELLITE PROGRAM
DISTRIBUTION**

Antenna Technology Corp.
CaVox/Tape-Athon Corp.
Century 21 Programming Inc.
Comsat General Corp.
Conus Communications
DX Communications
Image Transform, Inc.
Macrotel, Inc.
NETCOM
RCA American Communications
Tape-Athon Corp. Cavox Stereo
Productions
Western Union Video Services
Wold Communications

WEATHER DATA SERVICE

ColorGraphics Systems, Inc.
Environmental Satellite Data, Inc.
Microdyne Corp.
R/SCAN Corp.
ROH Div. of Anchor Audio
Texas Electronics, Inc.
WSI Corp.
Weatherbank
Wold Communications

**SATELLITE TRANSPONDER
TIME BROKERS**

Comsat General Corp.
Conus Communications
Ethereum Scientific Corp.
Macrotel, Inc.
NETCOM
RCA American Communications
Western Union Video Services
Wold Communications

STANDARDS CONVERSION

Allied Film & Video/DC
Allied Film & Video/IL
Allied + WBS Film & Video Services

WIRING AND CABLING

A. F. Associates, Inc. 80
AVS (Audio-Visuel Systems)
Abbott & Co.
Andrew Corp.
Antenna Technology Corp.
Audio Service Corp.
R. Barth KG
Beiden Electronic Wire & Cable
Bi-Tronics, Inc.
Broadcast Systems Installations
Connectronics Corp.
DICSА-Delay TV Ingenieurs-Conseils SA
Delcom Corp.
DYMA Engineering, Inc.
Elektroimpex
Harrison Systems Ltd.
Jenel Systems & Design Corp.
Lakeside Associates Inc.
Marshall Electronics
Old Dominion Broadcast Eng. Service
Ram Broadcast Systems
The Real World Tech. Group, Inc.
Siecor Corp.
Steiger, Hurray & Associates Inc.
Broadcast Tech. Consultants
Tri-Tronics Professional Elec., Inc.
Western Wireless Works
Wireworks Corp.





The DYNAMAX[®] family of cartridge machines

New models, good looking, great listening

Thirty years of experience is working for you. In 1954, Fidelipac invented the endless loop tape cartridge, and we've been in the business ever since. We've focused our experience to develop a complete line of innovative, state-of-the-art cartridge machines.

CTR100 Series

The ultimate cartridge machine. You can intermix standard, high output, mono, stereo, matrix and discrete format cartridges using our Cartscan™ system. Even warn a jock to read live tags or automatically turn on external functions. Create special effects with Vary Speed. Time carts with ease, even in fast forward, with our real time digital clock. Other features include DC servo motor. Blackout status display. Splice finder. On-board diagnostics. SMPTE time code compatibility. Phase correcting

matrix system. Optional Maxtrax[®] format. And audio you'd never expect from a cart machine.

CTR10 Series

Our idea of basic utility. 3 cue tones. Automatic fast forward. Audio search. Audio switcher and mixer. 1 kHz defeat. Constant current recording. Low voltage 2-inch air damped solenoid. Ball-bearing self aligning pressure roller. Azimuth independent head bridge assembly. Superb audio.

CTR30 Series

A 3-Deck that records. The recording system is standard, and the complete unit is priced below most play-only 3-decks. The CTR30 Series offers 3 cue tones, audio switcher and mixer, and a constant current recording system for the cleanest audio you'll ever put on a cartridge.

ESD10 Eraser/Splice Detector

Cleanest erasure ever! Dual constant current precision erase heads. No heat generating, tape stretching degaussing coils. Continuous duty operation. Reliable, adjustment-free, patented splice finding.

All you'll ever need

The inventor of the tape cartridge has invented a complete family of cartridge machines. Let our experience work for you. For more information, contact Fidelipac or your authorized DYNAMAX distributor.



DYNAMAX[®]
BROADCAST PRODUCTS BY FIDELIPAC[®]

Fidelipac Corporation □ P.O. Box 808 □ Moorestown, NJ 08057 U.S.A. □ 609-235-3900 □ TELEX: 710-897-0254 □ Toll Free 800-HOT TAPE

DYNAMAX products are designed and manufactured in the U.S.A.

Circle (152) on Reply Card

B E A U T Y

Classic beauty is unmistakable. You know it when you see it.

Like the beauty you get with Ampex 195. Clean, clear pictures that capture every sparkling moment of your production.

No other video tape delivers such consistent low-dropout performance. Or such dynamic picture quality.

By focusing on critical drop-outs, especially in the area not compensated for by your VTR, we developed a video tape you can rely on for all your applications.

The secret behind our success is Ampex Process Management. APM is a unique manufacturing concept enabling us to control the consistency of the entire production process. From raw materials to finished products.

So you always get the cleanest, sharpest pictures time after time, reel after reel, carton after carton. That's why top professionals around the world specify Ampex 196.

If you'd like to know more about how APM contributes to beautiful pictures, call or write Ampex today for a free brochure.

MANUFACTURERS' ADDRESSES



AMPEX
196

AMPEX

Ampex Corporation, Magnetic Tape Division,
401 Broadway, Redwood City, CA 94063, 415/367-3809.

Circle (153) on Reply Card

Broadcast product manufacturers' addresses

A

REGIONAL SALES CONTACTS:

Please contact home office for the name of your, nearest dealer..

ADC Telecommunications, Inc.
4900 West 78th St.
Minneapolis, MN 55435
612-893-3136

ADM Technology, Inc.
1626 E. Big Beaver Road
Troy, MI 48084
313-524-2100

Murray A. Shields

REGIONAL SALES CONTACTS:

*MI, Union Lake, (313) 360-1477
NM, Albuquerque, (505) 831-5210
TX, Arlington, (817) 478-0050*

AEA, Inc.
1029 N. Allen Ave.
Pasadena, CA 91104
818-798-9127

AEG Bayly Inc.
167 Hunt St.
Ajax, Ont., Canada L1S 1P6
416-683-8200

**AEG Communications Div.
Transmitter Department**
Sickingenstrasse 20-28
D-1000 Berlin, West Germany
30-3483-2535

AEG Corp.
P.O. Box 3800
Somerville, NJ 08876-1269
201-722-9800

A. F. Associates, Inc.
100 Stonehurst Court
Northvale, NJ 07647
201-767-1000

Richard Lunniss

AHB-USA Ltd.
5 Connair Road
Orange, CT 06477
203-795-3594

AKG Acoustics, Inc.
77 Selleck St.
Stamford, CT 06902
203-348-2121

AMP Special Industries
P.O. Box 1776
Southeastern, PA 19399
215-251-6317

ANT Telecommunications Inc.
211 Perry Parkway, Suite 4
Gaithersburg, MD 20877
301-670-9777

ART, Applied Research & Technology
215 Tremont St.
Rochester, NY 14608
716-436-2720

ATI-Audio Technologies Inc.
328 W. Maple Ave.
Horsham, PA 19044
215-443-0330

Ed Mullin

AVS (Audio-Visual Systems)
66-68 ave. Paul Signac
Montreuil, France F-93100
14857-2164

AVS Ltd.
Davis Road, Venture House
Chessington, England KT9 1TT
01-391-5678

AXE (Artists X-Ponent Eng.)
P.O. Box 2331 DB
Menlo Park, CA 94025
415-365-5243

**John Aalto, P.E.
Consulting Engineer**
4534 Van Noord Ave.
Studio City, CA 91604
818-784-2208

Abbott & Co.
1611 Cascade Drive
Marion, OH 43302

Abekas Video Systems, Inc.
353-A Vintage Park Drive
Foster City, CA 94404
415-571-1711

Abekas Video Systems Ltd.
10 Portman Road
Reading, Berks, England RG3 1JR
0734-585421

Abroyd Communications Ltd.
614 Colby Drive
Waterloo, Ont., Canada N2V 1A2
519-746-1743

Accu-Weather, Inc.
619 W. College Ave.
State College, PA 16801
814-237-0309

Accurate Sound Corp.
3515 Edison Way
Menlo Park, CA 94025
415-365-2843

Acorn Engineering, Inc.
186 E. Springettsbury Ave.
York, PA 17403

Acoustic Systems
P.O. Box 3610
Austin, TX 78764
512-444-1961

Wyndy Ellis

Acquis Ltd.
1641 McGaw
Irvine, CA 92714
714-250-1641

Acrian Inc.
490 Race St.
San Jose, CA 95126
408-294-4200

Acrodyne Industries Inc.
516 Township Line Road
Blue Bell, PA 19422
800-523-2596

Acron Video
Unit 3, Lovelace Road
Bracknell, Berks, England RG12 4YT
0344-55625

**Adams-Russell Co.
Video Info. Systems Div.**
300 Second Ave.
Waltham, MA 02154
617-890-5850

Adams-Smith
34 Tower St.
Hudson, MA 01749
617-562-3801

Admark Inc.
3630 Burlingame Road
Topeka, KS 66614
913-234-4082

Advance Products Co.
P.O. Box 2178
Wichita, KS 67201
316-263-4231

Advanced Designs Corp.
P.O. Box 1907
Bloomington, IN 47402
812-333-1922

Advanced Micro-Dynamics, Inc.
P.O. Box 150
Harvard, MA 01451
617-456-3570

Advanced Music Systems
Billington Road
Burnley Lancs, England BB11 5ES
0282-57011

**Agfa-Gevaert Inc.
Magnetic Tape Div.**
275 North St.
Teterboro, NJ 07608
201-288-4100

Aiphone Intercom Systems
1700 130th Ave. N.E.
Bellevue, WA 98005
206-455-0510

AIWA Co., Ltd.
11-9 Ueno 1-chome, Taito-ku
Tokyo 110, Japan
03-835-1201

Alabama Case
709 N. Memorial Parkway
Huntsville, AL 35801

Alamar Electronics USA, Inc.
36 Railway Ave.
Campbell, CA 95008
408-866-9373

Douglas A. Hurrell

P. Albrecht Elektronik
Alte Rother Strasse 16
D-8540 Schwabach, West Germany
09122-2821

Alden Electronics, Inc.
40 Washington St.
Westborough, MA 01581
617-366-8851

Alexander Mfg. Co.
P.O. Box 1645
Mason City, IA 50401
515-423-8955

Alias Research Inc.
110 Richmond St., E.
Toronto, Ont., Canada M5C 1P1
416-362-9181

Alice (Stancoil Ltd.)
38 Alexandra Road
Windsor, Berkshire, England SL4 1HU
07535-51056

All Mobile Video, Inc.
630 Ninth Ave.
New York, NY 10036
212-757-8919

Allen Avionics, Inc.
224 E. Second St.
Mineola, NY 11501
516-248-8080

Ben Pines

REGIONAL SALES CONTACTS:

*AZ, Phoenix, (602) 952-2079
CA, Palo Alto, (415) 323-5414
CA, Arcadia, (818) 445-9728
CO, Golden, (303) 279-7796
IL, Elmhurst, (312) 834-1100
NY, Plainview, (516) 931-1414
OR, Beaverton, (503) 643-8020
PA, Huntingdon Valley, (215) 947-4825
TX, Dallas, (214) 243-7261
VA, Alexandria, (703) 768-1660
WA, Seattle, (206) 775-6656*

**John P. Allen
Airspace Consultant**
P.O. Box 1008
Fernandina Beach, FL 32034
904-261-6523

Allied Film & Video/DC
717 Second St. N.E.
Washington, DC 20002-4307
202-546-2228

Allied Film & Video/FL
45 N. Texas Ave.
Orlando, FL 32805
205-298-0012

Allied Film & Video/IL
1322 W. Belmont Ave.
Chicago, IL 60657
312-348-0373

Allied Tower Co., Inc.
12450 Old Galveston Road
Webster, TX 77598
713-486-7691

Allied + WBS Film & Video Services
6305 N. O'Connor Road, Suite 111
Irving, TX 75039-3510
214- 869-0100

Allsop, Inc.
P.O. Box 23
Bellingham, WA 98227
206-734-9090

Alpha Audio
40 Washington St.
Richmond, VA 23220
804-358-3852

Alpha Products, Inc.
5740 Corsa Ave., Suite 104
Westlake Village, CA 91362
818-889-9304

Alpha Video & Electronics Co.
28 E. Mall Plaza
Carnegie, PA 15106
412-923-2070

Alta Group, Inc.
535 Race St., Suite 230
San Jose, CA 95126
408-297-ALTA

Altec Lansing Corp.
P.O. Box 26105
Oklahoma City, OK 73126-0105
405-324-5311

Altronic Research Inc.
P.O. Box 249
Yellville, AR 72687
501-449-4093

Aluma Tower Co. Inc.
P.O. Box 2806
Vero Beach, FL 32961-2806
305-567-3423

Amalgamated Wireless (Australia Ltd.)
P.O. Box 96
North Ryde, NSW 2113, Australia
02-8877111

Amber Electro Design Inc.
4810 Jean Talon West
Montreal, Que., Canada H4P 2N5
514-735-4105

Guy Lemieux

REGIONAL SALES CONTACTS:

AZ, Phoenix, (602) 263-6022
CA, Sunnyvale, (408) 738-1333
CA, Westlake Village, (818) 706-8351
FL, Orlando, (305) 425-5505
IL, Chicago, (312) 539-4838
MD, Rockville, (301) 251-4100
MA, Chelmsford, (617) 256-3350
NJ, Landing, (201) 398-8425
NY, Liverpool, (315) 452-1091
OH, Dayton, (513) 434-7500
OR, Tigard, (503) 246-0962
PA, Southampton, (215) 355-7700
TX, Dallas, (214) 661-0300
Canada, Ontario, (416) 890-2010

Amco Engineering Co.
3801 N. Rose St.
Schiller Park, IL 60176
312-671-6670

Amek Consoles Inc.
10815 Burbank Blvd.
North Hollywood, CA 91601
818-508-9788

Amek Systems & Controls
Islington Mill, James Street
Salford, England M3 5HW
44-618346747

American Diversified
3200 Park Center Drive
Costa Mesa, CA 92626

American Laser Systems, Inc.
106 James Fowler Road
Goleta, CA 93117
805-967-0423

American Studio Equipment
8922 Norris Ave.
Sun Valley, CA 91352

Amilon Corp.
49-12 30th Ave.
Woodside, NY 11377
718-274-1794

Amperex Electronic Corp.
Klystron Div.
230 Duffy Ave.
Hicksville, NY 11802
516-931-6200

Amperex Electronic Corp.
Slatersville Div.
Providence Pike
Slatersville, RI 02876
401-762-3800

Robert Carlin

REGIONAL SALES CONTACTS:

CA, North Hollywood, (818) 980-4212
CA, Santa Clara, (408) 727-6132
GA, Atlanta, (404) 458-2519
IL, Wood Dale, (312) 860-7373
NY, Hicksville, (516) 931-6200
TX, Dallas, (214) 231-3481

Amplex Corp.
Audio-Video Systems Div.
401 Broadway
Redwood City, CA 94063
415-367-4423

Amplex Corp.
Magnetic Tape Div.
401 Broadway, M.S. 22-02
Redwood City, CA 94063
415-367-3888

Richard A. Antonia

REGIONAL SALES CONTACTS:

CA, Redwood City, (415) 367-4611
CA, San Fernando, (818) 365-8627
GA, Tucker, (404) 491-7112
IL, Arlington Heights, (312) 593-6000
MD, Bethesda, (301) 530-8800
NJ, Allendale, (201) 825-9600
TX, Carrollton, (214) 960-1162

Amplex Switcher Co.
10604 West 48th Ave.
Wheat Ridge, CO 80033
303-423-1300

Ampro/Scully Div.
--See TTC Companies

Armtel Systems Inc.
33 Main St.
Nashua, NH 03060
603-880-9011

Andersen Labs, Inc.
1280 Blue Hills Ave.
Bloomfield, CT 06002
203-242-0761

Andrew Corp.
10500 West 153rd St.
Orland Park, IL 60462
312-349-3300

Angenieux Corp. of America
7700 N. Kendall Drive, Suite 303
Miami, FL 33156
305-595-1144

Eric Neil Angevine, P.E.
924 W. Eskridge Ave.
Stillwater, OK 74075
405-624-6043

R. B. Annis, Co.
1101 N. Delaware St.
Indianapolis, IN 46202
317-637-9282

Anritsu America, Inc.
15 Thornton Road
Oakland, NJ 07436
201-337-1111

Antek
Analysis Technologies, Inc.
P.O. Box 821603
Dallas, TX 75382
214-422-2654

Antenna Technology Corp.
1140 E. Greenway St., Suite 2
Mesa, AZ 85203
602-264-7275

Antennas For Communications, Inc.
334 Cypress Road
Ocala, FL 32672-3198
904-687-4121

Antiference Ltd.
Bicester Road
Aylesbury, Bucks, England HP19 3BJ
0296-82511

Anton/Bauer, Inc.
1 Controls Drive
Shelton, CT 06484
203-929-1100

John O'Keefe

Anvil Cases, Inc.
4128 Temple City Blvd.
Rosemead, CA 91770
818-575-8614

Apert-Herzog Corp.
7007 Realm Drive, Suite B3
San Jose, CA 95119
408-225-1425

Aphex Systems Ltd.
13340 Saticoy St.
North Hollywood, CA 91605
818-765-2212

Paula Ann Lintz

Apollo Audio Visual
60 Trade Zone Court
Ronkonkoma, NY 11779
516-467-8033

Apple Frequency Measuring Service
P.O. Box 997
Burlington, NC 27216
919-584-0448

Applied Digital Technology, Inc.
39 West 14th St.
New York, NY 10011
212-929-2360

Aqua-Tronics, Inc.
17023 S.E. McLoughlin Blvd.
Milwaukee, OR 97222
503-653-2232

Arben Design
600 W. Roosevelt Road
West Chicago, IL 60185
312-231-5077

Aries Antennas, Inc.
3857 Birch St., Suite 417
Newport Beach, CA 92660
714-641-9430

Aristocart Div., Western Int'l. Communications, Ltd.
505 Burrard St., Suite 1960
Vancouver, B.C., Canada V7X 1M6
604-526-3214

D. Kalmokoff

REGIONAL SALES CONTACTS:

CA, Huntington Beach, (714) 898-7224
CT, North Haven, (203) 288-7731
IL, Elk Grove Village, (312) 640-7077
IN, Richmond, (317) 962-8596
NC, Charlotte, (704) 542-6543
WA, Tacoma, (206) 565-2301
CANADA, Toronto, (416) 751-6262

Arnold & Richter
Tuerkenstrasse 89
D-8000 Muechen 40, West Germany

Arrakis Sytems Inc.
2609 Riverbend Court
Fort Collins, CO 80525
303-224-2248

Michael Palmer

REGIONAL SALES CONTACTS:

IN, Richmond, (317) 962-8596
NY, South Glenn Falls, (518) 793-2181
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (206) 565-2301

Arriflex Corp.
500 Route 303
Blauvelt, NY 10913
914-353-1400

Artel Communications Corp.
P.O. Box 100, West Side Station
Worcester, MA 01602
617-752-5690

Artronics
P.O. Box 408
South Plainfield, NJ 07080
201-756-6868

Asaca/Shibasoku Corp.
12509 Beatrice St.
Los Angeles, CA 90066
213-827-7144

Alan Davis

REGIONAL SALES CONTACTS:

CA, Fountain Valley, (714) 964-0145
CA, Redwood City, (415) 365-3944
FL, Clearwater, (305) 442-7505
GA, Atlanta, (404) 921-8687
NY, Buffalo, (716) 626-5517
NY, New York, (201) 390-0770
TX, Dallas, (214) 746-3490

Ashly Audio Inc.
100 Fernwood Ave.
Rochester, NY 14621
716-544-5191

Associated Production Music
888 Seventh Ave.
New York, NY 10106
212-977-5680

Aston Electronic Designs Ltd.
125-127 Deepcut Bridge Road
Camberley Surrey, England GU16
6SD
0252-836221

Aston Electronics, Inc.
346 N. Lindenwood Drive
Olathe, KS 66062
913-782-4007

Atlantic Research Corp.
5390 Cherokee Ave.
Alexandria, VA 22312
703-642-4000

Atlas Sound
10 Pomeroy Road
Parsippany, NJ 07054
201-887-7800

Auburn Instruments
107 Church St.
Watertown, MA 02172
617-923-4747

Donald Kaischer

“MY XC-A1 IS GREAT
IN LOW LIGHT SITUATIONS.
LIKE FROM
OCTOBER TO MAY.”

GEORGE MILLER
TAKOTNA VIDEO,
ANCHORAGE,
ALASKA

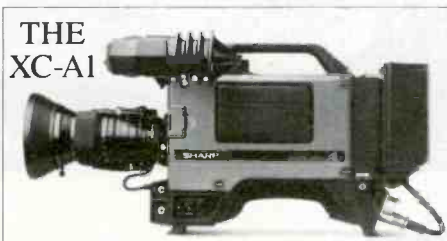


George Miller lives in Alaska and shoots documentaries. So half the year he's shooting at night.

That's why he replaced the camera he was using with a Sharp XC-A1. The picture is amazingly quiet. Even when he goes to 18db gain.

And thanks to all the information the XC-A1 displays in the viewfinder, George's job is a lot easier. Step-by-step instructions coach him on what to do, then disappear or move to one corner automatically.

Of course, George realizes that the XC-A1 can't do everything, so he still keeps the camera he replaced with it for one very important job—he uses it to anchor his boat.



SHARP
FROM SHARP MINDS
COME SHARP PRODUCTS™

For more information call (201) 529-8731. Write Sharp Electronics Corp., Professional Products Division, Sharp Plaza, Mahwah, NJ 07430. Or visit your local Sharp dealer. © 1986 Sharp Electronics Corporation.

Circle (51) on Reply Card

Manufacturers' Addresses

Audi-Cord Corp.
1845 W. Hovey Ave.
Normal, IL 61761
309-452-9461

Audico, Inc.
219 Crossen Ave.
Elk Grove Village, IL 60007
312-640-1030

Audio Accessories, Inc.
Mill St.
Marlow, NH 03456
603-446-3335

Audio & Design
(**Audio Design Calrec, Inc.**)
P.O. Box 786
Bremerton, WA 98310
206-275-5010

Audio Developments Ltd.
Hall Lane, Walsall Wood
West Midlands, England WS9 9AU
0543-375351

Audio/Digital, Inc.
1000 S. Bertelsen Road, Suite 4
Eugene, OR 97402
503-687-8412

Virginia Nott, (800) 423-1082

REGIONAL SALES CONTACTS:

AZ, Phoenix, (602) 242-2211
AR, Eureka Springs, (501) 253-8702
CA, San Francisco, (415) 285-8900
CA, Solana Beach, (619) 481-5999
FL, Ocala, (904) 622-9058
IN, Richmond, (317) 962-8596
MD, BWI Airport, (301) 859-1500
MI, Farmington Hill, (313) 471-0027
NJ, Sea Bright, (201) 530-8555

NY, Morris, (607) 263-5695
NY, South Glens Falls, (518) 793-2181
OK, Claremore, (918) 341-5240
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (206) 565-2301
CANADA, Toronto, (416) 868-0528
CANADA, Winnipeg, (204) 786-6715

Audio Export
Georg Neumann & Co. GmbH
Badstrasse 14, Postfach 1180
D-7100 Heilbronn, West Germany
030-259930

Audio Kinetics Ltd.
Kinetic Centre, Theobald St.
Borehamwood, Herts, England WD6
4PJ
01-953-8118

Audio-Metrics
5113 W. Chester Pike
Edgemont, PA 19028
215-356-4706

Audio Precision
P.O. Box 2209
Beaverton, OR 97075
503-297-4837

Bob Metzler

Audio Service Corp.
4210 Landershim Blvd.
North Hollywood, CA 91602
818-980-9891

Audio-Technica U.S., Inc.
1221 Commerce Drive
Stow, OH 44224
216-686-2600

Audio-Video Engineering Co.
65 Nancy Blvd.
Merrick, NY 11566
516-546-4239
Olga Drucker

Audio Visual Div./3M
225-3NE 3M Center
St. Paul, MN 55144-1000
800-328-1371

Audiolab Electronics, Inc.
3725 Esperanza Drive
Sacramento, CA 95864
916-344-4744

Audisar
P.O. Box 1561
Bellevue, WA 98009
206-454-2040

Auditratics, Inc.
3750 Old Getwell Road
Memphis, TN 38118
901-362-1350

Stovall Kendrick

REGIONAL SALES CONTACTS:

CA, San Francisco, (415) 285-8900
FL, Ft. Lauderdale, (305) 761-1106
IN, Richmond, (317) 962-8596
MI, Grand Rapids, (616) 452-1596
NC, Four Oaks, (919) 934-6869

Audix Corp.
110 Ryan Industrial Court
San Ramon, CA 94583
415-831-0808

Audix Ltd.
Station Road, Wenden, Saffron
Walden
Essex, England CB11 4LG
0799-40888

Auernheimer Labs & Co.
4561 E. Florence Ave.
Fresno, CA 93725
209-442-1048

Augat/LRC-Vitek
P.O. Box 111
Horseheads, NY 14861
607-739-3603

Auratone Corp.
P.O. Box 698
Coronado, CA 92118
619-297-2820

Aurora Systems
185 Berry St., Suite 444
San Francisco, CA 94107
415-777-2288

Autocue
104 East 25th St.
New York, NY 10010
212-460-9050

Autogram Corp.
P.O. Box 456
Plano, TX 75074
214-424-8585

Automatic Devices Co.
2121 South 12th St.
Allentown, PA 18103
215-797-6000

Product Directory begins on page 14

We've Just Made SNG As Simple As ENG.



The Marconi NEWSHAWK

It's Marconi's NEWSHAWK—a superior, lightweight satellite transmitting system that is rapidly becoming the standard for portable SNG operations.

The unique design of NEWSHAWK's one-piece, self-storing, elliptical antenna permits you to transport it, set it up, use it, store it and re-use it time and again without effecting its 2° spacing alignment. Unlike multi-sectioned antenna systems, the NEWSHAWK won't lose its accuracy in spite of frequent usage. And its two-piece, portable electronics package is the perfect complement to the NEWSHAWK'S outstanding antenna design.

What's more, the NEWSHAWK is so compact that it is easily transported in or on top of an ENG van, by small plane or commercial airliner.

NEWSHAWK. Manufactured by Marconi. Sold and serviced in North America by AFA.



A.F. ASSOCIATES INC.

ADVANCED SYSTEMS AND PRODUCTS FOR THE VIDEO INDUSTRY
100 STONEHURST COURT NORTHVALE NJ 07647 (201) 767-1000;
IN THE WEST (213) 466-5066.

Circle (52) on Reply Card

TO CHECK A MONITOR'S COLOR ACCURACY, JUST PUT IT NEXT TO A SHARP.



The only colors you'll see on these Sharp monitors are true colors.

Because they both have a shadow mask CRT with U.S. controlled phosphors. Plus a comb filter that cuts cross-color interference.

They also have 600 lines of resolution, so the picture is as sharp as the color is accurate.

Plus multiple inputs, including RGB, that let you change sources at the flick of a switch.

And two time constants, so you can analyze VTR reproduction.



All for \$3,500 for our 13-inch model and \$4,300 for our 19-inch.

Or for \$770, there's our 9-inch utility color monitor for remotes and editing. With many of the features our larger models have.

So contact your local Sharp dealer, call Sharp at (201) 529-8731, or write Sharp Electronics Corporation, Professional Products Division, Sharp Plaza, Mahwah, N.J. 07430.

And the next time you're checking out monitors, remember:

Next to Sharp, any other monitor is the next best thing.



Our 9" utility color monitor for remotes and editing.

AV Equipment, Audio, Banking Systems, Broadcast Cameras, Calculators, Cash Registers, Computers, Copiers, Electronic Components, Electronic Typewriters, Facsimile, Medical Products, Microwave Ovens, Televisions, Vacuum Cleaners, Video Recorders.



**FROM SHARP MINDS
COME SHARP PRODUCTS™**

Audio Transformers

Choose from a wide variety of types and packages

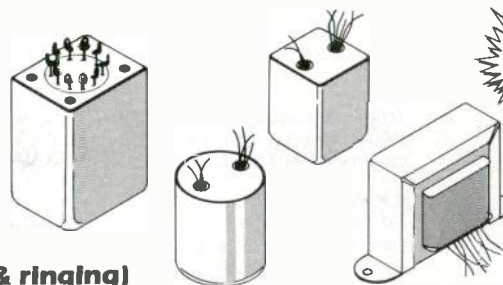
Computer optimized design

100% tested – consistent quality

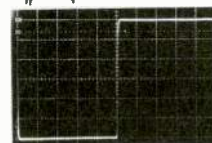
Low distortion

Wide bandwidth

Minimum transient distortion (overshoot & ringing)



REVISED
AUGUST
1985



JE-16A
2 kHz Square Wave

INPUT TRANSFORMERS AND SPECIAL TYPES

Model	Application	Impedance Ratio Pri-Sec	Turns Ratio Pri:Sec	20Hz Max Input Level ¹	Typical THD Below Saturation (%) 20 Hz / 1 kHz	Frequency Response (dB ref. 1 kHz) 20 Hz / 20 kHz	Band-Width ² -3 dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot (%)	Noise Figure (dB)	Magnetic Shield ⁴ (dB)	Number of Faraday ⁴ Shields	Package ⁵	PRICES		
														1-19	100-249	1000.

MICROPHONE INPUT

JE-16-A JE-16-B	Mic in for 990 opamp	150-600	1:2	+8	0.036/0.003	-0.08 / -0.05	230	-8	<1	1.7	-30	1	A=1 B=2	65.25 71.73	43.59 47.92	30.07 33.06
JE-13K7-A JE-13K7-B	Mic in for 990 or I.C.	150-3750	1:5	+8	0.036/0.003	-0.09 / -0.21	85	-19	<2	2.3	-30	1	A=1 B=2	65.25 71.73	43.59 47.92	30.07 33.06
JE-115K-E	Mic in for I.C. opamp	150-15K	1:10	-6	0.170/0.010	-0.50 / +0.10	115	-5	<7	1.5	-30	1	3	44.84	29.95	23.39

LINE INPUT

JE-11P-9	Line in	15K-15K	1:1	+26	0.025/0.003	-0.03 / -0.30	52	-28	<3		-30	1	1	105.75	70.65	48.74
JE-11P-1	Line in	15K-15K	1:1	+17	0.045/0.003	-0.03 / -0.25	85	-23	<1		-30	1	3	42.69	28.53	22.27
JE-6110K-B JE-6110K-BB	Line in bridging	36K-2200 (10K-600)	4:1	+24	0.005/0.002	-0.02 / -0.09	125	-12	<1		-30	1	B=1 BB=2	63.98 74.05	42.75 49.47	31.37 34.13
JE-10KB-C	Line in bridging	30K-1800 (10K-600)	4:1	+19	0.033/0.003	-0.11 / -0.08	160	-9	<2		-30	1	3	43.45	29.03	20.03
JE-11SSP-8M	Line in / repeat coil	600/150-600/150	1:1 split	+22	0.035/0.003	-0.03 / -0.00	120	-9	<3.5		-30	1	4	168.39	112.50	77.61
JE-11SSP-6M	Line in / repeat coil	600/150-600/150	1:1 split	+17	0.035/0.003	-0.25 / -0.00	160	-5	<3		-30	1	5	85.11	56.86	39.23

SPECIAL TYPES

JE-MB-C	2-way ³ mic split	150-150	1:1	+1	0.050/0.003	-0.16 / -0.13	100	-12	<1		-30	2	3	36.22	24.21	18.89
JE-MB-D	3-way ³ mic split	150-150-150	1:1:1	+2	0.044/0.003	-0.14 / -0.16	100	-12	<1		-30	3	3	63.35	42.32	33.04
JE-MB-E	4-way ³ mic split	150-150-150-150	1:1:1:1	+10	0.050/0.002	-0.10 / -1.00	40	-18	<1		-30	4	1	98.99	66.13	45.62
JE-DB-E	Direct box for guitar	20K-150	12:1	+19	0.096/0.005	-0.20 / -0.20	80	-18	<1		-30	2	6	45.46	30.38	23.71

- (dBu) Max input level = 1% THD; dBu = dBv ref. 0.775 V
- With recommended secondary termination
- Specifications shown are for max. number of secondaries terminated in 1000 ohm (typical mic preamp)
- Separate lead supplied for case and for each faraday shield
- Except as noted, above transformers are cased in 80% nickel mu-metal cans with wire leads.

PACKAGE DIMENSIONS:

	W	L	H
1	1 1/16" Diam.		1 1/16"
2	1 3/16" x 1 3/16"		1 1/16"
3	1 1/8" Diam.		1 1/16"
4	1 1/2" x 1 3/4"		2 1/2" w/solder terminals
5	1 3/8" Diam.		1 3/4"
6	1 1/8" Diam.		1 1/16"

NICKEL CORE OUTPUT TRANSFORMERS⁶

Model	Construction	Nominal Impedance Ratio Pri-Sec	Turns Ratio Pri:Sec	20 Hz Max Output Level ⁷ across (n) windings (dBu)	600 Ω Load Loss (dB)	DC Resistance per Winding	Typical THD Below Saturation (%) 20 Hz / 1 kHz	Frequency Response (dB ref. 1 kHz) 20 Hz / 20 kHz	Band-Width ² -3 dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot (%)	Package	PRICES		
													1-19	100-249	1000
* JE-11-BMCF	Bifilar 80% nickel	600-600	1:1	+26	1	40 Ω	0.002/0.002	-0.02 / -0.00	>10MHz	-0.0	<1 ⁹	7	65.36	43.66	30.12
* JE-11-DMCF	Bifilar 80% nickel	600-600	1:1	+21	1	38 Ω	0.004/0.002	-0.02 / -0.00	>10MHz	-0.0	<1 ⁹	8	48.74	32.56	22.46
JE-123-BLCF	Quadfilar	600-600 150-600	1:1 1:2	+32	2	20 Ω	0.041/0.003	-0.02 / -0.01	>450 170	-1.9 -4.0	<1 ⁸	7	64.57	37.71	26.02
* JE-11SS-DLCF	Bifilar split/split	600-600 150-600	1:1 1:2	+27	2	19 Ω	0.065/0.003	-0.02 / -0.01	>10MHz 245	-0.0 -2.5	<1 ⁸	8	46.38	30.98	21.37
* JE-11-ELCF	Bifilar	600-600	1:1	+23.5	1	40 Ω	0.088/0.003	-0.03 / -0.00	>10MHz	-0.0	<1 ⁹	9	30.21	20.18	13.93
* JE-11-FLCF	Bifilar	600-600	1:1	+20.4	1	58 Ω	0.114/0.003	-0.03 / -0.00	>10MHz	-0.0	<1 ⁹	10	23.66	15.81	10.91
JE-112-LCF	Quadfilar	600-600 150-600	1:1 1:2	+20.4	2	29 Ω	0.114/0.003	-0.03 / -0.01	>450 205	-1.2 -3.2	<1 ⁸	10	26.68	17.82	13.08
JE-123-ALCF	Quadfilar	66.7-600	1:3	+26.5	3	8 Ω	0.125/0.003	-0.04 / +0.06	190	-4.6	<6 ⁸	8	44.09	29.45	20.32
JE-11S-LCF	Bifilar w/ split pri.	600-600 150-600	1:1 1:2	+30	1 (sec)	63 Ω	0.058/0.002	-0.02 / +0.01 -0.02 / -0.05	>10MHz 155	+1.1 -4.1	<1 ⁸	8	44.09	29.45	20.32

- Multifilar construction has no faraday shield; cannot be used as input transformer. All specifications are for 0 Ω source, 600 Ω load.
- Max output level = 1% THD; dBu = dBv ref. 0.775 V
- Source amplifier -3 dB @ 100 kHz
- Source amplifier -3 dB @ 200 kHz
- Output transformers are horizontal channel frame type with wire leads, vertical channel frames available. PC types available.

PACKAGE DIMENSIONS:

	W	L	H	Mounting Centers
7	1 1/2" x 2 5/16"		1 15/16"	2 3/16"
8	1 5/16" x 1 15/16"		1 3/8"	2 3/8"
9	1 1/8" x 1 11/16"		1 3/8"	2"
10	1 1/16" x 1 1/16"		1 3/16"	1 3/4"

↑ IMPROVED PERFORMANCE * NEW MODELS

jensen transformers
INCORPORATED

10735 Burbank Blvd./N. Hollywood, CA 91601
(213) 876-0059 Closed Fridays, visitors by appointment only.

These charts include the most popular types which are usually available from stock. Many other types are available from stock or custom designs for OEM orders of 100 pieces or more can be made to order. Certified computer testing is available for OEM orders. Call or write for applications assistance and/or detailed data sheets on individual models.

Prices shown are effective 8/1/85 and are subject to change without notice. Packing, shipping, and applicable sales taxes additional.

Manufacturers' Addresses

**Barco Industries
Video & Communications N.V.**
Th. Sevenslaan 106
B-8500 Kortrijk, Belgium
32-56-233211

Barcus-Berry Electronics, Inc.
5500 Bolsa Ave., Suite 245
Huntington Beach, CA 92649
800-233-8346

Bardwell & McAlister, Inc.
7051 Santa Monica Blvd.
Hollywood, CA 90038
213-466-9361

Barkway Electronics Ltd.
Melbourn Science Park
Melbourn, Royston Herts, England
SG8 6EJ
0763-62222

Barrett Associates Inc.
3205 Production Ave.
Oceanside, CA 92054
619-433-5600

R. Barth KG
Gillparzerstrasse 6a
Hamburg 76, West Germany
D-2000
040-2298883

Basys Inc.
900 Stierlin
Mountain View, CA 94043
415-969-9810

Basys Inc.
45 Mortimer St.

London, England W1V 1PF
01-631-0286

John H. Battison, P.E.
2400 Olentangy River Road
Columbus, OH 43210

R.R. Beard Ltd.
10 Trafalgar Ave.
London, England SE15 6NR
01-703-3136

Beaveronics, Inc.
8 Haven Ave.
Port Washington, NY 11050
516-883-4414

Beckman Industrial Corp.
630 Puente St.
Brea, CA 92621
714-671-4837

Belar Electronics Lab, Inc.
Lancaster Ave. at Dorset
Devon, PA 19333
215-687-5550
Harry Larkin

Belden Electronic Wire & Cable
P.O. Box 1980
Richmond, IN 47375
317-983-5200

Benchmark Media Systems, Inc.
3817 Brewerton Road
North Syracuse, NY 13212
315-452-0400

Blair Benson Engineering Consultant
23 Park Lane

Norwalk, CT 06854
203-838-9049

Berk-Tek, Inc.
RD 1 Box 888
New Holland, PA 17557
717-354-6200

Beyer Dynamic
5-05 Burns Ave.
Hicksville, NY 11801
516-935-8000

Beyer Dynamic
Postfach 1320
Heilbronn, West Germany D-7100
07131-617154

Biddle Instruments
510 Township Line Road
Blue Bell, PA 19422
215-646-9200

Bird Electronic Corp.
30303 Aurora Rd.
Cleveland (Solon), OH 44139
216-248-1200

William F. Kail

REGIONAL SALES CONTACTS:

AZ, Phoenix, (800) 221-6941
CA, Ojai, (805) 646-7255
CA, Scotts Valley, (408) 438-4273
FL, Miami, (305) 651-5752
FL, Miami, (305) 887-1223
IL, Quincy, (217) 224-9600
IL, Elk Grove Village, (312) 640-3792
IN, Richmond, (317) 962-8596
MD, BWI Airport, (800) 547-2346
MA, Southwick, (413) 569-0116
OH, Solon, (216) 248-1200
PA, White Haven, (800) 233-6193
TX, Dallas, (214) 381-7161
WA, Seattle, (206) 363-7730

Birns & Sawyer Inc.
1026 N. Highland Ave.
Hollywood, CA 90038
213-466-8211

Bi-Tronics, Inc.
76 Main St.
Tuckahoe, NY 10707
212-585-1645

Black Audio Devices
P.O. Box 4573
Glendale, CA 91202
818-507-8785

Black Star Ltd.
4 Stephenson Road, St. Ives
Huntington, Cambs, England PE17
4WJ
0480-62440

Blonder-Tongue Labs, Inc.
1 Jake Brown Road
Old Bridge, NJ 08857
201-679-4000

Bogen, A Lear Siegler Co.
P.O. Box 575
Ramsey, NJ 07446
201-934-8500

Bogen Photo Corp.
P.O. Box 712
Fair Lawn, NJ 07410
201-794-6500

Bogner Broadcast Equipment Corp.
603 Cantiague Rock Road
Westbury, NY 11590
516-997-7800

Bonneville Media Communications

Product Directory begins on page 14

Remote Control **FREEDOM** . . .



Gentner's VRC-1000™ Remote Control Unit uses inexpensive, readily available dial-up circuits for all types of remote control applications.



...Dial-up Convenience!

- Transmitter - Main/back-up**
- ENG**
- Satellite**
- Machine Control**
- STL/Microwave**

Visit us in Booths 426, and 513, SBE

GENTNER™
RF PRODUCTS DIVISION

P.O. Box 32550 • San Jose, California 95152
(408) 926-3400 Telex II: 510-600-1445

Circle (56) on Reply Card

Connoisseur

of communications

Intercom systems.
Headsets. Interfaces.
Complete engineering
support — from
application to
configuration.



Clear-Com • 1111 17th Street, San Francisco, CA 94107 • 415-661-6666 • TWX: 910-372-1037
Export Division: P.O. Box 302, Walnut Creek, CA 94596 • 415-932-8134 • Telex: 175340 CLEAR-COM WNCK

SEE US AT THE SMPTE SHOW, Booth #912,
THE SBE SHOW, Booth #907 and the IBC SHOW

Circle (57) on Reply Card

Manufacturers' Addresses

130 Social Hall Ave.
Salt Lake City, UT 84111
801-237-2400

Boonton Electronics Corp.
791 State Highway 10
Randolph, NJ 07869
201-584-1077

Robert Bosch Corp.
Video Equipment Div.
P.O. Box 30816
Salt Lake City, UT 84130-0816
801-972-8000

Dave Spindle

See — **BTS Broadcast Television Systems, Inc.**, (A Joint Co. of Bosch & Phillips)

Robert Bosch GmbH
See — **BTS Broadcast Television Systems, Inc.**, (A Joint Co. of Bosch & Phillips)

Brabury Ltd.
Units 10 & 11 Pipers Ind. Estate
Thatcham Berkshire, England RG13 4NA
0635-68830

Breneman Labs
753 Harmon Ave.
Columbus, OH 43223
614-221-3544

Bretford/Knox
9715 Soreng Ave.
Schiller Park, IL 60176
312-678-2545

Walter S. Brewer Co., Inc.
4717-F S. Mingo Road
Tulsa, OK 74146
918-665-6820

Brintec Corp.
Brand-Rex Cable Systems Div.
1600 W. Main St.
Willimantic, CT 06226-1128
203-456-8000

Broadcast Aids, Inc.
20 Red Rose Drive
Levittown, PA 19056
215-547-7133

Broadcast Audio Corp.
11306 Sunco Drive
Rancho Cordova, CA 95670
916-635-1048

Broadcast Cartridge Service
15131 Triton Lane, Suite 108
Huntington Beach, CA 92649
714-898-7224

Broadcast Developments Ltd.
Autoscript
16 Cannon Drive, Limehouse
London, England E14 9SU
01-987-5135

Broadcast Devices Inc.
5 Crestview Ave.
Peekskill, NY 10566
914-737-5032

Broadcast Electronics, Inc.
P.O. Box 3606
Quincy, IL 62305
217-224-9600

Broadcast Microwave Services, Inc.
7322 Convoy Court
San Diego, CA 92111
619-560-8601

Broadcast Programming

2211 Fifth Ave.
Seattle, WA 98121
800-426-9082

Broadcast Systems Group Inc.
24843 Del Prado, Suite 461
Dana Point, CA 92629
714-240-8946

Broadcast Systems, Inc.
8222 Jamestown Drive
Austin, TX 78758
800-531-5232

Broadcast Systems Installations
14484 Yukon
Hawthorne, CA 90250
213-644-3574

Broadcast Video Systems, Ltd.
1050 McNicoll Ave.
Agincourt, Ont., Canada M1W 2L8
416-497-1020

Bert Verwey

REGIONAL SALES CONTACTS:

CA, Los Angeles, (818) 704-6324
CA, San Francisco, (415) 365-3944
KY, Edgewood, (606) 331-8990
MD, Washington Grove, (301) 258-7676
MN, Burnsville, (612) 890-8920
ND, Bismark, (701) 258-6360
TX, Austin, (512) 836-6011
TX, Dallas, (214) 233-5535
WA, Seattle, (206) 364-9911

Broadcasting & Related Products Div./3M

225-3N-03, 3M Center
St. Paul, MN 55144-1000
612-733-9073

Brooke Siren Systems
30B Banfi Plaza N.
Farmingdale, NY 11735
516-249-3660

Bruel & Kjaer Instruments, Inc.
185 Forest St.
Marlborough, MA 01752
617-481-7000

Bryston Ltd.
57 Westmore Drive
Rexdale, Ont., Canada M9V 3Y6
416-746-1800

Brystonvermont Ltd.
RFD 4, Box 2255
Montpelier, VT 05602
800-451-4160

Bud Industries, Inc.
4605 East 355th St.
Willoughby, OH 44094
216-946-3200

Buhl Optical Co.
1009 Beech Ave.
Pittsburgh, PA 15233
800-245-4574

Richard W. Burden Associates
20944 Sherman Way
Canoga Park, CA 91303
818-340-4590

Burlington Audio/Video Tapes
106 Mott St.
Oceanside, NY 11572
516-678-4414

C

CAE Inc.
P.O. Box 430
Hamburg, MI 48139
313-231-9373

CBS Special Products
51 West 52nd St., Room 861
New York, NY 10019
212-975-5073

CBSI-Custom Business Systems, Inc.
P.O. Box 67
Reedsport, OR 97467
503-271-3681

CCI
7353 Lee Highway
Chattanooga, TN 37421
615-894-2580

CEL Electronics Ltd.
Chroma House, Shire Hill
Saffron Walden, Essex, England
0799-23817

CMC Technology
2650 LaFayette St.
Santa Clara, CA 95050-2604
408-980-9800

CMX Corp.
2230 Martin Ave.
Santa Clara, CA 95050
408-988-2000

CRL Audio
Circuit Research Labs, Inc.
2522 W. Geneva Drive
Tempe, AZ 85282
800-535-7648

Bob Richards

REGIONAL SALES CONTACTS:

AR, Eureka Springs, (501) 253-8702
CA, Carpinteria, (805) 684-1423
FL, Miami Beach, (305) 674-0536
FL, Ocala, (904) 622-9058
HI, Honolulu, (808) 941-3618
IN, Richmond, (317) 962-8596
LA, New Orleans, (504) 242-8014
MD, BWI Airport, (301) 796-1500
MI, Grand Rapids, (616) 452-1596
MN, Brainerd, (218) 829-1326
MO, St. Louis, (800) 325-1960
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (206) 565-2301
WI, Oshkosh, (414) 235-8930
CANADA, Ontario, (416) 676-9171

CSI Electronics, Inc.
P.O. Box 965
Highland City, FL 33846
813-647-1904

C-Tape Developments Ltd.
Unit 19, Holder Road
Aldershot, England GU12 4RM
0252-319171

CVR Products
2824 N.E. 21st Ave.
Portland, OR 97212
503-284-1009

Cable Systems
Div. of Celwave Systems Inc.
60 Dodge Ave.
North Haven, CT 06473
203-239-3311

Caig Labs, Inc.
P.O. Box J
Escondido, CA 92025
619-743-7143

Calaway Engineering
49 S. Baldwin Ave.
Sierra Madre, CA 91024
818-355-2094

California Microwave
990 Almanor Ave.
Sunnyvale, CA 94086
408-720-6229

Calrec Audio
(Audio Design Calrec, Inc.)
P.O. Box 786
Bremerton, WA 98310
206-275-5009

Calzone Case Co.
225 Black Rock Ave.
Bridgeport, CT 06605
203-367-5766

Cambridge Products Corp.
244 Woodland Ave.
Bloomfield, CT 06002
203-243-1761

The Camera Mart, Inc.
456 West 55th St.
New York, NY 10019
212-757-6977

Herb Browning, VP

REGIONAL SALES CONTACTS:

CA, Huntington Beach, (714) 841-4397
IN, Evansville, (812) 476-6327
NY, Liverpool, (315) 457-3703

Canare Cable, Inc.
832 N. Victory Blvd.
Burbank, CA 91502
818-840-0993

Canford Audio Ltd.
Stargate Works, Ryton
Tyne & Wear, England NE40 3EX
44-91413-7171

Canon USA, Inc.
Optics Div.
1 Canon Plaza
Lake Success, NY 11042
516-488-6700

Jack Keyes: Jim Wolfe

REGIONAL SALES CONTACTS:

CA, Costa Mesa, (714) 979-6000
IL, Elmhurst, (312) 833-3070
TX, Dallas, (214) 620-2641
CANADA, Ontario, (416) 678-2730

Capitol Magnetic Products
6902 Sunset Blvd.
Hollywood, CA 90028
213-461-2701

Edward Khoury, Pres.; H. J. 'Bud' Jackson, Sr. V.P./Sales

REGIONAL SALES CONTACTS:

CA, Los Angeles, (213) 254-9111
IL, Park Ridge, (312) 298-1806
PA, Bethlehem, (215) 868-1401
ENGLAND, Middlesex, 011-44-1-561-0922

Capitol Production Music
1750 N. Vine St.
Hollywood, CA 90028
312-461-2701

Cartridge Technology
4 Crescent Drive
Shenfield, Essex, England CM15 8DS
215485

Carvin Corp.
1155 Industrial Ave.
Escondido, CA 92025
619-747-1710

Cat Systems Inc.
401 East 74th St.
New York, NY 10021
212-988-0290

Catel Telecommunications, Inc.
4050 Technology Place
Fremont, CA 94537-5122
415-659-8988

Dwight Cavendish Co.
2117 Chestnut Ave.
Wilmette, IL 60091
312-256-0937

CaVox/Tape-Athon Corp.
13633 Crenshaw Blvd.
Hawthorn, CA 90250
213-676-6752

- Celwave**
Route 79
Marlboro, NJ 07746
201-462-1880
- Center Video Industrial Co., Inc.**
5615 W. Howard St.
Chicago, IL 60648
312-647-8700
- Central Dynamics**
147 Hymus Blvd.
Pointe Claire, Que., Canada H9R 1G1
514-697-0810
- Central Tower Inc.**
P.O. Box 530
Newburgh, IN 47630
812-853-0595
- Centro Corp.**
9516 Chesapeake Drive
San Diego, CA 92123
619-560-1578
Darrell Wenhardt
- Century Precision Optics**
10713 Burbank Blvd.
North Hollywood, CA 91601
818-766-3715
- Century 21 Programming Inc.**
4340 Beltwood Parkway
Dallas, TX 75244
214-934-2121
- Cetec Gauss**
9130 Glenoaks Blvd.
Sun Valley, CA 91352
213-875-1900
- Cetec Ivie**
1366 W. Center
Orem, UT 84057
801-224-1800
- Cetec Raymer**
7315 Fulton Ave.
North Hollywood, CA 91605
213-875-0423
- Cetec Vega**
9900 Baldwin Place
El Monte, CA 91731
818-442-0782
- Channelmatic, Inc.**
821 Tavern Road
Alpine, CA 92001
619-445-2691
- Chester Cable**
Div. Celwave Systems, Inc.
P.O. Drawer D
Chester, NY 10918
914-469-2141
- Choice Electronics, Inc.**
P.O. Box 1475
Gainesville, FL 32602
904-375-4434
- Christie Electric Corp.**
20665 Manhattan Place
Torrance, CA 90501
213-320-0808
- Chroma Digital Systems**
Div. of Shintron Co. Inc.
144 Rogers St.
Cambridge, MA 02142
617-491-8700
- Chyron Corp.**
Telesystems
265 Spagnoli Road
Melville, NY 11747
516-249-3296
- Cine 60, Inc.**
- 630 Ninth Ave.
New York, NY 10036
212-586-8782
- Cinema Products Corp.**
2037 Granville Ave.
Los Angeles, CA 90025
213-395-5826
- Cinematography Electronics, Inc.**
1625 Stanford St.
Santa Monica, CA 90404
213-829-1811
- Cipher Digital, Inc.**
5734 Industry Lane
Frederick, MD 21701
301-695-0200
Anthony R. Mattia
- Clear-Com Intercom Systems**
1111 17th St.
San Francisco, CA 94107
415-861-6666
- COARC**
P.O. Box 2 Route 217
Mellenville, NY 12544
518-672-7202
Doug Fithian
- Coaxial Dynamics**
15210 Industrial Parkway
Cleveland, OH 44135
216-267-2233
- Jules Cohen & Associates**
1730 M St., Suite 400
Washington, DC 20032
- Coherent Communications, Inc.**
13756 Glenoaks Blvd.
Sylmar, CA 91342
818-362-9393
- Cohu, Inc.**
Electronics Div.
P.O. Box 85623
San Diego, CA 92138-5623
619-277-6700
- Colorado Video Inc.**
P.O. Box 928
Boulder, CO 80306
303-444-3972
- ColorGraphics Systems, Inc.**
5725 Tokay Blvd.
Madison, WI 53719
608-274-5786
- Colortran, Inc.**
1015 Chestnut St.
Burbank, CA 91506
818-843-1200
- Columbine Systems, Inc.**
1620 Jackson St., Level 3
Golden, CO 80401
303-279-4000
- Comark Communications, Inc.**
P.O. Box 506
Colmar, PA 18915
215-822-0777
- CommTek Publishing**
Satellite Orbit & Dealers
P.O. Box 53
Boise, ID 83707
208-323-7438
- Communitronics Ltd.**
160 Wilbur Place
Bohemia, NY 11716
516-567-8320
- Comprehensive Video Supply Corp.**
148 Veterans Drive
Northvale, NJ 07647
201-767-7990
- Comprompter, Inc.**
P.O. Box 128
LaCrosse, WI 54602-0128
608-785-7766
- Compu-Prompt**
746 N. Cahuenga
Los Angeles, CA 90038
213-461-3113
- CompuSonics**
2345 Yale St.
Palo Alto, CA 94303
303-753-0060
- Computer Concepts Corp.**
8375 Melrose Drive
Lenexa, KS 66214
913-541-0900
- Computer Graphics Lab, Inc.**
405 Lexington Ave., 49th Floor
New York, NY 10174
212-557-5130
- Computer Prompting Corp.**
1511 K St. N.W., Suite 831
Washington, DC 20005
202-783-2051
- Comrex Corp.**
65 Nonset Path
Acton, MA 01720
617-263-1800
- Comsat General Corp.**
950 L'Enfant Plaza, S.W.
Washington, DC 20024
202-863-6926
- Comsearch, Inc.**
11720 Sunrise Valley Drive
Reston, VA 22091
703-620-6300
- ComSonics, Inc.**
P.O. Box 1106
Harrisonburg, VA 22801
703-434-5965
- Comtech Antenna Corp.**
3100 Communications Road
St. Cloud, FL 32769
305-892-6111
- Comtek Communications Technology**
357 West 2700 South
Salt Lake City, UT 84115
801-466-3463
- Comtronix Systems**
P.O. Box 388
Westfield, MA 01085
413-568-7311
- Comwave, Div. of**
Communication Microwave Corp.
P.O. Box 69
Mountaintop, PA 18707
717-474-6751
- Jerry Conn Associates Inc.**
P.O. Box 444
Chambersburg, PA 17201
717-263-8258
- Connectronics Corp.**
652 Glenbrook Road
Stamford, CT 06906
203-324-2889
- Connolly Systems**
7 Intec 2 Wade Road
Basingstoke, Hamps, England RG24
ONE
- Conrac Div., Conrac Corp.**
600 N. Rimsdale Ave.
Covina, CA 91722
818-966-3511
- Consolidated Electronic Industries**
15A Anderson Road
Thornbury, Victoria, Australia 3071
- Contact East**
335 Willow St. S.
North Andover, MA 01845
617-682-2000
- Continental Electronics**
A Div. of Varian Associates, Inc.
P.O. Box 270879
Dallas, TX 75227
214-381-7161
R. L. Floyd
- REGIONAL SALES CONTACTS:**
AL, Birmingham, (205) 822-1078
CA, Auburn, (916) 268-2077
CO, Evergreen, (303) 670-1049
IL, Streator, (815) 672-8585
MN, Maple Plain, (612) 479-2633
NY, Schroom Lake, (518) 532-7488
NC, Asheville, (704) 274-5298
OR, Sandy, (503) 668-9312
TN, Hendersonville, (615) 822-0256
TX, Plano, (214) 423-3644
- Continental Microwave**
1 Drawley Green Road
Luton, Beds, England LU1 3LB
- Continental Recordings Inc.**
102 South St.
Boston, MA 02111
617-426-3131
- Control Concepts Corp.**
P.O. Box 1380
Binghamton, NY 13902-1380
607-724-2484
- Control Technology, Inc.**
2950 S.W. Second Ave.
Fort Lauderdale, FL 33315
305-761-1106
- Conus Communications**
3415 University Ave.
Minneapolis, MN 55414
612-642-4655
- Convergence Corp.**
1641 McGaw
Irvine, CA 92714
714-250-1641
Jim Peacher
- REGIONAL SALES CONTACTS:**
CO, Denver, (303) 796-0924
CT, Enfield, (203) 745-7144
NJ, Tinton Falls, (201) 389-2264
NY, Brooklyn, (718) 434-0598
OH, Centerville, (513) 435-0444
TX, Austin, (512) 499-0817
- Cool Light Co.**
5723 Auckland Ave.
North Hollywood, CA 91601
- Cornwall Associates Inc.**
650 Sierra Madre Villa, Suite 300
Pasadena, CA 91107
818-351-5521
- Cortland Cable Co.**
P.O. Box 330
Cortland, NY 13045-0330
607-753-8276
- Countryman Associates Inc.**
417 Stanford Ave.
Redwood City, CA 94063
415-364-9988
- Court Acoustics Sales Ltd.**
29 Beethoven St.
London, England W10 4LG
01-960-8178
- Cox Electronics Ltd.**
Hanworth Trading Estate, Hampton
Road West
Feltham, Middlesex, England TW13
6DH
441-894-5622

Manufacturers' Addresses

Creative Video Services

4167 Lyndale Ave. N.
Minneapolis, MN 55412
612-521-5870

Creative Video Services

816 St. Germain, Suite 500
St. Cloud, MN 56301
612-255-0033

Crest Audio

150 Florence Ave.
Hawthorne, NJ 07506

Crosspoint Latch Corp.

95 Progress St.
Union, NJ 07083
201-688-1510

Crouse-Hinds Co.

Aviation Lighting
P.O. Box 1200
Windsor, CT 06095
203-683-4314

Crow Broadcast Systems Ltd.

264 Bath Road
Slough, Berks, England SL1 4EW
44-753-31181

John Crowe Productions

6311 N. O'Connor, Suite 102, LB
48
Irving, TX 75039
214-556-1816

Crown International, Inc.

1718 W. Mishawaka Road
Elkhart, IN 46517
219-294-8000

Cruz Bay

P.O. Box 3274
Opopka, FL 32703
305-682-4400

Cubicomp Corp.

21325 Adeline St.
Hayward, CA 94545
415-887-1300

Cumming Corp.

Canyon Place
9620 Topanga
Chatsworth, CA 91311
818-882-0551

Curtis & Green Ltd.

Arundel Road
Uxbridge, Middlesex, England UB8
2RR
44-895-31777

D

dbx, Inc.

71 Chapel St.
Newton, MA 02195

DICSA-Delay TV

Ingenieurs-Conseils SA
CH-1462 Yvonand, Switzerland
024 32 11 55

D.D. Industries, Inc.

Navitar AV Div.
317 E. Chestnut St.
East Rochester, NY 14445
716-385-4920

DX Communications

10 Skyline Drive
Hawthorne, NY 10532
914-347-4040

Dacobas, Inc.

A Subsidiary of Zero Corp.

1830-A N. Voyager Ave.
Simi Valley, CA 93063
805-526-7733

Dago Cases

6945 Indiana Court, Suite 600
Golden, CO 80403
303-421-7912

Peter W. Dahl Co., Inc.

5869 Waycross
El Paso, TX 79924
915-751-2300

Da-Lite Screen Co., Inc.

P.O. Box 137
Warsaw, IN 46580
219-267-8101

Dalsat Inc.

1205 Summit
Plano, TX 75074
214-570-7561

Data Communications Corp. Broadcast Div.

3000 Directors Row
Memphis, TN 38131
901-345-3219

Datatek Corp.

1121 Bristol Road
Mountainside, NJ 07092
201-654-8100

Dataworld

P.O. Box 30730
Bethesda, MD 20814
301-652-8822

Datel

A Div. of General Electric Co.
11 Cabot Blvd.
Mansfield, MA 02048
617-339-9341

Datum Inc.

1363 S. State College Blvd.
Anaheim, CA 92806
714-533-6333

John J. Davis & Associates Consulting Engineers

P.O. Box 128
Sierra Madre, CA 91024-0128
818-355-6909

Davis & Sanford Co. Inc.

24 Pleasant St.
New Rochelle, NY 10802
914-632-1636

Delcom Corp.

2349 Grissom
St. Louis, MO 63146
314-432-1164

Delcom Corp.

6019 South 66th East Ave.
Tulsa, OK 74145
918-494-9500

Delta-Benco-Cascade

A Sub. of Triple Crown Elec. Inc.
4560 Fieldgate Drive
Mississauga, Ont., Canada L4W 3W6
416-629-1111

Delta Electronics Inc.

5730 Gen. Washington Drive
Alexandria, VA 22312
703-354-3350

J. Novak

Denecke Inc.

5417 Cahuenga Blvd.
North Hollywood, CA 91601
818-766-3525

Denrad Technical Group, Inc.

P.O. Box 225

Denison, TX 75020

214-463-5382

DeSisti Lighting

Desmar Corp.
328 Adams St.
Hoboken, NJ 07030
201-792-4980

Devlin Productions, Inc.

150 West 55th St.
New York, NY 10019
212-582-5572

Dictaphone Corp.

120 Old Post Road
Rye, NY 10580
914-967-2249

Dielectric Communications

A Unit of General Signal
Tower Hill Road
Raymond, ME 04071
207-655-4555

Digalogic Communications Corp.

1106 Harpeth Industrial Court
Franklin, TN 37064
615-790-2882

Digital Broadcast Systems Inc.

184 Mechanic St.
Southbridge, MA 01550
617-764-4386

Digital Services Corp.

3622 N.E. Fourth St.
Gainesville, FL 32609
904-377-8013

Digivision Broadcast Ltd.

Parker Drive
Leicester, England LE4 0JP
0533-351224

DigiVision, Inc.

4980 Carroll Canyon Road
San Diego, CA 92121
619-458-1111

Dilor Industries Ltd.

P.O. Box 2169
Squamish, B.C., Canada V0N 3G0
604-892-9301

Diner + Allied Film & Video Services

620 Third St.
San Francisco, CA 94107
415-777-1700

Discrete Technology Labs, Inc.

2911 Oceanside Road
Oceanside, NY 11572
516-678-3961

Di-Tech Inc.

48 Jeffry Blvd.
Deer Park, NY 11729
516-667-6300

Dixon Instruments

P.O. Box 1449
Grand Junction, CO 81502
303-242-8863

Dolby Laboratories, Inc.

100 Potrero Ave.
San Francisco, CA 94103-4813
415-558-0200

Stacy Rehm

REGIONAL SALES CONTACTS:

CA, Encino, (818) 995-4175
CA, Hollywood, (213) 851-4111
CA, Los Angeles, (213) 851-9800
CA, San Francisco, (415) 285-8900
FL, North Miami, (305) 944-4448
IL, Pekin, (309) 346-3161
MA, Newton, (617) 244-6881
MN, Minneapolis, (612) 729-8305
NY, New York, (212) 586-5989
NY, New York, (212) 541-5900
OR, Portland, (503) 239-0352
PA, Philadelphia, (215) 627-6700

TN, Nashville, (615) 366-1890
TX, Austin, (512) 443-4567
UT, Salt Lake City, (801) 466-3196

Dorough Electronics

5221 Collier Place
Woodland Hills, CA 91364
818-999-1132

Dow-Key Microwave Corp.

1110 Mark Ave.
Carpinteria, CA 93013-2918
805-684-0427

Philip Drake Electronics Ltd.

37 Broadwater Road
Welwyn Garden City, Herts, England
AL7 3AX
07073-33866

The Droid Works

3301 Kerner Blvd.
San Rafael, CA 94901

Drummex Inc.

P.O. Box 426
Drummondville, Que., Canada J2B
6W3
819-477-2027

Dubner Computer Systems, Inc.

6 Forest Ave.
Paramus, NJ 07652
201-845-8900

Dukane Corp.

2900 Dukane Drive
St. Charles, IL 60174
312-584-2300

The Durafilm Co.

137 N. LaBrea Ave.
Hollywood, CA 90036
213-936-1156

DYMA Engineering, Inc.

P.O. Box 1535
Los Lunas, NM 87031
505-865-6700

Dynair Electronics, Inc.

5275 Market St.
San Diego, CA 92114
619-263-7711

Robert A. Jacobs

REGIONAL SALES CONTACTS:

NY, Pleasantville, (914) 769-0212

Dynamic Technology Ltd.

DTL House, Alliance Road
Acton, London, England W3 0BA
441-993-2401

Dynamote Corp.

1200 W. Nickerson
Seattle, WA 98119
206-282-1000

Dynatech Data Systems

7644 Dynatech Court
Springfield, VA 22153
703-569-9000

Dynatech Microwave Switches

Div. Dynatech/UZ, Inc.
589 Venice Blvd.
Venice, CA 90291
213-392-9821

Dynatech Nevada, Inc.

Exact Electronics Div.
P.O. Box 1925
Carson City, NV 89702
702-883-3400

Dynatech NewStar, Inc.

3001 Latham Drive
Madison, WI 53713
608-274-8686

MONDAY
DECEMBER
1995

25

*The HP Audio Analyzer
might take its first day off.*

With 20,000 hours MTBF, it could be ten years before the HP Audio Analyzer takes a break. So you won't lose patience with down time or money on repairs. And at \$5800* (or \$3900* without a source), you can easily afford the most reliable audio distortion analyzer on the market.

For details about the HP8903B/E, call your local HP office listed in the white pages, or use our toll free number. 1-800-556-1234, ext.515. In California, 1-800-441-2345, ext.515.



**HEWLETT
PACKARD**

*U.S. list price

Circle (60) on Reply Card

Manufacturers' Addresses

Dynetic Systems
19128 Industrial Blvd.
Elk River, MN 55330
612-441-4300

E

EDX Engineering, Inc.
P.O. Box 1547
Eugene, OR 97440
503-345-0019

EECO Inc.
1601 E. Chestnut Ave.
Santa Ana, CA 92702-0659
714-953-3724

EEG Enterprises, Inc.
1 Rome St.
Farmingdale, NY 11735
516-293-7472

EELA Audio
Hondsruglaan 83A
5628 DB Eindhoven, Holland
040-424455

EEV
4 Westchester Plaza
Elmsford, NY 10523
914-592-6050

Dennis Baker

REGIONAL SALES CONTACTS:

CA, Westminster, (714) 895-3948
GA, Atlanta, (404) 394-9201
IL, Chicago, (312) 843-8417
WA, Seattle, (206) 363-2200
CANADA, Rexdale, (416) 745-9494

EEV
Waterhouse Lane
Chelmsford, Essex, England CM1
2QU
0245-261777

EG&G Inc.
35 Congress St.
Salem, MA 01970
617-745-3200

EMCEE Broadcast Products
P.O. Box 68
White Haven, PA 18661
717-443-9575

EMT-Franz GmbH
Postfach 1520
D-7630 Lahr, West Germany
078251011

E-MU Systems, Inc.
1600 Green Hills Road
Scotts Valley, CA 95066
408-438-1921

E-N-G Corp.
2930 Cloverdale Ave.
Concord, CA 94520
415-798-4040

ESC Electronics Corp.
534 Bergen Blvd.
Palisades Park, NJ 07650
201-947-0400

ESE
142 Sierra St.
El Segundo, CA 90245
213-322-2136

Bob Mayers

REGIONAL SALES CONTACTS:

CA, Burbank, (213) 255-0150
CA, Mountainview, (415) 967-6040
CA, Los Angeles, (818) 704-6324
CA, San Jose, (408) 946-2236
IL, Chicago, (312) 539-7700
IL, Quincy, (217) 222-8200
IN, Richmond, (317) 962-8596
KY, Edgewood, (606) 331-8990
MD, Bethesda, (301) 657-2141
NY, New York, (212) 586-3690
NY, Fort Washington, (516) 883-4414
NY, So. Glens Falls, (518) 793-2181
TX, Austin, (800) 531-5232
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (800) 426-8434

ESS/Spectratek
7838 San Fernando Road
Sun Valley, CA 91352
818-768-8064

Eagle Hill Electronics, Inc.
Route 2 Box 354
Chestertown, MD 21620
301-778-3240

Eastman Kodak Co.
343 State St.
Rochester, NY 14650
716-724-7355

ECHOlub, Inc.
175 Bedford Road
Burlington, MA 01803
617-273-1512

Econco Broadcast Service Inc.
1318 Commerce Ave.
Woodland, CA 95695
916-662-7553

Eddor Product Assurance Corp.
16782 Hale Ave.
Irvine, CA 92714
714-863-1529

Editron USA
1900 S. Sepulveda Blvd., Suite 354
West Los Angeles, CA 90025-5620
213-477-4882

Eidophor Ltd.
Althardstrasse 70
Regensdorf, Switzerland CH-8105
0041-1-8422222

Eigen Video
P.O. Box 848
Nevada City, CA 95959
916-272-3461

Elcom-Bauer
6199 Warehouse Way
Sacramento, CA 95826
916-381-3750

Elcon Associates
1450 O'Connor Drive
Toronto, Ont., Canada M4B 2T8
416-759-5614

Electrical Products Div./3M
225-4N-05 3M Center
St. Paul, MN 55144-1000
612-733-8019

Electro Controls
2975 South 300 West
Salt Lake City, UT 84115
801-487-9861

Electro Impulse Lab, Inc.
P.O. Box 870
Red Bank, NJ 07701
201-741-0404

Electro Industries
1800 Shames Drive
Westbury, NY 11590
516-938-6439

Electro-Voice Inc.
600 Cecil St.
Buchanan, MI 49107
616-695-6831

Electrocraft Consultants Ltd.
Liss Mill, Mill Road
Liss, Hampshire, England GU33 7BD
042873-5190

Electrohome Ltd.
809 Wellington St. N.
Kitchener, Ont., Canada N2G 4J6
519-744-7111

Electronic Article Surveillance/3M
223-3N-01 3M Center
St. Paul, MN 55144-1000
612-733-5050

Electronic Systems Labs, Inc.
110 S.W. 21st Terrace, Suite B-107
Fort Lauderdale, FL 33312
305-791-1501

Electronic Systems Products
1301 Armstrong Drive
Titusville, FL 32780
305-269-6680

Electronic Visuals Ltd.
Goldsworth Road
Woking Surrey, England GU21 1RU
04862-71663

Electronics Diversified, Inc.
1675 Northwest 216th Ave.
Hillsboro, OR 97124
503-645-5533

Elektroimpex
P.O. Box 296
H-1392 Budapest, Hungary

Elemack Italia S.R.L.

New Frezzi On-Board™ "Interface" gives you

UNINTERRUPTED POWER TO ENG/EFP CAMERAS during battery changing

Frezzi™
Made in
U.S.A.

Fits standard
On-Board
battery
brackets.

*patent
applied
for

*uninter-
ruptible
power
source.

Frezzi™ Power-UPS-Interface*
keeps you shooting without stopping
while you change camera battery.

Powers camera for 5 to 10 minutes during camera battery change • Wt: less than 1½ lbs • Size: 5.3" h x 4" w x 1.4" d • automatically re-charges itself from camera battery—ready to power camera •

Call (201) 427-1160 for information



Frezzolini Electronics Inc.

5 Valley St. Hawthorne, N.J. 07506 • TWX: 710-988-4142
See Frezzi at SMPTE/New York Booth 1043

Circle (61) on Reply Card

Via Poggibonsi, 15
00148 Rome, Italy
5231994

Elicon
940 S. Leslie St.
La Habra, CA 90631
714-870-6647

Emcor Products
Crenlo, Inc.
1600 Fourth Ave. N.W.
Rochester, MN 55901
507-289-3417

Emergency Alert Receiver Inc.
Also known as EAR Inc.
P.O. Box 20629, Cathedral Station
New York, NY 10021
212-695-4767

**Encom Telecommunications & Tech.,
Inc.**
3264 Saturn Court
Norcross, GA 30092
404-446-8668

Energy-Onix
P.O. Box 923
Hudson, NY 12534
518-828-1690

Enertec/Schlumberger
Dept. Audio Professionnel
1 rue Nieuport
78141 Velizy, Cedex, France
130 70 3070

Engel Engineering
1 Norman Lane
Succasunna, NJ 07876
201-927-0866

The Engineering Lab, Inc.
3019 La Costa Ave.
Carlsbad, CA 92008
619-942-2208

Enterprise Engineering P.C.
P.O. Box 9001
Peoria, IL 61614
309-691-4155

Environmental Satellite Data, Inc.
5200 Auth Road
Suitland, MD 20746
301-423-2113

Environmental Technology, Inc.
1302 High St.
South Bend, IN 46618
219-233-1202

Equipto Electronics Corp.
351 Woodlawn Ave.
Aurora, IL 60506-9988
312-897-4691

ERCA
43 av. A. Schneider
F-92140 Clamart, France
1-645-2181

Ethereum Scientific Corp.
7641 Clarewood, Suite 336
Houston, TX 77036
713-784-2630

Evans Associates
Consulting Telecom, Engineers
216 N. Green Bay Road
Thiensville, WI 53092
414-242-6000

Eventide Inc.
1 Alsan Way
Little Ferry, NJ 07643
201-641-1200

Evertz Microsystems Ltd.
3515 Mainway
Burlington, Ont., Canada L7M 1A9
416-335-3700

Excalibur Industries
12427 Foothill Blvd.
Lake View Terrace, CA 91342
818-899-2547

F

Fairchild Camera & Instrument Corp.
CCD Imaging Div.
450 National Ave.
Mountain View, CA 94043
415-493-8001

Fairchild Data Corp.
350 N. Hayden Road

Scottsdale, AZ 85257
602-949-1155

Fairlight Instruments
2945 Westwood Blvd.
Los Angeles, CA 90064

Faroudja Labs, Inc.
946 Benicia Ave.
Sunnyvale, CA 94086
408-245-1492

Farrtronics Ltd.
480 Dutton Drive
Waterloo, Ont., Canada N2L 4C6

Fast Forward Video
14146 Paseo Verde
Tustin, CA 92680
714-838-9850

Federal Pacific/Reliance Electric
P.O. Box 99502
Cleveland, OH 44199
800-245-4501

Fenwal Inc.
Div. of Kidde, Inc.
400 Main St.
Ashland, MA 01721
617-881-2000

Ferno Salesmaker
Div. of Ferno-Washington, Inc.
70 Weil Way
Wilmington, OH 45177-9371
513-382-1451

Fiberbilt Cases
601 West 26th St.
New York, NY 10001

WE WORRY, SO THAT YOU WON'T HAVE TO.

We have strong opinions about the way communications towers should be built.

Some people think that quality standards can be somewhat flexible.

We don't agree.

Some people think that "off-the-shelf" designs, with minor adjustments, are sufficient to meet most requirements.

We don't agree.

Some people think that short cuts in fabrication are justified when the end product seems "good-enough".

We don't agree.

For TV, CATV, "Class C" FM, AM and microwave towers, call STAINLESS. We worry about quality . . . so you won't have to.

The Tower People

Stainless, inc.

North Wales, PA 19454 U.S.A.
Phone: (215) 699-4871
TWX: 510-661-8097



C0186

Circle (63) on Reply Card

Manufacturers' Addresses

212-675-5820

Fidelipac Corp.
P.O. Box 808
Moorestown, NJ 08057
609-235-3900

Jack M. Ducart, 800-HOT-TAPE

REGIONAL SALES CONTACTS:
Over 300 distributors worldwide—Contact, Fidelipac for your nearest distributor.

Film/Video Equip. Service Co.
1875 S. Pearl St.
Denver, CO 80210
303-778-8616

Flash Technology

55 Lake St.
Nashua, NH 03060
603-883-6500

John Fluke Mfg. Co., Inc.
P.O. Box C9090
Everett, WA 98206
206-356-5293

For-A Corp. of America
320 Nevada St.
Newton, MA 02160
617-244-3223

Tedd Jacoby

REGIONAL SALES CONTACTS:
CA, Cerritos, (213) 402-5391
IL, Chicago, (312) 582-2233
MA, Newton, (617) 244-3223

Forge Recording Studios, Inc.
P.O. Box 861
Valley Forge, PA 19481
215-644-3266

Forox Corp.
393 West Ave.
Stamford, CT 06902

Fortel Inc.
2985 Gateway Drive, Suite 600
Norcross, GA 30071
404-447-4422

Fostex Corp. of America
15431 Blackburn Ave.
Norwalk, CA 90650
213-921-1112

Mark Cohen

Fougerolle S.A.
Z1 10 rue Charles Cros
F-95230 Saint Leu La Foret, France
3-995.69.33

Freeland Products, Inc.
Route 7 Box 628
Covington, LA 70433
504-893-1243

Frequency Measuring Service Inc.
P.O. Box 353
Commerce City, CO 80037

Frezzolini Electronics, Inc.
7 Valley St.
Hawthorne, NJ 07506
201-427-1160

Jack Frezzolini

Fuji Photo Film USA, Inc.
Magnetic Products Div.
555 Taxter Road
Elmsford, NY 10523
212-736-3336

Fujinon Inc.
10 Highpoint Drive
Wayne, NJ 07470
914-472-9800

REGIONAL SALES CONTACTS:
CA, Carson, (213) 532-2861
IL, West Chicago, (312) 231-7888
TX, Carrollton, (214) 385-8902

Furman Sound, Inc.
30 Rich St.
Greenbrae, CA 94904
415-927-1225

G

GBC Closed Circuit TV Corp.
315 Hudson St.
New York, NY 10013
212-989-4433

GEC Video Systems
106 Purdy Ave.
Port Chester, NY 10573

GEC Video Systems
79 Silver St.
Reading, Berks, England RG1 3SZ

GKM Mfg. Corp.
47 Bridgewater St.
Brooklyn, NY 11222
718-388-4114

G & M Power Products Inc.
943 N. Orange Drive
Los Angeles, CA 90038
213-850-6800

GML America
8150 Leesburg Pike, Suite 910
Vienna, VA 22180
703-790-0101

Paula M. Bowen

REGIONAL SALES CONTACTS:
CA, Burbank, (818) 848-1234
GA, Decatur, (404) 294-1536
IL, Lake Forest, (312) 295-6726
KS, Leawood, (913) 383-3475
KY, Louisville, (502) 456-6666
MD, Wheaton, (301) 942-2092
NH, Manchester, (603) 472-2297

GTE Sylvania Lighting Products
U.S. Lighting Div.
Sylvania Lighting Center
Danvers, MA 01923
617-777-1900

Problem:

Unpredictable audio levels from program sources.

Solution:

The Valley 610 & 440.

We offer two devices capable of delivering a constant output level for input levels ranging from -40 dB to +24 dB.



The Model 610 Dual Compressor/Expander is ideal for stereo applications—whether AM, FM, or TV. And, the Model 440 Limiter/Compressor/Expander is well suited for single-channel or mono use.

To receive an immediate demonstration of the full capabilities of either of these devices at your facility, simply call...

1-800-FOR A TRY.

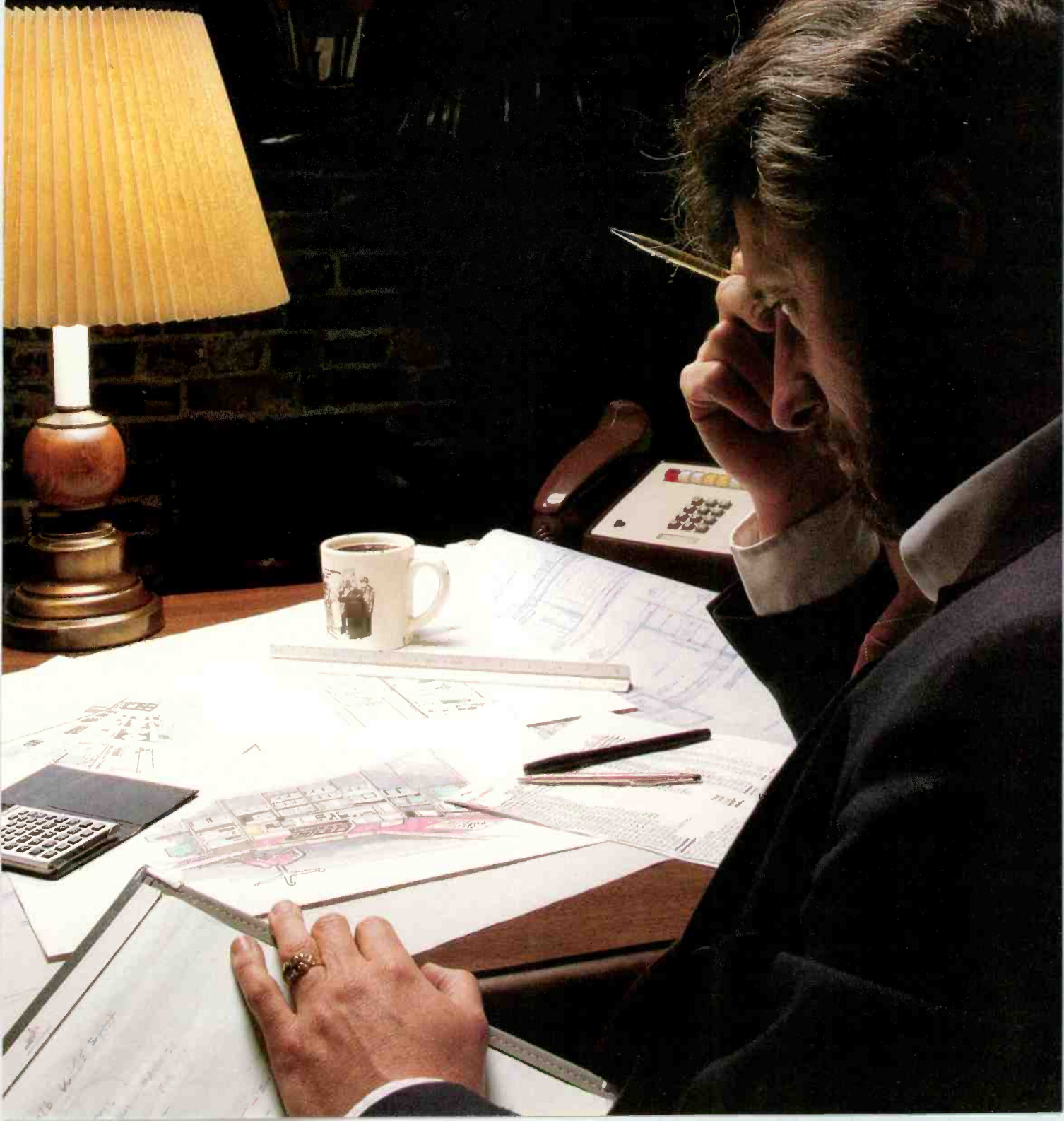


VALLEY PEOPLE INC. • P.O. Box 40306 • 2817 Erica Place • Nashville, TN 37204
(615) 383-4737 • TELEX 3785899 • NASH AUDIO

INTERNATIONAL: Gexco International, Inc. • 317 St. Paul's Avenue • Jersey City, NJ 07308
Telex 285261 GEXCI • (201) 653-2383

Circle (149) on Reply Card

Upgrading Your Facility?



Bosch Distribution Switching Equipment will

Machine Control. The TCS-1 Machine Control System provides you with complete remote control from single or multiple locations.

Signal Control. The TAS/TVS-2000 Audio/Video Distribution Switcher provides you with exceptional signal transparency and allows unlimited expansion.

Switcher Control. Digital Switcher Control Systems allow you complete control of the quality.

Master Control. Complete stereo, audio, video, and machine control with production switching capabilities are at your fingertips.

Reliable. Your Bosch switching equipment is fully tested and "burned in" before you receive it. The Distribution Switcher includes a free, five-year warranty.

Built for the Future. Bosch switching systems are fully capable of today's and future broadcast needs, such as stereo/audio, high-definition television, and station automation.



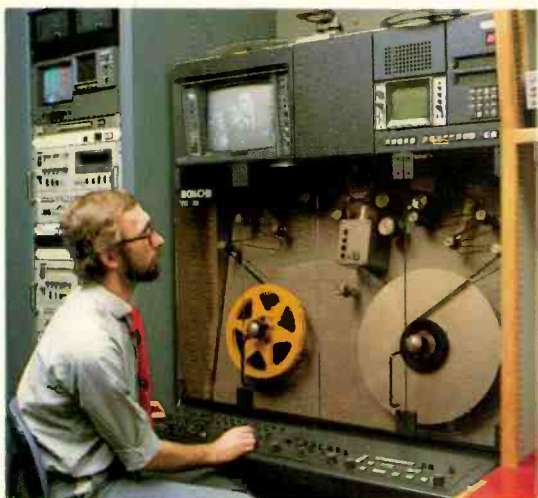
Master control switcher works together with the distribution switcher and machine control.

Distribution Switcher provides unlimited video and audio expansion capabilities.



Machine control interfaces may be grouped together, or located at the individual machines.

Projectors and telecine transports can be remotely controlled.



meet your needs for today and the future. . .



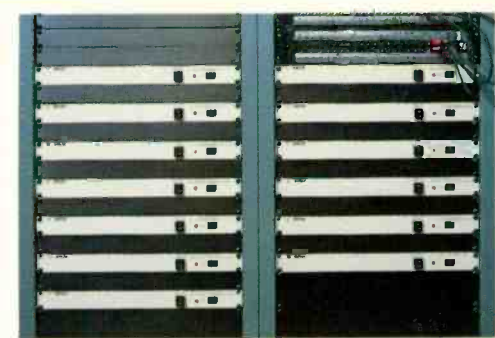
VTRs can be controlled with source selection panels and machine assignment panels.

(Facility Photos Courtesy of KTZZ Channel 22, Seattle, Washington.)

Source selection and machine control in a production control room.



Custom control panels are designed to meet specific control needs.



. . . Putting You in complete control!

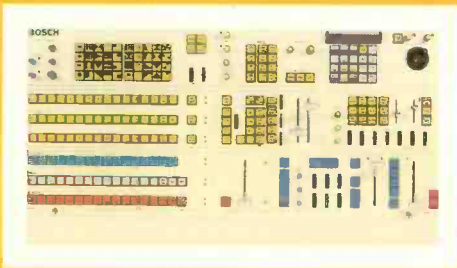
Upgrade your facility with the Bosch Family of audio and video products.



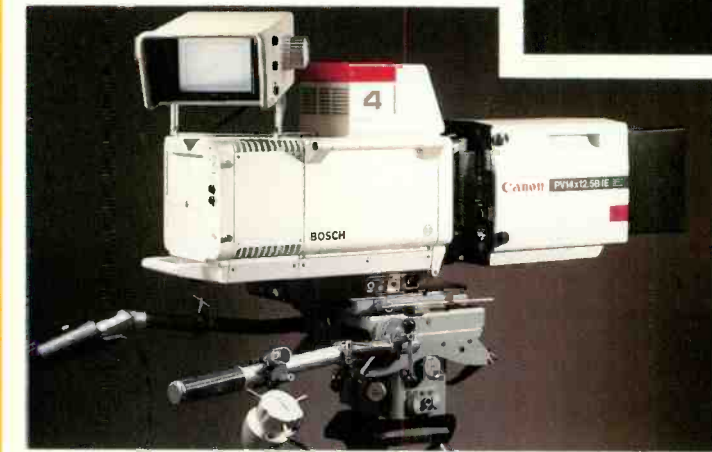
Computer Graphics



Signal Processing



Production Switchers



Cameras

Distribution Switcher Systems



Video Tape Recorders



Film to Tape Transfer

“Bosch for EXCELLENCE”

Product Integrity

Bosch provides you with over 50 years of experience in the video business. Superior quality, excellent service, and expert engineering continue to be the standard for Bosch video products.

BOSCH



Robert Bosch Corporation
Video Equipment Division

2300 South 2300 West
P.O. Box 30816
Salt Lake City, Utah 84130-0816
Phone (801) 972-8000

Gabriel Electronics, Inc.
Libby Road, Box 70
Scarborough, ME 04074
207-883-5161

R. F. Gain, Ltd.
116 S. Long Beach Road
Rockville Centre, NY 11570
800-645-2322

Gaines Audio
P.O. Box 17888
Rochester, NY 14617
716-266-0780

Garner Industries
4200 North 48th St.
Lincoln, NE 68504
402-464-5911

General Electric Co.
Projection Display Products
Electronics Park, 6-205
Syracuse, NY 13221
315-456-3277

General Microwave Corp.
5500 New Horizons Blvd.
Amityville, NY 11701
516-226-8900

Generic Computer Systems
357 N. Main St.
Butler, PA 16001
412-283-1500

The Geneva Group of Companies
7255 Flying Cloud Drive
Eden Prairie, MN 55344
612-829-1724

Gentner Engineering
540 West 3560 South
Salt Lake City, UT 84115
801-268-1117

Elaine Jones

REGIONAL SALES CONTACTS:

AZ, Phoenix, (602) 267-0600
IL, Palatine, (312) 358-3330
IN, Richmond, (317) 962-8596
IN, Richmond, (317) 935-1704
MD, BWI Airport, (301) 796-1500
MI, Grand Rapids, (616) 452-1596
MI, Farmington Hills, (313) 471-0027
NY, South Glens Falls, (518) 793-2181
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (206) 565-2301
CANADA, Ontario, (416) 731-3697

Gentner RF Products
Div. of Gentner Engineering
P.O. Box 32550
San Jose, CA 95152
408-926-3400

John E. Leonard, Jr.

Ghielmetti Inc.
Switches & Data Devices
6290 Sunset Blvd., Suite 1126
Los Angeles, CA 90028-8770
213-463-5111

Giese Electronic KG
Klaus-Groth-Strasse 84-86
2000 Hamburg 26, West Germany
040-250-6064

Global Specialties
An Interplex Electronics Co.
70 Fulton Terrace
New Haven, CT 06509
203-624-3103

Alan Gordon Enterprises Inc.
1430 Cahuenga Blvd.
Hollywood, CA 90078
213-466-3561

Gorman-Redlich Mfg. Co.
6 Curtis St.
Athens, OH 45701
614-593-3150

Gotham Audio Corp.
1790 Broadway
New York, NY 10019-1412
212-765-3410

Graham-Patten Systems, Inc.
P.O. Box 1960
Grass Valley, CA 95945
916-273-8412

R.J. Grandmaison, P.E.
P.O. Box 878
Vienna, VA 22180
703-281-1081

Granite Telecom Corp.
8 Continental Blvd.
Merrimack, NH 03054
603-424-3900

The Graphic Express Corp.
3518 Third Ave.
San Diego, CA 92103
619-298-2834

Grass Valley Group
P.O. Box 1114
Grass Valley, CA 95945
916-478-3234

Randy Hood, Dir. of Sales

REGIONAL SALES CONTACTS:

CA, Palo Alto, (415) 968-6680
CA, Woodland Hills, (818) 999-2302
GA, Tucker, (404) 493-1255
IN, Elkhart, (219) 264-0931
MD, Silver Spring, (301) 622-6313
MN, Arden Hills, (612) 483-2594
NJ, Paramus, (201) 845-7988
TX, Arlington, (817) 483-7447
England, Winchester, 0962-53292

Claude M. Gray
P.O. Box 602
Birmingham, AL 35201

Gray Communications Consultants, Inc.
P.O. Box 3229
Albany, GA 31708-7701
912-883-2121

Gray Engineering Labs, Inc.
504 W. Chapman Ave., Suite P
Orange, CA 92668
714-997-4151

Scott R. Gray

REGIONAL SALES CONTACTS:

CA, Lawndale, (213) 643-9021
CA, Mountain View, (415) 967-6040
CA, San Jose, (408) 946-2236
CO, Englewood, (303) 733-9499
FL, Miami, (305) 592-5355
GA, Atlanta, (404) 237-6097
IL, Chicago, (312) 943-7300
KY, Louisville, (502) 491-2888
LA, Baton Rouge, (504) 926-8287
MA, Needham, (617) 449-2100
MN, Burnsville, (612) 890-8920
MO, Springfield, (417) 862-5533
NY, New York, (212) 741-8011
PA, Philadelphia, (215) 223-8200
TX, Austin, (512) 836-6011

The Great American Market
826 N. Cole Ave.
Hollywood, CA 90038
213-461-0200

Greco Systems
372 Coogan Way
El Cajon, CA 92020
619-442-0205

Gresham Lion (PPL) Ltd.
Lower Way
Thatcham, Berks, England RG13 4RE
0635-68686

Grosh Scenic Studios
4114 Sunset Blvd.
Hollywood, CA 90029

Groton Computer Inc.
19 Fort Hill Road
Groton, CT 06340
203-445-2325

Grumman Aerospace Corp.
Broadcast Systems Group
Sunrise Highway A38-43
Great River, NY 11739
516-435-6068

James Grunder & Associates Inc.
5925 Beverly
Mission, KS 66202
913-831-0188

H

H.E. Inc.
2601 McLeod Drive
Las Vegas, NV 89121
702-457-6118

HM Electronics, Inc.
9675 Business Park Ave.
San Diego, CA 92131
619-578-8300

Michael Hughes

REGIONAL SALES CONTACTS:

CA, Anaheim, (714) 635-0190
CO, Wheat Ridge, (303) 467-9042
CT, Stamford, (212) 585-2027
FL, Miramar, (305) 966-6622
IL, Palos Park, (312) 448-6715
IN, Carmel, (317) 846-1034
KS, Mission, (913) 262-1720
MD, Baltimore, (301) 574-0550
MA, Norwell, (617) 659-1463
MN, Minneapolis, (612) 881-1255
NY, Baldwinville, (315) 638-1261
NC, Asheville, (704) 658-2291
OH, Columbus, (614) 761-3177
TX, Terrell, (214) 222-2131
WA, Edmonds, (206) 776-3121

HN Engineering Inc.
4664 Lougheed Highway
Burnaby, B.C., Canada V5C 5R7
604-294-3401

Floyd Hall, E.E.
Consulting Radio Engineers
P.O. Box 910
Crestline, CA 92325
714-338-3338

Hallikainen & Friends, Inc.
141 Suburban Road
San Luis Obispo, CA 93401-7590
805-541-0200

Hammett & Edison
1210 Broadway
Alameda, CA 94501

Hannay Reels
600 E. Main St.
Westerlo, NY 12193
518-797-3791

Inside Sales Group

Hardigg Industries Inc.
North Main St.
So. Deerfield, MA 01373
413-665-2163

Harris Corp.
Broadcast Div.
P.O. Box 4290
Quincy, IL 62305-4290
217-222-8200

Harris Corp.
Broadcast Microwave
967 Stierlin Road
Mountain View, CA 94043
415-969-9100

Harrison Systems, Inc.
P.O. Box 22964
Nashville, TN 37202
615-834-1184

Harrison Systems Ltd.
7515 Annapolis Road, Suite 411
Hyattsville, MD 20784
301-731-5677

HEDCO (Hughes Elec. Devices Corp.)
P.O. Box 1985
Grass Valley, CA 95945
916-273-9524

Heie Engineering
P.O. Box 6599
Ocala, FL 32678
904-629-7000

Karl Heitz, Inc.
P.O. Box 427
Woodside, NY 11377
718-565-0004

Hewlett-Packard Co.
1620 Signal Drive, TAF C-34
Spokane, WA 99220
509-922-4001

REGIONAL SALES CONTACTS:

CA, North Hollywood, (818) 505-5600
GA, Atlanta, (404) 955-1500
IL, Rolling Meadows, (312) 255-9800
MD, Rockville, (301) 670-4300
CANADA, Ontario, (416) 678-9430

Heyden Int'l
P.O. Box 10
AA-6590 Genep, Holland

Hnat Hinds Inc.
42 Elaine St., R.R. 1
Thompson, CT 06277
203-935-9066

Hi-Net Communications
3796 Lamar Ave.
Memphis, TN 38195

Hipotronics Inc.
Drawer A
Brewster, NY 10509
914-279-8091

Richard Hirschmann Electric
Oberer Paspelsweg 6-8
Rankweil-Brederis, Austria A-6830
05522-23471

Hitachi Denshi America, Ltd.
175 Crossways Park W.
Woodbury, NY 11797
516-921-7200

Madeleine Lanza

REGIONAL SALES CONTACTS:

CA, Carson, (212) 538-4880
GA, Doraville, (404) 451-9453
TX, Dallas, (214) 233-7623
WA, Tukwila, (206) 575-1680

Holiday Industries
14825 Martin Drive
Eden Prairie, MN 55344
612-934-4920

STOP GROUND-LOOP HUM!

VIDEO HUM STOP COIL...HSC 1

Will ELIMINATE HUM and other INTERFERENCE in Video Lines caused by differences in Ground Potential.

- For Color and Black and White.
- FLAT-DC to 6.5 MHz.
- No Low-Freq or Hi-Freq. Roll-off.
- No Differential Phase Distortion.
- No Differential Gain Distortion.
- No Envelope Delay.
- Passive Device - Failure Free-Low Price.
- Small Compact Package 4" x 4" x 2-1/4".

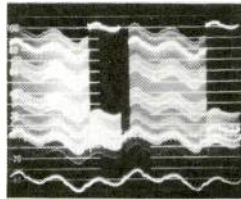
ELIMINATES HUM AND INTERFERENCE:

IN STUDIO

- Between Buildings
- On long runs in Buildings
- Between Studio and Transmitter
- On Incoming Telco circuits
- On Outgoing Telco circuits

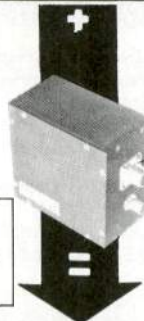
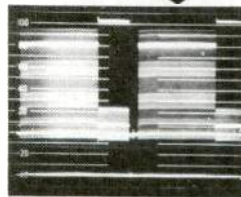
IN FIELD

- Betw. Remote Truck and Telco
- Betw. Remote Truck and Microwave
- For Intertruck Hookup
- For VTR Units
- For Monitoring Lines



NEW!

**\$190
F.O.B.
N.Y.**

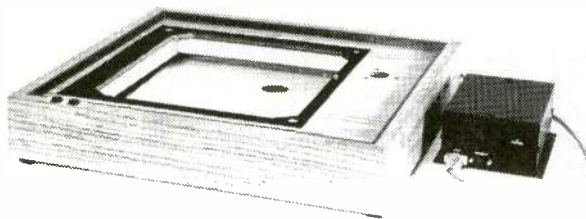


Available on
10 day free trial

AUDIO-VIDEO ENGINEERING COMPANY
65 Nancy Blvd., Merrick, N.Y. 11566
Tel. (516) 546-4239

Circle (64) on Reply Card

FEEDBACK STOPPED DEAD IN ITS TRACKS THE GSP-1000E TURNTABLE ISOLATION SYSTEM



FOR TECHNICS SP-10, SP-15, SP-25

Eliminates 98% of feedback at 90db S.P.L. and significantly reduces the effects of vibration from heating and air conditioning systems including building movement from street and internal traffic.

SIMS VIBRATION DYNAMICS
17724 15TH AVE. N.E. ■ SEATTLE, WA 98155
206 ■ 362-0700

Circle (65) on Reply Card

Manufacturers' Addresses

R. L. Hoover
Consulting Telecommunications Eng.
11704 Seven Locks Road
Potomac, MD 20854
301-983-0054

Hoppmann Corp.
P.O. Box 601
Chantilly, VA 22021
703-631-2700

Horizon Towerz, Inc.
P.O. Box 1516
Kilgore, TX 75662
214-984-2937

Hotronc Inc.
1875 Winchester Blvd.
Campbell, CA 95008
408-292-1176

Howe Audio Productions, Inc.
2300 Central Ave. Suite E
Boulder, CO 80301
303-444-4693

Lee Edwards

REGIONAL SALES CONTACTS:

AZ, Phoenix, (602) 242-2211
CA, Carlsbad, (714) 729-4957
CA, Campbell, (408) 866-0648
IN, Richmond, (317) 962-8596
MN, Minneapolis, (612) 729-8305
NV, Sparks, (702) 359-8218
NY, South Glens Falls, (518) 793-2181
NC, Pineville, (704) 889-4508
PA, Allentown, (215) 432-0671
TX, Houston, (713) 774-3314
TX, Paris, (214) 785-5764
WA, Tacoma, (206) 565-2301

Hubbard Communications, Inc.
12495 34th St. N.
St. Petersburg, FL 33702
813-577-7759

Hughes Aircraft Co.
Microwave Communications Products
P.O. Box 2940
Torrance, CA 90509-2940
213-517-6268

Hughes & Phillips Inc.
8511 Lankershim Blvd.
Sun Valley, CA 91352-3127
213-849-1104

Carl Phillips

ICM Video
P.O. Box 26330
Oklahoma City, OK 73126
405-232-3741

Mike Janko

REGIONAL SALES CONTACTS:

CA, San Dimas, (714) 599-7763
FL, Fort Lauderdale, (305) 587-7481
IN, Carmel, (317) 841-6189
MD, Columbia, (301) 621-4113
MN, Minneapolis, (612) 881-1255
NH, Manchester, (603) 472-2297
NY, Briarcliff Manor, (914) 941-7274
OR, Beaverton, (503) 646-5061
TX, Dallas, (214) 243-2564

IGM Communications
282 W. Kellogg Road
Bellingham, WA 98226
206-733-4567

IMS-Integrated Media Systems, Inc.
1551 Laurel St.
San Carlos, CA 94070
415-325-8867

ITI Electronics, Inc.
12 Kulick Road
Fairfield, NJ 07006
201-882-6405

ITT Cannon
P.O. Box 929
Santa Ana, CA 92702-0929
714-557-4700

ITT Electro-Optical Products
P.O. Box 7065
Roanoke, VA 24019
617-835-6082

Ikegami Electronics (USA), Inc.
37 Brook Ave.
Maywood, NJ 07067
201-368-9171

Harvey Caplan

REGIONAL SALES CONTACTS:

CA, Torrance, (213) 534-0050
FL, Tampa, (813) 884-2046
IL, Elmhurst, (312) 834-9774
TX, Dallas, (214) 233-2844

Image Amplification Inc.
P.O. Box 699
Pine Brook, NJ 07058
201-882-0584

Image Technology Corp.
411 Mill St.
Brighton, MI 48116
313-227-2297

Image Transform, Inc.
4142 Lankershim Blvd.
No. Hollywood, CA 91602

Image Video Ltd.
705 Progress Ave. Suite 46
Scarborough, Ont., Canada M1H 2X1
416-438-3940

Industrial Acoustics Co.
1160 Commerce Ave.
Bronx, NY 10462
212-931-8000

Industrial Research Products
321 Bond St.
Elk Grove Village, IL 60007
312-436-3600

Information Transmission Systems, Corp.
375 Valleybrook Road
McMurray, PA 15317
412-941-1500

J. Boyd Ingram & Associates
P.O. Box 73
Batesville, MS 38606
601-563-4664

Innovative TV Equipment, Inc.
6445 De Soto Ave.
Woodland Hills, CA 91367
818-888-9421

Inovonics Inc.
1305 Fair Ave.
Santa Cruz, CA 95060
408-458-0552

Jim Wood

REGIONAL SALES CONTACTS:

CA, Hollywood, (818) 703-0381
CA, Scotts Valley, (408) 438-4273
FL, Tallahassee, (904) 893-1382
FL, Miami, (305) 651-5752
ID, Boise, (208) 343-3088
IL, Chicago, (312) 528-4641
MA, Chelmsford, (617) 250-1774
MI, Novi, (313) 349-7910
NC, High Point, (919) 869-3335
TX, South Lake, (817) 481-7221
TX, Laredo, (512) 723-2525
VA, Williamsburg, (804) 253-0171
WA, Woodinville, (206) 788-5246

CANADA, Ontario, (416) 635-9456
CANADA, Vancouver, (604) 872-8525

Integrated Technologies
3716 Alliance Drive
Greensboro, NC 27407

Intelco Corp.
8 Craig Road
Acton, MA 01720
617-264-4485

Interactive Motion Control
8671 Hayden Place
Culver City, CA 90232
213-559-6146

Interand Corp.
3200 W. Peterson Ave.
Chicago, IL 60659
312-478-1700

Interface Electronics
6710 Alder
Houston, TX 77081

Intergroup Video Systems
P.O. Box 2580
Gainesville, FL 32602
904-335-0901

Kevin T. Kelly

REGIONAL SALES CONTACTS:

AL, Birmingham, (205) 942-7904
AZ, Phoenix, (602) 273-8808
CA, Sausalito, (415) 332-7070
CO, Denver, (303) 238-6493
FL, Jacksonville, (904) 737-5083
FL, Miami, (305) 592-5355
GA, Atlanta, (404) 455-7610
IL, Elk Grove Village, (312) 364-1900
KS, Topeka, (913) 232-7701
KY, Edgewood, (606) 331-8990
NC, Charlotte, (704) 399-6336
NY, Menands, (518) 449-7213
OH, Cleveland, (216) 479-9745
TX, Carrollton, (214) 531-0404
VA, Virginia Beach, (804) 464-6256

International Electro-Magnetics
350 Eric Drive
Palatine, IL 60067
312-358-4622

International Microwave Corp.
65 Commerce Road
Stamford, CT 06902
203-323-5599

International Music Co.
1316 E. Lancaster
Fort Worth, TX 76102
817-336-5114

International Nuclear Corp.
608 Norris Ave.
Nashville, TN 37204
615-254-3365

International Tapetronics Corp./3M
P.O. Box 241
Bloomington, IL 61702-0241
309-828-1381

Chuck Kelly

REGIONAL SALES CONTACTS:

AUSTRALIA, Chatswood, 406-4700
CANADA, Ontario, (416) 255-8231
ENGLAND, Hertfordshire, 01-953-0091
FRANCE, Cedex, 13-031-6161
GERMANY, Neuss, (02101) 14-2898

ITAME, S.A.
Alfonso Pena Boeuf 15
28022 Madrid, Spain
917477444

ITELCO
1620 W. 32nd Place
Hialeah, FL 33012
305-822-1421

ITELCO
Piazza Febei 3
I-05018 Orvieto, Italy

J

JBL Professional/UREI
8500 Balboa Blvd.
Northridge, CA 91329
818-893-8411

Ken Lopez, Nat'l. Sales Mgr.

REGIONAL SALES CONTACTS:

MI, Grand Rapids, (616) 455-6270
PA, Folsom, (215) 543-4677
TX, Bedford, (817) 540-3066

J-Lab
P.O. Box 6530
Malibu, CA 90264

J&R Film
6820 Romaine St.
Hollywood, CA 90038
213-467-3107

JRF Magnetic Sciences Inc.
101 Landing Road
Landing, NJ 07850
201-398-7426

JVC Co. of America
41 Slater Drive
Elmwood Park, NJ 07407
201-794-7664

Daniel Roberts, V.P.

REGIONAL SALES CONTACTS:

CA, Compton, (213) 537-6020
GA, Norcross, (404) 447-0811
IL, Elk Grove Village, (312) 364-9300
TX, Houston, (713) 694-0666

JVC Cutting Center, Inc.
6363 Sunset Blvd., Suite 500
Hollywood, CA 90028

Jamieson & Associates, Inc.
5200 Willson Road, Suite 300
Minneapolis, MN 55424
612-920-3770

Jampro Antennas Inc.
6939 Power Inn Road
Sacramento, CA 95828
916-383-1177

Jasmin Electronics PLC
St. Matthews Way
Leicester, England LE1 2AA
0533-58128

Jefferson Pilot Data Systems
501 Archdale Drive
Charlotte, NC 28210

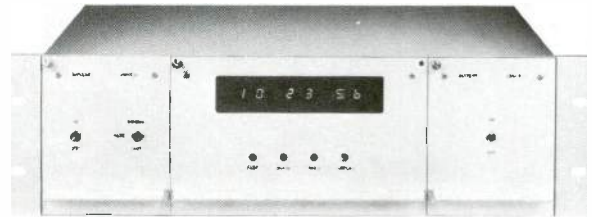
Jenel Systems & Design Corp.
10307 Bernardin
Dallas, TX 75243
214-680-0502

Jennings
A Div. of FL Industries Inc.
970 McLaughlin Ave.
San Jose, CA 95122
408-292-4025

Jensen Tools Inc.
7815 South 46th St.
Phoenix, AZ 85044
602-968-6241

Perfect Timing

MASTER CLOCK SYSTEMS



MASTER CLOCK SYSTEMS

If seeing the same time on all your clocks is important, select **ES 192E-Line** frequency timebase, for only \$358.

If a guaranteed accuracy of three seconds per month is what you want, choose **ES 160** — \$1190.

How about one second per month? **ES 160/1** — \$1382.

Or National Bureau of Standards accuracy! **ES 199** is synchronized to Radio Station WWV to provide a Master with unquestioned accuracy. \$1607 with receiver and antenna.

ESE Master Clock Systems are simple to install. All Masters have a **Serial Time Code** output, able to drive twenty slave displays without buffering. Slaves range in size from .4" LED to 2" gas discharge displays, priced from \$174 to \$495.

IF YOU ALREADY HAVE A SYSTEM AND WANT TO EXPAND IT, get the **ES 167B** Serial Time Code Generator (\$161), then add any number of our low cost slaves.

Many, many options and accessories are available. Ask us about them. Our brochure tells the whole story, but not for long. We keep adding new products.



Write, Wire or Call: (213) 322-2136
142 SIERRA STREET • EL SEGUNDO, CALIFORNIA 90245

TOWER WARNING LIGHTS



Complete Kits

New/Improved solid state microwave control for easier maintenance. Many special features. 300mm Beacons • Flashers • Obstruction Lights • Photo Controls • Isolation Transformers • Lamp Failure • Alarm Systems • Meets all FCC/FAA Regulations • Technical Support Provided.

HUGHEY & PHILLIPS

8511 Lankershim Blvd., Sun Valley, CA 91352 (213) 849-1104

Circle (67) on Reply Card

IBM-PC Schematic Design

Speed up the design of engineering projects and increase your productivity by documenting schematics on your IBM PC! OrCAD/SDT includes everything you need to design, edit, print and plot professional electronic schematics.

- Runs on IBM/PC/XT/AT or compatibles
- Special RF Part Library contains Antenna Networks, Pi/Hi/Low Pass Filters, Hotline Jacks, Contractors, Coax, Feedlines, Tubes, and more!
- Over 2000 other Unique Library Parts
- Part Rotation and Mirroring.
- Supports A through E size worksheets.
- Visible Grids, Auto Panning, 5 Zoom Levels.
- Package includes Part List Generation, Net/Wire List Outputs, and Library creation utility programs.

Now is the time to join the growing list of satisfied broadcast professionals that use OrCAD/SDT. For only \$495, you can break away from the old time-consuming methods of manual documentation!

Call today to receive your Free Demonstration Disk and brochure!

All orders are shipped from stock for immediate delivery!

OrCAD Systems Corporation
1049 S.W. Baseline St., Suite 500
Hillsboro, OR 97123
(503) 640-5007



Circle (143) on Reply Card

Manufacturers' Addresses

Jensen Transformers Inc.
10735 Burbank Blvd.
North Hollywood, CA 91601
213-876-0059

Dave Hill; Rick Carlson

Johnson Electronics Inc.
4301 Metric Drive
Winter Park, FL 32793-4728
305-677-4030

Johnson Measurement Service
3497 Cornwall Drive, N.W.
Canton, OH 44708
216-477-0635

Johnson-Nyquist Production Inc.
23854 Via Fabricante, Suite D-1
Mission Viejo, CA 92691
714-770-5777

Jones Broadcasting System
106 N. Avondale Road
Avondale, GA 30002

Kay Elemetrics Corp.
12 Maple Ave.
Pine Brook, NJ 07058
201-227-2000

Kay Industries, Inc.
604 N. Hill St.
South Bend, IN 46617

Kayglo Electronics
6584 Ruch Road
Bethlehem, PA 18017-9359
215-837-0700

Keystone Metal Products, Inc.
2711 N. California St.
Burbank, CA 91504
818-846-9210

Kikusui International
19601 Mariner Ave.
Torrence, CA 90503

Kinometrics/Truetime
3243 Santa Rosa Ave.
Santa Rosa, CA 95407
707-528-1230

King Instrument Corp.
80 Turnpike Road
Westboro, MA 01581

Kings Electronics
40 Marbledale Road
Tuckaheo, NY 10707
914-793-5000

Kinotone Inc.
P.O. Box 508
Paterson, NJ 07544
201-279-9700

Kintek Inc.
224 Calvary St.
Waltham, MA 02154
617-894-6111

Kintronic Labs, Inc.
P.O. Box 845
Bristol, TN 37621-0845
615-878-3141

Klark-Teknik Electronics
30-B Banfi Plaza N.
Farmingdale, NY 11735
516-249-3660

Klark-Teknik PLC
Walter Nash Road
Kidderminster Worcs, England DY11
7HJ
0562-741515

Kliegl Bros. Lighting
32-32 48th Ave.
Long Island City, NY 11101
718-786-7474

Kline Iron & Steel Co.
P.O. Box 1013
Columbia, SC 29202
803-779-7080

Knox Video Products
8547 Grovemont Circle
Gaithersburg, MD 20877

Knudson-Benson Associates Inc.
P.O. Box 1117
Mercer Island, WA 98040
206-232-2273

Korg USA
89 Frost St.
Westbury, NY 11590
516-333-9100

Kryptocom Inc.
3115 Kashiwa St., Suite 200
Torrence, CA 90505
213-539-8538

K

KEM Elektronik Mechanik GmbH
Herlingsburg 16
D-2000 Hamburg 54, West
Germany

K&H Products-Porta-Brace
P.O. Box 246
North Bennington, VT 05257
802-442-8171

KSK Broadcast Services Ltd.
2 Thistle Grove
St. Lawrence, Jersey, England
44-25672 3859

Kahn Communications, Inc.
425 Merrick Ave.
Westbury, NY 11590
516-222-2221

Kaitronics Corp.
890 Cowan Road
Burlingame, CA 94010
415-697-9102

Paul Tarrodaychik

KalaMusic
4200 W. Main St.
Kalamazoo, MI 49007-2729
616-385-5110

Kalart Victor Corp.
Hultenius St.
Plainville, CT 06062
203-747-1663

Kaman Sciences Corp.
P.O. Box 7463
Colorado Springs, CO 80933
303-599-1570

Kangaroo Video Products
10845 Wheatlands Ave., Suite C
Santee, CA 92071-2856
619-562-9696

Kathrein-Werke KG
P.O. Box 260
D-8200 Rosenheim, West Germany
08031-184319

Kavours Inc.
6301 34th Ave. S.
Minneapolis, MN 55450
612-726-9515

Kudelski Nagra
Rte. de Geneva 22
Cheseaux, Lausanne, Switzerland
CH-1033
41-021 91 21 21

Kulka-Smith, Inc.
1913 Atlantic Ave.
Manasquan, NJ 08736
201-223-9400

L

LBA Technology, Inc.
P.O. Box 8026
Greenville, NC 27835-8026
919-757-0279

LNR Communications, Inc.
180 Marcus Blvd.
Hauppauge, NY 11788
516-273-7111

LPB Inc.
28 Bacton Hill Road
Frazer, PA 19355
215-644-1123

LTM Corp. of America
1160 N. Las Palmas Ave.
Hollywood, CA 90038
213-460-6166

L-W International
50 W. Easy St.
Simi Valley, CA 93065
805-522-3284

Laird Telemedia Inc.
2424 South 2570 West
Salt Lake City, UT 84119
801-972-5900

Lake Systems Corp.
287 Grove St.
Newton, MA 02166
617-244-6881

Lakeside Associates Inc.
4 Alegria
Irvine, CA 92720
714-730-1333

Lamp Technology Inc.
141A Central Ave.
Farmingdale, NY 11735
516-454-6464

Landy Associates, Inc.
1890 E. Marlton Pike
Cherry Hill, NJ 08003
609-424-4660

Lang Video Communication Inc.
547 N.E. 26th Court
Pompano Beach, FL 33064
305-946-0622

Larcan Communications Equip. Inc.
6520 Northam Drive
Mississauga, Ont., Canada L4V 1H9
416-678-9970

Larus Corp.
848-3 E. Gish Road
San Jose, CA 95112
408-275-9505

Laser Edit, Inc.
540 N. Hollywood Way
Burbank, CA 91505
818-842-0777

D. N. Latus & Co., Inc.
P.O. Box 1720
Helena, MT 59624
406-442-3940

Lauderdale Electronic Labs
16 Southwest 13th St.
Fort Lauderdale, FL 33315
305-764-7755

LEA Dynatech, Inc.
12516 Lakeland Road
Santa Fe Springs, CA 90670
213-994-0916

REGIONAL SALES CONTACTS:
AL, Huntsville, (205) 882-0689
CA, Mountain View, (415) 969-6313
CO, Boulder, (303) 444-1173
DC, Washington, (202) 223-1759
FL, Orlando, (305) 851-5710
GA, Atlanta, (404) 446-0033
KS, Lenexa, (913) 888-6200
LA, Gretna, (504) 366-3264
MA, Acton, (617) 263-2766
ME, Birmingham, (313) 642-6620
MO, Bridgeton, (314) 291-8661
NY, Lynbrook, (516) 599-4875
NC, Rasmøur, (919) 824-2196
TX, Houston, (713) 526-0656
WA, Seattle, (206) 622-3403

Leader Instruments Corp.
380 Oser Ave.
Hauppauge, NY 11788
516-231-6900

B. Storch

REGIONAL SALES CONTACTS:
CA, Torrance, (213) 618-0695

Leasametric, Inc.
1164 Triton Drive
Foster City, CA 94404
415-574-4441

LeBlanc & Dick Communications Inc.
14440 Cherry Lane Court, Suite
201
Laurel, MD 20707
301-498-2200

Lectrotech Inc.
5810 N. Western Ave.
Chicago, IL 60659
312-709-6262

Ledex Inc.
P.O. Box 427
Vandalia, OH 45377
513-898-3621

Lee Filters Ltd.
Central Way, Walworth Industrial
Estate
Andover, Hants, England SP10 5AN
0264-66245

Leitch Video
10 Dyas Road
Don Mills, Ont., Canada M3B 1V5
416-445-9640

Garry Newhook

Leitch Video
825k Greenbrier Circle
Chesapeake, VA 23320
804-424-7920
Bob Henson, Dir. of Mktg., 800-231 9673

REGIONAL SALES CONTACTS:
CANADA, Ontario, 800-387-0233

LEMO USA Inc.
P.O. Box 11488
Santa Rosa, CA 95406
707-578-8811

Perfect Timing

CLOCKS AND TIMERS FROM \$174



TO \$495

ESE

(213) 322-2136

142 Sierra Street, El Segundo, CA 90245

Manufacturers' Addresses

Lenco Inc.
Electronics Div.
 300 N. Maryland St.
 Jackson, MO 63755
 314-243-3147

Bob Bergfeld

REGIONAL SALES CONTACTS:

*AL, Mobile, (205) 660-0738
 CA, Los Gatos, (408) 356-0221
 MN, Elk River, (612) 441-4390
 NJ, Vincentown, (609) 953-9101
 TX, Plano, (214) 578-0419*

Lenzar Optics Corp.
 1006 West 15th St.
 Riviera Beach, FL 33404
 305-844-0263

Lerro Electrical Corp.
 3125 N. Broad St.
 Philadelphia, PA 19132
 215-223-8200

Richard Murphy

LETERON
 3305 Kashiwa St.
 Torrance, CA 90505
 213-534-1630

Lexicon Inc.
 60 Turner St.
 Waltham, MA 02154
 617-891-6790

Lighting Methods Inc.
 1099 Jay St.
 Rochester, NY 14611
 716-328-1020

Lighting & Shadows
A Div. of Phoebus
 2800 Third St.
 San Francisco, CA 94107

Lightning Deterrent Corp.
 5321 S. Kedzie Ave.
 Chicago, IL 60632
 312-434-7912

Lightning Eliminators & Consultants
 13007 Lakeland Road
 Santa Fe Springs, CA 90670
 213-946-6886

Lightning Sciences
 4695 Ulmerton Road, Suite 200
 Clearwater, FL 33520

Lightwave Communications, Inc.
 650 Danbury Road
 Ridgefield, CT 06877
 203-438-3591

Lindburg Enterprises, Inc.
 9707 Candida St.
 San Diego, CA 92126
 619-566-5656

Link Electronics Ltd.
 North Way
 Andover, Hants, England SP10 5AJ
 0264-61345

Lipsner-Smith Co.
 4700 Chase Ave.
 Lincolnwood, IL 60646
 312-677-3000

Peter Lisand Machine Corp.
 352 River Road
 Edgewater, NJ 07020
 201-943-5600

Listec Video Corp.
 205 Oser Ave.
 Hauppauge, NY 11787
 516-273-3020

James Lloyd Group
 P.O. Box 3
 Ashland, OR 97520
 503-488-1405

Logica CES Ltd.
Broadcast & Media Group
 64 Newman St.
 London, England W1A 4SE
 44-1637-9111

Logitek Electronic Systems, Inc.
 3320 Bering Drive
 Houston, TX 77057
 713-782-4592

Scott Hochberg, (800) 231-5870

REGIONAL SALES CONTACTS:

*CA, Carpinteria, (805) 684-5415
 CA, San Diego, (619) 268-1100
 CA, Sunnyvale, (408) 745-1700
 HI, Honolulu, (808) 373-2701
 ID, Boise (208) 343-3088
 IL, Chicago, (312) 364-1900
 KY, Edgewood, (606) 331-8990
 LA, New Orleans, (504) 586-0140
 MD, Gaithersburg, (301) 762-9222
 MN, Minneapolis, (612) 729-8305
 NJ, Sea Bright, (201) 530-8555
 TX, Houston, (713) 774-3314
 UT, Salt Lake City, (801) 486-8822
 WA, Seattle, (206) 366-5400
 WI, Brookfield, (414) 789-7996*

Lowel-Light Mfg., Inc.
 475 Tenth Ave.
 New York, NY 10018
 212-947-0950

Lucas Stability Electronics
Semiconductor Div.
 Mere Green Road
 Sutton Coldfield, West Midlands,
 England B75 5BN

Lumitrol, Ltd.
 253 Merton St.
 Toronto, Ont., Canada M4S 1A7
 416-485-4817

Lunar Video Ltd.
 138 East 26th St.
 New York, NY 10010
 212-686-4802

Luxor Corp.
 2245 Delany Road
 Waukegan, IL 60085
 312-244-1800

Luxor (North America) Corp.
 600 108th Ave. N.E., Suite 539
 Bellevue, WA 98004
 206-451-4414

Lyon-Lamb Video Animation Systems
 4531 Empire Ave.
 Burbank, CA 91505
 818-843-4831

Lyrec Mfg. A/S
 Hollandsvej 12, Box 199
 DK-2800 Lyngby, Denmark
 02-876322

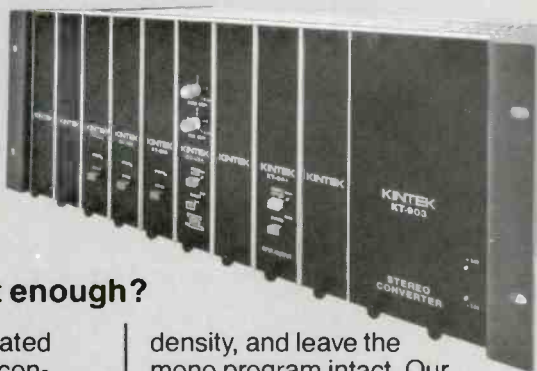
M

M/A-Com Cable Home Group
 P.O. Box 1729
 Hickory, NC 28603
 704-324-2200

M/A-Com Mac, Inc.
 5 Omni Way
 Chelmsford, MA 01824
 617-272-3100

Product Directory begins on page 14

How quickly can you broadcast your mono programs in stereo?



Is immediately fast enough?

All you need is our dedicated KT-903 mono-to-stereo converter and a stereo modulator. That's your only expense. Your mono studio and STL remain as is. But not the results.

Music, sound effects and crowd noise are heard in three-dimensional stereo, while dialogue remains perfectly focused. No disembodied, bigger-than-life voices. It's all coherent with the picture.

How is it done? Briefly put, the KT-903 introduces unique, high-density amplitude and phase cues that retain the total spectral

density, and leave the mono program intact. Our "intelligent" speech recognition circuitry isolates and steers dialogue from any mixed track.

If you want to know more about all that we can do for you, call us now. You can be putting out stereo while that other station is still thinking about it.

KINTEK

224 Calvary St., Waltham Mass. 02154
 617-894-6111

**AMXBMXTOM
 IXERABXMICRO
 AMXABXBMX
 XTOMCATAMX
 IXBMXNEWSM
 ABXAMXBMXT
 XMICROMAXN
 BXNEWSMIXER
 ABX**



PACIFIC RECORDERS & ENGINEERING CORPORATION

2070 LAS PALMAS DRIVE
 CARLSBAD, CA 92008

(619) 438-3911 TELEX: 181777

M/A-Com Microwave Power Devices
330 Oser Ave.
Hauppauge, NY 11788

MBB Helicopter Corp.
P.O. Box 2349
West Chester, PA 19380
215-431-4150

MBI Broadcast Systems
69 Ship St.
Brighton, England BN1 1AE
44-273-24928

MCG Electronics, Inc.
12 Burt Drive
Deer Park, NY 11729
516-586-5125

Chuck Cameron

MCL, Inc.
501 S. Woodcreek Drive
Bolingbrook, IL 60439-4999
312-759-9500

MEI Electronics/Microprobe
910 Sherwood Drive, Unit 19
Lake Bluff, IL 60044
312-295-2606

MII Inc.
P.O. Box 395
Birdsboro, PA 19508
215-582-5361

MPB Technologies Inc.
1725 N. Service Road
Dorval, Que., Canada H9P 1J1
514-683-1490

MPO Videotronics
2580 Turquoise Circle
Newbury Park, CA 91320
805-499-8513

Macrotel, Inc.
320 Main Place Tower
Buffalo, NY 14202
716-843-7575

Magna-Tech Electronic Co., Inc.
630 Ninth Ave.
New York, NY 10036
212-586-7240

Magnasync/Moviola Corp.
5539 Riverton Ave.
North Hollywood, CA 91603
213-467-3107

Magnefax International Inc.
Route 1 Box 764
Rogers, AR 72756
501-925-1818

Magnetic Media Div./3M
223-5N-01, 3M Center
St. Paul, MN 55144-1000
612-733-1082

Magni Systems
9500 S.W. Gemini Drive
Beaverton, OR 97005
503-626-8400

Magnum Towers, Inc.
9370 Elder Creek Road
Sacramento, CA 95829
916-381-5053

The Management
P.O. Box T
Aledo, TX 76008
817-441-8532

Marathon Products Corp.
334 W. Boylston St.
West Boylston, MA 01583
617-853-0988

Marcom
P.O. Box 66507
Scotts Valley, CA 95066
408-438-4273

Marconi Communication Systems Ltd.
Marconi House, New Street
Chelmsford Essex, England CM1 1PL
0245-353221

Marconi Instruments
3 Pearl Court
Allendale, NJ 07401
201-934-9050

Maric Industries Ltd.
2978 Pasture Crescent
Port Coquitlam, BC, Canada V3C 2C2
604-464-0768

Mark Antenna Products, Inc.
2180 S. Wolf Road
Des Plaines, IL 60018
312-298-9420

D. L. Markley & Associates, Inc.
Consulting Engineers
2104 W. Moss Ave.
Peoria, IL 61604
309-673-7511

Marshall Electronics
P.O. Box 2027
Culver City, CA 90230
213-390-6608

Marti Electronics
P.O. Box 661
Cleburne, TX 76031
817-645-9163

Matco Mfg. & Test Co., Inc.
dba Matco Control Products
427 Perrymont Ave.
San Jose, CA 95125
408-998-1655

Math Associates Inc.
Fiberlink/Fibervision Products Group
2200 Shames Drive
Westbury, NY 11590
516-334-6800

Matthews Studio Equipment, Inc.
2405 Empire Ave.
Burbank, CA 91504
818-843-6715

Matthey Printed Products Ltd.
William Clowes St.
Burslem, Stoke-On-Trent, England
ST6 3AT
0782-85631

Maxell Corp. of America
60 Oxford Drive
Moonachie, NJ 07074
201-641-8600

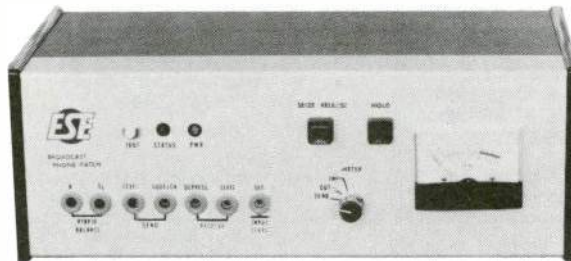
Maze Broadcast
P.O. Box 6968
Birmingham, AL 35210
205-956-2227

McCullough Satellite Equip., Inc.
Route 5 Box 97
Salem, AR 72576
501-895-3167

McCurdy Radio/Ram Broadcast
346 W. Colfax St.
Palatine, IL 60067
312-358-3330

McCurdy Telecommunications Products
70 Milner Ave., Unit 2
Scarborough, Ont., Canada M1S 3P8
416-291-6449

PHONE PATCH!



ES 212

HYBRID TELEPHONE INTERFACE

PHONE PATCH! has been evolving for the last ten years in Los Angeles area Radio Stations, Television Stations and Recording Studios. The special needs of broadcasters are met because the signal quality is unexcelled. Now ES 212 is ready for your facility.

PHONE PATCH! reproduces telephone audio cleanly and quietly—the sound is not tinny, spitting, compressed, noisy or narrow. It is as wide, clear and natural as the telephone line will permit.

PHONE PATCH! is not just another interface device. It is a quality broadcast instrument, fully compatible with the requirements of fine audio. If you depend on the quality of your audio to stay competitive, you don't need a "device."

You need a real instrument, ESE's **PHONE PATCH!**

\$995



142 SIERRA ST., EL SEGUNDO, CA 90245
(213) 322-2136

Circle (72) on Reply Card

Manufacturers' Addresses

Phil McQuatters
Frequency Measurement Service
 601 S. Bunker Hill Drive
 San Bernardino, CA 92410
 714-884-1526

Kenneth R. Meades
 P.O. Box 71098
 Los Angeles, CA 90071
 213-666-9570

Media Computing
 4401 E. Kings Ave.
 Phoenix, AZ 85032
 602-992-2338

Media Concepts, Inc.
 559 49th St. S.
 St. Petersburg, FL 33707
 813-321-2122

Melford Electronics Ltd.
 Leigh Court, Leigh St.
 High Wycombe, Bucks, England HP11
 2QU
 0494-25696

MERET, Inc.
 1815 24th St.
 Santa Monica, CA 90404
 213-828-7496

Merlin Engineering Works
 2240 Embarcadero Way
 Palo Alto, CA 94303
 415-865-0900

Micro Communications, Inc.
 P.O. Box 4365 Grenier Field
 Manchester, NH 03108
 603-624-4351

Micro Controls, Inc.
 P.O. Box 728
 Burleson, TX 766028
 817-295-0966

Micro-Trak Corp.
 165 Front St.
 Chicopee, MA 01013
 413-594-8501

Microdyne Corp.
 P.O. Box 7213
 Ocala, FL 32672
 904-687-4633

Microflect Co., Inc.
 3575 25th St. S.E.
 Salem, OR 97302
 503-363-9267

Micron Audio Products Ltd.
 210 Westlake Drive
 Valhalla, NY 10595
 914-761-6520

Microsonics Inc.
 60 Winter St.
 Weymouth, MA 02188-3336
 617-337-4200

Microtime, Inc.
 1280 Blue Hills Ave.
 Bloomfield, CT 06002
 203-242-4242

Microtran Co. Inc.
 P.O. Box 236
 Valley Stream, NY 11582
 516-561-6050

Microwave Communications Ltd.
 Humphrys Road
 Dunstable, Beds, England LU5 4SX
 0044-582-601441

Microwave Filter Co., Inc.
 6743 Kinne St.
 East Syracuse, NY 13057
 315-437-3953

Microwave Modules & Devices
 550 Ellis St.
 Mountain View, CA 94043

Mid-America Automation Corp.
 1822 Laramie St.
 Manhattan, KS 66502
 913-537-3289

Midwest Communications Corp.
 One Sperti Drive
 Edgewood, KY 41017
 606-331-8990

Jay Adrick

REGIONAL SALES CONTACTS:

*FL, Miami, (305) 592-5355
 FL, Tampa, (813) 885-9308
 GA, Atlanta, (404) 875-3753
 IN, Indianapolis, (317) 872-2327
 KS, Overland Park, (913) 469-6810
 KY, Louisville, (502) 491-2888
 MD, Lanham, (301) 577-4903
 MI, Troy, (313) 689-9730
 MO, St. Louis, (314) 569-2240
 NC, Charlotte, (704) 399-6336
 OH, Cleveland, (216) 447-9745
 OH, Columbus, (614) 846-5552
 PA, Pittsburgh, (412) 364-6780
 TN, Nashville, (615) 255-2801
 VA, Virginia Beach, (804) 464-6256*

Miles Air Products Ltd.
 411 Birchmount Road
 Scarborough, Ont., Canada M1K 1N3
 416-690-4404

Miller Fluid Heads (USA) Inc.
 2819 W. Olive Ave.
 Burbank, CA 91505
 818-841-6262

Miller Professional Equipment, Inc.
 10816 Burbank Blvd.
 North Hollywood, CA 91601
 818-766-9451

Mineroff Electronics, Inc.
Uher Products
 946 Downing Road
 Valley Stream, NY 11580
 516-825-4702

Minolta Corp.
Industrial Meter Div.
 101 Williams Drive
 Ramsey, NJ 07446
 201-825-4000

John McCasland

Mitchell Camera Corp.
 11630 Tuxford St.
 Sun Valley, CA 91352
 818-768-6400

Mitomo Co., Ltd.
 8-11 Jinnan 1-Chome, Shibuya-ku
 Tokyo, Japan 150
 03-463-1601

Mitsubishi Int'l. Corp.
Electronic Equipment Div.
 46305 Landing Parkway
 Fremont, CA 94538
 415-651-9931

Mitsubishi Pro Audio Group
Digital Entertainment Corp.
 225 Parkside Drive
 San Fernando, CA 91340
 818-898-2341

Modular Audio Products
Unit of Modular Devices, Inc.
 50 Orville Drive
 Bohemia, NY 11716
 516-567-9620

Modular Sound Systems Inc.
dba-Bag End
 P.O. Box 488
 Barrington, IL 60010
 312-382-4550

Modulation Associates Inc.
 897 Independence Ave.
 Mountain View, CA 94043
 415-962-8000

Modulation Sciences, Inc.
 115 Myrtle Ave.
 Brooklyn, NY 10024
 718-625-7333

Modulight Systems Inc.
 P.O. Box 1009
 Cumming, GA 30130
 404-887-9910

Mole-Richardson Co.
 937 N. Sycamore Ave.
 Hollywood, CA 90038-2384

Monroe Electronics, Inc.
 212 Housel Ave.
 Lyndonville, NY 14098
 716-765-2254

Tommy Moore, Inc.
dba Fort Worth Tower Co.
 P.O. Box 8597
 Fort Worth, TX 76124-0597
 817-457-3060

R. K. Morrison Co.
 819 Coventry Road
 Kensington, CA 94707
 415-525-9409

Moseley Associates, Inc.
 111 Castilian Drive
 Goleta, CA 93117
 805-968-9621
David Chancey

Motorola Communications
and Electronics Inc.
 1722 Whitestone Expressway
 Whitestone, NY 11352
 718-746-1100

Motorola Inc.
AM Stereo
 1216 Remington
 Schaumburg, IL 60195
 312-576-0554

Mu-Del Electronics, Inc.
 2426 Linden Lane
 Silver Spring, MD 20910
 301-587-6087

Multi Electronic Services Ltd.
 Unit 5, 190 Don Park Road
 Markham, Ont., Canada L3R 2V8
 416-475-5068

Multi-Track Magnetics, Inc.
 #3 Industrial Ave.
 Upper Saddle River, NJ 07458
 201-327-9400

Multi-Video Productions, Inc.
 341 Broad St.
 Clifton, NJ 07013
 201-742-2999

Multiplex Technology
 251 Imperial Highway
 Fullerton, CA 92635
 714-680-5848

Musco Mobile Lighting, Ltd.
 P.O. Box 73
 Oskaloosa, IA 52577
 515-673-0491

The Music Director Programming
Service
 P.O. Box 103
 Indian Orchard, MA 01151
 413-783-4626

The Musicworks, Inc.
 P.O. Box 111390
 Nashville, TN 37211
 615-790-1200

Mycomp Technologies Corp. (MTC)
 200 McCormick Ave.
 Costa Mesa, CA 92626
 714-545-5111

Mycro-Tek
 9229 East 37th St. N.
 Wichita, KS 67226
 316-681-0550

N

NEC America, Inc.
Broadcast Equipment Div.
 1255 Michael Drive
 Wood Dale, IL 60191
 312-860-7600

NEK Cables Ltd.
 Chepping House, Temple End
 High Wycombe, Bucks, England HP13
 5DR
 0494-450371

NTI America, Inc.
 1680 N. Vine St.
 Los Angeles, CA 90028
 213-462-8945

NKT Elektronik
 Brøndbyvestervej 95
 DK-2600 Golstrup, Denmark

NTP Elektronik A/S
 Theklavej 44
 DK-2400 Copenhagen NV, Denmark
 451-101222

Nady Systems Inc.
 1145 65th St.
 Oakland, CA 94608
 415-652-2411

Nagra Magnetic Recorders, Inc.
 19 West 44th St., Room 715
 New York, NY 10036
 212-840-0999

Nakamichi USA Corp.
 19701 S. Vermont Ave.
 Torrance, CA 90502
 213-538-8150

Jett Logan

REGIONAL SALES CONTACTS:
*CA, Glendale, (818) 246-3806
 CA, Oakland, (415) 532-5600
 CO, Denver, (303) 333-4477
 FL, Miramar, (305) 961-0886
 HI, Honolulu, (808) 847-4038
 IL, Westmont, (312) 655-1180
 MA, Burlington, (617) 229-6050
 MI, Farmington Hills, (313) 553-8070
 MO, St. Louis, (314) 631-3326
 NJ, Verona, (201) 239-3727
 NC, Asheville, (704) 658-2291
 OH, Columbus, (614) 459-5947
 PA, Devon, (215) 964-0606
 TX, Houston, (713) 528-2005
 WA, Seattle, (206) 284-9699*

Nalpac Video Sales Inc.
 1937-C Friendship Drive
 El Cajon, CA 92020
 619-258-1200

The Narda Microwave Corp.
 435 Moreland Road
 Hauppauge, NY 11788
 516-231-1700

LEITCH DOES



Leitch equipment is found in most of the major studios around the world. Our reputation is for never compromising on quality yet staying competitive on price. Leitch also offers you outstanding reliability and a worldwide sales and service network for our equipment:

1. PAL and NTSC SCH Monitors
2. Video Test Signal Generators
3. PAL and NTSC Video Processing Equipment
4. PAL and NTSC Sync Pulse Generators
5. Frame

- Synchronizers
6. State-of-the-art clock systems
7. Audio and Video Distribution Amplifiers.

When you get our literature, you'll discover that the specifications are impressive. But if they err anywhere, it's on the side of modesty.

At Leitch, we'd rather understate than overstate.

For more information on Leitch products call, write or telex.

LEITCH

Leitch Video of America, Inc., 825K Greenbrier Circle, Chesapeake, VA, U.S.A. 23320. Tel: (804) 424-7920 or 1-800-231-9673, Telex: 710 882 4342
 Leitch Video International Inc., 10 Dyas Road, Don Mills, Ontario, Canada M3B 1V5, Tel: (416) 445-9640 or 1-800-387-0233, Telex: 06 986 241

Circle (73) on Reply Card

MIC MAZE... A Real Powerhouse!



COMPREHENSIVE SUPPORT PROCESSOR The Finest Microphone Processor For The Finest Microphones.

- Absolutely transparent, handles any transient.
- Multiple outputs, 2 lines (diff. & transformer) 1 mic (-55Dbm).
- Triggered expansion, pause delay, adjustable expansion platform, muting, sync capability for ducker operation or stereo.

NOT JUST FOR MICROPHONES:

- Line in, dipswitch selectable pre-emphasis, de-emphasis clippers, asymmetry control.

IDEAL FOR STL, SCA, AM, FM, TV.

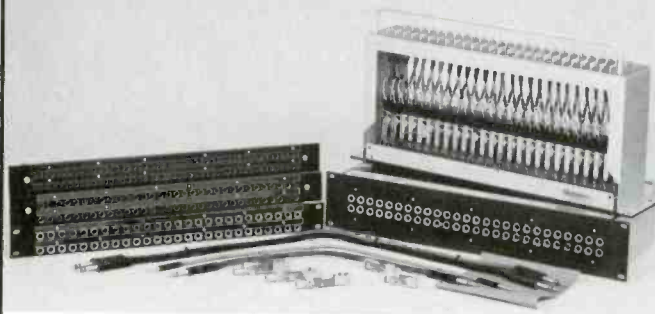
\$730.00

hnat hinders inc

42 Elaine St., R. R. 1 • Thompson, CT 06277
(203) 935-9066

Circle (74) on Reply Card

TALK TO US! THE PATCH BAY SOURCE. YOUR SOURCE.



WHETHER IT'S standard wired audio panels, custom-wired audio panels, panels with jacks, panels without jacks, patch cords, telephone jacks, Polysand, patch cord holders—whether it's one or a thousand you need—we've got everything immediately available to help you get your installation or expansion completed ON TIME!
Write or phone for information on Audio-Line products.

audio accessories
audio-line

AUDIO ACCESSORIES, INC., MILL ST., MARLOW, NH 03456
603-446-3335

Circle (75) on Reply Card

Manufacturers' Addresses

National Teleconsultants

1651 Gardena Ave.
Glendale, CA 91204
213-245-8000

National Video Service

2142 Rheem Drive
Pleasanton, CA 94566
415-846-1500

NAUTEL

201 Target Industrial Circle
Bangor, ME 04401
207-947-8200

J. B. Jensen, 902-823-2233

REGIONAL SALES CONTACTS:

AR, Eureka Springs, (501) 253-8556
CA, Santa Barbara, (805) 682-9429
FL, Niceville, (904) 678-8943
IN, New Albany, (812) 945-1209
LA, New Orleans, (504) 242-8014
MI, Grand Rapids, (616) 452-1596
NE, Bellevue, (402) 734-5521
NY, South Glens Falls, (518) 793-2181
PA, Pittsburgh, (412) 733-1994
SC, Rock Hill, (803) 366-8830
TX, Amarillo, (806) 372-4518
WA, Seattle, (206) 363-7730
CANADA, Manitoba, (204) 885-5471
CANADA, Ontario, (416) 731-9500
CANADA, Montreal, (514) 387-7348

NAUTEL

Nautical Elec. Labs Ltd.
RR # 1 Tantallon
Halifax County, NS, Canada B0J 3J0
902-823-2233

Neilson-Hordell Ltd.

Unit 11 Central Trading Estate
Staines, Middlesex, England TW18
4UU
0784-56456

L E Nelson Sales Corp.

5451 Ukiah Circle
Las Vegas, NV 89118
702-367-3656

Nemal Electronics Int'l.

1224 Northeast 14th Ave.
North Miami, FL 33161
305-893-3924

Neotek Corp.

1154 W. Belmont
Chicago, IL 60657
312-929-6699

NETCOM

2901 W. Alameda
Burbank, CA 91505
415-921-1441

Network Production Music, Inc.

11021 Via Frontera
San Diego, CA 92127
619-451-6400

Neumade Products Corp.

200 Connecticut Ave.
Norwalk, CT 06584
203-866-7600

Rupert Neve Inc.

Berkshire Industrial Park
Bethel, CT 06801
203-744-6230

Barry Roche, President.

REGIONAL SALES CONTACTS:

CA, Hollywood, (213) 874-8124
TN, Nashville, (615) 385-2727

New England Digital Corp.

P.O. Box 546
White River Junction, VT 05001
802-295-5800

Newman-Kees Measurements

Engineering & Installations
Route 4 Box 326, Slate Road
Evansville, IN 47712
812-963-3294

Nexus Engineering Corp.

7000 Lougheed Highway
Burnaby, BC, Canada V5A 4K4
604-420-5322

Nisus Video Inc.

6329 Lomas Blvd. N.E.
Albuquerque, NM 87110
505-268-4587

Norac Broadcast Power Systems

1401 O'Kane, Suite 19
Lardeo, TX 78040
512-726-0130

Normex/Telnox Ltd.

55 Montpellier
St. Laurent, Que., Canada H4N 2G3
514-744-1785

Norpak Corp.

10 Hearst Way
Kanata, Ont., Canada K2L 2P4
613-592-4164

North American Soar Corp.

1126 Cornell Ave.
Cherry Hill, NJ 08002
609-488-1060

North Hills Electronics, Inc.

Alexander Place
Glen Cove, NY 11542
516-671-5700

North Wind Power Co., Inc.

P.O. Box 556
Moretown, VT 05660
802-496-2955

Northern Magnetics, Inc.

P.O. Box 16409
Minneapolis, MN 55416
612-944-8602

Northwest Monitoring Service

P.O. Box 1042
Pendleton, OR 97801
503-276-2281

Nortronics Co., Inc.

8101 Tenth Ave. N.
Minneapolis, MN 55427
612-540-8671

Nova Electric Mfg. Co., Inc.

263 Hillside Ave.
Nutley, NJ 07110
201-661-3434

Nova Systems, Inc.

20 Tower Lane
Avon, CT 06001
203-677-5252

Nu-Concept Systems, Inc.

P.O. Box 587
Colmar, PA 18915
215-822-8400

Fred A. Nudd Corp.

P.O. Box 475
Ontario, NY 14519
315-524-2531

Nurad, Inc.

2165 Druid Park Drive
Baltimore, MD 21211
301-462-1700

Nytone Electronics

2424 South 900 West
Salt Lake City, UT 84119

O

OKI Telecom
Cellular Telephone Div.
One University Plaza
Hackensack, NJ 07601
201-646-0011

Oak Communications Inc.
16516 Via Esprillo
Rancho Bernardo, CA 92127
619-485-9300

O'Connor Engineering
100 Kalmus Drive
Costa Mesa, CA 92626
714-979-3993

Odetics, Inc.
1515 S. Manchester Ave.
Anaheim, CA 92802-2907
714-774-5000

Bill Keegan

REGIONAL SALES CONTACTS:

*KS, Topeka, (913) 862-2824
WI, Janesville, (608) 754-2139*

Oktel Corp.
1220 Page Ave.
Fremont, CA 94538
415-490-3100

Old Dominion Broadcast Eng. Service
1101 Front St.
Richmond, VA 23222
804-321-4506

Olesen
1535 Ivar Ave.
Hollywood, CA 90028
213-461-4631

Omicron Video
9700 Owensmouth Ave., Unit F
Chatsworth, CA 91311
818-700-0742

Omni Q Inc.
925 Boblett
Blaine, WA 98230
206-384-1750

Omnimount Systems
10850 Vanowen St.
North Hollywood, CA 91605
818-766-9000

Omnimusic
52 Main St.
Port Washington, NY 11050
516-883-0121

One Pass Film & Video
One China Basin Building
San Francisco, CA 94107
415-777-5777

Opamp Labs, Inc.
1033 N. Sycamore Ave.
Los Angeles, CA 90038
213-934-3566

Optical Disc Corp.
17517-H Fabrica Way
Cerritos, CA 90701
714-522-2370

Optical Recording/3M
225-4S-09, 3M Center
St. Paul, MN 55144-1000
612-733-2142

Orban Associates Inc.
645 Bryant St.
San Francisco, CA 94107
415-957-1067

Howard Mullinack, Broadcast; Sid Goldstein-Pro Audio. Contact home office for dealers in your area. 800-227-4498

Orcad Systems Corp.
1049 S.W. Base Line St., Suite 500
Hillsboro, OR 97123
503-640-5007

Orion Research, Inc.
4650 West 160th St.
Cleveland, OH 44135
216-267-7700

Ortofon Inc.
122 Dupont St.
Plainview, NY 11803
516-349-9180

Allen Osborne Associates
756 Lakefield Road, Building J
Westlake Village, CA 91361
805-495-8420

Lois Osborne

Osram Corp.
P.O. Box 7062
Newburgh, NY 12550
914-564-6300

Otari Corp.
2 Davis Drive
Belmont, CA 94002
415-592-8311

Oxberry
180 Broad St.
Carlstadt, NJ 07072
201-935-3000

P

Pace, Inc.
9893 Brewers Court
Laurel, MD 20707
301-490-9860

Pacific Recorders & Eng. Corp.
2070 Las Palmas Drive
Carlsbad, CA 92008
619-438-3911

Packaged Lighting Systems, Inc.
P.O. Box 285
Walden, NY 12586
914-778-3515

Paco Electronics USA Inc.
714 W. Olympic Blvd., Suite 706
Los Angeles, CA 90015-1439
213-747-6540

Pag America, Ltd.
P.O. Box 15194
Asheville, NC 28813
704-274-1438

PAG Ltd.
565 Kingston Rd.
London, England SW20 8SA
07-543-3131

Paladin Corp.
3543 Old Conejo Road, Suite 102
Newbury Park, CA 91320
805-499-0318

Palomar Engineers
1924F W. Mission Road
Escondido, CA 92025
619-747-3343

IN SEARCH OF EXCELLENCE.

Long before it was a popular management theory, broadcasters were searching for excellence. Excellence of Sound.

The search is still on, but the goal is now within the reach of every FM broadcaster.

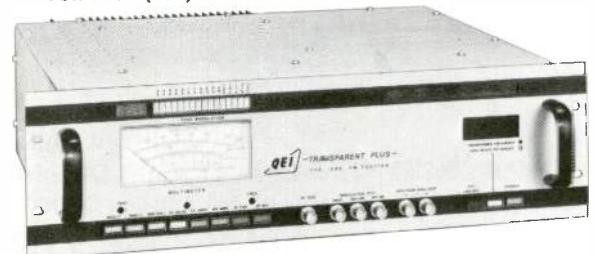
The 695 is an exciter without equal . . . in quality sound . . . in versatility . . . and in value. Any type of distortion you can name (THD, TIM, IMD) is less than .025 percent. This isn't an environmentally controlled lab figure, but rather one that is measurable over the operating temperature range of the equipment. Moreover, noise is so low that it's virtually impossible to measure.

QEI's 695 offers features that the competition has never even dreamed of. A peak counter with LED display, modulation measurements on the front panel, and a measurements grade linear demod built in. It is synthesized, has wideband circuitry, a 3-color LED bar graph for modulation display, a 10-position meter, and many other features that are best described in our new brochure.

For more information on QEI and the 695 Exciter just write or call us. You'll see why our search for excellence has produced the best value on the market today.

QEI Corporation

One Airport Drive □ P.O. Box D
Williamstown, NJ 08094 □ (609) 728-2020
Toll Free (800) 334-9154

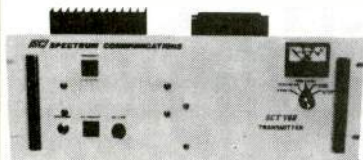


Circle (76) on Reply Card

1987 BG/SB Broadcast Engineering 107

Nothing Comes Remotely Close

SPECTRUM RPU LINKS



- TX FEATURES**
- VHF & UHF Units
 - 2-75 Watts
 - Direct FM
 - Front Panel Metering & Indicators
 - Built-in AC Supply
 - 12VDC Input or "Battery Backup"
 - 19" Rack Mt. - Cabinets Available
 - FCC Type Accepted. Parts 74, 90

SCT500 RPU Transmitter

The Spectrum SCR500 & SCT500 are a series of high performance broadcast quality RPU Receivers and Transmitters. They incorporate the latest advances in solid state technology—brought about by Spectrum's more than a decade of experience in the two way radio field. These rugged units use the highest quality components & construction for high reliability in either fixed or mobile applications.

RX FEATURES

- VHF & UHF Units
- High Sensitivity & Selectivity
- High Rejection of IMs & strong local signals
- 4 IF Bandwidths Available
- Very Low Distortion
- Full Panel Metering
- Built-in AC Supply
- Many Advanced Features



SCR500M RPU RECEIVER



SPECTRUM COMMUNICATIONS CORP.

Call or Write for Details. Data Sheets & Prices
1055 W. Germantown Pk. • Dept BE • Norristown, PA 19403 • (215) 631-1710 • Telex: 846-211

Circle (77) on Reply Card

NOVA II NIGHT VISION

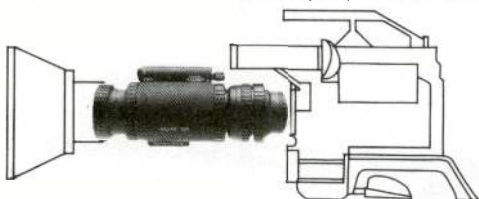
for T.V. CAMERAS

The Nova II is latest in compact high performance 2nd generation light amplification system



- Automatic Brightness Control
- Bright Source Protection
- Manual Gain Control
- Powered By 2 N Cell Batteries
- Custom Manufactured to fit:

Ikegami, Sony, Hitachi, JVC, etc. Cameras and Fujinon, Canon etc. Lenses



Western group Optical Division

3250 Wilshire Blvd., Suite 1101, Los Angeles, CA 90010

FAX (213) 384-2328

(213) 384-2181

TLX 194 583 W GROUP LSA

Circle (78) on Reply Card

Manufacturers' Addresses

Paltex Ltd.
2752 Walnut Ave.
Tustin, CA 92680
714-838-8833

Panasonic Broadcast Systems Co.
One Panasonic Way
Secaucus, NJ 07094
201-348-7671

Panasonic Industrial Co. Audio-Video System Products Group
One Panasonic Way
Secaucus, NJ 07094
201-348-7620

Parsons Mfg. Corp.
1055 O'Brien Drive
Menlo Park, CA 94025
415-324-4726

Patch Bay Designation
P.O. Box 6278
Glendale, CA 91205
818-241-5585

Peavey Electronics Corp.
711 A St.
Meridian, MS 39301
601-483-5365

Peerless Sales Co.
1950 Hawthorne Ave.
Melrose Park, IL 60160
312-865-8870

Pegasus Systems Ltd.
Bagshot Road
Bracknell Berks, England RG12 3SE
0344-489048

Peirce-Phelps, Inc.
2000 North 59th St.
Philadelphia, PA 19131
215-879-7171

Penny & Giles
Blackwood
Gwant, England NP2 24D
44-495-228000

Penny & Giles
2716 Ocean Park Blvd. Suite 1005
Santa Monica, CA 90405
213-393-0014

Perma Power Electronics, Inc.
5601 Howard Ave.
Chicago, IL 60648
312-647-9414

Perrott Eng. Labs, Inc.
7201 Lee Highway
Falls Church, VA 22046
703-532-0700

PESA America Inc.
6073 Northwest 167th St., Suite C-4
Miami, FL 33015
305-556-9638

PESA Electronica
Albala, 12
28037 Madrid, Spain
7540078

Philips Lighting/Westinghouse
One Westinghouse Plaza
Bloomfield, NJ 07003

Philips/Pye TVT Ltd.
Box 41, Coldhams Lane
Cambridge, England CB1 3JU
0223-245115

See—BTS Broadcast Television Systems, Inc., (A Joint Co. of Bosch & Philips)

Philips Television Systems, Inc.
900 Corporate Drive
Mahwah, NJ 07430
201-529-1550

See—BTS Broadcast Television Systems, Inc., (A Joint Co. of Bosch & Philips)

Philips Test & Measuring Instruments
85 McKee Drive
Mahwah, NJ 07430
201-529-3800

Photo Research
Div. of Kollmorgen Corp.
3000 N. Hollywood Way
Burbank, CA 91505
818-843-6100

Piclear, Inc.
180 E. Prospect Ave.
Mamaroneck, NY 10543
914-698-0258

Pinzone Communications Products Inc.
P.O. Box 540
Newbury, OH 44065
216-564-9093

Pioneer Electronics
5000 Airport Plaza Drive
Long Beach, CA 90815

Pioneer Technology Corp.
1021 N. Lake St.
Burbank, CA 91502
818-842-7165

Plastic Capacitors, Inc.
2623 N. Pulaski Road
Chicago, IL 60639
312-489-2229

Plastic Reel Corp. of America
Brisbin Ave.
Lyndhurst, NJ 07071
201-933-5100

PLISCH-Nachrichtentechnik
GroBer Stellweg 13, Postfach 1168
D-6806 Viernheim, West Germany
06204-7070

Plum Valley Engineering
P.O. Box 24845
San Jose, CA 95154

Polar Video Ltd.
2-5 Powis Mews
London, England W11 1JN
01-727-1111

Polaroid Corp.
575 Technology Square, 9th Floor
Cambridge, MA 02139

Polyline Corp.
1233 Rand Road
Des Plaines, IL 60016
312-298-5300

Porta-Pattern Inc.
P.O. Box 38945
Los Angeles, CA 90038
213-461-3561

Portable Energy Products, Inc.
1875 S. Pearl St.
Denver, CO 80210
303-778-8616

Portable Power Specialists
200 N. Cedar
Inglewood, CA 90301

Potomac Instruments, Inc.
932 Philadelphia Ave.
Silver Spring, MD 20910

Power Integrity Corp.
P.O. Box 9682
Greensboro, NC 27429-0682
919-379-9773

Power Pak Systems
A Haltom Int'l. Co.
1200 Everman Parkway
Fort Worth, TX 76140
817-293-1800

**Powerex Inc. (Joint Venture of GE,
Mitsubishi & Westinghouse)**
Hillis St.
Youngwood, PA 15697
412-925-4354

Precision Camera Inc.
1589 The Queensway, Suite 14
Toronto, Ont., Canada M8Z 5W9
416-251-2211

Precision Design
27106 South 46th Ave.
Kent, WA 98032
206-852-5070

Precision Echo
3105 Patrick Henry Drive
Santa Clara, CA 95054
408-988-0516

Prime Image
19943 Via Escuela
Saratoga, CA 95070
408-867-6519

Pro Battery Co. Inc.
3941 Oakcliff Industrial Court
Atlanta, GA 30340
800-451-7171

Pro-Bel Ltd.
Danehill, Lower Earley
Reading, Berks, England RG6 4PB
0734-866123

Procart
7012 27th St. West
Tacoma, WA 98466
206-565-4546

Programming Plus
P.O. Box 90486
Pacific Beach, CA 92109-0860
619-272-PLUS

ProTech Audio Corp.
Flowerfield Building 1
St. James, NY 11780
516-584-5855

Publison Audio Professional S.A.R.L.
18, av. de la Republique
93170 Bagnolet, France
14360 84 64

Pulse Instruments
1234 Francisco St.
Torrance, CA 90502

Pumpkin Air Inc.
P.O. Box 1110
Addison, TX 75001

Pye TVT Ltd.
Broadcast Co. of Philips
Box 41, Coldhams Lane
Cambridge, England CB1 3JU
0223-245115

Pye TVT Ltd. Inquiries for U.S.A.
Contact BTS Broadcast Television
Systems
900 Corporate Drive
Mahwah, NJ 07430
201-529-1550

Q

QEI Corp.
P.O. Box D
Williamstown, NJ 08094
609-728-2020
John Tiedeck

QSC Audio Products Inc.
1926 Placentia Ave.
Costa Mesa, CA 92627

QSI Systems Inc.
12 Linscott Road
Woburn, MA 01801
617-938-1403

Q-TV
104 East 25th St.
New York, NY 10010
212-460-9050

Quality Video Supply
76 Frederick St.
Hackensack, NJ 07602
201-488-8336

Quanta Corp.
2440 S. Progress Drive
Salt Lake City, UT 84119
801-974-0992

Quante Corp.
3350 Scott Blvd., Building 15
Santa Clara, CA 95051
408-727-2077

Quantel
3290 W. Bayshore Road
Palo Alto, CA 94303
415-856-6226

Quantel
Kenley House, Kenley Lane
Kenley Surrey, England CR2 5YR
01-668-4151

Quantum Audio Labs, Inc.
1909 Riverside Drive
Glendale, CA 91201
818-841-0970

Questech Ltd.
Eastheath Ave.
Wokingham Berks, England RG11
2PP
0734-787209

Quick-Set Inc.
3650 Woodhead Drive
Northbrook, IL 60062

R

R.A.C. Corp.
31W037 North Ave.
West Chicago, IL 60185
312-293-0661

RCA American Communications
4 Research Way
Princeton, NJ 08540
609-987-4200

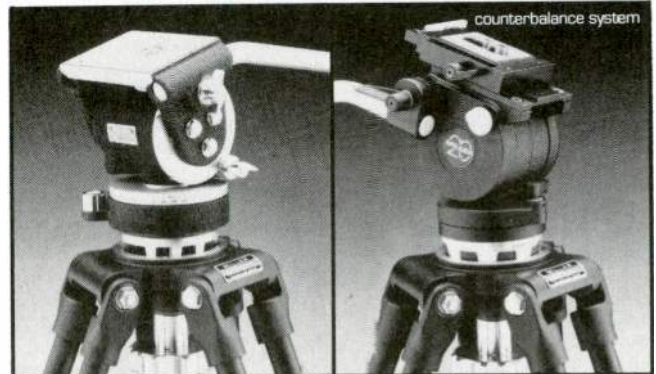
RCA Distributor & Special Products
Div.
2000 Clements Bridge Road
Deptford, NJ 08096
609-853-2350

RCA New Products Div.
Tube Operations
New Holland Ave.
Lancaster, PA 17604-3140
717-295-6024



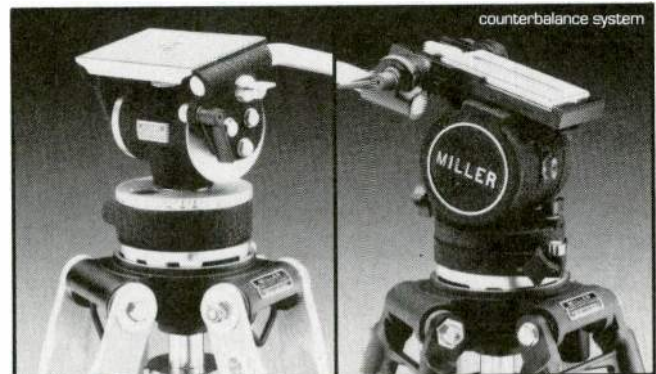
MILLER FLUID HEADS

14 MODELS FOR ALL TYPES
OF ENG/EFP CAMERAS



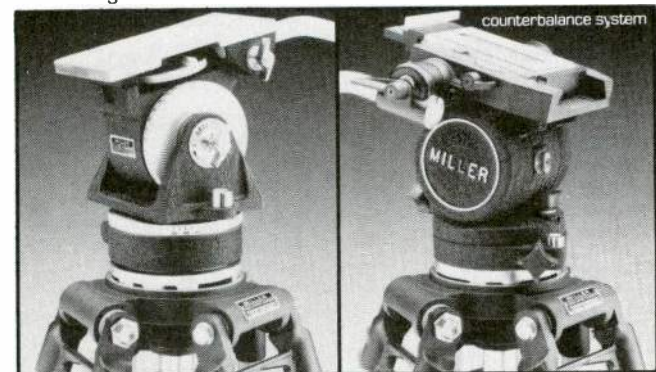
Serior F

Miller 20



Light Professional

Miller 30



VG.50

Miller 50

SUPPORT YOU CAN DEPEND ON

- FLUID HEADS
- TRIPODS
- SPECIAL APPLICATION MOUNTS
- CAMERA SUPPORT ACCESSORIES

MILLER FLUID HEADS (USA) Inc.
2819 W. OLIVE AVE, BURBANK CA 91505
TEL: (818) 8416262 TLX: 283223

Circle (79) on Reply Card

1987 BG/SB **Broadcast Engineering** 109

RCI (Recording Consultants Inc.)
8550 Second Ave.
Silver Spring, MD 20910
301-587-1800

R-Columbia Products Co., Inc.
2008 St. Johns Ave.
Highland Park, IL 60035
617-994-4213

R & D Station Service
64 Richdale Ave.
Cambridge, MA 02140-2629
617-864-4298

RE Instruments Corp.
31029 Center Ridge Road
Westlake, OH 44145
216-871-7617

RF Technology, Inc.
145 Woodward Ave.
South Norwalk, CT 06854
203-866-4283

RKO Tape Corp.
3 Fairfield Crescent
West Caldwell, NJ 07006
201-575-8484

RMS Electronics, Inc.
50 Antin Place
Bronx, NY 10462
212-892-1000

RPG Difussor Systems
12003 Wembleton St.
Largo, MD 20772
301-249-5647

R/SCAN Corp.
511 11th Ave. S.
Minneapolis, MN 55415
612-333-1424

RTI-Research Tech. Int'l.
4700 Chase Ave.
Lincolnwood, IL 60646
312-677-3000

RTS Systems, Inc.
1100 W. Chestnut St.
Burbank, CA 91506
818-840-7313

Racal-Decca Canada Inc.
Insulators Div.
71 Selby Road
Brampton, Ont., Canada L6W 1K5
416-457-8720

Jules Racine & Co., Inc.
Box 246 Route 22
Croton Falls, NY 10519
914-277-8450

Radamec-E.P.O.
Bridge Road
Chertsey, Surrey, England KT16 8LJ
09328-61181

Radiation Systems, Inc.
1501 Moran Road
Sterling, VA 22170
703-450-5680

Radio Engineering Co.
Consultants
P.O. Box 420
Santa Ynez, CA 93460
805-688-2333

Radio Systems Inc.
5113 W. Chester Pike
Edgemont, PA 19028
215-356-4700

Radiotechniques
Consulting Engineers
402 Tenth Ave.
Haddon Heights, NJ 08035-1838
609-546-0472

Raines Engineering
13420 Cleveland Drive
Potomac, MD 20850
301-279-2972

RAKS
201 Route 17, Suite 300
Rutherford, NJ 07070
201-438-0119

Ram Broadcast Systems
346 W. Colfax St.
Palatine, IL 60067
312-358-3330

Ramko Research Inc.
11355-A Folsom Blvd.
Rancho Cordova, CA 95670
916-635-3600

Rank Cintel
Watton Road
Ware Herts, England SG12 OAE
920-3939

Rank Cintel
13340 Satcoy St.
North Hollywood, CA 91605
818-765-7265

Rank Cintel
260 N. Route 303
West Nyack, NY 10094
914-353-1914

Theodore A. Rapp Associates Inc.
Tram Microphones
P.O. Box 821
Nyack, NY 10960
914-358-7895

Raven Screen Corp.
124 East 124th St.
New York, NY 10035

Re: DB Co.
A Div. of Pierce Industries Inc.
3120 E. Pico
Los Angeles, CA 90023
213-264-7855

Re-Play Video Cartridge Service
328 Merritt Ave.
Pittsburgh, PA 15227
412-885-0959

The Real World Tech. Group, Inc.
130 McCormick Ave., Suite 109
Costa Mesa, CA 92626
714-957-1061

Rebis Audio
2093 Faulkner Road N.E.
Atlanta, GA 30324
404-633-6626

Recortec, Inc.
275 Santa Ana Court
Sunnyvale, CA 94086
408-737-8441

Reddy, Begley & Martin
2033 M St. N.W., Suite 500
Washington, DC 20036
202-659-5700

Rees Associates, Inc.
4200 Perimeter Center Drive
Oklahoma City, OK 73112
405-946-9800

REGIS
P.O. Box 244
Biella, Italy 13051
39-15-22457

Register Data Systems
P.O. Box 1246
Perry, GA 31069
912-987-2501

Reliance Comm/Tec
P.O. Box 99502
Cleveland, OH 44199
800-245-4501

Reliance Electric Co.
P.O. Box 99502
Cleveland, OH 44199
800-245-4501

Reliance Plastics & Packaging Div.
225 Belleville Ave.
Bloomfield, NJ 07003
201-748-2222

Richmond Sound Design, Ltd.
1234 W. Sixth Ave.
Vancouver B.C., Canada V6H 1A5
604-734-1217

A.D. Ring & Associates
1140 19th St. N.W.
Washington, DC 20036
202-223-6700

Riser-Bond Instruments
P.O. Box 188
Aurora, NE 68818
402-694-5201

Rockwell Int'l.
Collins Transmission Sys. Div.
1200 N. Alma Road
Richardson, TX 75081
214-996-6966

ROH Corp.
3603 Clearview Place N.E.
Atlanta, GA 30340
404-455-7940

ROH Div. of Anchor Audio
913 West 223rd St.
Torrance, CA 90502
213-533-1498

Rohde & Schwarz
Muehldorfstrasse 15
D-8000 Munchen 80, West Germany
089-4129-2230

Rohde & Schwarz-Polarad, Inc.
5 Delaware Drive
Lake Success, NY 11042
516-328-1100

ROHN
P.O. Box 2000
Peoria, IL 61656
309-697-4400

Roll-A-Reel Co. Inc.
P.O. Box 37381
Cincinnati, OH 45222
513-761-8500

C.N. Rood B.V.
Broadcasting Div.
P.O. Box 42
2280 AA Rijswijk ZH, Holland
70-99 63 60

Rosco Labs Inc.
36 Bush Ave.
Port Chester, NY 10573
914-937-1300

Roscor Corp.
1061 Feehanville Drive
Mount Prospect, IL 60056
312-539-7700

Rosner TV Systems, Inc.
250 West 57th St.
New York, NY 10107
212-246-2850

Ross-American Logic Systems Inc.
20540-D Superior St.
Chatsworth, CA 91311
818-709-4195

Ross Video Ltd.
P.O. Box 220
Iroquois, Ont., Canada KOE 1K0
613-652-4886

Ruslang Corp.
320 Dewey St.
Bridgeport, CT 06605
203-384-1266

Russco Electronics Mfg. Inc.
5690 E. Shields
Fresno, CA 93727

Ryley Communications
39 Haviland Road
Wimborne Dorset, England BH21
7SA
0202-871313

S

S.C.V. Audio
Box 50056, Paris Nord 11 95947
Roissy Ch. de Gaulle
Cedex, France
863-2211

SCV Inc.
414 N. Sparks St.
Burbank, CA 91506
818-500-0137

SL Waber, Inc.
Subsidiary of SL Industries
300 Harvard Ave.
Westville, NJ 08093
609-456-5400

SSAC Inc.
P.O. Box 395
Liverpool, NY 13088-0395
315-622-1000

SWR, Inc.
P.O. Box 215
Goffstown, NH 03045
603-529-2500

Sachtler Corp. of America
400 Oser Ave.
Hauppauge, NY 11788
516-231-0033

Sachtler GmbH
Dieselstrasse 16
D-8046 Garching, West Germany
89-3204041

Saki Magnetics, Inc.
8650 Hayden Place
Culver City, CA 90230
213-559-6704

Howard W. Sams & Co., Inc.
4300 West 62nd St.
Indianapolis, IN 46268

Samson Products Corp.
124 Fulton Ave.
Hempstead, NY 11550
516-489-2203

Sander Electronics A/S
P.O. Box 132
3201 Sandefjord, Norway
34-67 222

Sansui Electronics
108 Westlake Drive
Valhalla, NY 10595

The Affordable Alternative



Why settle for a consumer deck when you can afford
The Nakamichi MR-2 Two Head Professional Cassette Deck!
Whether you operate a recording studio,
a broadcast station,
or a real-time tape-duplication facility,
you'll find the MR-2 ideal for the job.

The MR-2 embodies the essentials of Nakamichi Technology...
a "Silent Mechanism" transport that banishes vibration-induced flutter,
Nakamichi tape heads that yield smooth response from 20 Hz to 20 kHz,
low-noise/low-distortion electronics with exceptional dynamic range,
and legendary Nakamichi quality control.

And, the MR-2 brings you such professional features as...
Variable output for operation in -10 dBV or $+4$ dBm environments,
RCA and $\frac{1}{4}$ -inch input/output jacks,
Copy Out and Remote Input/Output ports for real-time tape duplication,
Dual-Speed Master Fader, EIA rack mounting and more.

The Nakamichi MR-2—the Affordable Professional Alternative!



Nakamichi U.S.A. Corporation 19701 South Vermont Ave., Torrance, CA 90502 (213) 538-8150
Circle (80) on Reply Card

"Diet Be



Sony Broadcast Products Company, 1600 Queen Anne Rd., Teaneck, NJ 07666 (201) 833-5231. © 1986 Sony Corporation of America. Sony and Belacam are registered trademarks of Sony Corporation.

SONY

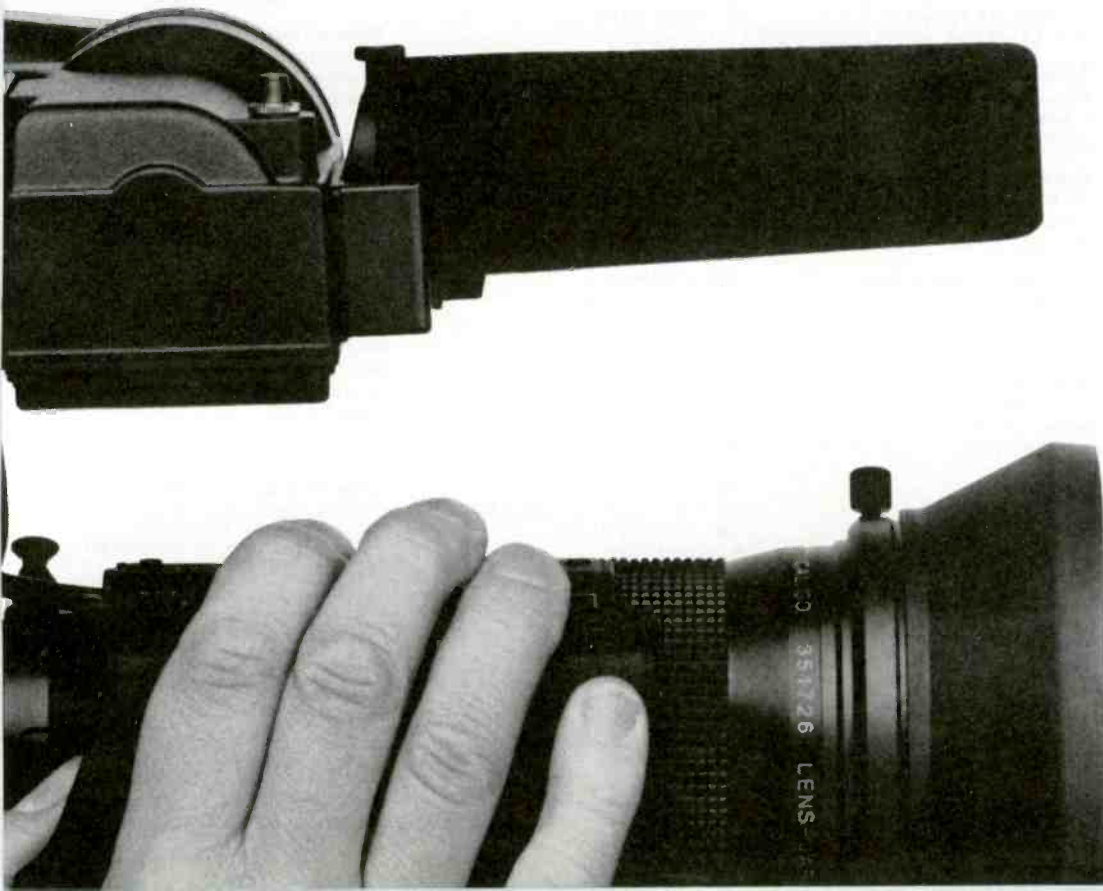
tacam?"

First we took out the tubes and put in CCDs. Then we trimmed the excess circuitry associated with tubes. The result is the new Sony BVW-105 CCD camcorder.

Compare it to its tube-type cousins and you'll find that it's 14% lighter, 22% smaller and eats less than half the power. 510 CCD elements per chip generate amazingly sharp resolution. Registration error holds rock-steady at a miniscule .05% throughout. Add the virtues of F5.6 sensitivity, instant startup, and high resistance to burn-in and physical shock and you have the ultimate lean machine for ENG.

Of course, the BVW-105 has other features you would expect from CCDs, such as no lag, no microphony and no-nonsense reliability. Plus one feature you wouldn't expect from such a sophisticated camcorder—a low price.

For more information, contact your Sony Broadcast representative. Or call Sony Broadcast at (201) 833-5231.



SONY
BROADCAST

SatCom Technologies, Inc.
An RSi Co.
 2912 Pacific Drive
 Norcross, GA 30071
 404-448-2116

Satellite Systems
 467 Edwin Drive
 Virginia Beach, VA 23462

SATT Communications AB
 P.O. Box 32701
 S-12611 Stockholm, Sweden
 468-81-0100

Sauppe Media, Inc.
 1625 Pegfair Drive
 Pasadena, CA 91103
 818-792-9840

Scala Electronic Corp.
 P.O. Box 4580
 Medford, OR 97501
 503-779-6500

Scantex Labs Inc.
 P.O. Box 338
 Pierrefonds, Que., Canada H9H 4L1
 514-626-8943

Schafer World Communications Corp.
 P.O. Box 31
 Marion, VA 24354
 703-783-2001

Schmid Fernmeldetechnik Zuerich
 Rieterstrasse 6
 CH-8002 Zuerich, Switzerland
 411-201-2353

Schneider Corp. of America
 400 Crossways Park Drive
 Woodbury, NY 11797
 516-496-8500

Jos. Schneider Optische Werke
Kreuznach GmbH & Co. KG
 Ringstrasse 132, Postfach 947
 D-6550 Bad Kreuznach, West
 Germany
 0671-601278

Edward A. Schober, P.E.
Radio Consulting Engineer
 402 Tenth Ave.
 Haddon Heights, NJ 08035-1838
 609-546-0472

Schoeps/Posthorn Recordings
 142 West 26th St., 10th Floor
 New York, NY 10001
 212-242-3737

Schoeps Schalltechnik
 Spitalstrass 20
 D-7500 Karlsruhe 41, West
 Germany

Schuessler Case Co., Inc.
 P.O. Box 39066
 Chicago, IL 60639
 312-227-0027

Schwem Technology, Inc.
 3305 Vincent Road
 Pleasant Hill, CA 94523
 415-935-1226

Scientific-Atlanta
 P.O. Box 105600
 Atlanta, GA 30348

Scientific-Atlanta
Digital Video Systems Div.
 120 Middlefield Road
 Scarborough, Ont., Canada M1S 4M6
 416-299-6888

Scientific-Atlanta
Optima Div.
 2166 Mtn. Industrial Blvd.
 Tucker, GA 30084
 404-496-4023

Scientific Systems, Inc.
 92 Westwood Drive
 Toms River, NJ 08753
 201-255-2230

Scip Electronic Systems
 16169 Sunset Blvd., Suite 304
 Pacific Palisades, CA 90272

The Screen Works, Ltd.
 3925 N. Pulsaki Road
 Chicago, IL 60641
 312-588-8380

The L.J. Scully Mfg. Corp.
 138 Hurd Ave.
 Bridgeport, CT 06604
 203-368-2332

Sea-Tex Div.
Si-Tex Marine Electronics Inc.
 P.O. Box 6700
 Clearwater, FL 33518
 813-535-4681

SECOA
 2731 Nevada Ave. N.
 Minneapolis, MN 55427
 612-546-6313

SED Systems Inc.
 P.O. Box 1464
 Saskatoon, Sask., Canada S7K 3P7
 306-664-1818

Seiko/KMD Sound Electronics
 P.O. Box 507
 Bloomfield, CT 06002-0507
 203-243-7853

Selco Products Co.
 7580 Stage Road
 Buena Park, CA 90621
 714-521-8673

Sellmeyer & Kramer, Inc.
 P.O. Box 841
 McKinney, TX 75069
 214-542-2056

Seltech Int'l
 Rose Industrial Estate/Cores End
 Road
 Borune End, Bucks, England SL8 5AT

Sencore Inc.
 3200 Sencore Drive
 Sioux Falls, SD 57107
 605-339-0100

Sennheiser Electronic Corp.
 48 West 38th St.
 New York, NY 10018
 212-944-9440

Sentry Systems
 2211 Fifth Ave.
 Seattle, WA 98121
 206-728-8651

Sescom, Inc.
 2100 Ward Drive
 Henderson, NV 89015
 702-565-3400

Setcom Corp.
 1400 Stierlin Road, Dept. BE
 Mountain View, CA 94043
 415-965-8020

Shallco, Inc.
 P.O. Box 1089
 Smithfield, NC 27577
 919-934-3135

Sharp Electronics Corp.
Broadcast Group
 Sharp Plaza
 Mahwah, NJ 07430
 201-529-8731

Ron Colgan, Nat'l. Sales Manager

REGIONAL SALES CONTACTS:
 CA, Los Angeles, (213) 637-9488
 GA, Atlanta, (404) 995-0717
 IL, Chicago, (312) 482-9292

Jack Shearer & Associates, Inc.
 834 Washington Ave.
 Carnegie, PA 15106
 412-429-9414

Shintron Co. Inc.
 144 Rogers St.
 Cambridge, MA 02142
 617-491-8700

Shively Laboratories
Div. of Howell Labs, Inc.
 36 Harrison Road
 Bridgton, ME 04009
 207-647-3327

Jonathan R. Clark

REGIONAL SALES CONTACTS:
 AR, Eureka Springs, (501) 253-8556
 FL, Niceville, (904) 678-8943
 ID, Boise, (208) 343-3088
 IN, Richmond, (317) 962-8596
 LA, New Orleans, (504) 242-8014
 MI, Novi, (313) 349-7910
 NM, Los Lunas, (505) 865-6700
 NC, Pineville, (704) 889-4508
 PA, Edgemont, (215) 356-4700
 WA, Seattle, (206) 303-7730
 WI, Brookfield, (414) 782-7996
 BRAZIL, Rio de Janeiro, 011-55-21-
 274-5009
 CANADA, Ontario, (416) 731-9500
 ITALY, Milan, 011-39-39-66-2223
 SOUTH AUSTRALIA, Edwardstown, (08)
 297-3888

Shook Electronic Enterprises, Inc.
 6630 Topper Parkway
 San Antonio, TX 78233
 512-653-6761

Shure Brothers Inc.
 222 Hartrey Ave.
 Evanston, IL 60202-3696
 312-866-2523

Siecor Corp.
 489 Siecor Park
 Hickory, NC 28603-0489
 704-327-5964

Siemens
 Balanstrasse 73
 D-8000 Muechen, West Germany

Siemens-Neve--See Rupert Neve Inc.

Sierra Scientific
 1173 Borregas Ave.
 Sunnyvale, CA 94089
 408-745-1500

Sierra Video Systems
 P.O. Box 2462
 Grass Valley, CA 95945
 916-273-9331

Sigma Consultants
 4776 El Cajon Blvd., Suite 106
 San Diego, CA 92115
 619-583-6767

Sigma Electronics, Inc.
 P.O. Box 448
 East Petersburg, PA 17520
 717-569-2681

Simpson Electric
 853 Dundee Ave.
 Elgin, IL 60120
 312-697-2260

Sims Vibration Dynamics
 17724 15th Ave. N.E.
 Seattle, WA 98155
 206-362-0700

Skantronics, Inc.
 1378 Port Washington Blvd.
 Port Washington, PA 11050
 516-944-6244

Skotel Corp.
 1445 Provencher
 Brossard, Que., Canada J4W 1Z3
 514-465-8990

Skyline Inc.
 6309 Eleanor Ave.
 Hollywood, CA 90038
 213-856-0033

Robert Slye Electronics
 3415 N. Washington Blvd.
 Arlington, VA 22201
 703-525-7272

Smith & Powstenko
 2033 M St. N.W., Suite 600
 Washington, DC 20036
 202-293-7742

Snell & Wilcox
Electronic Consultants Ltd.
 57 Jubilee Road
 Waterlooville, Hants, England PO7
 7RF
 0705-262060

Softpedal Inc.
Microsoft for TV Sales
 2690 Cumberland Parkway, Suite
 350
 Atlanta, GA 30339
 404-435-4880

Softube Co.
 344 West 72nd St.
 New York, NY 10023
 212-580-1082

Sola/General Signal
 1717 Busse Road
 Elk Grove Village, IL 60007

Solartron Instruments
 2 Westchester Plaza
 Elmsford, NY 10523
 914-592-9168

Solder Absorbing Technology
 144 Oakland St.
 Springfield, MA 01108
 413-788-6191

Solid Electronics Labs
 220 Brookthorpe Circle
 Broomall, PA 19008
 215-353-9449

Solid State Logic
Begbroke
 Oxford, England OX5 1RU
 08675-4353

Antony David

REGIONAL SALES CONTACTS:
 CA, Los Angeles, (213) 463-4444
 NY, New York, (212) 315-1111
 AUSTRALIA, Sydney, 61-2-406-4700
 FRANCE, Paris, 33-1-4245-1840
 HONG KONG, Kowloon, (852) 3 7125251
 ITALY, Milano, (392) 25390121
 JAPAN, Tokyo, 81-3-320-1101
 NORWAY, Vinderen, 47-2 145460
 SWITZERLAND, Lausanne, 41-21-39-
 5015

Soll, Inc.
 401 East 74th St.
 New York, NY 10021
 212-988-0290

Paint Plus...



Iris, Auto Iris, Auto White, Color Bars, Tally/Call...all with **MicroControl™**

- **Controls include:** Iris, Master Ped, Red and Blue Gain, Red and Blue Ped, Color Bars, Auto Iris, Auto White and Tally/Call.
- **No special cable.** Advanced circuitry allows all controls including intercom to operate over a single ordinary microphone cable to more than 1000 feet.
- **Powered by camera battery.** No external batteries or power supplies required. Entire system draws less than .075 amps from camera battery.
- **Ultra compact and lightweight.** Control Unit weighs only 1½ lbs....is easily hand held and stored in camera case.
- **Snap-On® camera mount.** Decoder unit mounts onto Anton/Bauer Snap-On battery bracket that is standard on all professional cameras.
- **Now available for Ikegami HL-95.** Other models include Ikegami HL-79A-D, HL-79E, Harris TC-90, Hitachi SK81-SK91, Sony BVP 300 Series and Thomson MC 601/701. No camera modifications required. Can be instantly interchanged from camera to camera of the same type.

**anton
bauer**

*The quality standard
of the video industry.*

Anton/Bauer, Inc. ☐ One Controls Drive, Shelton, CT 06484 ☐ 203-929-1100
Circle (82) on Reply Card

Manufacturers' Addresses

H. A. Solutec Ltd.
4360 Iberville St.
Montreal, Que., Canada H2H 2L8
514-524-8690

Gilles Fortin

REGIONAL SALES CONTACTS:

CA, Los Alamos. (805) 344-3335
MA, Middleboro. (617) 947-6801
NJ, Mahwah. (201) 529-1550
NY, Menands. (518) 449-7213
TN, Memphis. (901) 345-9500

Solway, Inc.
P.O. Box 7647
Hollywood, FL 33081
305-962-8650

Sonar Radio Corp.
3000 Stirling Road
Hollywood, FL 33021
305-981-8800

Sondor Export AG
Im Gewerbezentrum
CH-8702 Zollikon-Zurich, Switzerland
1-397-8090

Sonifex Ltd.
61 Station Road
Irthlingborough, Northampts, England
NN9 5QE
0933-650700

Sono-Mag Corp.
1833 W. Hovey Ave.
Normal, IL 61761
309-452-5313

Sonosax SA
Rte Cantonale 116

CH-1025 St-Sulpice, Switzerland
021-35.35.01

Sony Broadcast Products Co.
1600 Queen Anne Road
Teaneck, NJ 07666
201-833-5200

Carlos Ferreira

REGIONAL SALES CONTACTS:

EASTERN Region: NJ, Paramus. (201) 368-5111
MID ATLANTIC: NJ, Paramus. (201) 368-5120
MIDWEST Region: IL, Itasca. (312) 773-6046
SOUTHEAST Region: GA, Norcross. (404) 263-9888
SOUTHWEST Region: TX, Irving. (214) 659-3600
WESTERN Region: CA, Burbank. (818) 841-8711

Sony Magnetic Products Co.
One Sony Drive
Park Ridge, NJ 07656
201-930-7266

Sony Video Communications Products Div.
One Sony Drive
Park Ridge, NJ 07656
201-930-1000

Jim Hansen, Nat'l. Sales Manager

Soper Sound Music Library
Soper Sound Media Music
P.O. Box 498
Palo Alto, CA 94301
415-321-4022

Sorensen Co., Div. of Switchcraft A Raytheon Co.
5555 N. Elston Ave.
Chicago, IL 60630
312-792-2700

Sound Ideas
Sound Effects Library
86 McGill St.
Toronto, Ont., Canada M5B 1H2
416-977-0512

Sound Technology
1400 Dell Ave.
Campbell, CA 95008
408-378-6540

Kent McGuire

REGIONAL SALES CONTACTS:

CA, Cypress. (714) 891-5048
CA, Campbell. (408) 866-0648
IL, Northbrook. (312) 490-3575
KS, Overland Park. (913) 541-9699
MA, Framingham. (617) 875-4199
MI, Southfield. (313) 569-1090
MN, Minneapolis. (612) 829-0431
NJ, Union. (201) 688-7079
NC, Charlotte. (704) 542-3380
TX, Dallas. (214) 330-8181
UT, Bountiful. (801) 298-8902
WA, Seattle. (206) 363-9200

Sound Workshop
Pro Audio Products
1324 Motor Parkway
Hauppauge, NY 11788
516-582-6210

Soundcraft Electronics Ltd.
Unit 2, Borehamwood Industrial Park
Rowley Lane, Borehamwood
Hertfordshire, England WD6 5PZ
01-207-5050

Soundcraft USA
8500 Balboa Blvd.
Northridge, CA 91329
818-893-4351

Souder Electronics Inc.
21 Madrona St.
Mill Valley, CA 94941
415-383-5811

Soundolier
1859 Intertech Drive
Fenton, MO 63026
201-887-7800

Soundtracs PLC
91 Ewell Road
Surbiton, Surrey, England KT6 6AH
01-399-3392

Southlake Technologies, Inc.
2100 Reston Ave.
Reston, VA 22091
703-620-5300

Spectra Sonics
3750 Airport Road
Ogden, UT 84405
801-392-7531

Spectrum Communications Corp.
1055 W. Germantown Pike
Norristown, PA 19403
215-631-1710

Shera C. Bello

Spectrum Planning, Inc.
P.O. Box 831360
Richardson, TX 75083-1360
214-680-1000

Product Directory begins on page 14

Move Over Digitrol

AUTO-CART Brings You Up To Speed



Yesterday's popular automatic VTR Sequencer has a successor that's miles ahead. It's AUTO-CART from Alamar, the innovators in total station automation.

- Automatic Program Cueing and Confirmation
- Interfaces with All VTR Formats
- Compatible with SMPTE/EBU Control Bus
- "As Aired" Station Log (Optional)

\$7995

Alamar Electronics USA, Inc.
36 Railway Ave.
Campbell, CA 95008
408/866-9373



Affordable Automation

IF YOU NEED ATTENUATORS YOU NEED THIS CATALOG!



FREE

AUDIO AND RF ATTENUATORS TO MEET ANY REQUIREMENT

Here in one compact and informative 24 page booklet is all the data you need to select a Precision Audio and RF Attenuator for your application.

Reference Charts, Circuit Diagrams, Types and Uses, Current and Voltage Ratio Tables, Ratings, Etc., make this a handy and invaluable reference.

SEND FOR YOUR FREE COPY TODAY.

TECH LABS, INC.
Bergen & Edsall Blvds.
Palisades Park, N.J. 07650
Tel.: (201) 944-2221

Circle (83) on Reply Card

Circle (84) on Reply Card

A.W. Sperry Instruments
245 Marcus Blvd.
Hauppauge, NY 11788
516-231-7050

Sphere Electronics, Inc.
20211B Prairie St.
Chatsworth, CA 91311
818-349-4747

Spin Physics
Eastman Kodak Co.
3099 Science Park Road
San Diego, CA 92121
619-453-5410

Stainless, Inc.
Third & Montgomery Sts.
North Wales, PA 19454
215-699-4871

Jess C. Rodriguez

Stencil Corp.
921 N. Highland
Hollywood, CA 90038
213-464-7461

Standard Communications
P.O. Box 92151
Los Angeles, CA 90009-2151
213-532-5300

Standard Frequency Measuring
Service
2092 Arrowood Place
Cincinnati, OH 45231
513-851-4964

Standard Tape Lab, Inc.
26120 Eden Landing Road, Suite 5

Hayward, CA 94545
415-786-3546

Standard Telephone und Radio AG
Friesenbergstrasse 75
CH-8055 Zurich, Switzerland

Stanton Magnetics Inc.
Terminal Drive
Plainview, NY 11803
718-445-0063

Pete Bidwell

REGIONAL SALES CONTACTS:
CA, San Francisco, (415) 651-5752
FL, Fort Lauderdale, (305) 764-7755
IL, Quincy, (217) 222-8200
IN, Richmond, (317) 962-8596
MD, BWI Airport, (301) 796-1500
MA, North Wilbraham, (413) 596-3854
NY, Morris, (607) 263-5695
NY, New York, (212) 989-9815
NY, South Glens Falls, (518) 793-2181
NC, Pineville, (704) 889-4508
OK, Claremore, (918) 341-5240
PA, Edgemont, (215) 356-4700
TX, Fort Worth, (817) 737-9911
WA, Tacoma, (206) 565-2301

Stantron
Unit of Zero Corp.
6900 Beck Ave.
North Hollywood, CA 91605
213-875-0800

Star Case
648 Superior
Munster, IN 46321
219-922-4440

Starlight Communications, Inc.
P.O. Box 523
Northbrook, IL 60065
312-272-5511

Static Control Systems/3M
P.O. Box 2963
Austin, TX 78769-2963
800-328-1368

Steady-Film Corp.
707 18th Ave. S.
Nashville, TN 37203
615-329-2073

Steenbeck, Inc.
9554 Vassar Ave.
Chatsworth, CA 91311
818-998-4033

Steiger, Hurray & Associates Inc.
Broadcast Tech. Consultants
6816 Westview Drive
Cleveland, OH 44141
216-526-7187

Stellavox
Jardillets 18
CH-2068 Hauterive, Switzerland
038-33.42.33

Storeel Corp.
2050-C Chamblee Tucker Road,
Suite 2
Atlanta, GA 30341
404-458-3280

Straight Wire Audio, Inc.
2611 Wilson Blvd.
Arlington, VA 22201
703-522-7780

Strand Lighting
18111 S. Santa Fe Ave.
Rancho Dominguez, CA 90221
213-637-7500

Studer Revox America
1425 Elm Hill Pike
Nashville, TN 37210
615-254-5651

David Bowman

REGIONAL SALES CONTACTS:
CA, Van Nuys, (818) 780-4243
CA, Walnut Creek, (415) 930-9866
IL, Barrington, (312) 526-1660
NY, New York, (212) 255-4462
TX, Dallas, (214) 943-2239

Summit Software Systems Inc.
2111-M 30th Suite 1126
Boulder, CO 80301
303-494-1761

Sunsport
2440 San Mateo Place N.E.
Albuquerque, NM 87110

The Superior Electric Co.
383 Middle St.
Bristol, CT 06010
203-582-9561

Surcom Associates, Inc.
305 Wisconsin Ave.
Oceanside, CA 92054
619-722-6162

August J. Link

Swintek Enterprises, Inc.
587 Division St.
Campbell, CA 95008
408-378-8091

Darisa Hill

REGIONAL SALES CONTACTS:
GA, Stone Mountain, (404) 292-5354

Product Directory begins on page 14

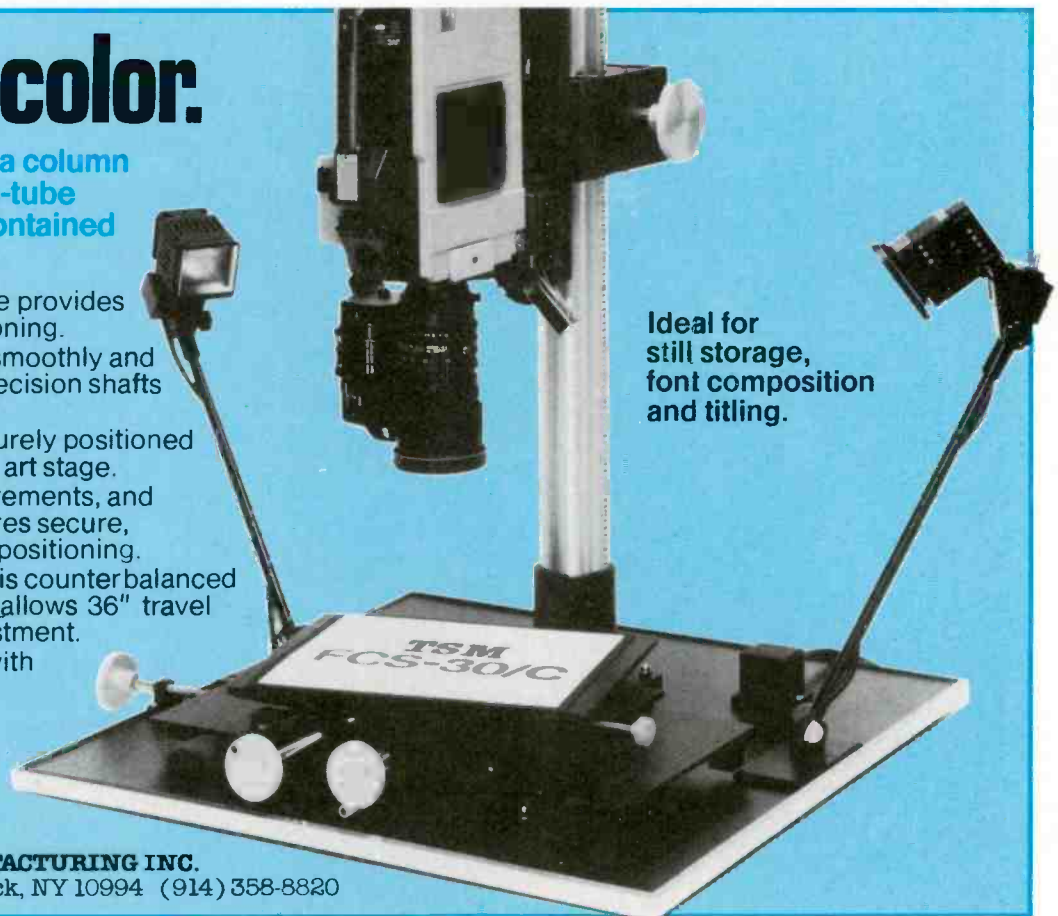
New for color.

The FCS-30/C features a column mount to support a 3/8", 3-tube color camera and self contained 3200°K lighting.

- Triple movement art stage provides X, Y and rotational positioning.
- 9" x 12" art stage moves smoothly and accurately along steel precision shafts and bronze bushings.
- Artwork is easily and securely positioned with magnets to the steel art stage.
- Height scale, with 1/4" increments, and locking mechanism assures secure, accurate and repeatable positioning.
- Universal camera mount is counter balanced for easy positioning, and allows 36" travel with rack and pinion adjustment.
- Two lights are provided with On-Off switch.

TSM

TOTAL SPECTRUM MANUFACTURING INC.
20 Virginia Avenue, West Nyack, NY 10994 (914) 358-8820



Ideal for
still storage,
font composition
and titling.

Circle (85) on Reply Card

Manufacturers' Addresses

IL, Naperville, (312) 983-0935
NY, Spring Valley, (914) 356-3700
PA, Langhorne, (215) 757-6100
TX, Houston, (713) 772-6765

Switchcraft Inc.
5555 N. Elston Ave.
Chicago, IL 60630
312-792-2700

Keith Bandolik

Symetrix Inc.
4211 24th Ave. W.
Seattle, WA 98199
206-282-2555

Roy Blankenship

Symtec Inc.
14902 Winding Creek Road
Tampa, FL 33612
813-961-4771

Symtec Inc.
15933 W. Eight Mile Road
Detroit, MI 48235
313-272-2950

Synchronous Communications, Inc.
1701 Fortune Drive, Suite O
San Jose, CA 95131
408-262-0541

System Video Ltd.
120 Oyster Lane
Byfleet, Surrey, England KT14 7LJ

Systemation Corp.
337 N. Water
Decatur, IL 62523
217-428-7101

Systems Wireless Ltd.
465 Herndon Parkway
Herndon, VA 22070
703-471-7887

T

TBA Technology
P.O. Box 302
Walnut Creek, CA 94596
415-932-8134

TDK Electronics Corp.
12 Harbor Park Drive
Port Washington, NY 11050

TDV S.A.
Parc Industrial Hauts Sarts
B-4400 Herstal, Belgium

TFT Inc.
3090 Oakmead Village Drive
Santa Clara, CA 95051
408-727-7272

T & G Optics
71-01 Ingram St.
Forest Hills, NY 11375
718-544-8156

TRW LSI Products Div.
P.O. Box 2472
La Jolla, CA 92038
619-457-1000

TRW RF Devices Div.
14520 Aviation Blvd.
Lawndale, CA 90260

TTC Companies
P.O. Box 1385

Broomfield, CO 80020-8385
303-465-4141

TTE, Inc.
2233 S. Barry Ave.
Los Angeles, CA 90064
213-478-8224

Taber Mfg. & Eng. Co.
1880 Embarcadero Road
Palo Alto, CA 94303
415-493-3811

Tamron Industries Inc.
24 Valley Road
Port Washington, NY 11050
516-883-8800

Tandberg of America, Inc.
1 Labriola Court
Armonk, NY 10504
914-273-9150

Tannoy Ltd.
Coronation Road, Cressex Ind. Estate
High Wycombe, Bucks, England HP12
3SB
0494-450606

Tape-Athon Corp.
Cavox Stereo Productions
13633 Crenshaw Blvd.
Hawthorn, CA 90250
213-676-6752

TASCAM
7733 Telegraph Road
Montebello, CA 90640
213-726-0303

Bill Mohrhoff

Teatronics Inc.
3100 McMillan Road
San Luis Obispo, CA 93401
805-544-3555

Tech Laboratories Inc.
500 Tenth St.
Palisades Park, NJ 07650
201-944-2221

Technical Projects
P.O. Box 1449
Barrington, IL 60010
800-562-5872

Technical Projects
Unit 2, Samuel Whites Estate
Isle of Wight, England PO31 7LP
0983-291553

Tectan, Inc.
P.O. Box 271872
Concord, CA 94527
415-798-2222

TEKO Telecom S.R.L.
Via Dell'Industria, 5
40068 San Lazzaro di Savena, BO,
Italy
051-456148

Tekskil Industries
#108-15290 103A Ave.
Surrey, B.C., Canada V3R 7A2
604-589-1100

Tektronix Inc.
P.O. Box 500 D/S 58-699
Beaverton, OR 97077
503-627-2230

Stephen Kerman, (503) 627-1844

Product Directory begins on page 14

HIGH RESOLUTION COLOR CHARACTER GENERATOR

The CG-7000P; a new standard in simplicity and performance — \$1995.00

- Extremely simple to operate and easy to learn
- Very high resolution maintained on all four character sizes
- Genlocks to external video or generates its own background
- Will generate any NTSC color for characters or background
- Outperforms character generators costing much more
- Has a long, long list of useful and needed features

Write or phone us toll-free
for additional information



ICM VIDEO
701 W. Sheridan
P.O. Box 26330
Oklahoma City, OK 73126
USA
800-426-9825 Toll-free
Phone (405) 232-5808;
Telex 747-147 CABLE INCRYSTAL

ICM VIDEO

Circle (86) on Reply Card

**CONVERGENCE
CORPORATION**

ECS 195



THE LOW COST DECISION IN FAVOR OF HIGH QUALITY

THE ECS 195 50 Event Memory, Three VTR Interfaces, Single Keystroke Tags, Add, Delete & CleanIt.

THE ECS 195LM Full List Management with ripple, 3 built-in Time Code Readers, 1 Generator, sequential auto-assembly.

CUSTOMER SERVICE 1-800-992-EDIT

DISTRIBUTORS WORLDWIDE

CONVERGENCE CORPORATION and ACQUIS LTD. • 1641 McGaw, Irvine, CA 92714-5661

Circle (87) on Reply Card

Manufacturers' Addresses

REGIONAL SALES CONTACTS:

AL, Huntsville, (205) 830-9212
CA, Irvine, (714) 660-8080
CA, Woodland Hills, (818) 999-1711
CO, Englewood, (303) 799-1000
FL, Orlando, (305) 894-3911
GA, Norcross, (404) 449-4770
IL, Rolling Meadows, (312) 259-7580
IN, Indianapolis, (317) 872-3708
MD, Gaithersburg, (301) 948-7151
MA, Lexington, (617) 861-6800
NJ, Woodbridge, (201) 636-8616
NY, Syracuse, (315) 455-6661
NY, Woodbury, (516) 364-9060
OR, Portland, (503) 620-9100
PA, Blue Bell, (215) 826-6400

Telcom Research

1163 King Road
Burlington, Ont., Canada L7R 3X5
416-681-2450

Telecommunication Products Corp.

P.O. Box 476
Chamberburg, PA 17201
717-264-1938

Telectro Systems Corp.

96-18 43rd Ave.
Corona, NY 11368
718-651-8900

Teledac Inc.

661 Pine
St. Lambert, Que., Canada J4P 2P4
514-671-7762

Teledyne Energy Systems

110 W. Timonium Road
Timonium, MD 21093
301-252-8220

Teledustriier AB

Box 234 Hamngatan 47
S-14901 Nynashamn, Sweden

Telemet Div.

A Geotel, Co.
185 Dixon Ave.
Amityville, NY 11701
516-842-2300

Telemetrics Inc.

7 Valley St.
Hawthorne, NJ 07506
201-423-0347

Telepak San Diego

4683 Ruffner St.
San Diego, CA 92111
619-268-8559

Telescript, Inc.

445 Livingston St.
Norwood, NJ 07648
201-767-6733

Telescript Industries Corp.

6735 Odessa Ave.
Van Nuys, CA 91406
818-989-7979

Telescript Industries Corp.

66 Pearl St., Suite 504
New York, NY 10004
212-514-6464

Telespec

45 Adams Ave.
Hauppauge, NY 11788
516-231-0222

Television Equipment Associates

P.O. Box 393
South Salem, NY 10590

914-763-8893

Television Systems & Services

2419 Rutland
Austin, TX 78758

Television Technology Corp.

Wilkinson Electronics Inc.
P.O. Box 1385
Broomfield, CO 80020-8385
303-465-4141

Telex Communications, Inc.

9600 Aldrich Ave. S.
Minneapolis, MN 55420
612-884-4051

Telfax Communications

P.O. Box 31
Webster City, IA 50595
515-832-1263

Tennaplex Systems Ltd.

21 Concourse Gate
Nepean, Ont., Canada K2E 7S4
613-226-5870

Tentel

1506 Dell Ave.
Campbell, CA 95008
408-379-1881

Tepco Corp.

P.O. Box 680
Rapid City, SD 57709
605-343-7200

Texar Inc.

616 Beatty Road
Monroeville, PA 15146-1502
412-856-4276

Barry Honel

REGIONAL SALES CONTACTS:

CA, Oceanside, (619) 433-5600
FL, Ocala, (904) 622-9058
IL, Palatine, (312) 358-3330
IN, Richmond, (317) 962-8596
LA, New Orleans, (504) 586-0140
MD, BWI Airport, (301) 859-1500
MD, Gaithersburg, (301) 948-0650
NY, South Glens Falls, (518) 793-2181
PA, Pittsburgh, (412) 733-1994
TX, Fort Worth, (817) 737-9911
WV, Charleston, (304) 344-8031
AUSTRALIA, Auburn N.S.W., (02) 6482531
CANADA, Ontario, (416) 438-6230
CANADA, Ontario, (416) 731-3697
ENGLAND, Douglas, Isle of Man, 0624 24404

Texas Electronics, Inc.

P.O. Box 7225
Dallas, TX 75209
214-631-2490

Texscan Instruments

3169 N. Shadeland Ave.
Indianapolis, IN 46226
317-545-4196

Theatre Service & Supply Corp.

1792 Union Ave.
Baltimore, MD 21211
301-467-1225

Thermodyne Int'l

20850 S. Alameda St.
Long Beach, CA 90810

Thomson-CSF Broadcast, Inc.

37 Brownhouse Road
Stamford, CT 06902
203-965-7102

C. J. Gaydos

Product Directory begins on page 14

PACO Ni-Cad BATTERY PACK

POWER UP! NEW PACO DP-11 (13.2V 1.7Ah)



■ NEW HIGH POWER CELLS ENABLE
1.7AH(0.2C Discharge Rate)

■ THE MAINTENANCE FREE THER-
MAL PROTECTOR IS BUILT-IN, AS
OTHER PACO BATTERY PACKS.

■ THIS IS THE DIRECT REPLACEMENT
FOR SONY NP-1.

PACO ELECTRONICS U.S.A., INC.

714 WEST OLYMPIC BLVD., SUITE 706, LOS ANGELES, CA 90015
TEL-213-747-6540 / TLX-756923 / FAX-213-747-3731

Circle (88) on Reply Card

There's greater depth in Fujinon's ULTRA WIDES.



Now with the widest zoom in the world!

When productions call for scenes as wide as all outdoors, or wall-to-wall coverage inside a phone booth, Fujinon's ULTRA WIDES deliver. And they deliver greater depth as well.

The new A8.5x5.5RM is the widest zoom made.

From 5.5mm to 47mm, you get a distortion-free zoom with all the brightness, contrast, and color accuracy that has made Fujinon famous.

The new, lightweight A18x8.5ERM zooms from 8.5mm to 153mm...and, with its built-in 2X extender, can take you all the way out to 306mm. It's destined to become the standard lens for news cameramen throughout the world.

More than the ultra wide field angles you want, the



A8.5x5.5RM

ULTRA WIDES also provide the high MTF, low longitudinal chromatic aberration, fast F1.7 speed, and the minimal ramping you've come to expect from Fujinon. And for absolute production control, the lenses accept a full range of studio conversion accessories including shot boxes that deliver push-button operation with accuracy to a single millimeter and zooms at the precise speed you want. The A18x8.5ERM is even available

with a built-in test pattern projector.

To learn more about Fujinon's ULTRA WIDES (including the A3.5x6.5RM and A7x7RM), you'll

get more information or a demonstration by

calling the Fujinon location nearest you.



A18x8.5ERM

FUJINON INC. 672 White Plains Road, Scarsdale, NY 10583 (914) 472-9800 Telex 6818115
SOUTH 2101 Midway, Suite 350, Carrollton, TX 75006 (214) 385-8902
MIDWEST 3 N. 125 Springvale, West Chicago, IL 60185 (312) 231-7888
WEST 118 Savarona Way, Carson, CA 90746 (213) 532-2861 Telex 194978



FUJINON

Circle (89) on Reply Card

Manufacturers' Addresses

REGIONAL SALES CONTACTS:

AL Birmingham, (205) 956-4932
 CA Pasadena, (213) 849-2188
 FL Pensacola, (904) 492-0666
 GA Duluth, (404) 476-2997
 NJ East Windsor, (609) 448-4307
 NY Solvay, (315) 487-6710
 WI Merrimac, (608) 493-2619

Thomson-CSF

Electron Tube Div.
 550 Mount Pleasant Ave.
 Dover, NJ 07801
 201-328-1400

Thomson-CSF

Div. Tubes Electroniques
 38, rue Vauthier, Box 305
 Boulogne-Billancourt, Cedex, France
 92102
 33-1-46048175

Thomson LGT

3 Tamarac Lane
 Medford, NJ 08055

Thomson-LGT

1, Rue de l'Hautil
 78700 Conflans Ste. Honorine,
 France
 331-34.90.31.00

Thomson Video Equipment

17, rue du Petit Albi
 95801 Cergy, ST. Christopher,
 France
 3420-70 00

Thorn-EMI Studio & Theatre Lamps

L. E. Nelson Sales Corp.
 5451 Ukiah Circle
 Las Vegas, NV 89118
 702-367-3656

Tiffen Mfg. Corp.

90 Oser Ave.
 Hauppauge, NY 11788
 516-273-2500

TimeLine, Inc.

270 Lafayette, Suite 1300
 New York, NY 10012
 212-431-0330

Times Fiber Communications

358 Hall Ave.
 Wallingford, CT 06492
 203-265-8729

Titus Technological Labs

1134 Neipic Road
 Glastonbury, CT 06033
 203-633-5472

TOA Electronics, Inc.

480 Carlton Court
 South San Francisco, CA 94080
 415-621-2949

Toko America Inc.

1250 Feenanville Drive
 Mount Prospect, IL 60056
 312-297-0070

Tonographie Apparatebau

Kleine Klotzbahn 27/29
 D-5600 Wuppertal 1, West Germany
 0202-447452

Topaz Electronics

3855 Ruffin Road
 San Diego, CA 92123-1875
 619-279-0831

Tore Seem

Kirkeveien 71, Box 14

Haslu, Norway 1344

Torpey Controls & Eng. Ltd.

2220 Midland Ave. Unit 98
 Scarborough, Ont., Canada M1P 3E6
 416-298-7788

Toshiba America

2441 Michelle Drive
 Tustin, CA 92680

Toshiba Corp.

1-1, Shibaura 1-Chome, Minato-Ku
 Tokyo 105, Japan
 03-457-3248

Total Spectrum Mfg. Inc.

20 Virginia Ave.
 West Nyack, NY 10994
 914-358-8820

Gary Rotondelli

REGIONAL SALES CONTACTS:

CA San Jose, (408) 946-2236
 CO Englewood, (303) 773-9499
 FL Miami, (305) 688-6618
 KY Edgewood, (606) 331-8990
 MD Bethesda, (301) 657-2141
 MA Cambridge, (617) 868-5150
 MA Newton, (617) 244-6881
 NM Albuquerque, (505) 265-3562
 NY New York, (212) 757-6977
 OR Portland, (503) 295-6963
 PA Philadelphia, (215) 879-7176
 TX Dallas, (214) 233-5535
 UT Salt Lake City, (801) 466-7481
 WA Mercer Island, (206) 232-3555
 CANADA Ontario, (416) 251-3355

Touch Technologies Inc.

363 Adelaide St. E.
 Toronto, Ont., Canada M5A 1N3
 416-865-1877

Townsend Associates, Inc.

79 Mainline Drive
 Westfield, MA 01085
 413-568-9581

Tracor Instruments Austin Inc.

Industrial Instruments Div.
 6500 Tracor Lane, Building 27-4
 Austin, TX 78725-2100
 512-929-2185

Transimage International

1201 Dove St., Suite 600
 Newport Beach, CA 92660

Transimage International

Transimage House, 245 Hanworth
 Road
 Hounslow, Middlesex, England TW3
 3UA
 01-572-0100

Transmission Structures, Ltd.

P.O. Box 907
 Vinita, OK 74301
 918-256-7883

Transtector Systems Inc.

10701 Airport Drive
 Hayden Lake, ID 83835
 800-635-2537

Tri-Tronics Professional Elec., Inc.

Highway 210 N. Box 1055
 Lillington, NC 27546
 919-893-4183

Trident U.S.A. Inc.

280 Mill St. Extension

Product Directory begins on page 14

The choice of the professionals...



310 PROFESSIONAL PHONO PREAMP/EQUALIZER... Interfaces magnetic phono cartridges for optimum calibration of audio systems. Available with balanced or unbalanced output.



500AL... For heavy duty on-the-air use with wide tracking force range.



680EL... Delivers sound excellence and stands up to backcueing, vibrations and mishandling.



881S... Used in broadcasting for "disc to tape" and quality control in Recording Studios.



PBR ANNOUNCER'S EARPHONE... Ideal for on camera studio work and remote coverage.



THE NARRATOR... TV applications - news interviews, etc.

Stanton is the company with a total commitment to quality and reliability - producing products for the Recording Industry, the Broadcast Industry and the Professionals in Audio.

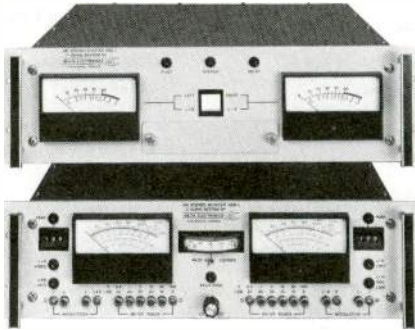


STANTON
 THE CHOICE OF THE PROFESSIONALS™

200 Terminal Dr., Plainview, NY 11803

Circle (91) on Reply Card

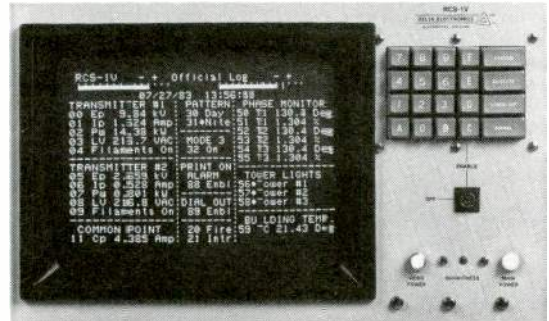
DELTA BROADCAST PRODUCTS



ASE-1/ASM-1

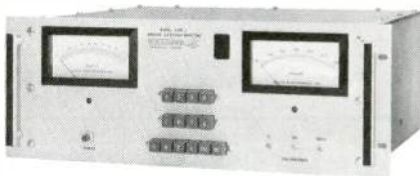
AM Stereo without compromise. The AM Stereo Exciter and Modulation Monitor provides a C-QUAM™ quadrature modulated stereo signal featuring low distortion and channel separation greater than 35 dB throughout the audio spectrum. The ASE-1 generates a signal to produce a phase modulated transmitter carrier. An L + R audio signal AM's this carrier to produce the C-QUAM signal, the only signal completely compatible with all C-QUAM, multimode and envelope detector receivers.

C-QUAM is a registered trademark of Motorola, Inc.



RCS-1V

This Remote Control System calls you when it needs help! The RCS-1 combines microprocessor technology with easy operation. Features include direct interface boards for antenna monitors, patented remote modulation bargraphs, automatic logging, and synthesized speech telephone interface. Additional input and control boards to expand remote control capabilities can be added at any time.



AAM-1

The Analog Antenna Monitor measures the parameters of directional antenna systems. Readings are: relative current; and current ratio and current phase to a reference antenna. The AAM-1 can monitor up to 8 antennas with ratio and phase measurements displayed on front panel meters.



AMC-1/FMC-1

The only modulation control systems which provide a completely closed loop around the transmitter. The Amplitude and Digital Modulation Controllers sample actual modulation levels after the PA output network assures precise adjustment for optimum modulation levels. Both the AMC-1 and FMC-1 keep count of over-modulation bursts for signal control through a linear attenuator.



RG-4

High output Receiver/Generator. The Receiver/Generator combines a two-watt RF output and a correlation detector circuit that virtually eliminates interference problems. The RG-4 operates in the 100 kHz to 30 MHz range. It is designed as the ideal companion instrument for Delta's OIB-1, OIB-2, and OIB-3 impedance bridges.



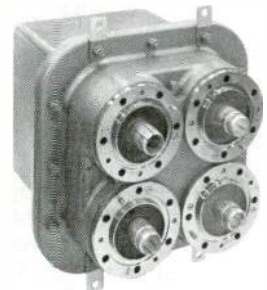
APC-1

Your insurance against over- and under-power operation. The Automatic Power Controller continuously monitors the transmitter output power, making automatic power adjustments via the transmitter loading control. The APC assures proper power levels at all times.



OIB-1/OIB-3/CPB-1

Full power impedance measuring. The Operating Impedance Bridges measure the impedance of radiators, networks and the like while operating under normal power. The OIB-1 measures VSWR and impedance up to $400 \pm j300$ ohms. The OIB-3 extends the range to $1000 \pm j900$ ohms, and has an RF amplifier for improved nulling. The Common Point Impedance Bridge is permanently installed for continuous monitoring of the common point during network adjustment. An optional TCA ammeter can be installed in its front panel.



6730E/6740B

Fast, efficient coaxial transfer switches. The coaxial transfer switches are designed to switch transmitters, transmission lines, antennas, dummy loads and auxiliary equipment quickly and easily. Either manually or remotely controlled, the switches are fully interlocked to prevent switching with RF power applied. The 6730E switch uses 1-5/8 inch connectors, the 6740B switch uses 3-1/8 inch connectors.



TCA/TCT

Simplifies antenna current and phase sampling. TCA Ammeter Systems provide accurate, modulation-free current readings on a variety of meter types. Toroidal Current Transformers provide current and phase samples, and are available with three output voltage ranges, as well as high voltage models.

DELTA ELECTRONICS

5730 General Washington Drive
P.O. Box 11268 • Alexandria, Virginia 22312
Telephone: (703) 354-3350 • Telex: 90-1963

Circle (90) on Reply Card



Manufacturers' Addresses

Lancaster, MA 01523

Trimm Inc.
400 W. Lake St.
Libertyville, IL 60048
312-362-3700

Triple Crown Electronics
700 W. Hillsboro Blvd.
Deerfield Beach, FL 33441
305-429-0870

Triplett Corp.
1 Triplett Drive
Bluffton, OH 45817
419-358-5015

Trompeter Electronics, Inc.
31186 La Baya Drive
Westlake Village, CA 91362

The Truck-Mobile Audio
P.O. Box 4573
Glendale, CA 91202
818-507-TRUK

Trylon Towers
P.O. Box 186
Elmira, Ont., Canada N3B 2Z6
519-669-5421

Tungstone Batteries Inc.
18 Billings St.
Sharon, MA 02067
617-784-8123

Tyler Camera Systems
14218 Aetna St.
Van Nuys, CA 91401

818-989-4420

U

U.S. Audio Inc.
P.O. Box 40878
Nashville, TN 37204
615-297-1098

UTE Microwave, Inc.
3500 Sunset Ave.
Asbury Park, NJ 07712
201-922-1009

Uher of America
7067 Vineland Ave.
North Hollywood, CA 91605
818-764-1120

Ultimate Support Systems
2506 Zurich Drive
Fort Collins, CO 80524
303-493-4488

ULTIMATE Corp.
18607 Topham St.
Reseda, CA 91335
818-345-5525

Unex, A Dynatech Co.
4 Kidder Road
Chelmsford, MA 01824
617-256-8222

Union Connector Co., Inc.
P.O. Box H
Roosevelt, NY 11575
516-623-7461

United Media, Inc.
4075 Leaverton Court
Anaheim, CA 92807
714-630-8020

United Ropeworks (USA) Inc.
Phillystran Div.
P.O. Box 306
Montgomeryville, PA 18936
215-368-6611

Universal Elecon Inc.
903 S. Lake St., Suite 102
Burbank, CA 91502
818-846-6220

Universal Fluid Heads (Aust.) Pty. Ltd.
2A Clement St., Rushcutters Bay
Sydney, N.S.W., Australia 2011
02-331-5789

Utah Scientific, Inc.
1685 West 2200 South
Salt Lake City, UT 84119
801-973-6840

C. Gary LaMunyan, Nat'l. Sales Mgr.

REGIONAL SALES CONTACTS:

CA, Caroga Park, (818) 704-5601
MA, Burlington, (617) 229-0099
MN, Minneapolis, (612) 941-0556
TX, Austin, (512) 836-6014
UT, Salt Lake City, (800) 453-8782
VA, Lynchburg, (804) 384-7001

Utility Tower Co.
P.O. Box 12369
Oklahoma City, OK 73157
405-946-5551

V

VDO-PAK Products
P.O. Box 67
Port Orange, FL 32029
904-767-3400

VG Electronics Ltd.
Theaklen Drive
Hastings, Sussex, England TN34
1YQ

VMI-Visual Methods Inc.
P.O. Box 644
Westwood, NJ 07675
201-666-3950

Thomas Valentino Inc.
151 West 46th St.
New York, NY 10036
212-869-5210

Valley People, Inc.
P.O. Box 40306
Nashville, TN 37204
615-383-4737

Valvo Unternehmensbereich Gmbh
Burchardstrasse 19, Postfach
106323
D-2000 Hamburg, West Germany

Vanner, Inc.
745 Harrison Drive
Columbus, OH 43204
614-272-6263

Varian Associates, Inc.
Electron Device Group
611 Hansen Way

Product Directory begins on page 14

Talk... Talk...

If listener involvement is a part of your format you need a multi-line telephone interface specifically designed for broadcast. The Symetrix Model 104 Four-line Interface and Model 108 Eight-line Interface (108 remote console shown here) connect your on-air or production consoles directly to incoming phone lines. Sophisticated 104/108 firmware makes system operation simple and fool-proof. Consider these important advantages: **FCC certified** for direct connection to incoming phone lines via *standard* RJ-11 (modular) connectors. **Loop current detectors** assure no dial-tone on air; if a caller abandons he is *automatically released*. **Stand alone operation** — the 104 and 108 are complete electronic phone systems and require *no additional* telco equipment to operate. **Caller conferencing** — up to six callers on air at once with the 108, four callers with the 104. **Call director option** — the 108 system supports the addition of a second remote console specifically programmed for *off-air call handling*. Plus, additional system features too numerous to list. Please call or write for our complete 104/108 system brochure.



Symetrix

109 Bell Street
Seattle, Washington, 98121, USA
Telephone (206) 624-5012
Telex 703282 SYMETRIX UD

Circle (58) on Reply Card

Palo Alto, CA 94303
415-424-6285

J. Driscoll

REGIONAL SALES CONTACTS:

AL, Huntsville, (205) 837-9225
CA, Covina, (818) 967-3834
CA, Palo Alto, (415) 424-6400
FL, Palm Bay, (305) 676-3183
GA, Warner Robins, (912) 922-2202
IL, Park Ridge, (312) 825-6686
IN, Bloomington, (812) 334-9900
MD, Baltimore, (301) 850-5010
MA, Burlington, (617) 272-8532
NJ, Cranford, (201) 276-9050
NJ, Mount Laurel, (609) 235-6800
NY, Syracuse, (315) 455-2810
OH, Dayton, (513) 258-3930
TX, Dallas, (214) 235-2385
VA, Arlington, (703) 522-8002

3919-A Magnolia Blvd.
Burbank, CA 91505
818-845-1515

Vidaire Electronics Mfg. Corp.
P.O. Box 788
Freeport, NY 11520
516-623-6696

Video Aids of Colorado
2450 Central Ave., Suite H
Boulder, CO 80301
303-443-1319

Video Components Inc.
601 S. Main St.
Spring Valley, NY 10977
917-356-3700

Video Data Systems
205 Oser Ave.
Hauppauge, NY 11787
516-231-4400

Video Design Pro
749 Carver Road
Las Cruces, NM 88005
505-524-3921

Video Int'l. Development Corp.
1280 Sunrise Highway
Copiague, NY 11726
516-842-1815

Video Int'l Gmbh
11 Ulmanweg
D-3013 Barsinghausen, West
Germany

Video Masters, Inc.

P.O. Box 1963
Kansas City, MO 64141
816-474-8530

VideoLab
1978-B Del Amo Blvd.
Torrance, CA 90501
213-618-9046

Videomagnetics, Inc.
3515 Edison Way
Menlo Park, CA 94025
415-365-0125

Videomedia, Inc.
211 Weddell Drive
Sunnyvale, CA 94089
408-745-1700

Videoplex Inc.
2 Worlds Fair Drive
Somerset, NJ 08873
201-469-9038

Videotek, Inc.
243 Shoemaker Road
Pottstown, PA 19464
215-327-2292

Peter Choi

VideoTeleCom
1041 N. Highland
Hollywood, CA 90038
203-856-5300

VideoTeleCom
1305 Pratt Court
Raleigh, NC 27606

Vidicraft Inc.

0704 S.W. Bancroft St.
Portland, OR 97201
503-223-4884

Viking Cases
10480 Oak St. N.E.
St. Petersburg, FL 33702
813-577-1216

Vinten Equipment Inc.
39 Cain Drive
Plainview, NY 11803-4492
516-694-8963

W. Vinten Ltd.
Broadcast Systems Div.
Western Way, Bury St. Edmunds
Suffolk, England IP33 3TB
0284-2121

Vir James
Consulting Engineers
3137 W. Kentucky Ave.
Denver, CO 80219
303-937-1900

Vistek Electronics Ltd.
Sefton Park, Bells Hill, Stoke Poges
Slough Berks, England SL2 4HD
44-2816-2777

Visual Departures, Ltd.
1641 Third Ave., Suite 202
New York, NY 10128
212-534-1718

Visual Information Institute
P.O. Box 33
Xenia, OH 45385-0033
513-376-4361

Vital Industries Inc.

Product Directory begins on page 14

Veam/Litton Systems, Inc.
100 New Wood Road
Watertown, CT 06795
203-274-9681

Vector Technology
203 Airport Road
Doylestown, PA 18901
215-348-4100

Velborn Int'l Corp.
2433 Moreton St.
Torrance, CA 90505
800-423-1623

Vicon Industries Inc.
525 Broad Hollow Road
Melville, NY 11747
516-293-2200

Vid-Video, Inc.



Video Delay Lines

ALLEN AVIONICS Video & Pulse Delay Lines replace 75 ohm coaxial cable. They reduce size, weight, costs; save time & effort in making delay changes.

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 100 KHz to 5.5 MHz (db)	Max. Rise Time (Nano-Sec.)	Package Size (Inches)
VAR005	3-7	Continuous	Trimmer	.20	.2 Max.	**III.A	3 5/8 x 1 1/2 x 1 1/4
VAR011	0-11	Continuous	Trimmer & Toggle	.20	.25	**III.A	4 3/8 x 2 3/8 x 1 1/16
VAR256	0-256	Continuous	Trimmer & Toggle	.15	.4	18	4 3/8 x 2 3/8 x 1 1/16
VAR320	0-320	Continuous	Trimmer & Toggle	.20	.4	22	4 3/8 x 2 3/8 x 1 1/16
VAR640	0-640	Continuous	Trimmer & Toggle	.80	.5	27	4 11/16 x 3 11/16 x 2 1/16
VP0010	0-10.5	.5	Toggle	.15	.2	3	4 3/8 x 2 3/8 x 1 1/16
VP0127	0-127	1.0	Toggle	.15	.3	4	4 3/8 x 2 3/8 x 1 1/16
VP0255	0-255	1.0	Toggle	.15	.3	6	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 3/16
VW0317	0-317.5	2.5	Strap	.25	.4	28	5 x 3 1/2 x 2
VW0635	0-635	5.0	Strap	.60	.5	33	5 x 3 1/2 x 2
VW1270	0-1270	10.0	Strap	1.25	.5	33	6 1/2 x 3 1/2 x 2
VW2075	0-2075	25.0	Strap	2.50	.5	40	6 1/2 x 3 1/2 x 2

RACK MOUNTABLE UNITS

**Not Applicable.

VRM011	0-11	Continuous	Trimmer & Slide	.30	.3 Max.	10	1 1/4 x 4 1/8 x 4
VRM0255	0-255	1.0	Slide Switch	.40	.4	20	1 1/4 x 4 1/8 x 4
VRM0637	0-637.5	2.5	Slide Switch	*1.00	.4	28	1 1/4 x 4 1/8 x 6
VRM1275	0-1275	5.0	Slide Switch	*3.00	.4	33	1 1/4 x 4 1/8 x 9
VRM2270	0-2270	10.0	Slide Switch	*3.00	.5	40	1 1/4 x 4 1/8 x 9
VRS0317	0-317.5	2.5	Strap	.40	.5	26	1 1/4 x 4 1/8 x 4
VRS0635	0-635	5.0	Strap	.75	.5	35	1 1/4 x 4 1/8 x 6
VRS1270	0-1270	10.0	Strap	1.50	.5	37	1 1/4 x 4 1/8 x 9
VRS2260	0-2260	20.0	Strap	3.00	.5	4C	1 1/4 x 4 1/8 x 9

*±.2db variation at any delay setting.



RACK MOUNTABLE VIDEO & PULSE DELAY LINES

A complete Rack Mountable series of Video & Pulse Delay Lines, with the capability of replacing up to 1450 feet of cable, is now being marketed by Allen Avionics. (See listing in table at left.)

Impedance: 75 ohms.

Pulse Distortion: Less than 4% with an input pulse rise time of 20 nanoseconds.

Working Voltage: 100 volts maximum 50 volts maximum for Rack Mountable series.

Return Loss: 20db minimum. 15db minimum for VP2075, VS2075 and Rack Mountable series.

Delay Tolerance: 5% or 1 nanosecond, whichever is greater.

We also specialize in Delay Equalized Lowpass Filters for the Video Industry

CALL/WRITE For Delay Lines & Filters Catalog
ALLEN AVIONICS, INC.

224 EAST SECOND ST., MINEOLA, NY 11501
Phone: 516-248-8080

Manufacturers' Addresses

3700 Northeast 53rd Ave.
Gainesville, FL 32601
904-378-1581

VIZ Test Equipment
Div. of VIZ Mfg. Co.
335 E. Price St.
Philadelphia, PA 19144
215-844-2626

W

WSI Corp.
41 North Road
Bedford, MA 01730
617-275-5300

Wallach & Associates Inc.
P.O. Box 18167
Cleveland, OH 44118
216-575-0765

Wandel & Goltermann, Inc.
Postfach 45
D-7412 Eningen, West Germany
45-7121 8511

Ward-Beck Systems Ltd.
841 Progress Ave.
Scarborough, Ont., Canada M1H 2X4
416-438-6550

Arthur A. Schubert

REGIONAL SALES CONTACTS:

*MA. Danvers, (617) 777-7228
TX. Dallas, (214) 247-5999*

Wavefront Technologies
1421 State St.
Santa Barbara, CA 93101
805-962-8117

Weatherbank

2185 South 3600 West
Salt Lake City, UT 84119
801-973-3131

Wegener Communications Inc.
150 Technology Park
Norcross, GA 30092
404-448-7288

Weinschel Engineering
One Weinschel Lane
Gaithersburg, MD 20877
301-948-3434

Weisel Technologies
P.O. Box 126
Youngstown, OH 44501
216-783-2509

West Coast Audio, Inc.
65 W. Easy St., Suite 102
Simi Valley, CA 93065
805-583-3800

Western Electronic Products Co.
107 Los Molinos
San Clemente, CA 92672
714-492-4677

The Western Group
3250 Wilshire Blvd., Suite 1101
Los Angeles, CA 90010
213-384-2181

Western Union Video Services
One Lake St.
Upper Saddle River, NJ 07458
201-825-5792

Western Wireless Works
P.O. Box 999
Apache Junction, AZ 85217

602-890-1200

Westinghouse Electric Corp.
Ind'l. & Gov't. Tube Div.
Westinghouse Circle
Horseheads, NY 14845
607-796-3260

Westlake Audio
Professional Products Mfg. Group
2696 Lavery Court, Unit 18
Newbury Park, CA 91320
805-499-3686

Wheatstone Corp.
5 Collins Road
Bethany, CT 06525
203-393-0887

Wheelit, Inc.
P.O. Box 7350
Toledo, OH 43615
419-531-4900

White Instruments
P.O. Box 698
Austin, TX 78767
512-892-0752

Whitehouse Audio Visual
11511 W. Pico Blvd.
Los Angeles, CA 90064
213-479-8313

Whitmor Waveguides
13161 Sherman Way
North Hollywood, CA 91605
818-764-6296

Wide Band Engineering Co., Inc.
P.O. Box 21652

Phoenix, AZ 85036
602-254-1570

Wide Range Electronics Corp.
140 Sun Valley Circle
St. Louis, MO 63026
314-343-9191

The Wilke Organization
260 Madison Ave.
New York, NY 10016
212-683-3939

The Will-Burt Co., TMD Div.
P.O. Box 900
Orville, OH 44667-0900
216-682-7015

Winsted Corp.
9801 James Circle
Minneapolis, MN 55431
612-888-1957

Wireworks Corp.
380 Hillside Ave.
Hillside, NJ 07205
201-686-7400

Wold Communications
10880 Wilshire Blvd., Suite 2204
Los Angeles, CA 90024
213-474-3500

Wolf Coach Inc.
7 B St.
Auburn, MA 01501
617-791-1950

Frank Woolley & Co.
529 Franklin St.
Reading, PA 19602
215-374-8335

World Video Inc.
P.O. Box 117
Boyertown, PA 19512
215-367-6055

X

XIT Grounding Systems
25845 S. Frampton Ave.
Harbor City, CA 90701
213-530-8000

Y

Yamaha International Corp.
Pro Products Div.
P.O. Box 6600
Buena Park, CA 90622
714-522-9011

Bob Shomaker

Yardney Battery Div.
82 Mechanic St.
Pawcatuck, CT 06379
203-599-1100

Z

Z-Comm
Zaiser Communications
P.O. Box 1301
Solana Beach, CA 92075
619-481-5999

The Zei-Mark Corp.
P.O. Box 182
Brookfield Center, CT 06805

Zellan Optics Ltd.
905 N. Cole Ave.
Hollywood, CA 90038
213-463-8151

Ziehl Electronic Service
8611 Dale Road
Gasport, NY 14067
716-772-7800

Zonal Ltd.
Holmethrope Ave.
Red Hill, Surrey, England RH1 2NX

ONE LIGHTNING STRIKE AND YOU'RE OUT.

Without lightning prevention for your facility, people and equipment are at high risk. So why take chances? LEC systems are fully guaranteed to prevent lightning strikes entirely. And we've got 15 years of experience and over 600 installations worldwide that are proving it day - in, day - out. That's made us number one and unequalled in the lightning prevention field.

So before a lightning strike puts you out of business, call us. We'll send you complete information on custom designed lightning prevention systems employing the new Chem-Rod grounding concept for towers, buildings, tanks, etc.

In this game you may not get a second chance.



Lightning Eliminators and Consultants, Inc.

13007 Lakeland Road, Santa Fe Springs, California 90670
(213) 946-6886

Circle (97) on Reply Card



YOU TALKED AND WE LISTENED

The Centro NETWORKER is the result of extensive research into your network news requirements.

- Vehicle chassis and suspension engineered to carry heavy components.
- Unparalleled Centro quality in an attractive affordable package.
- Available in a rugged standard package with many options for your specific requirements.
- 2.3 meter dish with 49.5 Dbi gain and selectable-adjustable vertical and horizontal polarization from inside the vehicle.
- Three year unlimited mileage, limited chassis warranty and serviceable in over 4,500 locations throughout the United States.
- Engineered, designed and constructed to meet your most demanding Satellite News Gathering requirements.



CENTRO CORPORATION
9516 CHESAPEAKE DRIVE
SAN DIEGO, CALIFORNIA 92123
(619) 560-1578

Circle (93) on Reply Card

Camera Mart

Video Systems:

We don't love you and leave you.

At Camera Mart, we believe our responsibility for your video system doesn't end with its installation.

Not only do we design, engineer, build and install the video system you need, we also *service* what we sell.

And, at Camera Mart, size doesn't matter. Whether your video system is a simple off-line unit or a complex broadcast studio, you get Camera Mart's *total* support. We give you a complete "turn-key" system. Delivered on time, and on budget.

This policy—where old-fashioned service is a thing of the *present*—sets us apart from other designers of production, post-production and mobile video systems.

Whatever you spend, we have so many sources to choose from, we can customize a system to any specs. And then keep it working.

And that's kind of unusual these days.

Typical Systems From Camera Mart:

1. Longwood Video Post-Production Facility.
2. Sheridan-Elson Production House Editing System.
3. CMTV Transportable "Super System."
4. Camera Mart Broadcast Multi Source Editing Suite.

Video Systems designed,
engineered,
serviced
by



The Camera Mart, Inc.
456 West 55th Street, New York 10019 • (212) 757-6977
Telex: 275619 FAX: (212) 532-2498
305 Vine St., Liverpool, NY 13088 • (315) 457-3703
Sales • Service • Rental

Broadcast product dealers/distributors

For your reference, **Broadcast Engineering** has designed this *Broadcast Product Dealers/Distributors* section to provide close-to-home purchasing assistance. Use it, with other sections in the *Buyers' Guide*, to plan new facilities and equipment expansion or upgrading. This directory identifies addresses and telephone numbers, products handled, and territory served for broadcast product dealers/distributors. Listings are arranged alphabetically by company/state. Companies listed do not comprise

all dealers/distributors serving an area, but only those that returned **BE's** listing form.

An example of a typical dealer/distributor listing, the geographic area and product classification code keys, are included on this page to assist you. We think you will find that this section, along with the updated *Product Directory* and *Broadcast Product Manufacturers' Addresses* sections, make this issue the most useful and comprehensive purchasing aid for the broadcast industry.

Typical listing

- (1) **Jones Broadcast Sales**,
2912 W. 10 St.,
- (2) Kansas City, Mo. 64105
(816-842-1234)
- (3) IA, KS, MO, OK, 1, 2, 5, 7, 9

- (1) firm name, street address
- (2) city, state, zip code, telephone
- (3) geographic area served and products handled (see code keys)

This firm covers Iowa, Kansas, Missouri and Oklahoma, and sells audio equipment, video equipment, tape, film equipment, and does service and repair work.

Key to product numerical code

- 1 **AUDIO EQUIPMENT** (including recorders, microphones, mixers, consoles, cart machines, turntables, processing devices, etc.)
- 2 **VIDEO EQUIPMENT** (including cameras, videotape recorders, production switchers, monitors, lights, etc.)
- 3 **TEST AND MEASUREMENT EQUIPMENT** (audio and video)
- 4 **TRANSMITTERS, ANTENNAS AND TRANSMISSION SYSTEMS** (including towers ATS, STL, MDS, etc.)
- 5 **TAPE** (including video and audio recording tape, etc.)
- 6 **VACUUM TUBES** (including video camera, transmitter, TWT, etc.)
- 7 **FILM EQUIPMENT** (including cine cameras, processing equipment, film projectors, etc.)
- 8 **VANS AND ACCESSORIES**
- 9 **SERVICE AND REPAIR**
- 10 **SYSTEM DESIGN** (including studio installation, etc.)
- 11 **USED EQUIPMENT** (including leasing, rent, etc.)

Key to geographical area code

AK	Alaska	MS	Mississippi
AL	Alabama	MT	Montana
AR	Arkansas	NC	North Carolina
AZ	Arizona	ND	North Dakota
CA	California	NE	Nebraska
CO	Colorado	NH	New Hampshire
CT	Connecticut	NM	New Mexico
DC	District of Columbia	NV	Nevada
DE	Delaware	NY	New York
FL	Florida	OH	Ohio
GA	Georgia	OK	Oklahoma
GU	Guam	PA	Pennsylvania
HI	Hawaii	PR	Puerto Rico
IA	Iowa	RI	Rhode Island
ID	Idaho	SC	South Carolina
IL	Illinois	SD	South Dakota
IN	Indiana	TN	Tennessee
KS	Kansas	TX	Texas
KY	Kentucky	UT	Utah
LA	Louisiana	VA	Virginia
MA	Massachusetts	VI	Virgin Islands
MD	Maryland	VT	Vermont
ME	Maine	WA	Washington
MI	Michigan	WI	Wisconsin
MN	Minnesota	WV	West Virginia
MO	Missouri	WY	Wyoming

(Abbreviations

for Canadian provinces)

ALTA	Alberta
BC	British Columbia
MAN	Manitoba
NB	New Brunswick
NF	Newfoundland
NS	Nova Scotia
ONT	Ontario
PEI	Prince Edward Island
QUE	Quebec
SASK	Saskatchewan
YUK	Yukon Territory

Dealer/distributors... (see page 129 for key to listings)

ALABAMA

Gray Communications Consultants, Inc., 102 Oxmoor Road, Suite 122, Birmingham, AL 35209 (205-942-2824)

Gray Communications Consultants, Inc., 8311 Whitesburg Way, Suite 501, Huntsville, AL 35802 (205-881-5840)

Gray Communications Consultants, Inc., 2866 Dauphin St., Suite F, Mobile, AL 36606 (205-476-2051) Entire Southeast Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

ALASKA

Alaska Electronics Supply, Inc., 2020 E. Dowling Road Units 1 & 2, Anchorage, AK 99507 (907-563-3774) AK Audio Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes

NVS Systems, Inc., 8300 King St., Anchorage, AK 99518 (907-349-3523) AK Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design

ARIZONA

Antenna Technology Corp., 1140 E. Greenway St., Suite 2, Mesa, AZ 85203 (602-264-7275) Worldwide Audio & Video Equip.; Transmitters, Antennas; Transmission Equip. Systems

E.A.R. Professional Audio, 2641 E. McDowell, Phoenix, AZ 85008 (602-267-0600) AZ, CA, CO, MT, NV, NM Audio & Video Equip.; Tape; Systems Design; Used Equip.

Jensen Tools Inc., 7815 South 46th St., Phoenix, AZ 85044 (602-968-6241) Worldwide Tools; Tool Kits; Tool Cases; Test Equip.; Shipping Containers

ROH'S Inc., 4553 E. Broadway, Tucson, AZ 85711 (602-795-8573) AZ, NM Audio & Video Equip.; Tape; System Design

Spencer Broadcast, Inc., 316 E. El

Camino Drive, Phoenix, AZ 85020 (602-242-2211; 800-221-6941) 50 State '800' Service, Worldwide Over 150 Lines; Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; System Design; Towers, Station Turnkey Services; Consulting Services Div.

Western Wireless Works, P.O. Box 999, Apache Junction, AZ 85217 (602-890-1200) AZ, CA, NV, NM Audio Equip., Transmitters, Antennas & Transmission Systems Service & Repair; System Design; Used Equip.

ARKANSAS

Gray Communications Consultants, Inc., 5105 McClanahan Drive, Suite J-1, North Little Rock, AR 72116 (501-758-3234) AR, TN Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Tape

CALIFORNIA

Accurate Sound Corp., 3515 Edison Way, Menlo Park, CA 94025 (415-365-2843) U.S.A., Canada, GU, PR, VI Audio Equip.; Tape; System Design; Used Equip.

Advanced Marketing, P.O. Box 97, Redwood City, CA 94064 (415-365-3944) CA, NV Audio & Video Equip.; Test & Measurement Equip.; Vans & Accessories

Audio Engineering Associates, 1029 N. Allen Ave., Pasadena, CA 91104 (818-798-9127; 213-684-4461) Southern-CA Audio Equip.

Audio Services Corp., 4210 Lander-shim Blvd., North Hollywood, CA 91602 (818-980-9891) U.S.A. and Canada Audio-Equip.-Film, Video, Live Entertainment, News; Test & Measurement Equip.; Tape; Service & Repair; Used Equip.

AVSC, Inc., 140 University Ave., Suite 113, Palo Alto, CA 94301 (415-493-3814) Worldwide Audio & Video Degaussers; Teleconfer-ence Systems; Audio/VHS Tape

Barrett Associates Inc., 3205 Production Ave., Oceanside, CA 92054 (619-433-5600) Worldwide Full Line Audio Equip.; Transmitters, Antennas, & Transmission Systems, Tape, Cartridges, Reconditioned and Warranted Broadcast Equip.

Birns & Sawyer, Inc., 1026 N. Highland Ave., Hollywood, CA 90038 (213-466-8211) Worldwide Film Equip.; 16mm & 35mm; Service & Repair; Used Equip.

Broadcast Cartridge Service, 15131 Triton Lane, Suite 108, Huntington Beach, CA 92649 (714-898-7224) U.S.A. Tape; Broadcast Cartridges Reel-to-Reel; Alignment Tools, Storage Systems; Reloading Service; Fone Box

Richard W. Burden Associates, 20944 Sherman Way, Canoga Park, CA 91303 (818-340-4590) AK, AZ, CA, CO, HI, ID, NV, NY, OR, UT, WA, WY Audio Equip.; Transmitters, Antennas & Transmission Systems; Cable FM Modulators

COMWEST, P.O. Box 420992, Sacramento, CA 95842 (916-332-8700) AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

Cottonwood Communications, Inc., P.O. Box 526, Los Alamos, CA 93440 (805-344-3335; CA only-800-826-7025; Outside CA-800-331-8333) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design; Used Equip.

Electro Rent Corp., 4209 Vanowen Place, Burbank, CA 91505 (818-843-1221) CA only-LA, San D, San Fran; GA only-Norcross; IL only-Elk Grove; MD only-Columbia; MA only-Wilmington; MI only-Livonia; NJ only-Cedar Grove; TX only-Dallas Test & Measurement Equip.; Used Equip.

Alan Gordon Enterprises Inc., 1430 Cahuenga Blvd., Hollywood, CA 90078 (213-466-3561; 818-985-5500) U.S.A., AK, HI, Canada, Central & So. America, Far East, India, Europe Audio Equip.; Video Lighting & Camera Supports; Film

Equip.; Service & Repair; Used Equip.

JP Associates, Inc., 3115 Kashiwa St., Torrance, CA 90505 (213-539-8533) AK, AZ, CA, CO, GU, HI, ID, NV, NM, OR, PR, TX, WA Video Equip.; Transmitters & Antennas & Transmission Systems; System Design

J&R Film, 6820 Romaine, Los Angeles, CA 90038 (213-467-3107) Western USA Film Handling, Editing; Video Reels; Film-to-Tape Machines

Magnetic Communications Systems, Inc., 144731 Franklin Ave., Suite C, Tustin, CA 92680 (714-730-5021) AK, AZ, CA, HI, ID, NV, OR, WA, Western-Canada Audio & Video Cassette Products; High Speed Cassette Duplicators; Slide Mounting & Mounts; Head Cleaning Equip.; Accessories for A/V Duplication

MARCOM, P.O. Box 66507, Scotts Valley, CA 95066 (408-438-4273) Nationwide Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; System Design, telephone bandwidth extender; 5KHZ 2-line

Martel Electronics, Inc., 920 E. Orangethorpe, Suite D, Anaheim, CA 92801 (714-871-7102) U.S.A. Audio Equip. including all types of Recorders, Microphones, Mixers, & Audio Tape

Meyer, Ross & Fleming, Inc., 1485 Rollins Road, Burlingame, CA 94010 (415-348-6800) CA, HI, NV CA, HI, NV Audio & Video Equip.; Test & Measurement Equip.

Pacific Coast Marketing, 14125 Capri Drive, Los Gatos, CA 95030 (408-370-3505) CA, NV Test & Measurement Equip.

Pacific Recorders & Eng. Corp., 2070 Las Palmas Drive, Carlsbad, CA 92008 (619-438-3911) U.S.A. and Canada Audio Equip.; System Design

Programming Plus, P.O. Box 90486, Pacific Beach, CA 92109-0860 (619-272-PLUS) Nationwide OEM Distributor for Zenith Data Systems, Computer Hardware Products

RF Specialties of California, 3463 State St., Suite 229, Santa Barbara, CA 93105 (805-682-9429) AZ, CA, NV Transmitters, Antennas & Transmission Systems

Skyline, Inc., 6309 Eleanor Ave., Hollywood, CA 90038 (213-856-0033) CA Audio & Video Equip.; Tape; Used Equip.

Sound Genesis, 2001 Bryant St., San Francisco, CA 94110 (415-285-8900) AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA Audio for Video; Tape; Service & Repair; System Design; Used Equip.

Sound Investment Enterprises, P.O. Box 4139, Thousand Oaks, CA 91359 (818-991-3400) AL, AZ, AR, CA, CC, FL, HI, IL, IN, IA, KS, LA, MI, MS, MO, NV, NM, NC, OK, OR, SC, TN, TX, UT, WY Audio Equip.; Systems Design

Spencer Broadcast
Broadcast Equipment Sales
"Turnkey Specialists"
Nationwide
1-800-221-6941

Cottonwood Communications Inc.

774 Main St.
Los Alamos, CA 93440
*New and Reconditioned
Used Equipment
for Audio/Video*

805-344-3335
NAT-800-331-8333
CA 800-826-7025



The choice of Radio Station KGLT

David Peters, Assistant Engineer KGLT Radio Station, Bozeman, Montana.

THE EIMAC 5CX1500B FOR LONG LIFE, QUALITY AND ECONOMY

Varian EIMAC has been in the business of broadcasting for over 50 years, producing durable, reliable and long-lasting tubes that a non-profit radio station like KGLT in Bozeman, Montana, can afford.

Longevity

KGLT engineers use the EIMAC 5CX1500B tube in their transmitter, reporting a life span of 18-19 months—approximately 13,000 hours of service!

Quality and Savings

This would be impressive under ideal conditions, but KGLT operates under rugged and adverse mountain-top conditions. Just as important is the 40% cost

savings attributable to the 5CX1500B's extended life.

In FM broadcasting, EIMAC tubes are customer-proven.

Varian EIMAC offers a 5,000-hour warranty on 5CX1500B tubes.

For more information, contact:



EIMAC's 5CX1500B broadcasting tube in KGLT radio station's transmitter.

Varian EIMAC
1678 South Pioneer Road
Salt Lake City, Utah 84104
Telephone: 801-972-5000



Circle (95) on Reply Card

Dealer/distributors...continued (see page 129 for key to listings)

Studio Film & Tape (LA) Inc., 6674 Santa Monica Blvd., Hollywood, CA 90038 (213-466-8101) U.S.A. and Canada Audio & Video Tape, All Formats, Blank 2' 1' 3/4' 1/2'

System Associates, 5801 Uplander Way, Culver City, CA 90230 (213-641-2042) North America Brokers of Used Broadcast TVEquip.; Video Equip.; Test & Measurement Equip.; Film Equip.; Vans & Accessories

Television Associates, Inc., 2410 Charleston Road, Mountain View, CA 94040 (415-967-6040) Northern-CA Broadcast Professional & Industrial Products; Video Equip. System Design; Video Production & Duplication Facilities

Universal Elecon Inc., 903 S. Lake St., Suite 102, Burbank, CA 91502 (818-846-6220) U.S.A. and Canada with emphasis on CA Audio & Video Equip.; MTS Stereo Modulator & Demodulators; ENG Battery

Video Communications Corp., 2514 Ontario St., Burbank, CA 91504 (714-594-2442)

Video Communications Corp., 314 Martin Ave., Santa Clara, CA 95050 (408-988-2968)

Videomedia, Inc., 211 Weddell Drive, Sunnyvale, CA 94089 408-745-1700 AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA, WY Editing Systems; Color Cameras; Monitors; Time Base Correctors; Video Tape Recorders, Projectors & Tape; Sync & Character Generators; Lighting; System Design, Fabrication & Training; Sequencing & Station Automation Products

Videotape Products, Inc., 320 N. Madison Ave., Los Angeles, CA 90004 (213-664-1144) Worldwide Video Equip.; Tape; Test & Measurement Equip.

West Coast Audio, Inc., 65 W. Easy St., Suite 102, Simi Valley, CA 93065 (805-583-3800) U.S.A. Audio & Film Equip.

Western Broadcast Systems Inc., 3350 Scott Blvd., Building 5, Santa Clara, CA 95054 (408-727-9898) AK, CA, HI, NV, OR, WA Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design

Whitehouse Audio Visual, 11511 W. Pico Blvd., Los Angeles, CA 90064 (213-479-8313) AZ, CA, CO, KY, MI, NV, OR, WA, WY Video Equip.; Test & Measurement Equip.; Film Equip.; Service & Repair; Used Equip.

COLORADO

Didier/Denver, P.O. Box 1599, Evergreen, CO 80439 (303-674-6000) CO, ID, KS, MT, NE, NM, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Equip.

Film/Video Equipment Service Co., 1875 S. Pearl St., Denver, CO 80210 (303-778-8616) AK, AZ,

CA, CO, DC, FL, KS, LA, MN, MS, MO, MT, NE, NV, NM, ND, SD, TN, TX, UT, WY Audio & Video & Film Equip.; Service & Accessories

2001 Enterprises, Inc., 180 Cook St., Suite 209, Denver, CO 80206 (303-333-4477) AZ, CO, ID, MT, NM, EL Paso-TX, UT, WY Audio & Video Equip.; Tape

CONNECTICUT

Audiotechniques Inc., 652 Glenbrook Road, Stamford, CT 06906 (203-359-2312) CT, DE, DC, ME, MD, MA, NJ, NY, PA, RI, VT, VA Audio Recording; Consoles; Test & Measurement Equip.; Tape; MCI, Sony, Studer Service & Repair; System Design; Used Equip.

National Video Services, Commerce Park, Finance Drive, Danbury, CT 06810 (203-792-3862) CT, DC, ME, MA, NH, NJ, NY, PA, RI, VT Video Equip.; Camera Tubes; Service & Repair; System Design; Manufacture a Wide Band Video Recorder For Medical Use:

Radio Research Instrument Co., Inc., 2 Lake Ave. Extension, Danbury, CT 06811 (203-792-6666) Worldwide Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Used Equip.

DISTRICT OF COLUMBIA

Instrucom, Inc., 655 15th St. N.W., Suite 310, Washington, DC 20005 (202-223-1759) DE, DC, MD, NC, VA, WV Customized Control; Telemetry & Alarm Systems; Telecommunications Systems & Test Equip.; Telephone Radio Surge Protection Systems

FLORIDA

Barbizon Delta Corp., 1125 N. 53rd Court, Australian Business Park, West Palm Beach, FL 33407 (305-844-5973) FL, GA Lighting Equip. for Motion Picture Producers, TV & Theatre; Lamps; Color Media; Sockets; Lighting Heads & Accessories

Beattie & Associates, Inc., 3317 Barrow Hill Trail, Tallahassee, FL 32312 (904-893-1382) AL, FL, GA Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; Sales, Service & Installation. Turnkey LPTV Systems; All Solid State FM Transmitters up to 5 KW.

Bencsik Associates Inc., 3730 N.E. 42nd Ave., Ocala, FL 32670 (904-732-9775) FL, PR Audio Equip.

Comex Corp., 1645 N.W. 79th Ave., Miami, FL 33126 (305-594-0850) Central & South America, Caribbean MMDS/ITFS Systems; Satellite Earth Stations & Associated Origination Equip.; Engineer, Furnish & Install

Control Technology, Inc., 2950 S.W. 2nd Ave., Fort Lauderdale, FL 33315 (305-761-1106; Outside FL 800-327-4121) U.S.A. Audio Tape Recorders; Consoles, Mixers; Turntables, Preamps; Mics & Accessories; Power Amps; Speakers, Audio Processing & Loggers; Tape, Cartridges & Accessories; Studio Furniture; STL Systems; Transmitters, Transmission & Antennas

Electrex Co., 18620 N.E. Second Ave., Miami, FL 33179 (305-651-5752) U.S.A. and Latin America Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape, Vacuum Tubes; System Design

Gray Communications Consultants, Inc., P.O. Box 1706, Fort Walton Beach, FL 32549-1706 (904-651-8546)

Gray Communications Consultants, Inc., 1031 N.W. 91st Terrace, Gainesville, FL 32601 (904-332-2435)

Gray Communications Consultants, Inc., 1657 N.W. 79th Ave., Miami, FL 33126 (305-591-3637)

Gray Communications Consultants, Inc., 1605 S. Bumby Ave., Orlando, FL 32806 (305-896-7414)

Gray Communications Consultants, Inc., 5401 Southern Comfort Blvd., Tampa, FL 33614 (813-885-1411) FL Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Tape

International Wholesalers of Miami, Inc., 17866 Ipc Road, North Miami, FL 33162 (800-327-0596) U.S.A., PR Audio & Video Equip.

Lauderdale Electronic Labs, 16 S.W. 13th St., Fort Lauderdale, FL 33315 (305-764-7755) U.S.A. and Canada Audio, Test & Measurement Equip.; Tape

Media Concepts, Inc., 559 49th St. S., St. Petersburg, FL 33707 (813-321-2122) Worldwide Audio & Video Equip.; Tape; Service & Repair; System Design; VHS Tape Duplication

Midwest Communications Corp., 8875 N.W. 23rd St., Miami, FL 33172 (305-592-5355)

Midwest Communications Corp., 622 Filmore St., Suite 149-D, Orange Park, FL 32073 (904-272-8832)

Midwest Communications Corp., 1501 E. Amelia St., Orlando, FL 32803 (305-898-1885)

Midwest Communications Corp., 6302 Benjamin Road, Suite 403, Tampa, FL 33614 (813-885-9308) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vans & Accessories; Service & Repair; System Design; Rental & Leasing Equip.

Nemal Electronics Int'l. Inc., 12240 N.E. 14th Ave., No. Miami, FL 33161 (305-893-3924) Worldwide Audio & Video Wire, Cables, Connectors; Transmitters, Antennas Wire, Cables, Connectors and Accessories

Recording Studio Equip. Co., 229 Sunny Isles Blvd., North Miami, FL 33160 (305-945-9774) U.S.A.; Export to So. America, Europe, Caribbean Professional Audio Equip.; Studio Design & Interface

RF Specialties of Florida, P.O. Box 397, Niceville, FL 32580 (904-678-8943) AL, FL, GA, SC Transmitters, Antennas & Transmission Systems

Southeast Electronics, Inc., 1125 Roselle St.; P.O. Box 41308, Jacksonville, FL 32203 (904-356-3007) AL, FL, GA Audio & Video Equip.; Transmitters; Tape; Service & Repair; System Design; Used Equip.

Stage Equipment & Lighting, Inc., 124 Candace Drive, Maitland, FL 32751 (305-339-1772)

Stage Equipment & Lighting, Inc., 12231 N.E. 13th Court; P.O. Box 61000F, Miami, FL 33161 (305-891-2010) AL, FL, GA, Caribbean, Central & South America Video Equip.; Lamps; Service & Repair; Used Equip.; Film Equip.

GEORGIA

Gray Communications Consultants, Inc. (Corporate Office), P.O. Box 3229, Albany, GA 31708 (912-883-2121)

Gray Communications Consultants, Inc., 2254 N.W. Parkway, Suite C, Marietta, GA 30067 (404-956-7725) AL, AR, FL, GA, LA, MS, PR, SC, TN, North & South America, Caribbean Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; Systems Design; Transmitters, Antennas & Transmission Lines; Vacuum Tubes

Midwest Communications Corp., 522 Armour Circle, Atlanta, GA 30324 (404-875-3753) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Pro Audio General Store, Inc., 1805 Kimberly Drive, Marietta, GA 30060 (404-425-0630) U.S.A. Audio & Test & Measurement Equip.; Antennas & Transmission Systems; Tape

Radford Associates, 3203 Lanier Drive, Atlanta, GA 30319 (404-237-6097) AL, FL, GA, KY, MS, NC, SC, TN, WV Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Transmission, Antennas Systems

**THE
SOLUTION
OF THE
FUTURE.**

NOW

30 kW fully solid state VHF TV transmitter EVHF 30 000s*



- High efficiency
- Low operating cost
- Easy to maintain
- Built-in redundancy
- Built-in input voltage regulator
- Rapid pay-back

* Not yet approved by F.C.C.



THOMSON-LGT

Laboratoire Général des Télécommunications

51, boulevard de la République / BP 51 / 78401 Chatou Cedex / France / Tél.: 30.71.92.60.

Circle (96) on Reply Card

Wm. J. Ray & Associates, Inc., 1379 Chattahoochee Ave. N.W., Atlanta, GA 30318 (404-351-6367) AL, GA, MS, NC, SC, TN Audio & Video Equip.

Technical Industries Inc. of Georgia, 6000 Peachtree Road, N.E., Atlanta, GA 30341 (404-455-7610; 404-292-7506) GA, SC Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design

Vica Associates, Inc., 4296-A Memorial Drive, Decatur, GA 30032 (404-292-7506) AL, FL, GA, MS, NC, SC, TN Audio & Video Equip.; Test & Measurement Equip.

HAWAII

Broadcast Services Inc., 2877 Kala-kaua Ave., Honolulu, HI 96815 (808-521-6311) HI Towers; Microwave Links 1-12 GHz; All steel work & erections & installations, Path Alignment, Turnkey Installations

John J. Harding Co., Ltd., 2825 Ualena St., Honolulu, HI 96819 (808-836-0941) HI and Pacific area Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; System Design

Omega Pacific, 222 Kaelepu Drive, Kailua, HI 96734 (808-263-4212) HI Video Equip.; Transmitters, Antennas & Transmission Systems

IDAHO

Hall Electronics, P.O. Box 5031, Boise, ID 83705 (208-343-3088) CO, ID, MT, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; System Design; Used Equip.

ILLINOIS

Allied Broadcast Equipment, 5097 N. Elston Ave., Suite 303, Chicago, IL 60630 (312-794-0224) IL, IA, MI, MN, MO, NE, ND, SD, WI Audio Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Service & Repair; System Design

Center Video Industrial Co., Inc., 5615 W. Howard St., Chicago, IL 60648 (312-647-8700; Outside IL-800-621-4354) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Tape; Service Repair; Used Equip.; System Design

Columbia Audio/Video, The Columbia Building, 1741 Second St., Highland Park, IL 60035-3599 (312-433-6010) IL, IN, IA, MI, WI Video Equip.; Tape

Victor Duncan, Inc., 661 N. LaSalle, Chicago, IL 60610 (312-943-7300) U.S.A. and Canada Audio, Film & Video Production Equip.; Test Equip.; Transmitters, Antennas & Transmission; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.

GO Video Sales, Inc., 1195 S. Wilson Drive, Lake Forest, IL 60045 (312-295-6726) IL, Davenport-IA, MN, ND, SD, WI Video Equip.

Joseph Electronics, 8830 N. Milwaukee Ave., Niles, IL 60648 (312-297-4200; 800-323-5925) IL, IN, WI, National by Mail Order Test Equip.; Tools; Cases; Wire; Connectors; Batteries; Camera Tubes; Hardware; Components; Chemicals; Cabinets; Solder & Equip.; Audio & Video Products

Ottawa Equipment Co., 6838 N. Ottawa Ave., Chicago, IL 60631 (312-774-5115) IL, IN, WI, Export Audio Equip.; Tape; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; System Design, Cellular Phone Systems, Language Translations

Pro Audio General Store, Inc., 746 Cypress Lane, Carol Stream, IL 60188 (312-231-7120) AL, AZ, AR, CO, DC, FL, GA, IL, IN, IA, KS, KY, LA, MD, MI, MN, MS, MO, MT, NE, NY, NC, ND, OH, OK, SC, SD, TN, TX, UT, VA, WV, WI Audio Equip.; Transmitters, Antennas & Transmission Systems; Service & Repair; System Design

Richardson Electronics, Ltd., 40W267 Keslinger Road, Lafox, IL 60147 (800-323-1770; 312-232-6400) Worldwide Vacuum Tubes

Roscor Corp., 1061 Feehanville Drive, Mt. Prospect, IL 60056 (312-539-7700) IL, IN, IA, KY, MI, OH, WI Audio & Video Equip.; Test &

Measurement Equip.; Tape; Vans & Accessories; Film Equip.; Service & Repair; System Design; Used Equip.

Swiderski Electronics, Inc., 1200 Greenleaf Ave., Elk Grove Village, IL 60007 (312-364-1900) IL, IN, IA, MI, MO, WI Complete line of Audio & Video Equip.; Service & Repair; System Design; Rent & Leasing; Computerized Editing Systems; Vans & Accessories

Video Images, 890 Cambridge Drive, Elk Grove Village, IL 60007 (312-640-7111) IL, IN, MO Audio, Video, Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; System Design; Used Equip.; Service & Repair

INDIANA

Allied Broadcast Equipment, #One, 3712 National Road W., Richmond, IN 47375 (317-962-8596; Int'l. calls 317-935-1704) Worldwide Worlds largest independent distributor of Audio & RF Broadcast & Professional Equipment

Midwest Communications Corp., 4105 Vincennes Road, Indianapolis, IN 46268 (317-872-2327) IN All Major Audio & Video Equip.; Vans, Trucks, Mobile Units; System Design

IOWA

Audiovisual Inc., 415 S.W. Eighth St., Des Moines, IA 50309 (515-278-2929) IA Broadcast & Professional Audio & Video Equip.; Microwave Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; Systems Design; Used Equip.

Sitler's Supplies, Inc., 702 E. Washington, Washington, IA 52353 (IA 800-272-6459; Outside IA 800-426-3938) U.S.A. Film Equip.; Lamps

KANSAS

Professional Studio Distributors, 1059 Porter, Wichita, KS 67203 (316-267-1573) AR, CO, IA, KS, MO, NE, OK, TX Audio Equip.; Video & Audio Tape; Floppy Discs; Wind Audio Cassettes

RSC Electronics, Inc., 131 Laura, P.O. Box 1220, Wichita, KS 67201

(316-267-5213) KS, OK Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes

Smith Audio-Visual, Inc., 2615 S.W. 21st St., Topeka, KS 66604 (913-235-3481) KS, Western-MO including St. Joseph and K.C. Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design; Used Equip.

KENTUCKY

Bruce L. Dawson & Associates, Central American Terminal-Bowman Field, Louisville, KY 40205 (502-456-6666, 6693) IN, KY, OH, West-PA, WV Audio & Video Equip.; Transmitters, Antennas & Transmission Systems

Midwest Communications Corp., Headquarters, One Sperti Drive, Edgewood, KY 41017 (606-331-8990) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Midwest Communications Corp., 2039 Regency Road, Lexington, KY 40503 (606-277-4994)

LOUISIANA

Audiomedia Associates, P.O. Box 29264, New Orleans, LA 70189 (504-586-0140) AL, AR, FL, GA, LA, MS, TN, TX Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design

Gray Communications Consultants, Inc., 550 Wholesalers Parkway, Suite G, New Orleans, LA 70123 (504-733-7265) AL, FL-Panhandle, LA, MS Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

Midwest Communications Corp., P.O. Box 1863, Hammond, LA 70404 (504-542-5040) U.S.A., GU, PR, VI Audio & Visual Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmissions Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

MARYLAND

ASR Enterprises, Ltd., 8969 Yellow Brick Road, Baltimore, MD 21237-2303 (301-574-0550) DE, DC, MD, NJ, PA, VA Audio & Video Equip.; Test & Measurement Equip.; Tape

Bradley Broadcast Sales, 8101 Ces-sna Ave., Gaithersburg, MD 20879

audiomedia associates

"THE GULF SOUTH'S PREMIER BROADCAST SYSTEMS HOUSE"
NAUTEL SOLID-STATE AM TRANSMITTERS
BROADCAST ELECTRONICS FM TRANSMITTERS
SHIVELY MULTISTATION ANTENNA SYSTEMS
FULL LINE BROADCAST STUDIO EQUIPMENT

SHOOT IT.

Take your best shot with Thomson Betacams, studio cameras and field cameras.


SHAPE IT.

Create your best ideas on Vidifont Character Generators/Paint and Graphics Systems.

SCAN IT.

Digitize, process and store your best slides on the Thomson TTV 2710 slide scanner.

PICTURE IT ALL. WITH THOMSON.

 **THOMSON-CSF BROADCAST, INC.**

37 Brownhouse Road

Stamford, CT 06902-6303

Tel: (203) 965-7000 TWX: (701) 474-3346

Circle (99) on Reply Card

(800-732-7665; 301-948-0650) U.S.A. and possessions Audio Equip.; Transmitters, Antennas, Transmission Systems; Tape; Service & Repair; System Design

David H. Brothers Co., Inc., 19 Old Court Road, Baltimore, MD 21208 (301-764-7189) DC, MD, VA Audio & Video Equip.; Tape; Vacuum Tubes

Midwest Communications Corp., 4720-B Boston Way, Lanham, MD 20706 (301-577-4903) North America Audio & Video Equip.; Test & Measurement Equip.; Tape; Transmitters & Antennas; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

Print Products International, 8931 Brookville Road, Silver Spring, MD 20910 (301-587-7824; 800-638-2020) U.S.A. and Canada Equip., Tools, Supplies, Training for Electronic PC Boards Maintenance & Repair

Radio Resources, P.O. Box 8782, BWI Airport, MD 21240 (301-859-1500) U.S.A. Radio Broadcast Equip. & Supplies

RCI (Recording Consultants Inc.), 8550 Second Ave., Silver Spring, MD 20910 (301-587-1800) DE,

DC, MD, PA, VA, WV Audio Equip.; Tape; Service & Repair; System Design; Used & Rental Equip.

Sel-Tronics, Inc., 9311 Annapolis Road, Lanham, MD 20706 (301-731-8080) DC, MD, VA Audio & Video Equip.; Test & Measurement Equip.

Wiltronix, Inc., 16850 Oakmont Ave., Washington Grove, MD 20880 (301-258-7676) DE, DC, FL, GA, KY, MD, NC, PA, SC, VA, WV Audio & Video Equip.; Test & Measurement Equip.; Transmission Systems

MASSACHUSETTS

Barbizon Light, 3 Draper St., Woburn, MA 01801 (617-935-3920) FL, GA, ME, MA, NH, NY, RI, VT Video & Film Lighting Equip. & Supplies

Contact East, 335 Willow St. S., P.O. Box 786, North Andover, MA 01845 (617-682-2000) U.S.A. Precision hand tools, test instruments, tool kits, soldering supplies

Lake Systems Corp., 287 Grove St., Newton, MA 02166 (617-244-6881) Worldwide Turnkey Communications Systems; TV Station Automation Featuring La-Kart

Landy Associates, Inc., 330 Bear Hill Road, Waltham, MA 02154 (617-890-6325) CT, DE, DC, ME,

MD, MA, NH, NJ, NY, PA, RI, VT, VA Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Tape; Vacuum Tubes; Service & Repair; System Design

QSI Systems, Inc., 12 Linscott Road, Woburn, MA 01801 (617-938-1403) CT, ME, MA, NH, RI, VT Video Equip.

MICHIGAN

Audio Broadcast Group, Inc., 2342 S. Division Ave., Grand Rapids, MI 49507 (616-452-1596) U.S.A. Studio Systems for AM-FM-TV Audio; Over 100 Equip. Lines; Studio Cabinetry - Turnkey Systems

CM Sales, 31700 W. 12 Mile Road, Suite 206, Farmington Hills, MI 48018 (313-553-8070) MI Audio & Video Equip.; Test & Measurement Equip.

Victor Duncan, Inc., 32380 Howard St., Detroit, MI 48071 (313-589-1900) U.S.A. and Canada Audio, Film & Video Production Equip.; Test Equip.; Transmitters, Antennas & Transmission; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.

H. M. Dyer Electronics, Inc., 48647 Twelve Mile Road, Novi, MI 48050 (313-349-7910) IL, IN, IA, MI,

MN, MO, OH, WI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Used Equip.

General TV Network, 13201 Capital Ave., Oak Park, MI 48237 (313-399-2000) MI, North-west-OH Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Midwest Communications Corp., 1328 Wheaton Ave., Troy, MI 48083 (313-689-9730) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Sound Solutions Inc., 5701 Canton Center Road, Canton, MI 48187 (313-455-5557) IL, IN, MI, OH Audio Equip.; Tape; System Design

Thalner Electronic Labs, Inc., 7235 Jackson Road, Ann Arbor, MI 48103 (313-761-4506; Area 313 Only 800-552-5275) MI, OH Audio & Video Equip.; Tape; Test & Measurement Equip.; Service & Repair; System Design; Used Equip.

SMPTE/EBU TIME CODE READER AND CHARACTER GENERATOR



THE STANDARD OF THE INDUSTRY MODEL DR-107B

- Provides for unsurpassed code reading using "The McFadin Window"™ decoding time code from a VTR at speeds of 1/100 to 100 times. (machine dependent)
- Very useful for window dubs for off-line editing and video monitor viewing. Highly legible and unique 'Font'.
- All front panel controls for easy positioning of character display including vertical interval insertion.
- Drop frame indication, choice of Time Code or User-Bit display, restored Time Code output for dubbing, 1 3/4" rack mounting and parallel BCD output.
- A five year warranty including parts & labor, included.



GRAY ENGINEERING LABORATORIES

504-P West Chapman Avenue
Orange, CA 92668 • 714/997-4151

Circle (100) on Reply Card

SAVE UP TO 40% ON 3/4" U-MATICS

3/4" U-Matic
NVS now offers you great savings on first quality remanufactured broadcast cassettes loaded with new 3M Color Plus, 3M MBU, Sony K or Agfa B.P. Call for a complete price list or free sample.

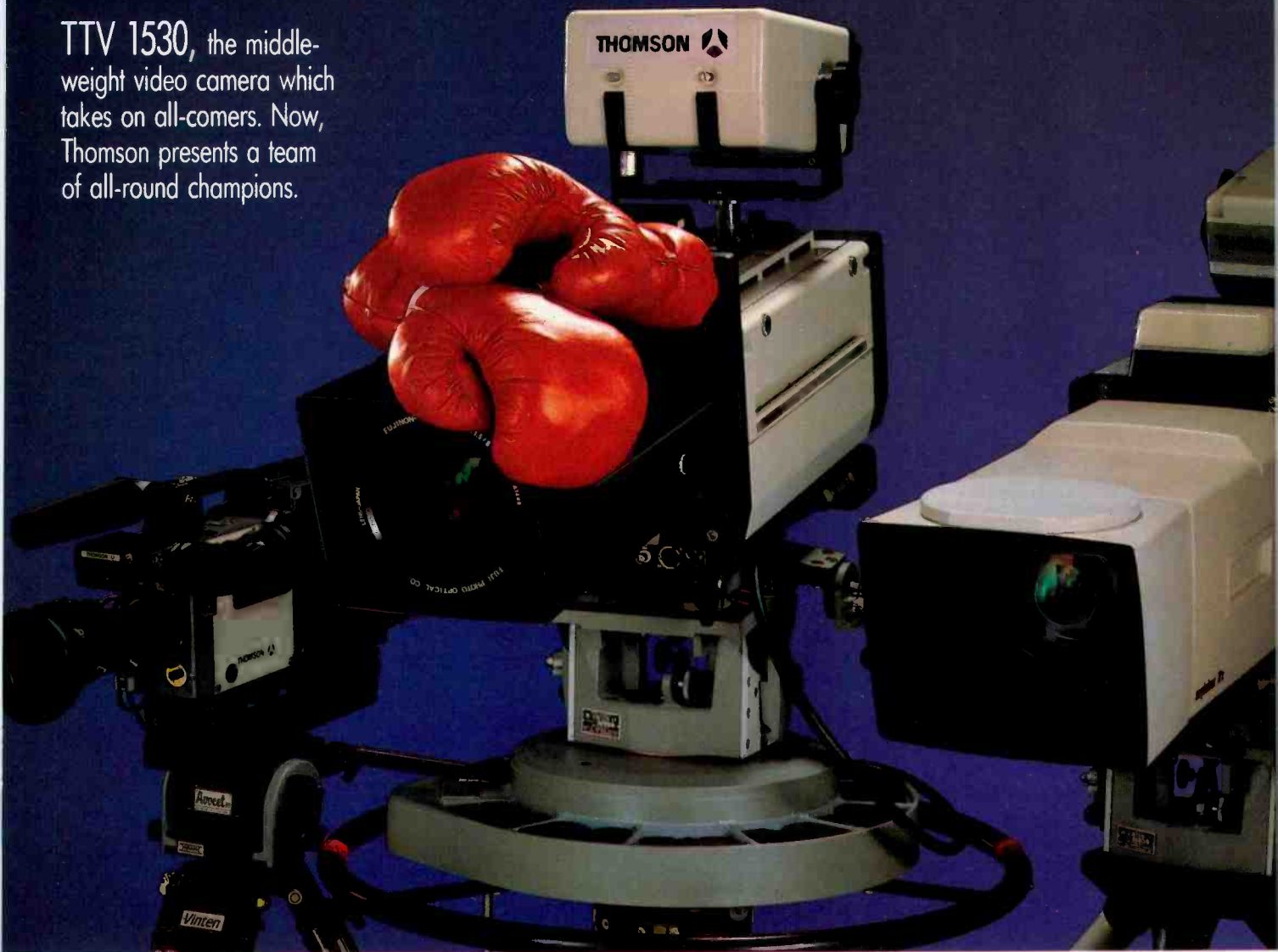
TCR-100
New TCR-100 Cartridge Sales and Reloading with 3M Scotch 400.

VHS
New VHS cassettes (T-3 to T-120)

NATIONAL VIDEO SERVICE
2150 Rheem Drive, Bldg. G
Pleasanton, California 94566
(415) 846-1500

Circle (101) on Reply Card

TTV 1530, the middle-weight video camera which takes on all-comers. Now, Thomson presents a team of all-round champions.



NEW MIDDLE WEIGHT CHAMPION

TTV 1530 is a professional 2/3 inch studio and OB camera. For the least possible investment, it gives you the best of Thomson's technology and quality: the know-how of a world leader in advanced electronic equipment.

Great image quality, automatic setup and all the operational facilities of bigger cameras.

Compact, maneuverable and lightweight.

 **THOMSON VIDEO EQUIPEMENT**

Because the best need the best

FRANCE (HEAD OFFICE)
THOMSON VIDÉO ÉQUIPEMENT
17, rue du Petit Albi - CERGY-SAINT-CHRISTOPHE
BP 8244 - 95801 CERGY-PONTOISE CEDEX
Phone (1) 34.20.70.00 - Telex 204.780 F
Fax (1) 34.20.70.47

U.S.A.
THOMSON-CSF BROADCAST Inc.
37 Brownhouse Road - STAMFORD
CT 06902 - U.S.A.
Phone (1203) 965.7000 - Telex 6819035 TCS FB.
Fax (1203) 327.6175.

Circle (102) on Reply Card

MINNESOTA

Emmons Associates, Inc., 1121 Riverwood Drive, Burnsville, MN 55337 (612-890-8920) IA, MN, ND, SD, WI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Service & Repair

Northern Magnetics, Inc., P.O. Box 16409, Minneapolis, MN 55416 (612-944-8602) U.S.A. Audio Equip. (Recording Heads.); Film Equip. (Film Heads. Audio); Service & Repair (Audio Heads. & Head Nest)

T. R. Pitts Co., 501 W. Fifth St.; P.O. Box 57, Winona, MN 55987 (507-452-2629; Outside MN: 800-533-8092; MN Only: 800-642-2384) U.S.A. Complete equip. & supplies for the cable TV industry including some services. Satellite Equip.

Video Midwest, Inc., 5050 West 78th St., Minneapolis, MN 55435 (612-831-2248) IL, IA, MN, ND, SD, WI Video Equip.; Test & Measurement Equip.; Video & Audio Tape; Vacuum Tubes; Service & Repair; System Design; Used & Rental Equip.; Duplications

MISSISSIPPI

Broadcast Equipment Sales & Engineering Inc., P.O. Box 20331, Jackson, MS 39209 (601-857-8573) LA, MS Audio Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design

MISSOURI

Centurian Marketing Associates, P.O. Box 1011, Ballwin, MO 63011 (314-227-7229) Southern-IL, IA, KS, MO, NE Audio Professional Products

Delcom Corp. of St. Louis, 2349 Grisom, St. Louis, MO 63146 (314-432-1164; 800-331-5461) Continental U.S. Total Video

Systems, Featuring Custom System Design; Installation; Computerized Wiring & Tracing Documentation; Custom & Standardized Cabinetry

Electronic Video Systems, 1856 S. Stewart, Springfield, MO 65804 (417-881-4677) AR, KS, MO, OK Audio, Video & Test Equip.; Tape; Transmitters including towers ATS, STL, MDS etc; Vacuum Tubes; Film Equip.; Service & Repair; Used Equip.; System Design, including Studio Installation Digital effects systems, broadcast cameras

Lines Video Systems, 219 S. Jefferson, Springfield, MO 65806 (417-862-5533; Outside MO-800-641-4674) AR, IL, IA, KS, KY, LA, MO, NE, OK, TN, TX Audio, Video, Test & Measurement Equip.; Transmitters, Antennas & Transmissions; Tape; Vans; Service Repair; System Design; Used Equip.

Television Engineering Corp., 580 Goddard Ave., Chesterfield, MO 63017 (314-532-4700) U.S.A. and Canada Audio & Video Equip.; Test & Measurement Equip.; Tape; System Design; Used Equip.; Vans & Accessories

Video Masters, Inc., P.O. Box 1963; 1616 Broadway, Kansas City, MO 64141 (816-474-8530) AR, IL, IA, KS, MO, NE Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design

MONTANA

Audiovisual Inc., 1422 W. Ramshorn, Laurel, MT 59044 (406-628-2116) MT, WY Broadcast & Professional Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Service & Repair; System Design; Used Equip.

The Source Inc., 320 Sixth St. S.; P.O. Box 2487, Great Falls, MT 59403 (406/761-2420) MT, Northern-WY Audio & Video Equip.; Test & Measurement Equip.; Tape; Antennas

Video International Publishers, 118 Sixth St. S., Great Falls, MT 59405 (406-727-7133) ID, MT, ND, SD, WA, WY Audio & Video Equip.; Test

& Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; System Design; Used Equip.

NEBRASKA

Audiovisual Inc., 8025 Maple St., Omaha, NE 68134 (402-393-9911) KS, NE Broadcast & Professional Video Equip.; Microwave Equip.; Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design; Used Equip.

RF Specialties of Nebraska, 2003 Brewster Road, Bellevue, NE 68005 (402-734-5521) IA, KS, MO, NE Transmitters, Antennas & Transmission Systems

NEVADA

Cinema Services, 4445 S. Valley View Blvd., Suite 7, Las Vegas, NV 89103 (702-876-4667) AZ, NV, NM, UT Video Equip.; Film Equip.; Used Equip.

NEW HAMPSHIRE

Associated Systems, P.O. Box 5211, Manchester, NH 03108 (603-472-2297) CT, ME, MA, NH, RI, VT Video & Test Equip.

NEW JERSEY

A.F. Associates, 100 Stonehurst Court, Northvale, NJ 07647 (201-767-1000) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Vans & Accessories; System Design

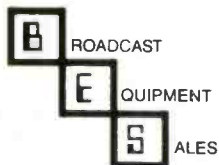
Avtec Industries, Inc., 5 Audrey Place, Fairfield, NJ 07006 (201-882-9460) USA, Egypt, Nigeria, Saudi Arabia Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Service & Repair; Used Equip.

Broadcast Video Marketing Corp., 275 Route 18, East Brunswick, NJ 08816 (201-390-0770) CT, DE, DC, MD, NJ, NY, PA, VA Video Equip.; Cases; Standards Converters; Test & Measurement Equip.; Audio Time Compression; Audio Delay Synchronizer; Character generators, graphics systems

Calvert Electronics Inc., A Richardson Co., 1 Branca Road, East Rutherford, NJ 07073 (Outside NJ 800-526-6362; NJ 201-460-8800) Worldwide Camera Pickup Tubes & CCDs; Capacitors, Transmitting, Mica & Vacuum; Microwave Components; Semiconductors; Vacuum Tubes

Comprehensive Video Supply Corp., 148 Veterans Drive, Northvale, NJ 07647 (201-767-7990) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Custom Cases & Accessories; Computer Software for Video & Film

Serving The Mid South



& ENGINEERING INC.

(601) 857-8573

P.O. Box 20331

Jackson, MS 39209

Sales • Installation • Service

ACOUSTIC SYSTEMS
MODULAR STUDIOS
for broadcast control,
production,
recording,
on-air

Holzberg Inc., P.O. Box 323, Sea Bright, NJ 07760 (201-530-8555; 800-242-7298) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT Audio & Video Equip.; Test & Measuring Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories, System Design; Turnkey Systems Installed

Landy Associates, Inc., 1890 E. Marlton Pike, Cherry Hill, NJ 08003 (609-424-4660) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA Cameras; Prompters; Batteries; Audio Equip.; Test & Measuring Equip.; Film Equip.; Tape; & Accessories; Service & Repair; System Design Transmitters, Antennas & Transmission Systems; VTR's

Quality Video Supply, 76 Frederick St., Hackensack, NJ 07602 (201-488-8336) Nationwide Audio & Video Equip.; Test & Measurement Equip.; Tape

Tape City Int'l. Inc., 300-1 Route 17 S., Lodi, NJ 07644 (800-223-1586; 201-777-4700) CT, NJ, NY, Mail Order in U.S.A. Professional Video Equip.; Tape; Service & Repair; Used Equip.

Tele-Measurements, Inc., 145 Main Ave., Clifton, NJ 07014 (201-473-8822) CT, DE, DC, NJ, NY, PA, VA Audio & Video Equip.; Test & Measuring Equip.; Satellite Communications; Tele-Conferencing; Service & Repair; System Design

Thor Electronics Corp., 321 Pennsylvania Ave., P.O. Box 707, Linden, NJ 07036 (201-486-3300) Worldwide Vacuum Tubes

NEW MEXICO

DYMA Engineering, Inc., P.O. Box 1535, Los Lunas, NM 87031 (505-865-6700) AZ, CA, CO, KS, NV, NM, OK, TX, UT Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Film Equip.; Vans & Accessories; System Design; Some Used Equip. As well documentation and installation

NEW YORK

Acoustilog, Inc., 19 Mercer St., New York, NY 10013 (212-925-

HOLZBERG INC.

From Console to Tower...
Everything for the Radio &
TV Broadcaster.

P.O. Box 323
Sea Bright, NJ 07760
1-800-242-7298
201-530-8555 NJ



Exclusive, triple patented dynamic cap and coil analyzing . . . guaranteed to pinpoint your problem every time or your money back



with the all new LC75 "Z METER 2"
Capacitor Inductor Analyzer
Patented \$995

The "Z METER" is the only LC tester that enables you to test all capacitors and coils dynamically — plus, it's now faster, more accurate, and checks Equivalent Series Resistance (ESR) plus small wire high resistance coils.

Eliminate expensive part substitution and time-consuming shotgunning with patented tests that give you results you can trust every time. Test capacitor value, leakage, dielectric absorption, and ESR dynamically; with up to 600 volts applied for guaranteed 100% reliable results — it's exclusive — it's triple patented.

Save time and money with the only 100% reliable, in- or out-of-circuit inductor tester available. Dynamically test inductors for value, shorts, and opens, automatically under "dynamic" circuit conditions.

Reduce costly parts inventory with patented tests you can trust. No more need to stock a large inventory of caps and coils. The "Z METER" eliminates time-consuming and expensive parts substituting with 100% reliable LC analyzing.

Turn chaos into cash by quickly locating transmission line distance to opens and shorts to within feet, in any transmission line or cable.

Test troublesome SCRs & TRIACs easily and automatically without investing in an expensive second tester. The patented "Z METER 2" even tests SCRs, TRIACs, and High-Voltage Diodes dynamically with up to 600 volts applied by adding the new SCR250 SCR and TRIAC Test Accessory for only \$148 or FREE OF CHARGE on Kick Off promotion.

To try the world's only Dynamic LC Tester for yourself, CALL TODAY, WATS Free, 1-800-843-3338, for a FREE 15 day Self Demo.



Call Today Wats Free 1-800-843-3338

SENCORE

3200 Sencore Drive
Sioux Falls, SD 57107
605-339-0100 In SD Only

*innovatively designed
with your time in mind.*

Circle (104) on Reply Card

1365) CT, NJ, NY Audio Equip.; Test & Measurement Equip.; Service & Repair; Used Equip.; System Design
Adcom Communications Inc., 555 West 57th St., New York, NY 10019 (212-265-1760) CT, NJ, NY Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.; Rental Equip.

Alpha Electronics, Inc., 1365 39th St., Brooklyn, NY 11218 (718-633-2800; 800-221-5802) U.S.A. Camera, Transmitting & Vacuum Tubes; Vidicons
Audiotechniques Inc., 1619 Broadway, 4th Floor, New York, NY 10019 (212-586-5989; Sales: 203-359-2312 CT, DE, DC, ME, MD, MA, NJ, NY, PA, RI, VT, VA

Audio Recording Equip.; Consoles Test & Measurement Equip.; Tape; MCI, Sony, Studer Service & Repair; System Design; Used Equip.
Auteri Associates, Inc., 9 Heneary Drive, Miller Place, NY 11764 (516-331-5022) Worldwide Audio & Film Equip.; Service & Repair
Avtech Electronics Inc., 22-60 46th St., Astoria, NY 11105 (718-

956-1200; 800-221-1300) Worldwide Audio & Video Equip.; Tape; Vacuum Tubes
Barbizon Electric Co., Inc., 426 West 55th St., New York, NY 10019 (212-586-1620) AL, CT, DE, DC, FL, GA, IL, IN, KY, ME, MD, MA, MI, MS NH, NJ, NY, NC, OH, PA, RI, SC, TN, VT, VA, WV, WI All Types of Lamps and Sockets; Gaffer's Tape; Hot Mill Gloves; Light Control & Diffusion Media; Color Media; Dimming Equip.

Beaveronics, Inc., 8 Haven Ave., Port Washington, NY 11050 (516-883-4414) USA Video Equip.

Bi-Tronics, Inc., 76 Main St., Tuckahoe, NY 10707 (212-585-1645; Outside NY: 800-522-7377) U.S.A. and Canada Cable and Assemblies; Audio & Video Connectors For Japanese Equip.

The Camera Mart, Inc., 456 West 55th St., New York, NY 10019 (212-757-6977) AZ, CA, CT, DE, DC, MA, NH, NJ, NY, PA, VT Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; System Design; Used Equip.

CeCo Communications Broadcast Div., 2115 Avenue X, Brooklyn, NY 11235 (718-646-6300; 800-221-0860) Worldwide Broadcast Tubes; Electron Tubes-Semiconductors; Broadcast Types, High Power Transmitting Tubes; Receiving Tubes; Industrial Tubes; Vacuum Tubes; Video Equip. Eimac, RCA, Ampere, GE, West

Davis & Sanford Co. Inc., 24 Pleasant St., New Rochelle, NY 10802 (914-632-1636) U.S.A. and Canada Video Equip.-Fluid Heads

R F Gain, Ltd., 116 S. Long Beach Road, Rockville Centre, NY 11570 (516-536-8868; 800-645-2322) Worldwide CCTV Equip.; Vacuum Tubes; RF Amplifiers & Transistors; Vacuum Capacitors

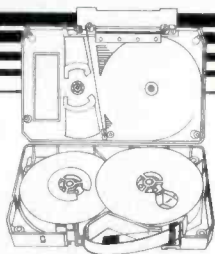
Henry Grossman Associates, 519 S. Fifth Ave., Mount Vernon, NY 10550 (914-664-5393) CT, DE, DC, FL, ME, MD, MA, NH, NJ, NY, PA, VT, VA Audio & Video Equip.; Film Equip.; Tape Equip.; Optics; TV Equip.; Transmitters (AM-FM-TV-STL), Antennas (AM-FM-TV); System Design

Hudson Audio Video Enterprises, Inc., 309 Power Ave., Hudson, NY 12534 (518-828-2000) Nationwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.

Laumic Co., Inc., 306 East 39th St., New York, NY 10016 (212-889-3300) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Lee Dan Communications, Inc., 155

We've taken apart half a million videocassettes and saved our customers 2 million dollars



Before we'll reload a 3/4" u-matic videocassette we take it completely apart and rebuild it inside and out. We replace wiper flaps, friction pads, tape guides and leader — everything that's needed to make the cassette test as good as new. Only then will we reload it with new 3 M videotapes or other major brands. If we can't rebuild it we won't reload it.

Coarc also loads new cassettes with broadcast quality videotape for Betacart and 3/4" cart systems.

CoarcVideo™

Custom Loaded Videocassettes (518) 672-7202
 P.O. Box 2, Route 217, Mellenville, New York 12544

3/4" RELOADING □ PROFESSIONAL VHS & BETA □ 1/2" AND 3/4" CART CASSETTES

Circle (105) on Reply Card

THRULINE® Wattmeters



NOW available in NEW 3, 6, 15, 30, 60kW and 8, 80kW-full scale models.

Also new: Rackmounted Digital RF Power/VSWR Read-out 250W — 250kW, 2 — 1000MHz. New Loads and Calorimeters.

Write for brochure!

Who else but
BIRD
 30303 AURORA RD SOLON OH 44139

Circle (106) on Reply Card

AUTOMATED BROADCASTING SYSTEMS

Four Models

SOL-6800/MICRO

For 1 VTR with 4-input AV switcher
 From \$2,500

SOL-6800/MINI

(Fully programmable)
 For 4 VTRs with 6-input AV switcher
 From \$9,000

SOL-6800/U.I.S.

(Upgradable intelligent system)
 For 8 VTRs with 12-input AV switcher
 From \$12,000

SOL-6800

(Fully programmable/expandable)
 For 8 VTRs with 12-input AV switcher
 From \$17,000

A COMPANY DEDICATED TO AUTOMATION

SOLUTEC

H.A. Solutec Ltd.
 4360 d'Iberville, Montreal
 Quebec Canada H2H 2L8
 Tel: (514) 522-8960 Telex: 055-62139

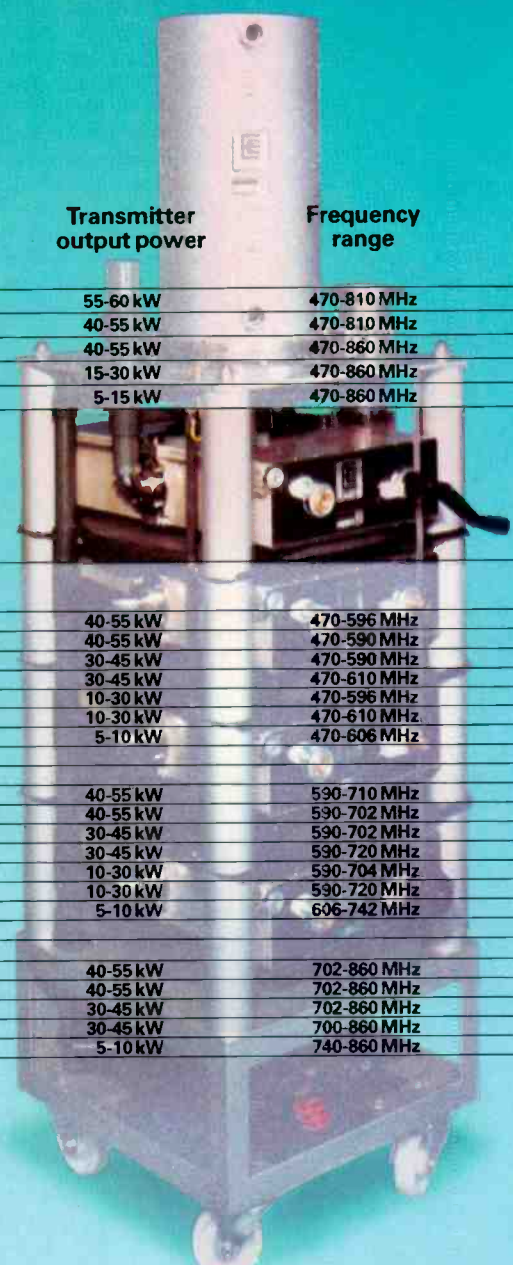
Circle (107) on Reply Card

EEV KLYSTRONS SO MUCH MORE TO OFFER

*The most comprehensive range of
External Cavity UHF TV Klystrons*

	Transmitter output power	Frequency range	Typical Sync efficiency
WIDEBAND SERIES			
K3672BCD	55-60 kW	470-810 MHz	44% to 48%
K3572BCD	40-55 kW	470-810 MHz	43% to 46%
K3272WBCD	40-55 kW	470-860 MHz	42% to 45%
K3271BCD	15-30 kW	470-860 MHz	42% to 47%
K3270BCD	5-15 kW	470-860 MHz	42% to 47%

	Transmitter output power	Frequency range	Typical Sync efficiency
STANDARD SERIES			
Low Band			
K3276HBCD	40-55 kW	470-596 MHz	38% to 43%
K3382BCD	40-55 kW	470-590 MHz	38% to 42%
K3217HBCD	30-45 kW	470-590 MHz	40% to 42%
K3282BCD	30-45 kW	470-610 MHz	30% to 40%
K3230BCD	10-30 kW	470-596 MHz	40% to 42%
K376L	10-30 kW	470-610 MHz	34% to 40%
K370/W series	5-10 kW	470-606 MHz	29% to 35%
Mid Band			
K3277HBCD	40-55 kW	590-710 MHz	38% to 43%
K3383BCD	40-55 kW	590-702 MHz	38% to 42%
K3218HBCD	30-45 kW	590-702 MHz	40% to 42%
K3283BCD	30-45 kW	590-720 MHz	30% to 40%
K3231BCD	10-30 kW	590-704 MHz	40% to 42%
K377L	10-30 kW	590-720 MHz	38% to 45%
K371/W series	5-10 kW	606-742 MHz	32% to 35%
High Band			
K3278HBCD	40-55 kW	702-860 MHz	38% to 43%
K3384BCD	40-55 kW	702-860 MHz	38% to 42%
K3219HBCD	30-45 kW	702-860 MHz	40% to 42%
K3284BCD	30-45 kW	700-860 MHz	30% to 40%
K372/W series	5-10 kW	740-860 MHz	32% to 35%



AVAILABLE TODAY **EEV** Klystrons

USA: EEV Inc, 7 Westchester Plaza, Elmsford, NY 10523, USA Telephone: 914 592 6050 Telex: 6818096 Fax: 914 592 8342
 UK: EEV, Waterhouse Lane, Chelmsford, Essex CM1 2QU, England Telephone: (0245) 261777 Telex: 99103 Fax: (0245) 50424
 CANADA: EEV Canada Ltd, 67 Westmore Drive, Rexdale, Ontario M9V 3Y6 Telephone: 416 745 9494 Telex: 06 989363 Fax: 416 745 0618
 Circle (108) on Reply Card

The art of shaping sound.

SONEX is a high-performance acoustical foam that upgrades your studio inexpensively.

Ideal for a temporary isolation booth, it can also eliminate slap echo and harsh resonances in the main room or silence noisy tape equipment in the control booth. Write for our color brochure today.

SONEX is manufactured by Illbruck and distributed exclusively to the pro sound market by Alpha Audio.

Alpha Audio
2049 West Broad Street
Richmond, Virginia 23220 (804) 358-3852
Acoustic Products for the Audio Industry



Circle (110) on Reply Card

Looking for... DA?

Come to Us!

We make plain vanilla as well as special audio/video DA's such as component video and DC 12V powered.

- 200-1 Plain vanilla video DA, 8 outputs.
- 200-2 Cable equalizing video DA, up to 3000 ft.
- 200-3 Chroma equalizing video DA, up to +/-3dB.
- 200-4 Delayed video DA, up to 750 nS.
- 200-5* VCA video DA, remote control system DA.
- 215-1 Line driver V DA, bal/unbal in-out 75/125 ohms.
- 220* DC 12 V powered video DA, 8 outputs.
- 230* 10 outputs video/2 ch audio, dubing system DA.
- 232* 20 outputs video/2 ch audio, dubing system DA.
- 233* 50 outputs video/2 ch audio, dubing system DA.
- 240-1 Plain vanilla audio DA, 12 outputs.
- 240-2 VCA audio DA, remote control system DA.
- 273* Component video DA one gain control for 3 CH.
- 280* DC 12V powered audio DA, 8 outputs.
- 470* DC 12 V powered - V DA, A DA, 5x1 V xp A xp in one 1 RU package.

*New products -

- Other quality products from OMICRON VIDEO.
- Model 310 4 frequency tone generator.
- Model 410 series sync generators.
- Model 500 series audio/video routing switchers.
- Model 700 series data distribution equipment.

5 YEAR WARRANTY

OMICRON VIDEO TEL: (818) 700-0742
FAX:(63)8187000313
9700-F Owensmouth Ave., Chatsworth, CA. 91311

Circle (109) on Reply Card

Dealer/distributors...(see page 129 for key to listings)

Adams Ave., Hauppauge, NY
11788-3699 (516-231-1414;
NY: 800-231-1414; USA:
800-Lee-Dan-1) U.S.A. Intercom
Systems; Speakers & Enclosures;
Wire & Cable, Annunciators

LCA Sales Co., 76 Main St., Tuckahoe,
NY 10707 (212-585-1645;
914-961-4700; 800-522-
7377) DE, DC, MD, NJ, Metro-NY,
East-PA, VA Audio & Video Equip.;
Transmission Systems; System De-
sign

Lunar Video Ltd., 138 East 26th St.,
New York, NY 10010 (212-
686-4802) CT, MA, NJ, NY Ser-
vice & Repair on Video & Test Equip.

MPCS Video Industries, Inc., 514
West 57th St., New York, NY
10019 (212-586-3690) U.S.A. Full
service distributor of industrial
& broadcast video equip.; complete
rental, service, production, post-pro-
duction & duplication facilities on
premises, as well as systems design
and installation. Specializes in net-
work, call letter & cable stations.

Martin Audio/Video Corp., 423 W.
55th St., New York, NY 10019
(212-541-5900) CT, DE, DC, ME,
MD, MA, NH, NJ, NY, PA, RI, VT
Audio & Video Equip.; Test & Meas-
urement; Tape; System Design;
Rentals

Miller Associates Ltd., L. Matthew, 48
West 21st St., 11th Floor, New York,
NY 10010 (212-741-8011;
800-221-9328) U.S.A., PR Audio
& Video Equip.; Test & Measure-
ment Equip.; Tape; Service & Repair;
System Design; Rental

Richardson Electronics-East, 116 S.
Long Beach Road, Rockville Center,
NY 11570 (800-645-2322;
516-536-8868) Worldwide
Vacuum Tubes & Capacitors; Cam-
era Tubes; Semiconductors; CC TV
Equip.; RF Amplifiers; SCR's
See advertisement on page 51

RMS Electronics, Inc., 50 Antin Place,
Bronx, NY 10462 (212-892-
1000) U.S.A. Audio & Video Equip.

Sharb Electronics, 192-08 90th Ave.,
Hollis, NY 11423 (718-479-
3011) Worldwide Electron Tubes;
Complete line of CCTV Products;
Cameras, Monitors & Accessories;
Transmitters AM-FM-TV

Stage Lighting Distributors, Industrial
Park, Route 9 W., Stony Point, NY
10980 (914-947-3034) U.S.A.
and Canada Video Equip.; Lighting &
Controls; System Design

Temtron Electronics Ltd., 15 Main St.,
P.O. Box 170, East Rockaway, NY
11518-0170 (516-599-6400;
800-645-2300) U.S.A. Audio &
Video Equip.; Test & Measurement
Equip.; Vacuum Tubes

NORTH CAROLINA

Broadcast Services Co., Route 3 Box
45-E, Four Oaks, NC 27524
(919-934-6869) DC, MD, NC, PA,
SC, VA, WV Full Line of Broadcast
Audio & Radio RF Equip.

**Electronic Merchandising Enterprises,
Inc.**, 112 Buena Vista, High Point,
NC 27260 (919-869-3335)
East-KY, NC, SC, East-TN, VA, WV
Mixers, Mics, Amps; Video Pro-
duction Switchers, Monitors, Cameras,
DA's; Analyzers; Frequency Count-
ers; Power Meters, Voltmeters; Test
& Measurement Equip.; Distortion
Analyzers; STL DVES, CCD Cameras

Midwest Communications Corp.,
2848 Interstate 85 S., Suite E,
Charlotte, NC 28208 (704-
399-6336)

Midwest Communications Corp.,
3033-2 Stoney Brook Drive, Ra-
leigh, NC 27604 (919-850-
9811)

S.C.M.S., Inc., 10201 Rodney Blvd.,
Pineville, NC 28134 (704-
889-4508; NC-800-221-SCMS;
Outside NC-800-438-6040) National
Audio Equip.; Test & Measure-
ment Equip.; Transmitters, Antennas
& Transmission Systems; Tape; Ser-
vice & Repair; System Design; Used
Equip.; Studio Design; Acoustics

Technical Video Systems, Inc., 215 N.
Broad St., Winston-Salem, NC
27101 (919-748-0916) NC, SC,
TN Video Equip.

NORTH DAKOTA

Audiovisual Inc., 1818 E. Broadway,
P.O. Box 2239, Bismarck, ND
58502 (701-258-6360) CO, ID,
IA, KS, MN, MT, NE, ND, SD, WY
Audio & Video Equip.; Test & Meas-
urement Equip.; Transmitters; Tape;

THANK YOU!

For keeping us Number One
with the companies we repre-
sent for the last ten years.

For you it means good pro-
ducts, good service and good
prices.

**BROADCAST
SERVICES CO.**

Neal Davis, 919 934-6869,
Rt. 3, Box 45E, Four Oaks, NC 27524.

The digital effects.

COMPRESSOR RELEASE = 525ms	PARAMETRIC EQ. MID FRQ = 500 Hz	AUTO PAN DIRECTION = L↔R
TRIGGERED PAN PANNING = 525ms	FREEZE A REC MODE = AUTO	FREEZE B OVER DUB
PITCH CHANGE A BASE KEY = C 3	PITCH CHANGE B 1 FINE = + 8	PITCH CHANGE C L DLY = 0.1ms
PITCH CHANGE D F.B. GAIN = 10 %	ADR-NOISE GATE TRG. MSK = 5ms	SYMPHONIC MOD. DEPTH = 50 %
STEREO PHASING MOD. DLY = 3.0ms	CHORUS A DM DEPTH = 50 %	CHORUS B AM DEPTH = 10 %
REV 1 HALL REV TIME = 2.6s	REV 2 ROOM DELAY = 20.0ms	REV 3 VOCAL LPF = 8.0 kHz
REV 4 PLATE HIGH = 0.7	EARLY REF. 1 TYPE = RANDOM	EARLY REF. 2 ROOM SIZE = 2.0
STEREO FLANGE A MOD. DEPTH = 50 %	STEREO FLANGE B MOD. FRQ = 0.5 Hz	STEREO ECHO Rch F.B = +58 %
DELAY L,R Lch DLY = 100.0ms	TREMOLO MOD. FRQ = 6.0 Hz	DELAY VIBRATO VIB RISE = 1400ms
GATE REVERB LIVENESS = 5	REVERSE GATE TYPE = REVERSE	REVERB & GATE TRG. LEVEL = 65

Without the expensive side effect.

If you want highly cost-effective, extremely versatile digital sound processing, you may not need anything more than the new SPX90 Digital Multi-Effect Processor. Or want anything less.

Built into its rack-mountable chassis are 30 preset effects specifically designed to suit a wide range of studio and live performance applications.

All the preset effects have up to nine user-programmable parameters. So you can further individualize them for your particular need and store them in any of the 60 on-board RAMs for instant recall using the front panel keys, optional remote control or footswitch.

The SPX90 offers MIDI-compatibility including the ability to make program changes during live performance via MIDI. Some effects can even be actuated

\$745

* by a change in input level during performance.

So whether you're a studio or sound reinforcement engineer, keyboard player, guitar player,

bass player, even home recording enthusiast, the SPX90 can add incredible creativity to your music. At a very credible price.

See your Yamaha Professional Audio dealer. Or write: Yamaha International Corporation, Professional Audio Division, P.O. Box 6600, Buena Park, CA 90622. In Canada: Yamaha Canada Music Ltd., 135 Milner Avenue, Scarborough, Ont. M1S 3R1.

*Suggested U.S.A. retail price. Prices will vary in Canada.



Vacuum Tubes; Film Equip.; Service & Repair; System Design; Used Equip.; Rentals

OHIO

Audio Marketing Association, 9470 Whitewood Road, Brecksville, OH 44141 (216-526-2426) IN, KY, OH, PA, WV Audio Equip.; Test & Measurement Equip.

Cartwright Communications Co., 7812 Red Sky Drive, Cincinnati, OH 45249 (513-489-1755; Outside OH-800-543-8614; OH-800-582-2641) U.S.A., AK, HI Antennas; Batteries; Duplexers; Power Suppliers; Remotes; RF Amps; Elec. Sirens & Lights; Tone Equip.; Transmission Line; Two-Way Warning Radios & Accessories; Wattmeters; Isolators; Receiver & Transmitter Multicouplers

Vincent Lighting Systems Co., 5325 Naiman Parkway, Suite G, Solon, OH 44139 (216)/292-2550 IN, KY, OH Install, Design & Service Lighting Systems & Related Equip.; Rentals are available. Expendable lighting Supplies i.e. color media, connectors, lamps, patterns

OKLAHOMA

Walter S. Brewer Co., Inc., 4717-F S. Mingo Road, Tulsa, OK 74146 (918-665-6820) Worldwide Lighting for Video; System Design

Delcom Corp., 6019 S. 66th E. Ave., Tulsa, OK 74145 (918-494-9500; Outside OK 800-331-5461) Continental U.S. Total Video Systems Featuring Custom System Design; Professional & Broadcast Equip. Installation; Computerized Wiring & Tracing Documentation; Custom & Standard Cabinetry

Hill Radio Equipment Co., 203 Alawhe Road, Route 8, Claremore, OK 74017 (918-341-5240) U.S.A. Audio Equip.; Audio Test Equip.; Audio Recording Tapes; Towers-STL-TSL-Remote; Transmitters, Antennas & Transmission Systems

MZB & Associates, 6705 East 81st St., Suite 195, Tulsa, OK 74133 (918-493-6200) AR, KS, LA, MO, NE, NM, OK, TX Audio & Video Equip.; Test & Measurement Equip.;

Transmitters, Antennas & Transmission Systems; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

OREGON

Custom Video Systems of Oregon, Inc., 1963 N.W. Kearney St., Portland, OR 97209 (503-295-6963) OR Audio & Video Equip.; Test Equip.; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

Frontier Communications Corp., P.O. Box 750, Portland, OR 97207 (503-246-8080) AK, AZ, CA, CO, HI, ID, MT, NV, OR, UT, VI, WA, WY Audio Equip.; Transmitters, Antennas & Transmission Systems; Service & Repair; Systems Design

URS Electronics, Formerly United Radio Supply Inc., 123 N.E. Seventh Ave., Portland, OR 97232 (503-233-5341) AK, CA, GU, ID, MT, OR, WA, Alta., Sask., Yuk. Test & Measurement Equip.; Vacuum Tubes; Audio & Video Equip.; Transmitters, Antennas & Transmission Systems

PENNSYLVANIA

Alpha Video & Electronics Co., 28 E. Mall Plaza, Carnegie, PA 15106 (412-923-2070) MD, NY, OH, PA, WV Audio & Video Equip.; Test & Measurement Equip.; Transmitters; Tape; Vans & Accessories; Service & Repair; System Design

Audio Associates, 814 W. Broad St., Bethlehem, PA 18018 (215-865-6013) U.S.A. Audio Equip.; Test & Measuring Equip.; Transmitters, Antennas & Transmission Lines; Tone Arms & Cartridges; Processing Equip.; Power Distribution & Preamps; Studio Furniture & Accessories; Used Equip. & Trade-Ins

Comark Communications, Inc., P.O. Box 506, Colmar, PA 18915 (215-822-0777) Worldwide Transmitters, Antennas and Transmission Systems

Jerry Conn Associates, Inc., P.O. Box 444, Chambersburg, PA 17201 (717-263-8258) U.S.A. Regional sales rep for top quality products and national distributor for all your

distribution needs from drop materials to standby 63 channel tuneable modulators.

Lerro Electrical Corp., 3125 N. Broad St., Philadelphia, PA 19132 (215-223-8200) DE, DC, MD, NJ, PA, VA Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

Maxima Magnetics, Inc., 300 Bonair Ave., Hatboro, PA 19040 (215-443-0700) AL, CT, DE, DC, FL, GA, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, NE, NH, NJ, NY, NC, ND, OH, OK, PA, PR, RI, SC, SD, TN, TX, VT, VA, WV, WI Audio & Video Tape; Reprocessed Tape all formats; Custom Loaded 1/2' Video Cassettes & Audio; Reloaded 3/4' Cassettes

Midwest Communications Corp., 535 Rochester Road, Pittsburgh, PA 15237 (412-364-6780) PA Audio & Video Equip.; Test & Measuring Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design

Richard S. Pass Associates, Inc., 27 Oxford Drive, Langhorne, PA 19047 (215-757-6100) DE, DC, MD, Southern-NJ, Eastern-PA, VA Audio Equip.; Test & Measurement Equip. (Spectrum Analyzers) ENG Mixers & Associated Equip.

Peirce-Phelps, Inc., 490 S. St. Johns Road, Camp Hill, PA 17011 (717-761-0240)

Peirce-Phelps, Inc., 2000 North 59th St., Philadelphia, PA 19131 (215-879-7171) U.S.A., GU, PR, VI Audio & Video Equip.; Tape; Vans & Accessories; Service & Repair; System Design

The Performance Group, Inc., 2741 Noblestown Road, Pittsburgh, PA 15205 (412-922-0900) DE, KY-TV only, Southern-NJ, Southeast-OH Install, Design & Service Lighting Systems & Related Equip.

Radio Systems Inc., 5113 W. Chester Pike, Edgemont, PA 19028 (215-356-4700) U.S.A. Audio Equip.; Tape; Transmitters, Antennas & Transmission Systems; System Design; Service & Repair; Turnkey Installation; Studio Furniture; SCA Receivers

Steinberg Electronics Inc., 2520-22 N. Broad St., Philadelphia, PA 19132 (215-223-9400; 800-523-0894; PA Only-800-245-3105) Worldwide Audio & Video Equip.; Tape; Vacuum Tubes

Val-Tronics, Inc., Penn Park Building, Pittston, PA 18640 (717-655-5937) U.S.A. Cart Machines; Consoles; Transmitters; Audio Carts; Tape Recorders & Turntables; Microphones; Optimods; Antennas; Transmission Lines; Cabinets; Phono Cartridges; Replacement Heads; Amplifiers; Dummy Loads

RHODE ISLAND

RF Specialties of Pennsylvania, 121 Conneaut Drive, Pittsburgh, PA 15239 (412-733-1994) AK, ID, MT, OR, WA Transmitters, Antennas & Transmission Systems

SOUTH DAKOTA

Audiovisual Inc., 1809 Cambridge, Sioux Falls, SD 57106 (605-361-7460) IA, SD Broadcast & Professional Audio & Video Equip.; Microwave Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design; Used Equip.

TENNESSEE

Broadcast Equipment & Supply Co., Inc., P.O. Box 3141, Bristol, TN 37625 (615-878-2531) U.S.A. Audio & Video Equip.; Tape

Consolidated Media Systems, Inc., 2225 Polymer Drive, Southern Comfort Insulation Building, Chattanooga, TN 37421 (615-899-5103) GA, TN

Consolidated Media Systems, Inc., 1004 Old Tree Court, Nashville, TN 37210 (615-244-3933) AL, GA, KY, TN Audio & Video Equip.; Test & Measurement Equip.; Tape; System Design; Service & Repair; Used Equip.

Wilson Audio Sales, 5972 Asberry Court, Nashville, TN 37221 (615-646-4477) AL, GA, MS, NC, SC, TN Audio Equip.

TEXAS

Crouse-Kimzey Co., 3507 W. Vickery, Ft. Worth, TX 76107 (817-737-9911) U.S.A. Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape

Discount Express, P.O. Box 15291, Austin, TX 78761 (512-836-6103; 800-762-3304) U.S.A. All major video equip.

Victor Duncan, Inc., 6305 N. O'Connor, Irving, TX 75039 (214-869-0200) U.S.A. and Canada Audio, Film & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.

Ethereum Scientific Corp., 7641 Clarewood, Suite 336, Houston, TX 77036 (713-784-2630) U.S.A. Service & Repair; System Design-including studio installation, etc.; Used Equip.-including leasing, rent, etc.; Vans & Accessories

G.P. Enterprises, Inc., P.O. Box 912, Arlington, TX 76010 (817-572-0132; 478-0050) AL, AZ, AR, CO, IA, KS, LA, MN, MS, MO, MT, NE, NM, ND, OK, SD, TN, TX, WI,

Video Parts & Accessories

**Sony - JVC - Panasonic - GE
RCA - 3M Video Tape**

Distributed By

STEINBERG ELECTRONICS INC.

2520 N. Broad St.
Philadelphia, PA 19132
215-223-9400
800-523-0894
PA. 800-245-3105

MASTER CONTROL

Over sixty of our new MC-500 series **MASTER CONTROL** Switchers are in operation at television stations throughout the country, many with full *station automation* also supplied by Utah Scientific. These customers include some of the country's most prestigious broadcasters. Call or write for our 100% Users List to learn firsthand the many advantages offered by this state-of-the-art product.



US UTAH SCIENTIFIC, INC.
DYNATECH Broadcast Group

1685 West 2200 South, Salt Lake City, Utah 84119
Phone: (800) 453-8782 (Toll Free) or (801) 973-6840 • TWX: 910-925-4037
Circle (115) on Reply Card

WY Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Used Equipment; Color Monitors; Audio Lip Sync & Time Compression/Expansion; 3D Graphics/Animation, Routing Switchers, Master Clock Systems, Time (SMPTE) Code GENs/Readers, Racks & Consoles

International Music Co., 1316 E. Lancaster, Fort Worth, TX 76102 (817-336-5114) Worldwide AKAI Professional; Studiomaster Mixing Consoles; Ross Systems Fane Loudspeakers

Linrose Broadcast Equipment, 442 Breesport, San Antonio, TX 78216 (512-342-8849; TX only-800-221-3063; Outside TX-800-523-7360) Worldwide Complete line of audio equip. & supplies

MZB & Associates, 4203 Beltway, Dallas, TX 75234 (214-233-5535) AR, KS, LA, MO, NE, NM, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

MZB & Associates, 11231 Richmond Ave., Suite 102, Houston, TX 77082 (713-497-0611)

MZB & Associates, 837 Isom Road, San Antonio, TX 78216 (512-525-1628)

Professional Audio Supply, 5700 East Loop 820 South, Fort Worth, TX 76119-7050 (817-483-7474; 800-433-7668; TX Only 800-233-8273) Worldwide Complete Line of Audio Equip. & Supplies

RF Specialties of Texas, P.O. Box 8316, Amarillo, TX 79114 (806-372-4518) CO, NM, OK, TX Transmitters, Antennas & Transmission Systems; System Design; Tape; Audio & Video Equip.; Test & Measurement RQ

SAVCO Broadcast Equipment, Inc., P.O. Box 850427, Richardson, TX 75085 (214-783-1438) AL, AR, KS, LA, MI, MO, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas &

Transmission Systems; System Design

The Gene Sudduth Co., Inc., P.O. Box 293, Flint, TX 75762 (214-894-6303) AR, LA, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems

The Gene Sudduth Co., Inc., P.O. Box 518, Paris, TX 75460 (214-785-5764) AR, LA, OK, TX

UAR Professional Systems, 8535 Fairhaven, One Studio Center, San Antonio, TX 78229 (512-690-8888) U.S.A. Audio Equip.; Tape; Test & Measurement Equip.; System Design; Used Equip.

UTAH

RIA Corp., 50 E. Malvern, Salt Lake City, UT 84115 (801-486-8822 or 484-1701) AZ, CA, CO, ID, LA, MS, MO, MT, NV, OK, TX, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Film Equip.; Tape; Service & Repair; System Design

VERMONT

Clifford, Inc., P.O. Box 51, Bethel, VT 05032 (802-234-9921-Collect; 800-451-4381) Nationwide Audio-Cable; Coaxial Cable & Cable Tools

VIRGINIA

AVCOM of Virginia Inc., 500 Southlake Blvd., Richmond, VA 23236 (804-794-2500) Worldwide Antennas, C/KU Band; Cable; LNAs; Modulators, TV; Complete TVRO Systems

Broadcast Services Co., 408 E. Sixth St., Front Royal, VA 22630 (703-635-1413) DC, MD, NC, PA, SC, VA, WV Full line of Broadcast Audio & Radio RF Equip.

Midwest Communications Corp., 4129-Q Townhouse Road, Richmond, VA 23228 (804-262-5788) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Trans-

mitters & Antennas; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

Old Dominion Broadcast Eng. Service, 1101 Front St., Richmond, VA 23222 (804-321-4506) Worldwide Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design; Used Equip.

Robert Slye Electronics, 3415 N. Washington Blvd., Arlington, VA 22201 (703-525-7272) DC, MD, VA Audio & Video Equip.; Test & Measurement Equip.; System Design

Straight Wire Audio, Inc., 2611 Wilson Blvd., Arlington, VA 22207 (703-522-7780, 800-368-2081) U.S.A., Alta, BC, Ont., Que Audio Equip.

WASHINGTON

Bennett Engineering Associates, Inc., P.O. Box 76, Mercer Island, WA 98040 (206-232-3550) AK, CA, ID, MT, OR, WA Engineering Consultants-Electronic & Communication Systems; Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; System Design

Broadcast Supply West, 7012 27th St. W., Tacoma, WA 98466 (206-565-2301; 800-426-8434) Worldwide Audio Equip.; Test & Measurement Equip.; Tape

Custom Video Systems, Inc., 17521 15th Ave. N.E., Seattle, WA 98155 (206-365-5400) AK, WA Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design; Rentals

Northshore Marketing, 16 W. Harrison St., Suite 205, Seattle, WA 98119 (206-284-9699) AK, ID, MT, OR, WA Audio & Test & Measurement Equip.

RF Specialties of Washington, Inc., 11721 15th Ave. N.E., Seattle, WA 98125 (206-363-7730) AK, ID, MT, OR, WA Transmitters, Antennas & Transmission Systems

WISCONSIN

Full Compass Systems, Ltd., 6729 Seybold Road, Madison, WI 53719 (608-271-1100; Outside WI: 800-356-5844; WI: 800-362-5445) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.

Video Images, 811 Mayfair Ave., Madison, WI 53714 (608-241-5281)

Video Images, 12200 W. Adler Lane, West Allis, WI 53214 (414-475-0111) IL, IA, MI, MN, NE, ND, SD, WI Audio & Video Equip.; Test & Measurement; Transmitters, Anten-

nas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

CANADA

Comad Communications, 1435 Bonhill Road, Unit 34, Mississauga, Ont., Canada L5T 1M1 (416-676-9171) Canada Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

GERR Electro Acoustics Ltd., 363 Adelaide St. E., Toronto, Ont., Canada M5A 1N3 (416-868-0529) Canada Audio & Video Equip.; Test & Measurement Equip.; Service & Repair; System Design

Incospec Electronics, Inc., 4651 Boul des Grandes Prairies, St. Leonard, Que., Canada H1R 1A5 (514-322-5540) Canada LPTV & TVRO Equip. including satellite subcarrier low level demodulators

Lumitrol, Ltd., 253 Merton St., Toronto, Ont., Canada M4S 1A7 (416-485-4817 or 4826) Canada Video Studio; Lights, Dimmers, Drapes; Studio Grids, Power Distribution

M.S.C. Electronics Ltd., 147 W. Beaver Creek Road, Richmond Hill, Ont., Canada L4B 1C6 (416-731-9500) Canada Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; System Design

McCurdy Telecommunications Products Ltd., 70 Milner Ave., Unit 2, Scarborough, Ont., Canada M1S 3P8 (416-291-6449) Canada Satellite Receiving Equip.

Multi Electronic Services Ltd., 190 Don Park Road, Unit 5, Markham, Ont., Canada L3R 2V8 (416-475-5068) Ont., Que. Audio & Video Equip.; Service & Repair; System & Design

Nortec West Ltd., 7056-B Farrell Road S.E., Calgary, Alta., Canada T2H 0T2 (403-252-8141) Alta, B.C., Man., Sask. Audio & Video Equip.; Film Equip.; Service & Repair

Pineway Electronics Ltd., 1875 Leslie St., Unit 7, Don Mills, Ont., Canada M3B 2M5 (416-449-1343; Canada 800-269-7839) ME, NY, VT, Canada Audio & Video Equip.; Test & Measurement Equip.; AM-FM-TV Transmitters; Tape; Service & Repair

Precision Camera, Inc., 1589 The Queensway, Unit 14, Toronto, Ont., Canada M8Z 5W9 (416-251-2211) Ont. Video & Film Equip.; Service & Repair; System Design

Tele-Tech Electronics Ltd., 920 Denison St., Unit 11, Markham, Ont., Canada L3R 3K5 (416-475-5646) Canada Audio & Video Equip.; Test & Measurement Equip.; Tape; Used Equip.



RF Specialties
OF TEXAS

- RF Specialties of Texas
P.O. Box 8316
Amarillo, Texas 79114
(806) 372-4518
Don Jones & Tim Hawks
- System Design •
- Competitive Pricing •

Paint


VIDEO SPECS

Color sta
Video out,
Integral s
CCU requ
Shutter d
Setup me
Auto blac
Beam opt
Auto cent
Auto regi
Auto dyna
Auto cabl
Micropro
Computer
Diagnosti
Cable typ
Portable c
Camera h
Detachabl
VCR form
Reader Si

'BTS Bro

Manufact Model Nu

Suggeste
of pickL
Type of pl
Optical fo
Lens mou
Sensitivit
Minimum
Resolutio
Registrat
S/N ratio
Noise red
Contours
Enhancer
Neutral di
Color corr
Color star
Video out,
Integral s
CCU requ
Shutter d
Setup me
Auto blac
Beam opt
Auto cent
Auto regi
Auto dyna
Auto cabl
Micropro
Computer
Diagnosti
Cable typ
Portable c
Camera h
Detachabl
VCR form
Reader Se



For the designer and the art director the satisfaction of producing an original television graphic *perfectly* is everything. With the Quantel Paintbox™ can create images with smoothly rounded curves and natural color mixing — at the same time choosing from a large selection of mediums and brush sizes. You'll never have to live with the "computer" look.

Artists love the response time of the Paintbox. Its easy-to-follow menu helps produce lively, original images with extraordinary speed. And management loves it for its fast payback.

Stimulate your creativity with these special features:

- Stencil and paste-up functions.
- Paste over live video.

Step closer to the digital studio

Paintbox Art



ic
you
d
om
ox.
l

By adding Quantel's new Harry Animation/Editing System, the already extensive animation capabilities of Paintbox can now include full cel animation.

The Paintbox has become the world standard for creativity in television graphics. All three major U.S. networks as well as most broadcast and post-production facilities design with the Paintbox.

Quantel's worldwide sales and service has been expanded to ensure prompt, friendly and expert support. It's always there if you need it.

To put the Paintbox creative art system to work for you, write today to Quantel, 3290 W. Bayshore Rd., Palo Alto, CA 94303. For the phone number of your nearest sales office call 415 856-6226.

QUANTEL

Manufacturer	Ikegami Electronics				
Model Number	HK-357A	HK-322	HK-323 (HL-79F)	SC-500	ITC-730A
Suggested use	Studio	Studio	Studio (ENG/EFP)	Studio	ENG/EFP/Studio
# of pickup devices	3 DG ACT	3	3 Pb0	3 Pb0	3 Pb0
Type of pickup	Pb0	Pb0	Or SAT	Or SAT	Or SAT
Optical format	1"	30mm std (25mm opt)	1" or 3/4" (3/8")	3/8" f/1.4 prism	3/8" f/1.4 prism
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet HL790A type	Bayonet
Sensitivity (fc-f/% reflect)	1,000 lux f/2.8	1,200 lux f/4 89.9%R	2,000 lux f/5.6 (f/4.5)	2,000 lux f/4	2,000 lux f/4 89.9% R
Minimum illumination	100 lux f/1.6	350 lux f/2.1 30mm	10fc f/1.4 +6dB	80 lux f/1.6 +12dB	40 lux f/1.6 +18dB
Resolution (in green)	650 TVL >70% 400 TVL	700 TVL (60%M 5MHz)	700 TVL (650 TVL)	700 TVL Pb0	>650TVL
Registration (zones 1/2/3)	0.05%/0.3%/0.4%	0.05%	0.05%/0.1%/0.2%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%
S/N ratio	56dB	56dB (58dB 25mm)	60dB 4.2MHz (59dB)	57dB	57dB
Noise reduction	Slicing/comb filter	Core/slice/comb	Core/slice/comb	Comb filter	Comb filter
Contours out of	RGB	RGB option	RGB	RGB	RGB
Enhancement made in	Green	RGB	Green	Green	Green 2H correction
Neutral density filters	External	Internal	Internal	Internal	Internal
Color correction	Optical filters	Optical/electronic	Optical filters	Optical filters	Optical filters
Color standards supported	NTSC	NTSC	NTSC	NTSC	NTSC
Video output formats	RGB Y/R-Y/B-Y & NTSC	RGB	NTSC (NTSC or RGB)	RGB	RGB at CCU
Integral sync generator	Yes	Internal & external	Yes	Yes w/ gen-lock	Yes w/ gen-lock
CCU required	Yes	Yes	Yes (No)	Yes	Option
Shutter design	No	No	No (Yes)	No	No
Setup memories for	Color balance/setup	Lens/color balance	Color balance (lens)	Color balance	Color balance
Auto black/white balance	Both	Both	Both	Yes	Yes
Beam optimization	Yes	Yes	Yes	No	Yes
Auto centering	Yes	Yes	Yes	Yes	Yes
Auto registration	Yes	Yes	Yes	Yes	No
Auto dynamic gain	Yes	Yes	Yes	No	No
Auto cable compensation	Yes	Yes	Yes	Yes	No
Microprocessor	Yes	Multiple	Multiple (single)	Single	Single
Computer setup system	CCU & external pkg	CCU	CCU/External (CCU)	None	None
Diagnostics	VF/CCU/hardcopy	CCU/hardcopy options	VF/CCU (VF)	Viewfinder	None
Cable types	Multicore/triax/coax	TV24/triax	TV24/triax/fbr optic	Multicore/coax	Multicore/coax
Portable camera	No	No	No (Yes)	No	Yes
Camera head weight	88 lb	55 lb	52.8 lb (13 lb)	9.9 lb	9.9 lb
Detachable VCR	No	No	No	No	No
VCR format	.....	.....	.....	.....	.....
	.....	.....	HL-79F portable can	.....	.....
	.....	.....	use HK-323 CCU.	.....	.....
Reader Service Number	411	412	413	414	415

Manufacturer	Ikegami Electronics			JVC Company	
Model Number	HL-79E	HL-95 Unicam	KY-210U (-210BU)	KY-320U	BY-110U
Suggested use	ENG/EFP	ENG/EFP	ENG/EFP/studio	ENG/EFP/studio	ENG
# of pickup devices	3 DG/LOC	3	3 SAT	3	3 SAT
Type of pickup	Pb0 or SAT	Pb0	(HR/EM/SAT)	Pb0	ES focus/EM defl
Optical format	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8" prism f/1.4	3/8" prism f/1.4	3/8" f/1.4 prism
Lens mount type	Bayonet	Bayonet HL-79A type	Bayonet	Bayonet	Bayonet
Sensitivity (fc-f/% reflect)	187fc f/5 89.9%R	187fc f/4.5 89.9%R	200fc f/4 89.9%R	200fc f/4.5 89.9%R	186fc f/2.8
Minimum illumination	20 lux f/1.4 +18dB	15 lux f/1.6 +24dB	3.8fc f/1.6 +18dB	3.6fc f/1.7 +18dB	6fc f/1.4 +12dB
Resolution (in green)	650 TVL	650 TVL	650 TVL (750 TVL)	600 TVL	600 TVL
Registration (zones 1/2/3)	0.05%/0.1%/0.3%	0.05%/0.1%/0.2%	0.1%/0.2%/0.5%	0.1%/0.2%/0.5%	0.1%/0.4%/0.8%
S/N ratio	57dB (59dB LOC tube)	60dB	59dB NTSC/56dB PAL	59dB NTSC/56dB PAL	54dB
Noise reduction	Coring/comb filter	Comb filter	.....	.....	H dual-edged/V 1H
Contours out of	RGB	RGB	Green	Green	Green
Enhancement made in	Bal H & 2H vertical	Green	.....	.....	.....
Neutral density filters	Internal	Internal	Internal	Internal	Integral
Color correction	Optical filters	Optical filters	Internal filters	Internal filters	Optical filters
Color standards supported	NTSC	NTSC	NTSC/PAL	NTSC/PAL	NTSC
Video output formats	Y/I/Q	NTSC & RGB	Encoded/YIQ/YUV	Encoded/YIQ/YUV	Encoded
Integral sync generator	Yes	Yes	Gen-lock w/ adapter	Gen-locks w/ adapter	Yes
CCU required	RCU options	No (adapter options)	RS-500U available	RCU optional	RS-110U available
Shutter design	No	No	No	No	No
Setup memories for	Lens/color balance	Color balance	Color balance	Balance	Color balance
Auto black/white balance	Yes	Yes	Yes	Yes	Both
Beam optimization	Yes	Yes	Yes	Yes	Yes
Auto centering	Yes	Yes	Yes	Yes	.....
Auto registration	Yes	Yes	Auto-shift reg	Yes	Auto-shift
Auto dynamic gain	Yes	Yes	No	No	.....
Auto cable compensation	Yes	.....	No	No	.....
Microprocessor	Multiple	Multiple	.....	No	Yes
Computer setup system	CCU & external eqpt	External eqpt	None	None	No
Diagnostics	VF/CCU/hardcopy	Viewfinder	Viewfinder	Viewfinder	No
Cable types	Multicore/triax/coax	Coax/triax/multicore	Multicore/triax/coax	Multicore/triax	14-core/coax
Portable camera	Yes	Yes	Yes	Yes	Yes
Camera head weight	13.2 lb w/ VF	7 lb	7.8 lb	9.2 lb	8.2 lb
Detachable VCR	No	No	No	No	No
VCR format	.....	Interfaces for M/ M-II/Betacam/1/4"	.....	.....	.....
	.....	CA-95 adapter for	.....	.....	.....
	.....	system gen-lock	.....	.....	.....
Reader Service Number	416	417	418	419	420

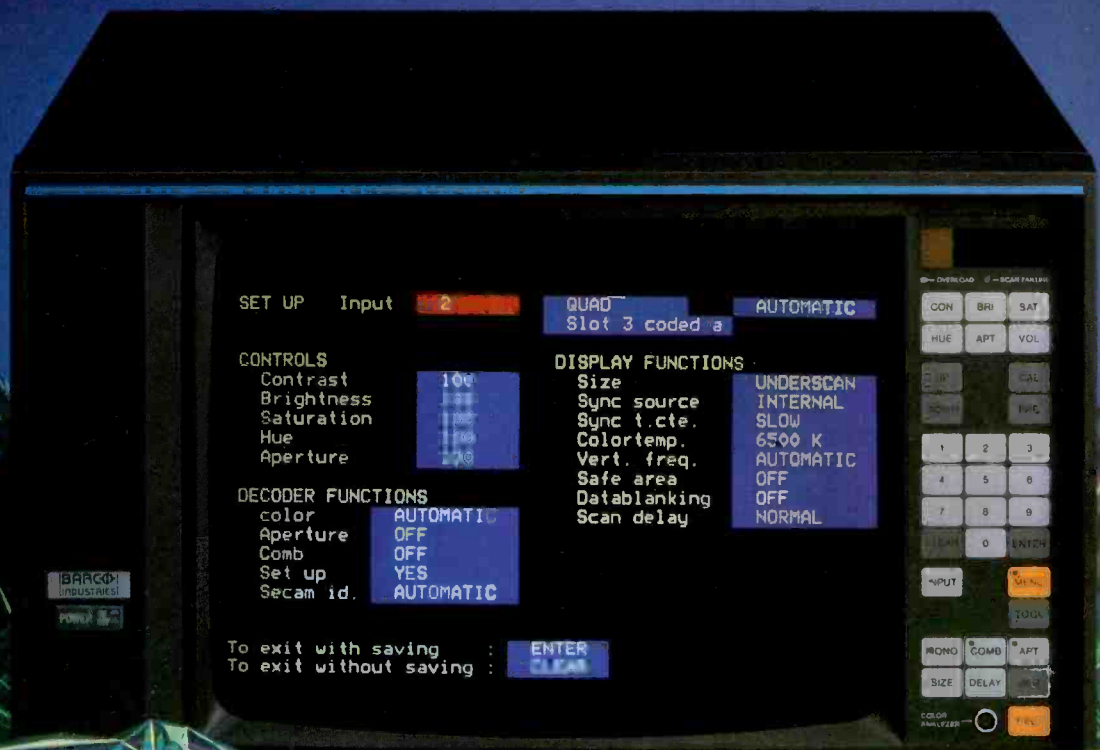
Manufacturer	JVC Company	Link Electronics	NEC America	Nisus Video	Panasonic Broadcast
Model Number	KY-950U (-900)	#130	SP-3A	N-79E (N-3A)	AK-30
Suggested use	ENG/EFP/studio	Yes	ENG/EFP/slow-motion	ENG/EFP	ENG/EFP/studio
# of pickup devices	3 Pb0	3	3 dual green CCD	3 LOC G Pb0	3 Pb0
Type of pickup	(Or SAT)	Pb0	Interline/frame Xsfr	(3 MF SAT)	XQ1427
Optical format	3/8" prism f/1.4	3/8"	3/8" prism f/1.4	3/8" prism f/1.4	3/8" f/1.4 prism
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet
Sensitivity (fc-f/% reflect)	200fc f/4.5 89.9%R	800 lux f/2 60%R	130fc f/4 89.9%R	187fc f/5 89.9%R	200fc f/4.5 89.9%R
Minimum illumination	3.6fc f/1.7 + 18dB	.....	<5fc f/1.4 + 12dB	1.87fc f/1.4 + 18dB	2.5fc f/1.4 + 18dB
Resolution (in green)	600 TVL	>600 TVL green	550 TVL	650 TVL (750 TVL)	650 TVL 35%M 5MHz
Registration (zones 1/2/3)	0.1%/0.2%/0.4%	0.1%/0.2%/0.5%	0.05%/0.05%/0.05%	0.05%/0.1%/0.3%*	0.05%/0.1%/0.25%
S/N ratio	58dB NTSC	59dB NTSC/56dB PAL	58dB	59dB 0dB gain (57dB)	62dB NTSC/59dB PAL
Noise reduction	Coring lvl dependent	Comb filter	Coring/lvl depend	Slicing	Slicing/comb filter
Contours out of	G	Green	Green	Green	RGB
Enhancement made in	RGB	.....	RGB	Green	RGB
Neutral density filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical & electronic	Internal filters	Optical filters	Optical filters	Optical filters
Color standards supported	NTSC	NTSC	NTSC	NTSC-I/Q	NTSC/PAL
Video output formats	Encoded & Y/R-Y/B-Y	Encoded/YIQ/YUV	YIQ/RGB/YUV/YR-Y/B-Y	RGB/encoded	YIQ RGB Y/R-Y/B-Y
Integral sync generator	Yes	Gen-locks w/ adapter	Yes	With gen-lock	Integral w/ gen-lock
CCU required	Optional	Optional	Option	Optional package	Option
Shutter design	No	Lens & balance	Electronic varispeed	Yes	No
Setup memories for	Yes	Lens/color balance	Color balanced	Color balance	Color bal/register
Auto black/white balance	Yes	Yes	Yes	Yes	Yes
Beam optimization	Yes	Yes	N/A	Yes	Yes
Auto centering	Yes	Yes	N/A	Yes	Yes
Auto registration	No	Yes	No adjustment	Option	No
Auto dynamic gain	No	Yes	No	No	Yes
Auto cable compensation	No	.....	Option	Yes	No
Microprocessor	Yes	Yes	.....	No	Single
Computer setup system	None	Yes	None	External option	None
Diagnostics	In viewfinder	Viewfinder	.....	In viewfinder	None
Cable types	Multicore/triax	Triax/coax	Multicore/triax	Multicore/triax	Multicore/triax/coax
Portable camera	Yes	No	Yes	Yes	Yes
Camera head weight	10 lb	44 lb w/o lens	6.7 lb	15.8 lb w/ VF	11 lb
Detachable VCR	No	No	Yes	No	No
VCR format	.....	.....	Betacam/M-II/8mm	.....	M (M-II opt) output
Reader Service Number	421	422	423	424	425

*(0.1%/0.2%/0.5%)

Manufacturer	AK-100S (-100PL)	WV-888	Panasonic Industrial	WV-890(P3)	WV-555BN(N3)	Phillips TV Systems ¹
Model Number	AK-100S (-100PL)	WV-888	WV-890(P3)	WV-890(P3)	WV-555BN(N3)	LDK-6A
Suggested use	ENG/EFP/studio	ENG/EFP/studio	ENG/EFP/studio	ENG/EFP/studio	ENG/EFP/studio	Studio/field
# of pickup devices	3 H8398B SAT or (LOC DG Pb0)	3 SAT	3 Pb0	3 Newvicon	3 Newvicon	3
Type of pickup	(LOC DG Pb0)	H4101B	S4804	S4701	S4701	Pb0
Optical format	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8" f/1.4 prism	1" or 1 1/4" f/1.4
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet
Sensitivity (fc-f/% reflect)	200fc f/3.5 59.9%R	190 lux f/4 89.9%R	190 lux f/4 89.9%R	140fc f/4	140fc f/4	53fc f/2.8 90%R
Minimum illumination	5.2fc + 18dB	6fc f/1.4 + 18dB	4fc f/1.6 + 18dB	2fc f/1.4 + 18dB	2fc f/1.4 + 18dB	4.6fc f/1.6 + 12dB
Resolution (in green)	550 TVL (600 TVL)	650 TVL	60 TVL	600 TVL	600 TVL	>650 TVL
Registration (zones 1/2/3)	0.1%/0.2%/0.5%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%	25ns/40ns/40ns
S/N ratio	58dB (59dB)NTSC	57dB NTSC/54dB PAL	59dB NTSC/56dB PAL	55dB NTSC/53dB PAL	55dB NTSC/53dB PAL	58dB NTSC/56dB PAL
Noise reduction	Comb filter/slicing	Slicing/comb filter	Slicing/comb filter	Comb filter/slicing	Comb filter/slicing	Coring/slicing
Contours out of	Green	Green	Green	Green	Green	RG
Enhancement made in	Green	Green	Green	Green	Green	RGB
Neutral density filters	Internal	Internal	Internal	Internal	Internal	Internal
Color correction	Optical filters	Optical	Optical filters	Optical filters	Optical filters	Optical/electronic
Color standards supported	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL/SECAM
Video output formats	Y/I/Q	Y/I/Q	Y/I/Q	Y/I/Q	Y/I/Q	RGB Y/U/V
Integral sync generator	Yes w/gen-lock	Yes w/ gen-lock	Yes w/ gen-lock	Yes w/ gen-lock	Yes w/ gen-lock	Yes
CCU required	Option	Option	Option	Option	Option	Yes
Shutter design	No	No	No	No	No	No
Setup memories for	Color balance	Color balance	Color balance	Color balance	Color balance	Lens/color balance
Auto black/white balance	Yes	Yes	Yes	Yes	Yes	Yes
Beam optimization	Yes	Yes	Yes	Yes	Yes	Yes
Auto centering	No	Yes	Yes	Yes	Yes	Yes
Auto registration	No	No	No	No	No	Yes
Auto dynamic gain	Yes	Yes	Yes	Yes	Yes	No
Auto cable compensation	No	No	No	No	No	Yes
Microprocessor	Single	Single	Single	Single	Single	Distributed
Computer setup system	None	None	None	None	None	CCU
Diagnostics	None	None	None	None	None	At CCU
Cable types	Multicore	Multicore	Multicore	Multicore	Multicore	Triax
Portable camera	Yes	Yes	Yes	Yes	Yes	No
Camera head weight	8.25 lb (8.6 lb)	12.1 lb	10.3 lb	7.7 lb	7.7 lb	.....
Detachable VCR	Yes	No	No	No	No	No
VCR format	M format	M format outputs	M format outputs	M format output	M format output	.....
Reader Service Number	426	427	428	429	429	430

¹BTS Broadcast Television Systems (A joint company of Bosch & Philips)

THE FIRST INTELLIGENT BROADCAST COLOR MONITOR



BARCO INDUSTRIES' new CVS professional broadcast monitor is microprocessor-based to make it intelligent in operation and easy to use.

It has both a digital and an analog bus for maximum flexibility. Plus four "open" slots that let you plug in today's options and those yet to come. As new features do come along, you'll be able to add them through software - no hardware changes!

All CVS functions are controlled from the front of the monitor or from a remote keyboard. An optional master remote permits control of a series of monitors.

WE PUT THE FUTURE IN THE PICTURE.

**BARCO
INDUSTRIES**

You can also store, and automatically call up, either calibrated presets or your own preferred presets.

Like our best master control monitors, the CVS has Automatic Kinescope Biasing (AKB) to maintain color and black level stability.

The CVS also generates more internal test patterns than any other monitor. They include white field, cross hatch and color bars.

The CVS is available in both 14 inch and 20 inch versions, and provides outstanding picture quality in any TV standard.

For complete specifications, contact your local BARCO INDUSTRIES Dealer or BARCO INDUSTRIES, 170 Knowles Drive, Suite 212, Los Gatos, CA 95030. Phone: (408) 370-3721.

BARCO INDUSTRIES is a member of the ACEC-group.
Circle (116) on Reply Card

Manufacturer	Philips TV Systems ¹			Sharp Electronics		Sony Broadcast
Model Number	LDK-26A	LDK-54A	XC-A1	XC-B10	BVP-5/BVW-105	
Suggested use	Studio/field	ENG/EFP	ENG/EFP/studio	ENG/EFP/studio	ENG	
# of pickup devices	3	3	3 SAT	3 SAT	3 CCDs	
Type of pickup	PbO	PbO	MF DG LOC	MF DG LOC	Interline transfer	
Optical format	3/8"	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8" f/1.4 prism	3/8"	
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet	
Sensitivity (fc-f/% reflect)	85fc f/2.8 90%R	85fc f/3 90%R	185fc f/4 89.9%R	186fc f/4 89.9%R	200fc f/5.6	
Minimum illumination	4.7fc f/1.4 + 12dB	2fc f/1.4 + 18dB	2.8fc f/1.4 + 18dB	2.8fc f/1.4 + 18dB	1.5fc + 18dB	
Resolution (in green)	>650 TVL	>650 TVL	750 TVL	750 TVL	550 TVL (510x492 pixel)	
Registration (zones 1/2/3)	25ns/40ns/40ns	30ns/60s/100ns	0.1%/0.2%/0.5%	0.1%/0.2%/0.4%	0.05% overall	
S/N ratio	58dB NTSC/56dB PAL	59dB NTSC/57dB PAL	57dB	57dB	58dB	
Noise reduction	Coring/slicing	Coring/slicing	Coring/slicing	Core/slice/comb	Yes	
Contours out of	RG	Green	Green	Green	Green spatial offset	
Enhancement made in	RGB	RGB	RGB	RGB	.....
Neutral density filters	Internal	Internal	Internal	Internal	.....
Color correction	Optical/electronic	Optical	Optical	Optical/electronic	4 optical filters	
Color standards supported	NTSC/PAL/SECAM	NTSC/PAL/SECAM	NTSC	NTSC	NTSC	
Video output formats	RGB Y/U/V	RGB Y/U/V	RGB	RGB Y/R-Y/B-Y	Enc & Y/R-Y/B-Y	
Integral sync generator	Yes	Yes	Yes w/ gen-lock	With gen-lock	Yes	
CCU required	Yes	Option	Option	Option	No	
Shutter design	No	No	No	No	No	
Setup memories for	Lens/complete setup	Color balance	Color balance/center	Color balance/center	Balance/filters	
Auto black/white balance	Yes	Yes	Yes	Yes	Yes	
Beam optimization	Yes	Yes	Yes	Yes	N/A	
Auto centering	Yes	.....	Yes	Yes	N/A
Auto registration	Yes	No	No	No	N/A	
Auto dynamic gain	No	No	No	Yes	Yes	
Auto cable compensation	Yes	Yes	Option	Option	.....
Microprocessor	.....	.....	Single	Single	Yes
Computer setup system	CCU	.....	None	None	.....
Diagnostics	CCU	.....	CCU & Viewfinder	Viewfinder & CCU	.....
Cable types	Triax	Multicore/triax	Multicore/coax	Multicore/coax/triax	Coax	
Portable camera	No	Yes	Yes	Yes	Yes	
Camera head weight	.....	9.35 lb	8.6 lb	10.8 lb	19.5 lb w/ bat/VF/tape
Detachable VCR	No	Yes	No	Includes connector	BVW-105	
VCR format	.....	Lineplex 1/4"	.....	for SMPTE CAM/VTR	Betacam 1/2"
Reader Service Number	431	432	433	434	435	

¹BTS Broadcast Television Systems (A joint company of Bosch & Philips)

Manufacturer	Sony Broadcast				
Model Number	HDC-100	BVP3000 SuperMotion	BVP-3A (BVP-30)	BVP-150/-150P	BVP-330A
Suggested use	HDTV 1,125/60 only	EFP/slow-motion	ENG/EFP	ENG	ENG/EFP/studio
# of pickup devices	3 mixed field	3 (XQ3457) MS PbO or MS SAT	3 MF SAT CT-2322 (DG PbO XQ3457)	3 MF SAT CT-2332	3 (XQ427) DG PbO
Type of pickup	SAT	Bayonet	Bayonet	Bayonet	Bayonet
Optical format	1" prism f/1.4	3/8"	3/8" prism f/1.4	3/8" prism f/1.4	3/8" prism f/1.4
Lens mount type	Special bayonet	Bayonet	Bayonet	Bayonet	Bayonet
Sensitivity (fc-f/% reflect)	200fc f/3 90%R	200fc f/4.5 90%R	200fc f/4.5 90%R	200fc f/4 90%R	200fc f/4.5 89.9%R
Minimum illumination	25fc f/1.6 + 6dB	10fc f/1.4 + 6dB	3fc f/1.4 + 18dB	3fc f/1.4 + 18dB	2.5fc f/1.4 + 18dB
Resolution (in green)	1200 TVL	500 TVL	650 TVL	650 TVL	60 TVL
Registration (zones 1/2/3)	0.025%/0.05%/0.1%	0.1%/0.2%/0.4%	0.1%/0.15%/0.3%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%
S/N ratio	Not available	51dB for system	59dB NTSC/57dB PAL	57dB NTSC/55dB PAL	58dB NTSC
Noise reduction	Digital core & slice	Coring/slicing	Coring/slicing	Coring/slicing	Coring/slicing
Contours out of	Green	Green	Green	Green	Green
Enhancement made in	Digital into RGB	RGB	RGB	RGB	RGB
Neutral density filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical filters	Optical filters	Optical & electronic	Optical filters	Optical & electronic
Color standards supported	HDTV	NTSC from 90fr/s	NTSC/PAL/SECAM/PAL-M	NTSC/PAL	NTSC/PAL
Video output formats	RGB & Y/Cw/Cn	Yes	Enc & Y/R-Y/B-Y	Enc & Y/R-Y/B-Y	Enc & Y/R-Y/B-Y
Integral sync generator	Yes	Yes	Yes	Yes	Yes
CCU required	HDC-100 required	OCU-3000/DPU-3000	CCU-300 optional	CCU-M3 suggested	CCU-300 suggested
Shutter design	No	No	No	No	No
Setup memories for	Color/black/gamma	.....	Color/black/center	Color/black/center	Color/black/center
Auto black/white balance	Yes	Yes	Yes	Yes	Yes
Beam optimization	Yes	Yes	Yes	Yes	Yes
Auto centering	Yes	Yes	Yes	Yes	Yes
Auto registration	Yes	Yes	No	No	No
Auto dynamic gain	Yes	No	No	No	No
Auto cable compensation	Yes	No	No	No	No
Microprocessor	Distributed	Yes	Single	Single	Yes
Computer setup system	In CCU	In CCU	None	None	No
Diagnostics	No	.....	No	In viewfinder	No
Cable types	Multicore/fiber optic	Multicore/fiber optic	Multicore/coax/triax	Multicore	Multicore/coax/triax
Portable camera	No	Yes	Yes	Yes	Yes
Camera head weight	22 lb head only	12 lb	10.1 lb	9.2 lb	11.9 lb
Detachable VCR	No	No	BVW-3A (BVW-30)	No	No
VCR format	HDTV-1000 1" VTR and HDT-1000 TBC needed.	BVH-2700 1" VTR and BVT-2700 TBC needed.	Betacam 1/2"	.....	.....
Reader Service Number	436	437	438	439	440

Manufacturer	Thomson-CSF Video Equipment				
	Sony	TTV 1530	BC-613 Betacam	TTV-1623	TTV-1624
Model Number	BVP-360				
Suggested use	EFP/studio/sports	Studio/OB	ENG/EFP	ENG/EFP	ENG/EFP
# of pickup devices	3 DG PbO	3 PbO	3 MF	3	3 LOC
Type of pickup	XQ3457	LOC DG	SAT	SAT	PbO
Optical format	2/3" prism f/1.2	2/3" f/1.4 prism	2/3"	2/3"	2/3"
Lens mount type	Camlock plate	Bayonet	Minicam	Minicam	Minicam
Sensitivity (fc-f/% reflect)	200fc f/4.5 90%R	130fc f/4 89.9%R	200fc f/4 89.9%R	200fc f/4 89.9%R	1,400 lux f/4 89.9%R
Minimum illumination	1fc f/1.2 + 24dB	2fc f/1.4 + 18dB	2fc f/1.4 + 18dB	3fc f/1.4 + 18dB	3fc f/4 + 18dB
Resolution (in green)	700 TVL	400 TVL 50% mod	650 TVL	650 TVL	650 TVL
Registration (zones 1/2/3)	0.05%/0.1%/0.15%	0.05%/0.1%/0.1%	0.1%/0.15%/0.3%	0.1%/0.2%/0.4%	0.1%/0.2%/0.4%
S/N ratio	60dB NTSC	58dB NTSC/57dB PAL	58dB NTSC/56dB PAL	57dB NTSC	58dB NTSC
Noise reduction	Coring/slicing	Coring	Coring	Coring	Coring
Contours out of	Green	Green	Green	Green	Green
Enhancement made in	RGB	RGB	RGB	RGB	RGB
Neutral density filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical & electronic	Filters	Electronic filters	Optical filters	Optical filters
Color standards supported	NTSC/PAL	NTSC/PAL/SECAM	NTSC/PAL/SECAM	NTSC/opt PAL/& SECAM	NTSC/opt PAL & SECAM
Video output formats	RGB/enc & Y/R-Y/B-Y	Enc & RGB	Y/R-Y/B-Y	RGB/enc & Y/R-Y/B-Y	RGB/enc Y/R-Y/B-Y
Integral sync generator	Yes	Yes	Yes	Yes	Yes
CCU required	CCU-360H suggested	No	Optional	Option	Optional
Shutter design	No	No	No	No	No
Setup memories for	Color/lens files	Yes	Centering/color	Centering/balance	Color/centering
Auto black/white balance	Yes	Yes	Yes	Yes	Yes
Beam optimization	Yes	Yes	Yes	Yes	Yes
Auto centering	Yes	Yes	Yes	Yes	Yes
Auto registration	Yes	.....	Yes	Option	Option
Auto dynamic gain	Yes	.....	No	No	No
Auto cable compensation	Yes	.....	No	No	No
Microprocessor	Distributed	Yes	Multiple	Single/distributed	Distributed
Computer setup system	In CCU & camera head	Yes	External option	In CCU or external	CCU & external unit
Diagnostics	At CCU & VF	.....	In viewfinder	In viewfinder	In viewfinder
Cable types	Coax/triax options	Multicore/triax	Multicore/coax/triax	Multicore/coax/triax	Multicore/coax/triax
Portable camera	No	No	Yes	Yes	Yes
Camera head weight	50 lb w/ VF	62 lb	9.5 lb	9.4 lb	9.4 lb
Detachable VCR	No	No	Yes	Yes	Yes
VCR format	.....	.....	1/2" Betacam	1/2" Betacam	1/2" Betacam
Reader Service Number	441	442	443	444	445

Camera Lenses, 2/3"

Manufacturer	Angenieux				Canon
	14x7/14x8/14x9	15x9	25x10	40x9.5	J13x9BIE-II
Suggested applications	ENG/EFP	Studio	EFP	EFP/studio/sports	ENG
Zoom range (mm)	7-98/8-112/9-126	9-135	10-250	9.5-380	9-117
Aperture range (wide/tele)	1.6-2	1.2-1.4	1.4-2.8	1.3-2.1	1.6-1.9
MOD distance (inches/meters)	31/0.8	1/0.8	20/0.5	6/1.8	29.1-0.8
MOD image area (H-V in mm)	72x54/61x46/52x39	69x52	27x20	.....	5.6x4.2
View angle (Horiz. wide/tele)	64°-5°/58°-4.5°*	52.5°/3.75°	46°/2°	49.75°/1.33°	52.1°/4.3°
Back focus distance (mm)	.....	.....	.....	.....	22.1-48.3*
Clear aperture (front/rear mm)	.....	.....	.....	180-F	72.6/31.7
Integral extender(s)	2x option	1.7x	2x	No	2x available
Macro focus feature	Yes	No	No	No	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Iris servo	Yes	Yes	Yes	Yes	Yes
Focus servo	Option	Yes	Yes	Yes	Yes
Integral diascope	Option	Yes	Option	Option	No
Weatherized housing	Yes	.....	.....	.....	.....
Adjustment access	.....	.....	.....	.....	Cover removal
Lens assembly weight (lb)	5.5/3.9/3.1	55	13.7	48	3.2
	*14x9 is 49°-3°	.....	.....	.....	*Camera dependent
Reader Service Number	446	447	448	449	450

Manufacturer	Canon			Fujinon		
	J18x9BIRS	J40x9.5BIE	J45x9.5BIE	A16.9x9.5RM	A12x9ERM	A44x9.5ESM
Suggested applications	ENG/EFP	OB/studio	EFP/OB/sports	ENG	ENG/field	EFP/OB
Zoom range (mm)	9-162	9.5-380	9.5-430	9.5-152	9-108	9.5-240
Aperture range (wide/tele)	1.7-2.4	1.4-2	1.7-3	1.8	1.7	1.4-2.5*
MOD distance (inches/meters)	35/00.9	8.2/2.5	70.9/1.8	37.4/0.95	37.4/0.95	2.2
MOD image area (H-V in mm)	45x34	50x38	33x25	51x38	73x55	42x32
View angle (Horiz. wide/tele)	52.1°/3.1°	49.7°/1.3°	49.7°/1.2°	49°42'/1°40'	49°42'/1°12'	.....
Back focus distance (mm)	40.6/48.6*	48.9-41.7*	48.3/42*	.....	.....	.....
Clear aperture (front/rear mm)	82.8/31.2	200/37	146.8/33	.....	.....	.....
Integral extender(s)	2x	2x	2x (option 1.5x)	No	2x	2x
Macro focus feature	Yes	No	No	Yes	Yes	No
Zoom servo	Yes	Yes	Yes	Yes	Yes	Yes
Iris servo	Yes	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	No	No	Yes
Integral diascope	No	Yes	Option	No	.....	Option
Weatherized housing	.....	.....	.....	Yes	Yes	Yes
Adjustment access	Remove cover	Remove housing	Remove cover	.....	.....	Side door
Lens assembly weight (lb)	3.75	66	30.8	31	3.21	31.9
	*Camera dependent	*Camera dependent	*Camera dependent	.....	.....	*Available w/ 1.7-3 and 1.2-2.1
Reader Service Number	451	452	453	454	455	456

Camera Lenses, 2/3"

Manufacturer	Fujinon	Schneider			Schwen Technology	Tamron
Model Number	A30x11ESM	TV-56 APO-Varon	TV-66 Variogon	TV-80 Variogon	Gyrozoom 60/300	466H/H14X9BI
Suggested applications	Studio/field	ENG/EFP	Studio	Studio/sports	ENG/field	ENG
Zoom range (mm)	11-330	9-126	8.8-130	8.5-150	60-300	9-126
Aperture range (wide/tele)	1.6	1.7-2.1	1.4-1.7	1.4-2	6.2-32	1.6-1.9
MOD distance (inches/meters)	67/1.7	31.5/0.8	17.7/0.45	27.5/0.7	108/2.7	39.37/1
MOD image area (H-V in mm)	41x31	54x41	43x32	53x40	.....	.....
View angle (Horiz. wide/tele)	43°36'/1°32'	52°/4°	56°/4°	55.5°-3.4°	5.24°/2.05°	52°6'/4°
Back focus distance (mm)	.....	42.5-47.6	43.6	42.4	.....	38.98
Clear aperture (front/rear mm)	.....	72/29.5	134/35.8	133/33	.....	76.5/24.8
Integral extender(s)	2x	2x	2x (option)	2x standard	5x reducer	No
Macro focus feature	.....	Yes	No	No	No	Yes
Zoom servo	Yes	Yes	Yes	Yes	W/remote control	Yes
Iris servo	Yes	Yes	Yes	Yes	Auto & manual	Yes
Focus servo	No	Yes	Yes	Yes	W/remote control	No
Integral diascop	Available	Option	Option	Yes	No	No
Weatherized housing	Yes	Yes	Yes	Yes	.....	No
Adjustment access	.....	Remove covers	Remove housing	Remove housing	.....	.....
Lens assembly weight (lb)	20.3	3.5	41.8	33	4.25	3.33
Reader Service Number	457	458	459	460	461	462

Camera Lenses, 1"

Manufacturer	Angenieux					Canon
Model Number	12x12.5	15x13 HP	18x12.5	40x14	42x12.5	PV40x13.5BIE
Suggested applications	Studio	Studio	Studio	Studio/sports	Studio/sports	OB/studio
Zoom range (mm)	12.5-150	13-195	12.5-225	14-560	12.5-525	13.5-540
Aperture range (wide/tele)	1.5 constant	1.5-2	1.5-2.4	1.9-3	1.5-5.3	1.7-2.8
MOD distance (inches/meters)	3/0.95	31/0.8	24/0.6	6/1.9	25/0.64	8.2 ft./2.5
MOD image area (H-V in mm)	109x82	69x52	50x37	.....	22x17	53x40
View angle (Horiz. wide/tele)	56°/5°	53°/3.75°	54.5°/3.25°	49.75°/1.33°	43°/1°	50.7°/1.4°
Back focus distance (mm)	.....	.....	.....	.....	.....	62.8
Clear aperture (front/rear mm)	.....	.....	.....	.....	.....	200/38.7
Integral extender(s)	.....	.....	.....	.....	.....	2x
Macro focus feature	No	No	No	No	No	No
Zoom servo	Yes	Yes	Yes	Yes	Yes	With manual
Iris servo	Yes	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	Yes	Yes	With manual
Integral diascop	Option	Option	Option	Option	Option	.....
Weatherized housing	.....	.....	.....	.....	.....	.....
Adjustment access	.....	.....	.....	.....	.....	Remove housing
Lens assembly weight (lb)	53	55	60	48	58	66
Reader Service Number	463	464	465	466	467	468

Manufacturer	Canon	Fujinon			Schneider	
Model Number	PV18x11BIE	R17x12.5ESM	R15x12.5ESM	R44x13.5ESM	R20x10.5ESM	TV-64
Suggested use	OB/studio	Studio	Studio	Field/OB	Field/OB	Studio
Zoom range (mm)	11-200	12.5-215	12.5-190	13.5-600	10.5-210	13-190
Aperture range (wide/tele)	1.6-2	1.6	1.6	1.8	1.6-2.1	1.7-2.5
MOD distance (inches/meters)	23.6/0.6	29.5	29.5	98.4	29.5	15.7/0.4
MOD area (H/V mm)	49x37	58x44	66x49	50x37	58x44	43.3x32.5
View angle (Horiz. wide/tele)	60.4°/3.7°	54°13'/3°25'	54°13'/3°52'	50°44'/1°13'	62°44'/3°29'	54°-4° (28°-2°)
Back focus distance (mm)	62.79	.....	.....	.....	.....	71.6
Clear aperture (front/rear mm)	185.2/42.4	.....	.....	.....	.....	134/43
Integral extender(s)	1.5x or 2x	1.5x & 2x	1.5x & 2x	2x	1.5x/2x	2x option
Macro focus feature	No	No	No	No	No	No
Zoom servo	With manual	Yes	Yes	Yes	Yes	Yes
Iris servo	Yes	Yes	Yes	Yes	Yes	Yes
Focus servo	With manual	Yes	Yes	Yes	Yes	Yes
Integral diascop	.....	Available	Available	Available	Available	Option
Weatherized housing	.....	Yes	.....	Yes	Yes	Yes
Adjustment access	Remove housing	Side door access	Side door	Side door	Side panels	Remove housing
Lens assembly weight (lb)	59	43	43	55	45.1	41.8
Reader Service Number	469	470	471	472	473	474

Camera Lenses, 1¼"

Manufacturer	Angenieux				Canon	
	15x17	18x16.5	42x16	P18x15BIE	P40x18BIE	
Suggested use	Studio 15x	Studio 18x	Studio/sports 42x	Studio/OB	OB/EFP/sports	
Zoom range (mm)	17-255	16.5-300	16-675	15-270	18-720	
Aperture range (wide/tele)	2-2.8	2-3.2	2-6,8	2.1-2.7	2.3-3.8	
MOD distance (inches/meters)	31/0.8	24/0.6	25/0.64	23.6/0.6	8.2 ft/2.5	
MOD area (Horiz. vertical, mm)	69x52	50x37	22x17	49x37	53x40	
View angle (Horiz. wide/tele.)	40.5°/2.75°	41.75°/2.5°	43°/1°	60.4°/3.7°	50.7°/1.4°	
Back focus distance (mm)	.....	.....	.....	75.3	75
Clear aperture (front/rear mm)	.....	.....	.....	185.2/39.1	200/36
Integral extenders	1.7x	1.6x & 2.5x	No	1.5x or 2x	2x	
Macro focus feature	No	No	No	No	No	
Zoom servo	Yes	Yes	Yes	W/manual control	W/manual control	
Iris servo	Yes	Yes	Yes	Yes	Yes	
Focus servo	Yes	Yes	Yes	W/manual control	W/manual control	
Integral diascope	Option	Option	Option	Yes	.....
Weatherized housing	.....	.....	.....	.....	.....
Adjustment access	.....	.....	.....	Remove housing	Remove housing
Lens assembly weight (lb)	55	60	58	59	66	
Reader Service Number	475	476	477	478	479	

Manufacturer	Fujinon				Schneider
	P15x16.5ESM	P17x16.5ESM	P44x18ESM	P20x14ESM	TV-65 Variogon
Suggested use	Studio	Studio	Field/OB	Field/OB	Studio
Zoom range (mm)	16.5-250	16.5-280	18-800	14-280	16.5-240
Aperture range (wide/tele)	2.1	2.1	2.4	2.1-2.8	2.2-3.2
MOD distance (inches/meters)	29.5	29.5	98.4	29.5	15.7/0.4
MOD area (Horiz. vertical, mm)	67x50	59x44	50x37	58x44	45.3x34
View angle (Horiz. wide/tele.)	54°56'/3°55'	54°50'/3°30'	50°44'/1°13'	62°53'-3°30'	54°4.2°
Back focus distance (mm)	.....	.....	.....	.....	71.5
Clear aperture (front/rear mm)	.....	.....	.....	.....	134/37.5
Integral extender(s)	1.5x & 2x	1.5x & 2x	2x	1.5x/2x	2x option
Macro focus feature	No	No	No	No	No
Zoom servo	Yes	Yes	Yes	Yes	Yes
Iris servo	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	Yes	Yes
Integral diascope	Available	Available	Available	Available	Option
Weatherized housing	Yes	Yes	Yes	Yes	Yes
Adjustment access	Side door access	Side door access	Side door access	Side panels	Remove housing
Lens assembly weight (lb)	43	43	55	45.1	41.8
Reader Service Number	480	481	482	483	484

Color Video Monitors

These color video monitoring units apply to broadcast and production for master control, utility and graphics use. For standards, N = NTSC, P = PAL, S = SECAM for the normal forms. Where variations from PAL exist, it is noted.

Manufacturer	ASACA/Shibasoku				Barco Industries
	CMM7	CMM11	CM22A6/CM65A	CM99A	CM22 (CM33/CM51)
Application	Master/utility	Master control	Master control	Portable	Master/utility
CRT diagonal (inches)	20 (14/26)	20 (14/26)	20/26	9	9 (14/19)
Aspect ratio	4:3	4:3	5:3 HDTV	4:3	4:3
Preferred CRT type	Inline dot (slot 26)	Delta-dot	Inline dot/delta dot	Inline dot	Inline dot
CRT dot pitch (mm)	0.31/0.38	0.31 (0.37/0.43)	0.26/0.37	0.30	0.30 (0.43)
Beam feedback design	No	No	No	No	Yes
Resolution (TVL)	600	>600	1000	500	320 - 12dB (340)
Video bandwidth (MHz)	7	>7	To 30	7	7
Chrominance bandwidth (MHz)	1.3	1-1.3/Q-0.5	To 7	1.3	.....
Aperture correction	-10/OdB	>10dB	.....	-10dB to OdB	No
Chrominance decoder type	Comb filter	Comb filter	.....	Comb filter	Comb filter
Demodulation axes	R-Y/B-Y	I/Q	.....	R-Y/B-Y	R-Y/B-Y
X-Y display outputs	Yes	Yes	.....	No	No
NTSC color test matrix	No	Yes	.....	No	No
Blue gun only	No	No	.....	No	Yes
Underscan range	To 95%	To 95%	To 92%	To 95%	Yes
H-V delay & cross pulse	Yes	Yes	Yes	Yes	Yes
Available standards	N P S RGB	N P S RGB	RGB	NTSC PAL	N P RGB
Multistandard unit	Switch selected	Switch selected	No	No	.....
Composite video inputs	Yes	Yes	No	Yes	Yes
Component video inputs	RGB	RGB & components	RGB/Y-Cw-Cn	RGB	RGB
VCR I/O connector	No	No	No	No	No
Integral audio amp or speaker	No	No	No	No	Yes
Automatic setup model	No	No	No	No	No
Reader Service Number	485	486	487	488	489

COLOR VIDEO MONITORS

Manufacturer	Barco Industries			Brabury Ltd/Grunder	Conrac
Model/Series Number	CTVM 4 Series	CVS series	HDTV series	MCM series (MCM37B)	Model 6100
Application	Master control	Master control	.....	Utility	Master control
CRT diagonal (inches)	14 (20/26)	14 (20)	30 (26/20/40)	14 (20/9)	19
Aspect ratio	4:3	4:3	4:3 & 5:34:3	4:3	4:3
Preferred CRT type	Delta or inline dot	Inline dot	Delta-dot	PIL black matrix dot	Delta-dot
CRT dot pitch (mm)	0.31	0.31	0.34	0.31	.....
Beam feedback design	Yes	Yes	.....	No	Yes
Resolution (TVL)	610 (770)	550	Unspecified	>600	600
Video bandwidth (MHz)	10 ±0.5dB	±1dB 8	±0.5dB/15k-30 RGB	8	6.5
Chrominance bandwidth (MHz)	0.6 equiband NTSC	0.6 equiband	.....	1.2	7
Aperture correction	.....	Switched +6dB 3MHz	No	.....	.....
Chrominance decoder type	Comb filter	Comb filter	.....	Passive filters	Comb filter
Demodulation axes	R-Y/B-Y	R-Y/B-Y	.....	U/V I/Q	R-Y/B-Y
X-Y display outputs	Yes	No	No	No	No
NTSC color test matrix	No	No	No	No	Yes
Blue gun only	Yes	Yes	No	RGB gun switches	No
Underscan range	Yes	Corners in	.....	To 10%	Yes
H-V delay & cross-pulse	Yes	Yes	No	Yes	Yes
Available standards	N/S/PAL-B/-M/-N/RGB	N/P/S/RGB	RGB	N/P-N(M)/S/RGB/YUV	NTSC
Multistandard unit	Auto-selected	Auto-selected	No	Auto-selected	No
Composite video inputs	Yes	Yes	No	2 Encoded	Yes
Component video inputs	RGB & others	RGB & others	RGB	RGB/YUV	No
VCR I/O connector	No	No	No	On A version only	No
Integral audio amp or speaker	No	Yes	No	.....	No
Automatic setup model	No	Menu controlled	No	Presets	No
Reader Service Number	490	491	492	493	494

Manufacturer	Conrac			Croma Research	Digitvision Broadcast
Model/Series Number	Model 6200	Model 6531	6545/6550 Micromatch	CM137/CM142 (CM151)	BCV37 (BCV51)
Application	Master & graphics	Master & graphics	Master control	Master control	Utility
CRT diagonal (inches)	19 (13)	19 (13)	13/19	14/16 (20)	14 (20)
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Inline dot or slot	Inline dot	PIL dot-mask	Inline/self converged	Delta-dot
CRT dot pitch (mm)	0.47 (0.42)	0.44 (0.31)	0.31/0.44	0.31 (0.43)	0.31/0.43/0.47
Beam feedback design	No	Yes	Yes	Yes	.....
Resolution (TVL)	600	>600	>800	.....	600
Video bandwidth (MHz)	.....	±1dB/8	±1dB/8	±0.5dB to 5.5	<±3dB to 10
Chrominance bandwidth (MHz)	8	1.8	±2dB/8	±0.3dB to 5.5 RGB	To 10
Aperture correction	+ 6.5dB	+ 6.5dB at 2.5MHz	+ 6.5dB at 2.5MHz	Yes	Switch selected
Chrominance decoder type	Comb filter	Comb filter	Comb filter	Comb filter	Notch filter switch
Demodulation axes	R-Y/B-Y	R-Y/B-Y	.....	R-Y/B-Y	R-Y/B-Y
X-Y display outputs	No	No	.....	Option for NTSC/PAL	.....
NTSC color test matrix	Yes	No	Yes	No	.....
Blue gun only	No	Yes	Yes	Yes	.....
Underscan range	Yes	Adjustable	Adjustable	Yes	Yes
H-V delay & cross pulse	Yes	Yes	Yes	Yes	Yes
Available standards	NTSC RGB	N P RGB	NTSC/PAL-B	N/S/RGB/P-B/M/N	NTSC & CCIR 625/50
Multistandard unit	No	Switched or auto	User selectable	Auto dual & triple	No
Composite video inputs	Yes	Yes	A/B/test	Yes	Yes
Component video inputs	RGB	RGB	RGB	RGB	RGB or Y/R-Y/B-Y
VCR I/O connector	No	No	No	No	No
Integral audio amp or speaker	No	No	No	No	No
Automatic setup model	No	No	6550 photometer	.....	.....
Reader Service Number	495	496	497	498	499

Manufacturer	Electrohome	Ikegami Electronics			
Model/Series Number	ECM1301	TM20-10RH (TM20-9RH)	TM14-10RH (TM14-9RH)	TM20-16RH (TM14-16RH)	TM10-9RH
Application	Graphics	Master control	Master control	Utility	Master control
CRT diagonal (inches)	13	20	14	20 (14)	10
Aspect ratio	4:3/variable	4:3	4:3	4:3	4:3
Preferred CRT type	Inline dot	Delta-dot (inline)	Delta-dot (inline)	Inline slot	Inline dot
CRT dot pitch (mm)	0.31	0.43	0.31	0.44 (0.39)	0.28
Beam feedback design	Yes	Yes	Yes	No	No
Resolution (TVL)	720x512 pixel	800 (700)	800 (700)	500	600
Video bandwidth (MHz)	To 25	To 10	To 10	.....	8
Chrominance bandwidth (MHz)	To 25	I-0.6/Q-0.3	I-0.6/Q-0.3	1.3	1.3
Aperture correction	No	+ 10dB	+ 10dB	+ 10dB	+ 10dB
Chrominance decoder type	No decoder	Comb filter	Comb filter	Notch Filter	Notch (comb option)
Demodulation axes	.....	I/Q	I/Q	R-Y/B-Y	R-Y/B-Y
X-Y display outputs	No	Yes	Yes	No	No
NTSC color test matrix	No	Yes	Yes	No	No
Blue gun only	No	Yes	Yes	Yes	Yes
Underscan range	Yes	90%	90%	90%	90%
H-V delay & cross pulse	No	Yes	Yes	Yes	Yes



VIDEOTEK

PHASE II: HIGH-RESOLUTION

For over a decade, critical customers have been using Videotek color monitors for a wide variety of applications.

Join us now in Phase II: High Resolution.

The HR130 is perfect for use in studios, control rooms, engineering bays, and many other areas that require critical signal evaluation.

Precision circuitry is based around a PIL-Delta CRT, with .31mm dot pitch, producing in excess of 600 lines of resolution.

Standard features include: three Composite Inputs,

A-B Split Screen, Analog RGB Input, High Voltage Regulation, Linear Phase Aperture Correction, Switchable Comb Filter and Notch Filter,

Horizontal and Vertical Delay with Switchable Expanded Vertical,

Underscan, Selectable Time Constant, Presets, and

Lockable Engineering Adjustment Drawer.

For a close-up look at the HR130, contact your local Videotek dealer.

A DECADE OF PROGRESS



A DESIGN FOR THE FUTURE

VIDEOTEK INC.

© copyright 1984—Videotek, Inc

243 Shoemaker Road, Pottstown, PA 19464. (215) 327-2292. TWX 710-653-0125. 9625 North 21st Drive, Phoenix, AZ 85021. (602) 997-7523. TWX 910-951-0621.

Circle (117) on Reply Card

COLOR VIDEO MONITORS

Available standards	RGB only
Multistandard unit	No
Composite video inputs	No
Component video inputs	RGB only
VCR I/O connector	No
Integral audio amp or speaker	No
Automatic setup model	No
Reader Service Number	500

NTSC	No
No	Yes
Yes	RGB/other components
RGB/other components	No
No	No
No	No
No	No
No	No
501	502

NTSC	No
No	Yes
Yes	RGB/other components
RGB/other components	No
No	No
No	No
No	No
No	No
502	503

NTSC/RGB	No
No	Yes
Yes	RGB
RGB	No
No	No
No	No
No	No
No	No
503	504

Manufacturer Ikegami Electronics

Model/Series Number	TM-751H
Application	HDTV
CRT diagonal (inches)	30
Aspect ratio	5:3
Preferred CRT type	Delta-dot
CRT dot pitch (mm)	0.34
Beam feedback design	No
Resolution (TVL)	1000
Video bandwidth (MHz)	25/components
Chrominance bandwidth (MHz)	.....
Aperture correction	.....
Chrominance decoder type	N/A
Demodulation axes	N/A
X-Y display outputs	No
NTSC color test matrix	No
Blue gun only	Yes
Underscan range	90%
H-V delay & cross pulse	Yes
Available standards	RGB/Y-Cw-Cn
Multistandard unit	No
Composite video inputs	No
Component video inputs	RGB
VCR I/O connector	No
Integral audio amp or speaker	No
Automatic setup model	No
Reader Service Number	505

TM-22U

Utility	5
5	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	310
310	To 4
To 4	To 3.58
To 3.58	.....
.....	No
No	.....
.....	I/Q
I/Q	No
No	No
No	No
No	Yes
Yes	Yes
Yes	No
No	Yes
Yes	Yes
Yes	No
No	NTSC
NTSC	No
No	Yes
Yes	No
No	Yes
Yes	No
No	No
No	No
506	507

JVC Company

TM-R9U

Master & utility	9
9	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	310
310	To 4
To 4	To 3.58
To 3.58	.....
.....	No
No	.....
.....	Comb filter
Comb filter	R-Y/B-Y
R-Y/B-Y	No
No	No
No	Yes
Yes	Yes
Yes	No
No	Yes
Yes	No
No	NTSC
NTSC	No
No	Yes
Yes	No
No	Yes
Yes	No
No	No
No	No
507	508

TM-R14U

Master & utility	14
14	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	400
400	To 4
To 4	To 3.58
To 3.58	.....
.....	No
No	.....
.....	Comb filter
Comb filter	R-Y/B-Y
R-Y/B-Y	No
No	No
No	Yes
Yes	Yes
Yes	No
No	Yes
Yes	No
No	NTSC/RGB
NTSC/RGB	No
No	Yes
Yes	RGB
RGB	No
No	No
No	No
508	509

Lenco

PCM 519-4

Master control	19 (14)
19 (14)	4:3
4:3	Inline dot
Inline dot	.....
.....	No
No	.....
.....	650
650	To 10
To 10	To 3.5 ±1
To 3.5 ±1	.....
.....	±3dB
±3dB	Comb filter
Comb filter	I/Q
I/Q	No
No	Yes
Yes	Yes
Yes	Yes
Yes	Yes
Yes	No
No	Yes
Yes	NTSC/RGB
NTSC/RGB	No
No	Yes
Yes	RGB
RGB	No
No	No
No	No
509	510

Manufacturer Lenco

Model/Series Number	ICM-219
Application	Utility
CRT diagonal (inches)	19 (14)
Aspect ratio	4:3
Preferred CRT type	Inline slot
CRT dot pitch (mm)	0.68
Beam feedback design	No
Resolution (TVL)	450
Video bandwidth (MHz)	To 5.5
Chrominance bandwidth (MHz)	To 3.5 ±1
Aperture correction	±6dB
Chrominance decoder type	No
Demodulation axes	R-Y/B-Y
X-Y display outputs	No
NTSC color test matrix	Yes
Blue gun only	No
Underscan range	Yes
H-V delay & cross pulse	No
Available standards	NTSC
Multistandard unit	No
Composite video inputs	Yes
Component video inputs	No
VCR I/O connector	No
Integral audio amp or speaker	No
Automatic setup model	No
Reader Service Number	510

PESA Electronics

BM-4314H-N

Master or utility	14
14	4:3
4:3	.....
.....	0.31 high res
0.31 high res	.....
.....	600
600	±0.5dB to 5
±0.5dB to 5	.....
.....	No
No	.....
.....	Notch filter
Notch filter	U/V
U/V	No
No	No
No	Yes
Yes	Yes
Yes	Yes
Yes	NTSC
No	No
Yes	Yes
No	No
No	Yes (No)
No	Yes (No)
No	No
511	512

Panasonic Industrial

BT-700N (701N/702N)

Master & utility	7
7	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	230
230	3.1
3.1	1
1	.....
.....
.....	Comb filter
Comb filter	R-Y/B-Y
R-Y/B-Y	No
No	No
No	Yes
Yes	10%
10%	Yes
Yes	Yes
Yes	NTSC
No	No
Yes	Yes
No	No
Yes (No)	Yes
Yes (No)	Yes
No	No
512	513

BT-S1300N

Master & utility	13
13	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	280
280	3.2
3.2	1
1	.....
.....
.....	Comb filter
Comb filter	R-Y/B-Y
R-Y/B-Y	No
No	No
No	Yes
Yes	10%
10%	Yes
Yes	Yes
Yes	NTSC
No	No
Yes	Yes
No	No
Yes	Yes
Yes	Yes
No	No
513	514

BT-S1900N

Master & utility	19
19	4:3
4:3	Inline slot
Inline slot	.....
.....	No
No	.....
.....	350
350	3.4
3.4	1
1	.....
.....
.....	Comb filter
Comb filter	R-Y/B-Y
R-Y/B-Y	No
No	No
No	Yes
Yes	10%
10%	Yes
Yes	Yes
Yes	NTSC
No	No
Yes	Yes
No	No
Yes	Yes
Yes	No
514	515

COLOR VIDEO MONITORS

Manufacturer	Philips T&M	Philips TV Systems ¹			Regis-BLT
	Model/Series Number	LDH-6200	LDH-6220	LDK-7020	NT-814
Application	General purpose	Master & utility	Master & utility	Master control	Master control
CRT diagonal (inches)	14	14	20	20	14/20
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Inline	Inline dot	Inline dot	Inline dot	Inline dot
CRT dot pitch (mm)	0.65	0.65	0.65	0.30	0.31
Beam feedback design	No	No	No	No	Yes
Resolution (TVL)		>310	>310	>650	650
Video bandwidth (MHz)		To 5	5	To 5	5.5
Chrominance bandwidth (MHz)		To 0.9	0.9	To 0.9	5.5
Aperture correction		±4dB	±4dB	±4dB	.....
Chrominance decoder type	Notch	Comb filter	Comb filter	Comb filter	Delay line
Demodulation axes		R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y
X-Y display outputs		No	No	No	No
NTSC color test matrix	A/B split-screen	No	No	No	No
Blue gun only		No	No	No	Yes
Underscan range	Yes	To 10%	10%	To 10%	10%
H-V delay & cross pulse	Yes	Yes	No	No	No
Available standards	N/P/S/RGB	N/P/S/RGB	N/P/S	N/P/S/RGB	PAL/RGB
Multistandard unit	No	No	No	No	No
Composite video inputs	A&B	A&B	A&B	A&B	Yes
Component video inputs	RGB	RGB	No	RGB	RGB
VCR I/O connector	No	No	No	No	Yes
Integral audio amp or speaker	No	No	No	No	Yes
Automatic setup model	No	No	No	No	No
Reader Service Number	515	516	517	518	519

¹BTS Broadcast Television Systems
(A joint company of Bosch & Philips)

Manufacturer	Sharp Electronics	Sony Broadcast			
	Model/Series Number	XM-1300	XM-1900	BVM1900/2000	BVM 1201/1301
Application	Utility	Master & graphics	Master & graphics	Master control	Master control
CRT diagonal (inches)	9	13	19	19	12
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Inline dot	Inline dot	Inline dot	Trinitron	Trinitron
CRT dot pitch (mm)	0.47	0.31	0.44	0.30	0.25
Beam feedback design	Yes	Yes	Yes	Yes	No
Resolution (TVL)	310	600	600	900	600
Video bandwidth (MHz)	To 5	7	7	10	8
Chrominance bandwidth (MHz)	To 3.58	3.58	3.58	1.5	1.5
Aperture correction		+8dB	0/+8dB	±8dB (4.5-9MHz)	+8dB at 4.5MHz
Chrominance decoder type	Comb filter	Comb or notch	Comb or notch	Comb filter	Precision
Demodulation axes	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	.....
X-Y display outputs	No	No	No	Yes	Yes
NTSC color test matrix	No	No	No	Yes	Yes
Blue gun only	Yes	Yes	Yes	Yes	Yes
Underscan range	To 5%	Yes	To 5%	Yes	Yes
H-V delay & cross pulse	Yes	Yes	Yes	Yes	Yes
Available standards	NTSC	NTSC/RGB	NTSC/RGB	NTSC/RGB	NTSC/RGB
Multistandard unit	No	No	No	Switch selected	No
Composite video inputs	Yes	Yes	Yes	Yes	Yes
Component video inputs	No	RGB or TTL	RGB or TTL	RGB or Y/R-Y/B-Y	RGB or Y/R-Y/B-Y
VCR I/O connector	No	No	No	No	No
Integral audio amp or speaker	No	No	No	No	No
Automatic setup model	No	No	No	BKM-2050/51/52 mod	No
Reader Service Number	520	521	522	523	524

Manufacturer	Sony Corporation	Tektronix	Videotek		
	Model/Series Number	650HR series	HR-190 (HR-130)	AVM-13S	Studio-13
Application	Utility	Master & graphics	Master/computer	Utility	Master control
CRT diagonal (inches)	8	12	19 (13)	13	13 (8)
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Trinitron	Trinitron	Inline dot	Inline slot	Trinitron
CRT dot pitch (mm)	0.25	0.25	0.31	0.65	0.25
Beam feedback design	No	No	No	No	No
Resolution (TVL)	400	480	700	280	380
Video bandwidth (MHz)	-3dB at 4	6	To 8	To 3	To 3.2
Chrominance bandwidth (MHz)	1.5	1.3	±1dB to 1	To 1	To 1.2
Aperture correction	0/+8dB at 4.5MHz	+10dBm	+6dB boost	±3dB	±3dB
Chrominance decoder type	Comb filter	Notch filter	Comb filter	.....	Comb filter
Demodulation axes		U/V or R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y

COLOR VIDEO MONITORS

X-Y display outputs	No	Yes	No	No
NTSC color test matrix	No	Yes	No	No
Blue gun only	Yes	B/W display of blue	Yes	Yes
Underscan range	-5% / +10%	To 20%	Yes	Yes
H-V delay & cross pulse	Yes	Yes	Yes	Yes
Available standards	NTSC	N/P/S/RGB	NTSC/RGB	NTSC
Multistandard unit	No	Switch selected	Switch selected	No
Composite video inputs	Yes	Yes	Yes	Yes
Component video inputs	No	RGB	RGB	No
VCR I/O connector	Yes	No	No	Yes
Integral audio amp or speaker	Yes	No	No	Yes
Automatic setup model	No	No	Preset only	No
Reader Service Number	525	526	527	528

Digital Effects Systems

This digital equipment is designed to be used as adjuncts to video switching and production systems for various visual image manipulation, aspect alteration and/or dimensional distortions. Simpler key, border, wipe, etc., effects may be capabilities of the repertoire, but are not listed here.

Manufacturer	Abekas Video Systems	ALTA Group	Ampex
Model Number	A52 digital effect	ZENO	Pyxis
# of output channels	1 expands to 2	2	1
# of image planes	1 expands to 2	2	1
Image size variation	Continuous	Continuous	Continuous
Image compression ratio	Variable	Infinite	Infinite
Image expansion ratio	Variable	To 2x	Infinite
Rotation around axes	X/Y	Multiple axes	X/Y/Z simultaneous
Perspective effects	No	3-D/rotating cube	Page turn/geo/cyl*
Image freeze	Field/frame/multiple	Field/frame	Fld/frm/trail/update
Picture splits	H-V	Yes	Soft wipes
Mirror image effects	No	No	Yes
Push-on/off	Yes	Yes	Yes
Posterization effect	8 levels	8 levels	Various degrees
Mosaic tiling	Unlimited	Yes	Variable tiles
Programmable sequences	Yes	Yes	Yes
System control	Soft/dedicated keys	Soft/dedicated keys	Dedicated keys
Instruction memory	EEROM	EEROM	Non-volatile
Parameter display	Control panel	Control panel	On control panel
VCR connection	No	No	For referenced VCRs
TBC functions	No	No	Switchable processor
External remote-control port	RS-232/422	GPI bus	For audio & editor
System S/N ratio	52dB	52dB	55dB
Differential phase/gain	2°/2%	2°/2%	2°/2%
Digital sampling rate/bits	14.3MHz/8-bit	14.3MHz/8-bit	Per EBU std/8-bit
	Inputs/outputs for composite/component signals. Processing in component form		
Reader Service Number	531	532	533

Manufacturer	CEL/Grunder & Associates	DSC/Digital Services	GML America
Model Number	EFX-2	Eclipse	Illusion
# of output channels	Expandable to dual	1	1 expands to 2
# of image planes	1	1	1
Image size variation	Infinite zoom	To ¼	Continuous
Image compression ratio	Variable	2-to-1	Variable
Image expansion ratio	Variable	Variable	Variable
Rotation around axes	X axis	No	X/Y/Z
Perspective effects	None	None	Geometric distortion/3-D
Image freeze	Frame/grab/multigrab	Frame/grab/multigrab	Around H/V/Z axes
Picture splits	H-V	Field	Field
Mirror image effects	Inversions	H-V	H-V
Push-on/off	Slides/reveals	H-V	H-V
Posterization effect	Yes	Slide on	Yes
Mosaic tiling	Yes	6-step/4 false color	2 levels
Programmable sequences	Via serial control	15-level	Yes
System control	Touch-screen/buttons	External control	Yes
Instruction memory	Floppy disk	Dedicated switches	Soft/dedicated keys
Parameter display	None	ROM	Dedicated keys
VCR connection	Through P147-30	External CRT	ROM
TBC functions	W/dynamic tracking	No	Control panel
External remote-control port	RS-232/423/422	No	No
System S/N ratio	56dB	47dB	Edit controller
Differential phase/gain	2°/2%	2°/2%	2°/2%
Digital sampling rate/bits	12.9MHz/components	12.9MHz/components	14.318MHz
Reader Service Number	536	537	538

Look Ahead One Year...



Did You Make The Right Decision?

Will you be happy with your production switcher choice one year from now? That depends.

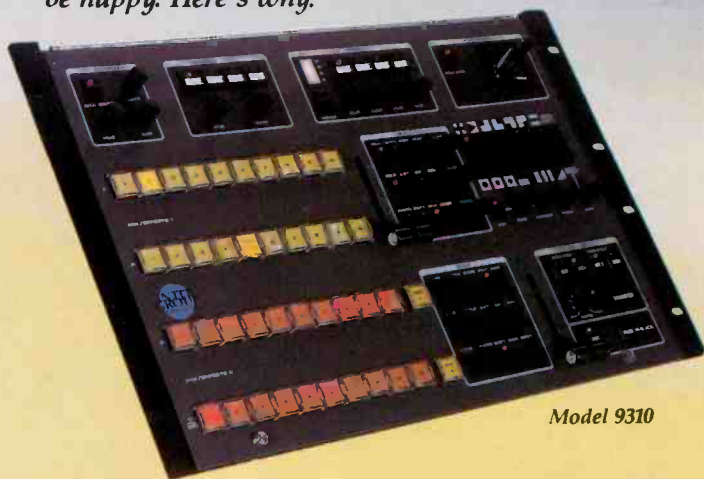
Has it been reliable? Are the features really useful? Is it easy to operate? How are you treated by the company that sold it to you?

If it's an Intergroup switcher, chances are you'll be happy. Here's why.

you to dissolve between the 9310's two M/E systems... a production must.

WIPE TRACK MODE™

Electronically connects the fader handles allowing wipe patterns to be positioned together. Multiple colored border effect can be accurately tracked throughout the transition.



Model 9310



Model 9026

CHROMA-KEY SELECT TRACKING MODE™

Inputs on the chroma-key 4 input source selector automatically follow its video input, reducing the number of steps you take between selecting chroma-keys.

FIVE YEAR WARRANTY

We back our reputation for standout customer service with toll free technical assistance lines and one of the strongest warranties in the industry. Our dealers are worldwide, call for the one nearest you.

9310-E Unique Features

MIX/EFFECT OUTPUTS FOR DIGITAL EFFECTS

Outputs are provided for inputs to digital effects systems creating feedback effects. M/E 1 and M/E 2 effects inside the digital effects system are also possible. True re-entry capability gives you unlimited creativity.

EXTERNAL INPUTS FOR BLANKING PROCESSOR BLACKBURST

Maintains RS-170A specification at the program output. This is critical for match frame editing.

DISSOLVES BETWEEN EFFECTS

Sophisticated Program/Preview transition allows

INTERGROUP

"Creativity You Can Depend On"



INTERGROUP VIDEO SYSTEMS, INC.

P.O. Box 1495 / Gainesville, FL 32602-9990

(800) 874-7590 / In Florida (904) 335-0901 / TWX 810-825-2307

Digital Effects Systems

Manufacturer	GML America	Grass Valley Group	Harris Video Systems		Microtime
Model Number	X-Calibre	Kaleidoscope DPM-1	HDE-100 (HDE-150)	HDE-200	Genesis/Act-1
# of output channels	2	1 expands to 5	1 expandable to 2	1 expandable to 2	1 expandable to 2
# of image planes	1	6	1	.....	2
Image size variation	Continuous	Continuous	Continuous	Continuous	Continuous
Image compression ratio	Infinite	Infinite	Infinite	Infinite	Variable
Image expansion ratio	Infinite	Infinite	Infinite	Infinite	Variable
Rotation around axes	X/Y	Multiple axes	X/Y	X/Y	.....
Perspective effects	.....	Geo/3-D/H-V/cube	No	H-V/cube page turns	None
Image freeze	Field/frame/2-pictures	All freeze types	Field-frame/multiple	Field-frame/multiple	Field
Picture splits	H-V	H-V	H-V	H-V	H-V
Mirror image effects	H-V	H-V	H-V	H-V	H-V
Push-on/off	Yes	Yes	Yes	Yes	Yes
Posterization effect	9 lvs w/false color	255 lvl/false colors	Yes	Yes	6 lvl no false color
Mosaic tiling	7 tile sizes	.....	HDE-150 only	Yes	Infinite tiling
Programmable sequences	Yes	Yes	Yes	Yes	Yes
System control	Dedicated keys	Soft/dedicated keys	Dedicated keys	Dedicated/soft keys	Soft/dedicated keys
Instruction memory	RAM	ROM/EEROM/F-disk	ROM (bubble memory)	Bubble memory/ROM	EEROM
Parameter display	Control panel	Control panel & CRT	Control panel	Control panel	Control panel
VCR connection	Multiple VCRs	No	No	No	Yes
TBC functions	Yes	Yes	No	No	No
External remote-control port	RS-422/editor	Switcher/editor	Remote event trigger	Switcher/editor	Master/edit/switcher
System S/N ratio	58dB	.....	50dB	50dB	.....
Differential phase/gain	2°/2%	.....	2°/2%	2°/2%	2°/2%
Digital sampling rate/bits	7.2MHz/8-bit	13.5MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	4.1.1 sampling/8-bit
	Inputs/outputs for composite/component signals	.....	.....	.....	Inputs/outputs for component/composite video signals
Reader Service Number	541	542	543	544	545

Manufacturer	Microtime	NEC America		Quantel
Model Number	TSE-120	DVE System 10	DVE System 100	DVM8000 Mirage
# of output channels	3	2 expands to 4	1 expands to 2	1 expands
# of image planes	1	.....	.....	.....
Image size variation	Stepped	Continuous	Continuous	Continuous
Image compression ratio	1.4	Infinite	Infinite	Infinite
Image expansion ratio	1.4	Infinite	infinite	Infinite
Rotation around axes	.....	X/Y/Z	.....	X/Y/Z
Perspective effects	None	Page turn/3-D/cube	.....	Page turn/3-D/H-V*
Image freeze	Field-frame	Field-frame/trail	Field/frame	Field/frame
Picture splits	Diagonals	.....	H-V	H-V/diagonals
Mirror image effects	Diagonals	.....	H-V	No
Push-on/off	Yes	Yes	Yes	Yes
Posterization effect	No	16 lvl no false color	16 levels	.....
Mosaic tiling	No	16 to infinite #	16 to infinite #	.....
Programmable sequences	Yes	Yes	Yes	Yes
System control	Dedicated keys	Dedicated/soft keys	.....	Dedicated/soft keys
Instruction memory	ROM	Floppy disk	Floppy disk	Floppy/hard disk/RAM
Parameter display	Control panel	Control panel & CRT	.....	External CRT
VCR connection	Yes	No	None	No
TBC functions	Yes	No	No	No
External remote-control port	Switcher/editor	Edit controller	Edit controller	Switcher/edit ctl
System S/N ratio	58dB	51dB	51dB	.....
Differential phase/gain	2°/2%	4°/4%	4°/4%	.....
Digital sampling rate/bits	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	13.5MHz
	.....	.....	.....	*Geo/cylinder/cube
Reader Service Number	546	547	548	549

Manufacturer	QuesTech	Regis-BLT	Shintron	Thomson-CSF	Vital Industries
Model Number	6101P	Modulo UNO	Chromafex 766	TTV-5305	MAGIC
# of output channels	1 expands to 2	1	1	2 composite/Y-Cr-Cb	1 expands to 4
# of image planes	3	1	1	.....	4
Image size variation	Continuous	Stepped	Stepped	Continuous	Continuous
Image compression ratio	Infinite	1/4/9/16/25/64	1/2-1/4-1/9-fixed	Variable	Variable
Image expansion ratio	Infinite	1/4/9/16/25/64	1/2-1/4-1/9-fixed	Variable	Variable
Rotation around axes	Y & Z axes	None	No	X/Y/Z	Multiple axes
Perspective effects	Page turns/3-D/geo*	None	No	Page turns/geo/3-D	Page turns/cyl/3-D/cube
Image freeze	Field/frame/multiple	Field/frame/multiple	Multiple/trail	Field/frame	Field/frame/trail
Picture splits	H-V/diagonals	H-V	H-V	H-V/diagonals	H-V
Mirror image effects	H-V	H-V	Inversion	No	H-V
Push-on/off	Yes	Yes	Yes	Yes	Yes
Posterization effect	16 lvs false color	4 preset levels	7 levels/false colors	Yes	256 w/o false color
Mosaic tiling	42 to infinity	x4 to x16	No	Yes	1 to 65,535 tiles
Programmable sequences	Yes	Limited	No	Yes	Yes
System control	Dedicated/soft keys	Dedicated/soft keys	Dedicated keys	Dedicated/soft keys	Dedicated/soft keys
Instruction memory	Floppy disk/RAM	.....	None	EEROM/floppy disk	Floppy/hard disk

Digital Effects Systems

Parameter display	External CRT	Control panel	LED in key	On control panel	On control panel
VCR connection	Yes	Yes	Possible	Yes	No
TBC functions	Yes	Yes	Yes	No	No
External remote-control port	Switcher/edit ctrl	Switcher	Switcher/editor	Switcher	Switcher/edit ctrl
System S/N ratio	51dB	52dB	52dB	55dB	54dB
Differential phase/gain	1.5°/2.5%	3°	3°/3%	3°	1°
Digital sampling rate/bits	13.3MHz/8-bit	.....	14.3MHz/7-bit	13.5MHz/8-bit	14.3MHz/32-bit
	*V-only/cube	.....	.....	.....	.....
Reader Service Number	551	552	553	554	555

Editing Controllers (AV)

Manufacturer	Adams-Smith	P. Albrecht Elektronik	Alpha Audio	Ampex
Model Number	2600 CC	2600 A/V	The Boss (8400)	Ace (Ace Micro)
Suggested use	Audio-for-video	On- & off-line	On- & off-line	On- & off-line
VTRs (ATRs) for record/play	1-R/4-P ATR or VTR	2-R/16-P ATR & VTRs	1 rec/4 play	R/P ATRs & VTRs
Videodisc interface	Yes	Yes	.....	No
Microprocessor	Multi 8-/16-bit	Multi 8-/16-bit	Multiple 8-bit	16-bit distributed
Internal storage	100	> 1,000 (hard disk)	3 events	300
External storage types	No	Floppy disk	Paper tape	F-disk/printer
Edit decision list	No	Yes	No	Yes
Auto EDL backup	No	Yes	No	Yes
Edit data display	LED displays	CRT	LED displays	CRT
Printer interface	RS-232	RS-232	TTY	RS-232 (Centronics)
Edit modes	Assemble/insert	Assemble/insert	Assemble/insert	Assemble/insert
Split modes	Split audio	Audio & A-V	Yes	Audio & A-V
Animation mode	No	No	No	Yes
A/B roll mode	No	Yes	Yes	Yes
Integral time-code reader	Yes	Yes	Interface option	Yes
Integral time-code generator	Yes	Yes	In interface	External
Time-code types	SMPTE-EBU LTC-VITC	SMPTE-EBU VITC-LTC	EBU LTC/VITC	SMPTE/EBU
Color framing use	No color framing	NTSC/PAL	PAL	No color framing
Edit accuracy	±0.01 frame	±1 frame	±0 frames	±0.03 frame
Deck speed control	Keyboard	Keyboard	Fader	Keyboard
Tape direction control	Keyboard	Keyboard	Keyboard	Keyboard
Edit command control	Keyboard	Keyboard	Keyboard	Keyboard
Device interfaces	Mixer	Switcher/mixer/title effects	Switcher/mixer effects	.....
Equipment control bus	RS-232/422/ESbus	RS-232/422/ESbus	Coaxial serial bus	RS-232/422/ESbus
Reader Service Number	556	557	558	559

Manufacturer	CMX Systems	Calaway Engineering	Convergence
Model Number	CMX-3400A	CED/CED +	ECS-90 (Super 90)
Suggested use	On-line	On- & off-line	Off-line (on-/off-)
VTRs (ATRs) for record/play	1-R/6-P any	1-R/4-P (1-R/3-P)	1-R/1-P
Videodisc interface	Yes	Yes	No
Microprocessor	Distributed 8/16-bit	Distributed 8/16-bit	Centralized 32-bit
Internal storage	.....	.....	Single
External storage types	F-disk/paper tape	F-disk/paper tape	F-disk/p-tape/PC
Edit decision list	Yes	Yes	Yes
Auto EDL backup	Yes	Yes	Yes
Edit data display	CRT	CRT	CRT
Printer interface	RS-232	RS-232	RS-232
Edit modes	Assemble/insert	Assemble/insert	Assemble/insert
Split modes	A-V	A-V	.....
Animation mode	No	No	Yes
A/B roll mode	Yes	Yes	No
Integral time-code reader	Option	In interface	(on Super 90)
Integral time-code generator	Option	In interface	(on Super 90)
Time-code types	SMPTE-EBU VITC-LTC	SMPTE-EBU VITC/LTC	SMPTE-EBU
Color framing use	NTSC/PAL	NTSC/PAL	NTSC
Edit accuracy	0-frame error	0-frame	0-frame error w/TC
Deck speed control	Keyboard/GISMO	Keyboard/GISMO	Joystick
Tape direction control	Keyboard/GISMO	Keyboard/GISMO	Joystick
Edit command control	Keyboard	Keyboard	Keyboard
Device interfaces	Switcher/mixer	Switcher/mixer	.....
Equipment control bus	RS-232/422	RS-232/422	RS-422
	Related models-	.....	.....
	CMX-3400 & CMX-3100	.....	.....
Reader Service Number	561	562	564

Editing Controllers (AV)

Manufacturer		Convergence		EEMM		EECO		Editron	
Model Number	ECS-204 (ECS-205)	ECS-1000LMX	EMME	IVES Pro (IVES II)	Model 200 (100)				
Suggested use	On- & off-line	On- & off-line	On- & off-line	Off-line	Off-line				Off-line
VTRs (ATRs) for record/play	1-R/3-P (2-R/8-P)	2-R/6-P	9 total	1-R/2-P	2-R/4-P				2-R/4-P
Videodisc interface	No	No	No	No	Yes (No)				Yes (No)
Microprocessor	Central 16(32)-bit	Centralized 16-bit	Distributed 16-bit	Distributed 8-bit	Distributed 8-bit				Distributed 8-bit
Internal storage	800 (1000)	1000	700	1	999 (99)				999 (99)
External storage types	F-disk/p-tape/PC	F-disk/p-tape/PC	F-disk/p-tape/printer	F-disk/p-tape/printer	Tape				Tape
Edit decision list	Yes	Yes	Yes	Yes	Yes				Yes
Auto EDL backup	No	No	Yes	Yes	Yes				Yes
Edit data display	CRT	CRT	CRT	CRT	LCD (LED) displays				LCD (LED) displays
Printer interface	RS-232	RS-232	RS-232	RS-232 parallel	RS-232				RS-232
Edit modes	Assemble/insert	Assemble/insert	Assemble/insert	Insert	Assemble/insert				Assemble/insert
Split modes	Audio & A-V	A-V	Audio & A-V	A-V (No)	No				No
Animation mode	Yes	Yes	Yes	Yes	No				No
A/B roll mode	Yes	Yes	Yes	Yes	No				No
Integral time-code reader	Yes (int/interface)	Int or interface	In interface	Yes	Yes				Yes
Integral time-code generator	External	Yes	Option	Yes	Yes				Yes
Time-code types	SMPTE-EBU	SMPTE-EBU/ctl trk	SMPTE LTC/VITC/ctl trk	SMPTE-EBU LTC/ctl trk	SMPTE-EBU LTC				SMPTE-EBU LTC
Color framing use	NTSC/PAL	NTSC/PAL	NTSC	NTSC/PAL	NTSC/PAL				NTSC/PAL
Edit accuracy	0-frame error	0-frame error	0-frame error	0-frame error	0-frame error				0-frame error
Deck speed control	Joystick	Joystick	Keyboard/mouse/knob	Knob	Joystick (keyboard)				Joystick (keyboard)
Tape direction control	Joystick	Joystick	Keyboard/mouse/knob	Knob	Joystick/keyboard				Joystick/keyboard
Edit command control	Keyboard	Keyboard	Keyboard/mouse	Keyboard	Keyboard				Keyboard
Device interfaces	Switcher/effects	Switcher/effects	Switcher/mixer/title effects/stills/graph	Switcher & any GPI closure device	Switcher/mixer/other GPI controlled units				Switcher/mixer/other GPI controlled units
Equipment control bus	RS-232/422/ESbus	RS-232	RS-422	RS-232	RS-422/SMPT bus				RS-422/SMPT bus
Reader Service Number	566	567	568	569	570				570
Manufacturer	500V	Editron	Grass Valley Group	JVC/Pathtex	JVC Company				
Model Number	500V	500A	Model 41 (31/51E)	Abner	RM-G850U (-86U)				
Suggested use	On- & off-line	Audio sweetening	On-line editing	On- & off-line	On- & off-line				On- & off-line
VTRs (ATRs) for record/play	1-R/6-P multirecord	1-R/14-P	6 record or 6 play	1-R/2-P	1-R/2-P (1-R/1-P)				1-R/2-P (1-R/1-P)
Videodisc interface	Yes	No	Yes	No	.....(No)				.....(No)
Microprocessor	Distributed 8-bit	Distributed 8-bit	Distributed 16-bit	Central 8-bit	Centralized 8-bit				Centralized 8-bit
Internal storage	999	999	800 event	20	1 event				1 event
External storage types	Floppy disk	Floppy disk	F-disk/paper tape	F-disk/p-tape	None				None
Edit decision list	Yes	Yes	Yes	Yes	No				No
Auto EDL backup	Option	Option	Yes	Yes	No				No
Edit data display	CRT	CRT or LCD panel	CRT	CRT	LED displays				LED displays
Printer interface	RS-232	RS-232	Serial	RS-232	No				No
Edit modes	Assemble/insert	Assemble/insert	Assemble/insert	Assemble/insert	Assemble/insert				Assemble/insert
Split modes	Audio & A-V	No	Split A-V	Audio & A-V	Yes				Yes
Animation mode	No	No	Yes	Yes	No				No
A/B roll mode	Yes	Yes	Yes	Yes	No				No
Integral time-code reader	Yes	Yes	External required	Yes	No				No
Integral time-code generator	Yes	Yes	External required	.....	No				No
Time-code types	SMPTE-EBU LTC	SMPTE-EBU LTC	S/E VITC-LTC/ctl trk	SMPTE-EBU/ctl trk	Control track				Control track
Color framing use	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	No color framing				No color framing
Edit accuracy	0-frame error	0-frame error	±0 frame/field option	±1-frame error	±2 frames				±2 frames
Deck speed control	Joystick/keyboard	Joystick/keyboard	Keyboard/jogger	Knob	Dial				Dial
Tape direction control	Joystick/keyboard	Joystick/keyboard	Keyboard/jogger	Knob	Dial				Dial
Edit command control	Keyboard/soft keys	Keyboard/soft keys	Keyboard	Keyboard	Keyboard				Keyboard
Device interfaces	Switcher/mixer/title graphics/effects	.....	All production units communicating by	Switcher/mixer/still graphics/effects	No				No
Equipment control bus	RS-422/SMPT/GPI	RS-422/SMPT-bus/GPI	RS-232/422/ESbus	.....	No control bus				No control bus
Reader Service Number	571	572	573	574	575				575
Manufacturer	Lucas Droidworks	Omicron/Electron	EXCEL	Pathtex	Esprit (Esprit Plus)				
Model Number	Editdroid	EM7100 Series	EXCEL	Director (Producer)	Esprit (Esprit Plus)				
Suggested use	On-line	On-line	On- & off-line	On- & off-line	On- & off-line				On- & off-line
VTRs (ATRs) for record/play	Various	1 rec/3 play	3/assignable record	4-machine	5-machine (6)				5-machine (6)
Videodisc interface	Yes	.....	Yes	Yes	Yes				Yes
Microprocessor	Multiple 16-/32-bit	Z-80 distributed	Distributed 16-bit	Multi 16-bit	Multi 16-bit				Multi 16-bit
Internal storage	>80,000	192 events	326	500 (998)	700				700
External storage types	Various	Disk & tape	F-disk/P-tape	F-disk/P-tape (H-disk)	F-disk/P-tape (H-disk)				F-disk/P-tape (H-disk)
Edit decision list	Yes	Yes	Yes	Yes	Yes				Yes
Auto EDL backup	Yes	.....	Yes	Yes	Yes				Yes
Edit data display	CRT	CRT	CRT	CRT	CRT				CRT
Printer interface	Yes	Serial	RS-232	RS-232	RS-232				RS-232
Edit modes	All modes	All modes	Assemble/insert	Assemble/insert	Assemble/insert				Assemble/insert
Split modes	Yes	Yes	Audio & A-V	Audio & A-V	Audio & A-V				Audio & A-V
Animation mode	Yes	Yes	Yes	Yes	Yes				Yes
A/B roll mode	Yes	Yes	Yes	Yes	Yes				Yes
Integral time-code reader	External required	Yes	Yes	Yes	Yes				Yes
Integral time-code generator	External required	Yes	.....	.....	.....				.....
Time-code types	SMPT	All timing types	SMPTE-EBU LTC/VITC	SMPTE-EBU LTC-VITC	SMPTE-EBU LTC-VITC				SMPTE-EBU LTC-VITC
Color framing use	.....	NTSC	NTSC/PAL	NTSC/PAL	NTSC/PAL				NTSC/PAL
Edit accuracy	±0 frames	±0 frames	0-frame error	0-frame error	0-frame error				0-frame error
Deck speed control	Knob	Keyboard & knob	Keyboard/knob	Keyboard/knob	Keyboard/knob				Keyboard/knob
Tape direction control	Knob	Keyboard & knob	Keyboard/knob	Keyboard/knob	Keyboard/knob				Keyboard/knob
Edit command control	Keyboard	Keyboard	Keyboard	Keyboard	Keyboard				Keyboard
Device interfaces	Various	Various switchers	Switcher/mixer/effects	Switcher/mixer/effects	Switcher/effects/mixer				Switcher/effects/mixer
Equipment control bus	.....	.....	RS-232/422/parallel	RS-232/422/parallel	RS-232/422/parallel				RS-232/422/parallel
Reader Service Number	576	577	578	579	580				580

The Ones to Watch!

IKEGAMI'S BROADCAST & INDUSTRIAL MONITORS: WE HAVE WHAT YOU'RE LOOKING FOR.

Whether you're looking for broadcast or industrial color or B&W monitors, one look at an Ikegami 9, 10, or 3H series monitor and you'll look no more.

And now everyone can afford to own an Ikegami monitor with prices starting at under \$400 for our new PM9-5, 9" monochrome model.

Ikegami's 9 series high resolution broadcast television monitors utilize In-Line Gun self converging cathode ray tubes with American Standard matched phosphors and are available in a 20, 14 and 10 inch models.

The 10 series resolution broadcast television monitors utilize Delta-Gun tubes to achieve maximum brightness and exceptional convergence and are available in 20 and 14 inch versions.

The 3H series high resolution broadcast television monitors feature high quality monochrome displays suitable for sophisticated broadcast studio applications. Available in 9, 14, single and dual 9 inch monitors.

For a complete demonstration of Ikegami monitors and cameras, contact us or visit your local Ikegami dealer.



Prices Start At Under \$400

Ikegami®

Ikegami Electronics (USA), Inc. 37 Brook Avenue Maywood, NJ 07607

East Coast: (201) 368-9171 West Coast: (213) 534-0050 Southeast: (813) 884-2046 Southwest: (214) 233-2844 Midwest: (312) 834-9774

The Breakthrough!

IKEGAMI'S HK-323 1" FIELD/STUDIO BROADCAST CAMERA BEGINS A NEW ERA

Ikegami's newest field/studio broadcast camera achievement has arrived—engineered and designed to provide the user with features beyond expectations.

The HK-323 1" features self-contained operation, numerous auto set-ups in any mode, a built-in encoder and sync generator, high performance prism optics, self-diagnostic functions, a control panel that connects directly to the camera head, a S/N ratio of 59dB and more—all in a camera weighing only 55 lbs.

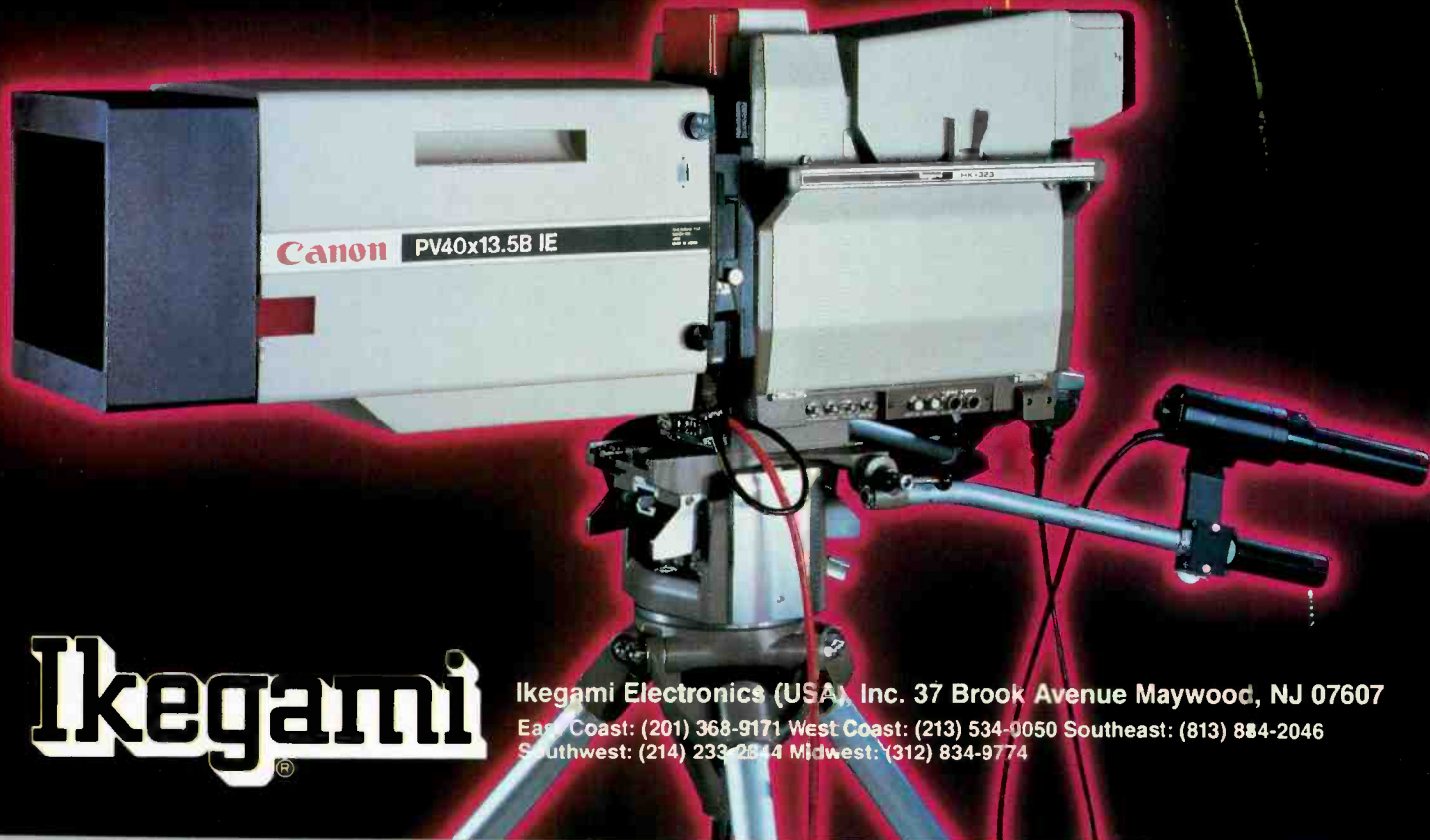
In addition, the HK-323 1" is equipped with a 7" viewfinder featuring pan and tilt, and special functions that include Chroma Aperture for sharpest picture quality regardless of color or lighting; Highlight Compression Circuitry for broadcast contrast range; Soft Detail to eliminate harsh or overwhelming presence; Auto Beam Control, and more.

A companion hand-held camera is also available and is operational off the same base station.

Optional remote control is available in: triax, multicore and fiber optics.

Compare the HK-323 1" to any camera in its class and find out why the lightest field/studio camera is also the biggest value.

For a complete demonstration of the HK-323 1" and other Ikegami cameras and monitors, contact us or visit your local Ikegami dealer.



Ikegami

Ikegami Electronics (USA) Inc. 37 Brook Avenue Maywood, NJ 07607
East Coast: (201) 368-9171 West Coast: (213) 534-0050 Southeast: (813) 884-2046
Southwest: (214) 233-2844 Midwest: (312) 834-9774

The Wait is Over!

IKEGAMI UNVEILS THE 2/3" FIELD/STUDIO CAMERA STANDARD

When Ikegami engineered the all new HK-323 field/studio camera, their first priority was to make this advanced technology camera available to all preferences.

The result: the HK-323 1" and the HK-323 2/3"—two tube sizes to meet the broadest range of preference, application or budget.

Like the 1", the HK-323 2/3" features self-contained operation, numerous auto set-ups in any mode, a built-in encoder and sync generator, high performance prism optics, self-diagnostic functions, a control panel that connects directly to the camera head, a S/N ratio of 60dB and more—all in a camera weighing only 55 lbs.

The HK-323 2/3" is equipped with a 7" viewfinder featuring pan and tilt, and special functions that include Chroma Aperture for sharpest picture quality regardless of color or lighting; Highlight Compression Circuitry for broadest contrast range; Soft Detail to eliminate harsh or overwhelming presence; Auto Beam Control, and more.

A companion hand-held camera is also available, and is operational off the same base station.

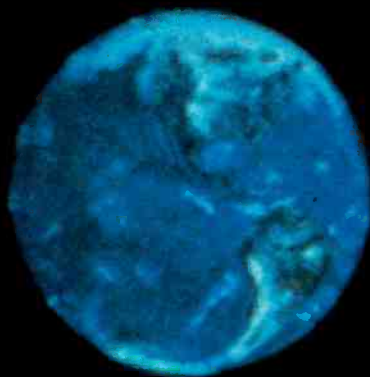
Optional remote control is available in: triax, multicore and fiber optics.

Compare the HK-323 2/3" to any camera in its class and find out why the lightest field/studio camera is also the biggest value.



Ikegami®

Ikegami Electronics (USA), Inc. 37 Brook Avenue Maywood, NJ 07607
East Coast: (201) 368-9171 West Coast: (213) 534-0050 Southeast: (813) 884-2046
Southwest: (214) 255-2844 Midwest: (312) 834-9774



ENGenius!

IKEGAMI HL-95 IS
THE CROWNING ACHIEVEMENT OF THE 80's.

The engineers at Ikegami have just enhanced the finest ENG component camera in the industry, by making it the most versatile.

Now the Ikegami HL-95 camera head can be the crown jewel of your 1/2" Beta ENG system, as well as three other configurations including 3/4", 1/4" and MII formats.

Considered by many as the most impressive and important hand-held camera breakthrough of the 80's, the HL-95 achieves total operational flexibility without compromising strict performance, sensitivity, resolution and registration.

Featuring registration stability without adjustment (proven over many weeks); better shoulder balance; better low light level sensitivity (1.5 ft. candles); better S/N for given low light levels (proven in exhaustive comparison tests); plus minimum maintenance, weight and power consumption. The Ikegami HL-95 far outdistances any camera in its class. It's pure ENGenius.

For a demonstration of the HL-95 and other Ikegami cameras and monitors, contact us or visit your local Ikegami dealer.





Ikegami Electronics (USA), Inc. 37 Brook Avenue Maywood, NJ 07607

East Coast: (201) 368-9171 West Coast: (213) 534-0050 Southeast: (813) 884-2046 Southwest: (214) 233-2844 Midwest: (312) 834-9774

The Outperformer!

IKEGAMI'S HL-79E IS MORE VERSATILE THAN EVER

Ikegami's HL-79E has lived up to its billing as the greatest achievement in hand-held camera technology, a claim supported by an increasing number of 79 series purchasers, presently in excess of 5000.

And yet, today, the engineers at Ikegami have found a way to improve the camera. Now, when equipped with the new VBA-1 adapter, the HL-79E is totally compatible with the Sony Beta recorder.

On your shoulder, the HL-79E is still unmatched in performance with features that include Dynamic Detail Correction, Chroma Aperture Correction, Highlight Aperture Correction and Auto Contrast Compression. Plus the HL-79E offers superior contrast range, S/N ratio, registration accuracy, resolution and more.

On a tripod, the HL-79E becomes the premier EFP camera which can be used in various systems configurations and controlled remotely by the MA-79 Multicore Adapter, through multi-core cable (up to 300 meters) or by the TA-79E triax adapter through triax cable (up to 2000 meters).

The camera can be set up using conventional manual techniques or an optional microprocessor assist.

For a complete demonstration of the HL-79E and other Ikegami cameras and monitors, contact us or visit your local Ikegami dealer.

Adapts to Sony Beta Recorder



Ikegami®

Still The One!

IKEGAMI'S HK-322 STUDIO CAMERA REMAINS AHEAD OF ITS TIME

Years after its introduction, the HK-322 is still the choice of many for solid studio camera performance.

We think it's because people don't like to tamper with a winner. And the HK-322 is certainly that—a winner.

The Ikegami HK-322 broadcast studio camera, equipped with 30mm or 25mm Plumbicon® tubes, features: standard diode gun or ACT pick-up tubes, advanced operational automatics including auto pedestal control and auto highlight compression, complete auto set up, diagnostics and a wide range of special features.

The HK-322 can be furnished with mini camera cable (up to 600 meters) or optional triax for lengths up to 1500 meters. Two types of camera control systems are available with an optional control panel configuration to suit user preference.

For a top-of-the-line broadcast studio camera, the HK-322 is still the one.

For a complete demonstration of the HK-322 and other Ikegami cameras and monitors, contact us or visit your local Ikegami dealer.



Ikegami

Ikegami Electronics (USA), Inc. 37 Brook Avenue Maywood, NJ 07607
East Coast: (201) 368-9171 West Coast: (213) 534-0050 Southeast: (813) 884-2046 Southwest: (214) 233-2844 Midwest: (312) 834-9774

*N.V. Philips

Alone At The Top!

IKEGAMI'S TELECINE SYSTEM
STANDS ALONE AS THE BEST



The one and only name in Telecine Camera Systems is Ikegami. And now Ikegami offers complete Telecine systems including two photoconductive telecine cameras, optical multiplexer, 35mm slide projector, 16mm motion picture projector as well as audio/ta ly interface panels and machine controls.

Both cameras, the TK-970 and TKC-990 utilize photoconductive 1 inch Vidicon tubes (Saticon[®] are optional) and provide consistent highest quality performance and reliability in on-line applications such as local viewing or direct on-air broadcast; and off-line where the video signal is recorded.

The TKC-990 features computer-controlled automatic set-up of the camera operating parameters, as well as automatic set-up of registration level, shading and detail correction for up to three input projectors.

Both cameras utilize a built-in large image field lens, neutral density disc for automatic light control and automatic color balance circuitry.

The FPH-16 16mm telecine projector SPR-35 35mm slide projector and MPK-3V optical multiplexer round out a system that stands alone in the industry.

For a complete demonstration of Ikegami Telecine Systems as well as our cameras and monitors, contact us or visit your local Ikegami dealer.

Ikegami Electronics (USA), Inc. 37 Brook Avenue Maywood, NJ 07607
East Coast: (201) 368-2171 West Coast: (213) 534-0050 Southeast: (813) 884-2046
Southwest: (214) 233-2844 Midwest: (312) 834-9774

*Hitachi Ltd.

Ikegami

To find out more about Ikegami's cameras, monitors, or telecine system, please fill out this postage-paid card today.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (_____) _____ ext. _____

I am interested in finding out more about the following product(s) :

- HK-323 1" Field/Studio Broadcast Camera
- HK-323 3/4" Field/Studio Broadcast Camera
- HK-322 Studio Broadcast Camera
- HL-95 Unicam ENG broadcast camera system
- HL-79E ENG/EFP broadcast camera
- ITC-730A ENG/EFP broadcast quality camera
- SC-500 Studio broadcast quality camera
- Monitors Color B&W
- Telecine Systems

To assist us in serving you, please fill out the following:
My purchasing interest in the above Ikegami product(s) is:

- Immediate Call to arrange for a demo
- 3 months 6 months 1 year

My budget for the product categories above is:

- Under 20,000 100,000-250,000
- 20,000-50,000 Over 250,000
- 50,000-100,000

I presently own the following cameras, monitors and/or telecine systems. Please list manufacturer, model and amount.

If you presently own Ikegami equipment, which dealer was it purchased from?

Thank you for your interest in Ikegami products.

Ikegami



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS

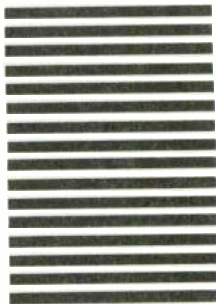
PERMIT NO. 2486

MAYWOOD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Ikegami[®]

IKEGAMI ELECTRONICS (USA), Inc.
37 Brook Avenue
Maywood, NJ 07607



Editing Controllers (AV)

Manufacturer	Panasonic Broadcast	Sony Broadcast		United Media	Videomedia
Model Number	AU-A65	BVE-800	BVE-5000	Commander II	Magnum
Suggested use	Off-line	On-line	On-/off-line	On- & off-line	On-line
VTRs (ATRs) for record/play	1-R/3-P	1 rec/2 play	2 rec/6 play	8-machine	1 rec/5 play
Videodisc interface	No	No	.....	Yes	.....
Microprocessor	Centralized 16-bit	Centralized	Central 8-bit	Distributed 16-bit	Distributed 8-bit
Internal storage	128	1-128 events	512	500	250 event
External storage types	P-tape (opt. F-disk)	F-disk & paper tape	F-disk/paper tape	F-disk/p-tape	F-disk
Edit decision list	Yes	CMX-340X format	CMX compatible	Yes	Yes
Auto EDL backup	Yes	No	Internal battery	Yes	Yes
Edit data display	LED display/opt. CRT	LED displays	CRT	CRT	CRT
Printer interface	Centronics	RS-232C TTY (ASR-43)	RS-232C 20mA loop	RS-232	RS-232C
Edit modes	Assemble/insert	Assemble/insert	Assemble/insert	Assemble/insert	All modes
Split modes	A-V	A-V	Yes	A-V	Yes
Animation mode	No	No	No	Yes	Yes
A/B roll mode	Yes	Yes	Yes	Yes	Option yes
Integral time-code reader	External required	Option	LTC/VITC	Yes	Required
Integral time-code generator	External required	Option	LTC/VITC	Yes	Yes
Time-code types	SMPTE LTC-VITC	S-E TC/ctl trk	S/E TC & ctl trk	SMPTE-EBU/ctl trk	All timing types
Color framing use	No color frame	.....	NTSC/PAL	NTSC/PAL	NTSC/PAL
Edit accuracy	0-frame error	±0 TC/±1 ctl trk	±0 frames	0-frame color-framed	±0 frames
Deck speed control	Dial	Bidirex controls	Bidirex control	Keyboard	Joystick
Tape direction control	Dial	Bidirex controls	Bidirex control	Keyboard	Joystick
Edit command control	Keyboard	Keyboard	Keyboard	Keyboard	Keyboard
Device interfaces	Switcher	For Sony BVS-500	Switchers/mixers/effects	Switcher/mixer/title	Any serial/parallel
.....	.....	.....	RS-422	Effects/stills/graph	RS-232/422/ESbus
Equipment control bus	RS-422	.....	BVE-3000 1-R/2-P	RS-232/422/UMI	LAN
.....	.....	.....	.....	Mini-Comm 4-R/4-P &	.....
.....	.....	.....	.....	Comm-Ette 6-machine	.....
.....	.....	.....	.....	upgradable.	.....
.....
Reader Service Number	581	582	583	584	585

Graphics/Art Systems

Manufacturer	AT&T	Alias Research	Ampex	Artrionics	Aurora Systems
Model Number	Truevision/TARGA	Alias/1	AVA-3	VGS/VPL	Aurora/75
Base computer	AT&T-6300/IBM-XT/AT	68010 w/ ACCEL 32-bit	68000	80286/80287	Enhanced IBM/AT
Internal memory	System dependent	5Mbyte expandable	.....	.....	512kbyte RAM
Memory architecture	8/16/24/32-bit	32-bit display	24-bit	32-bit	8-bit R/G/B
Integral still-store	.....	72Mbyte expandable	Yes	Fixed/removable disk	20Mbyte Winchester
Image resolution	512x480-pixel	1024x768-pixel	768x484-pixel	512x512x32	512x486-pixel/103ns
Anti-aliasing	.....	Hardware/software	Software	Full	Single/multicolor
Available type faces	Various	Various	Various	.....	35 avail fonts
Face/font compose	Possible	Yes	Yes	.....	Yes
Color palette	16.7 million	16.7 million	16.7 million	16.7 million	16.7 million
Colors per screen	.....	.....	16.7 million	230400	.....
Color memory	Full color	Full color	Full color	Color table	Color table
Image sources	Bit-pad or any RGB digitized video	Any video/bit-pad	Camera/bit-pad/any video source	Any video source	Any video source
Image manipulations	Copy/retouch/design Cut-paste/draw	All standard types	All standard types	All standard types	Cut-paste/color fill
Artistic tools	Brush/air-brush/geos Patterns	All standard tools	All standard tools	All standard tools	Overlay/replace Brushes/geos/edging Magnifications
Animation software	.....	.....	.....	.....	.....
3-D rendering	.....	Phong/Blinn	.....	Yes	.....
Menu CRT	Yes	On image CRT	No	Yes	.....
Multi-user system	No	No	No	No	.....
Remote/data link	.....	RS-232/Ethernet	RS-232/422	RS-422	RS-232
Reader Service Number	591	592	593	594	595

Manufacturer	Aurora Systems		Robert Bosch	ColorGraphics System	
Model Number	Aurora/220	Aurora/280	MC-68000	LiveLine PC	LiveLine IVA
Base computer	IBM/AT	CPU w/ 68020 µP	MC-68000	IBM-PC	68010 µP
Internal memory	512kbyte	.....	.....	2-image	2-pages/images
Memory architecture	.....	.....	16-bit	8-bit	8-bit
Integral still-store	40Mbyte Winchester	40Mbyte Winchester	Yes	Yes	Yes
Image resolution	512x486-pixel/103ns	720x486 CCIR std	485x765-pixel/15ns	640x483-pixel	768x483-pixel
Anti-aliasing	Software	Software	Hardware	.....	Software
Available type faces	Multiple	Multiple	4 serif/italic	20 faces	100 faces
Face/font compose	Yes	Yes	Yes	No	Yes
Color palette	16.7 million	16.7 million	16.7 million	16.7 million	.....
Colors per screen	.....	.....	16.7 million	256/screen	.....

Graphics/Art Systems

Color memory	8-bit each RGBA	Full color	Full color	Color mapped	Color mapped
Image sources	Any video source	Any video source	Bit-pad/camera/video	Bit-pad/wx database	Bit-pad/library
Image manipulations	Full image edit capability	Full image editing	Retouch/fill/wash	Cut-paste/pix repeat	Camera/weather data
Artistic tools	Multi-brushes/scale perspective/masking	Multi-brush/air-brush Wash/retouch	Cut-paste/overlay Multi-/air-brushes Geos/other	Expand-reduce/fill Multi-brush/geos Both external Color animation	Retouch/overlay/wash Fill/expand-reduce Multi-/air-brushes Geos
Animation software					
3-D rendering		Yes	Gouraud/Phong/other		
Menu CRT	Yes	Yes	Yes	Yes	Yes
Multi-user system	No		No	No	Yes
Remote/data link	RS-232	RS-232	RS-422/Ethernet	RS-232	RS-232
Reader Service Number	596	597	598	599	600

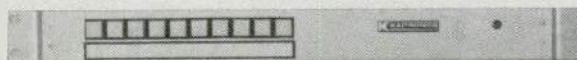
*See BTS Broadcast Television Systems

Manufacturer	ColorGraphics System	Cubicomp/Ampex	Dubner Computer	Integrated Technology	
Model Number	ArtStar 3D	PictureMaker	ModelMaker	DPS-1	Image-Maker
Base computer	68010 μ P	No	IBM-PC	68000 series μ P	IBM/AT
Internal memory	4-image	2-frame	2-image	2-image	2-image
Memory architecture	32-bit	16-bit	16-bit	8-bit	16-bit
Integral still-store	Yes	No	No	Yes	Limited capability
Image resolution	768x483-pixel	512x512-pixel	512x512-pixel	768x525-pixel	Software
Anti-aliasing	Software	Software	Software	255 faces	Various
Available type faces	100 faces	Multiple		No	Yes
Face/font compose	Yes			16.7 million	16.7 million
Color palette	16.7 million	16.7 million	16.7 million	16.7 million	
Colors per screen	16.7 million	4096	4096	Full color	
Color memory	Full color	Color mapped	Color mapped	Camera/video	Any standard video
Image sources	Bit-pad/library Camera/weather data	Bit-pad/camera	Bit-pad/video	Bit-pad	
Image manipulations	Cut-paste/wash Overlay/pix repeat	Retouch/cut-paste Fill/wash/repeat		All standard types	Rotation/translate
Artistic tools	Multi-/air-brushes Geos	Air/multi-brushes Geos		All standard tools	Perspective All standard tools
Animation software	Yes				
3-D rendering	Yes	Yes	Yes		Yes
Menu CRT	Yes	Yes	Yes	No	
Multi-user system	Yes	No	No	No	Master/slave edit
Remote/data link	RS-232/422	RS-232	RS-232	RS-232	
Reader Service Number	601	602	603	604	605

Manufacturer	3M	Quanta	Quanteil		
Model Number	D-6000 Panther	Quantapaint EVP-850	Quantapaint QVP2500	Quantapaint 32	Paintbox
Base computer	MS-DOS PC	Proprietary	Quanta 8086	Quanta 32032	68000 series μ P
Internal memory	3-image	2-image			
Memory architecture	8-bit	8-bit/16-bit	8-bit	32-bit	16-bit
Integral still-store	Yes	No	No	No	
Image resolution	24ns	512x512-pixel	485x650-pixel	650x485-pixel	
Anti-aliasing	Software	Software	Software	Hardware/software	Hardware/software
Available type faces	3 faces	6	1 san serif	>1000 faces	
Face/font compose	Option	Yes	No	Yes	Yes
Color palette	1024	16.7 million	16.7 million	16.7 million	16.7 million
Colors per screen	256	256	256	16.7 million	16.7 million
Color memory	Full & mapped	Color mapped	Color mapped	Full & mapped	Full color
Image sources	Video/disk Bit-pad	Camera/bit-pad	Camera/bit-pad	Bit-pad/camera	Any video source
Image manipulations	Fill/wash/cut-paste Retouch/overlay	Standard types	Cut-paste/overlay Retouch/fill/wash	Overlay/retouch/fill Wash/cut-paste/expnd	Bit-pad All standard types Variable viewpoint
Artistic tools	Multi-/air-brushes Geos	Standard tools	Multi-/air-brushes Geos	Air-/multi-brushes Geos	All standard tools
Animation software					With Harry system
3-D rendering			By artist		Yes
Menu CRT	Option	No	No	No	
Multi-user system	Yes		No	Yes	No
Remote/data link	RS-232		RS-232	RS-232/422	RS-422
Reader Service Number	606	607	608	609	610

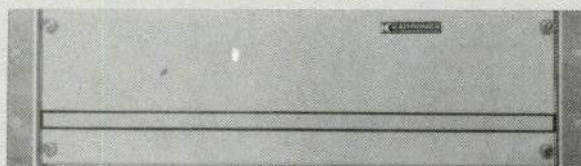


Compact Video/Audio Switchers



Routing Switchers

10 x 1, 10 x 5 and 10 x 10 Complimentary Series of Video/Audio, Vertical Interval Switchers

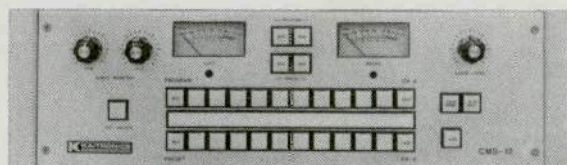


Starting with 10 x 1 Routing Switcher, easily expandable with matching 10 x 5, 10 x 10 Series. Component video and RGB versions are also available.

Remote control up to 5,000 feet with a twisted pair allows for easy and flexible installation and any later changes, accomplished by using RS-422/232C serial data which also lends itself to computer/modem usage.

Individual audio connectors allow changing any single input without power shutdown, as encountered in switchers that use multi-pin connectors.

Typically, a 10 x 10 Routing Switcher including stereo audio and power supply occupies only 5 1/4" of your valuable rack space.



Master Control Switchers

**Stereo audio in this CMS-12 Video/Audio Switcher
5 1/4" high and less than 1/4 cost of
a studio switcher!**

This complete next event system can handle all network and local stereo programs for **master control, mobile or satellite uplinks.**

Totally self-contained, including video and audio DA's for both A & B channels and bridging inputs for ease of installation.

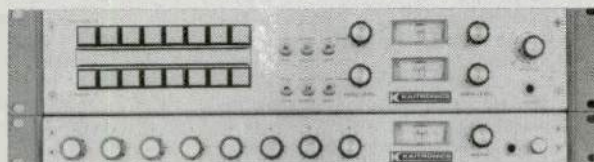
Modular expansion for up to twenty (20) secondary video/stereo audio sources.

News Switchers

Industry standard for news coverage!

VAS-MKII Video/Audio Switching System

AM-8000 Broadcast Audio Mixer



Separate channel for program and preview with audio follow - Auto gain select for Mic or line
Vertical interval or random switching - Audio monitor amplifier
Video and audio DA's, four (4) each per channel

This integrated system, occupying just 5-1/4" of rack space, is a total control center able to handle everything from a news interview to an election central. **In use by all the TV Networks and leading Broadcast Stations across the USA.**

**ALWAYS FAST DELIVERY
COMPETENT ENGINEERING
DEPENDABLE SERVICE BACK-UP . . . for nearly two decades!**

KAITRONICS CORPORATION

Broadcast Products since 1967

Circle (119) on Reply Card

890 Cowan Rd., Burlingame, Ca. 94010
Phone: (415) 697-9102
Telex: WUI 671-1616

Graphics/Art Systems

Manufacturer	Rank Cintel	Raster Technologies	Thomson-CSF	Vertigo Systems Intl.
Model Number	Art File	Model One Series	Vidifont V Graphics	V-2000
Base computer	Proprietary	Proprietary 16/32	Microprocessor	68020/68881
Internal memory	390 images	>256kbyte	440-pages	4Mbytes
Memory architecture	24-bit	8/16/24/32-bit	8-bit/bit-slice	32-bit
Integral still-store	Yes	Various facilities	Yes	Dual 71Mbyte disks
Image resolution	720x484-pixel CCIR	1280x1024/640x512	48ns	720x486-pixel NTSC
Anti-aliasing	Software	Software	Software	Hardware/software
Available type faces	Various	Various	8	Various
Face/font compose	.....	Yes	Option	Yes
Color palette	16.7 million	16.7 million	4096	16.7 million
Colors per screen	16.7 million	16.7 million	64/screen	16.7 million
Color memory	Full color	Full & mapped color	Color mapped	Full color
Image sources	Library/bit-pad	Bit-pad/mouse/stylus	Weather/camera	Any standard video
	Camera/vidoc	Camera	Bit-pad	Bit-pad
Image manipulations	All standard types	Standard types	Various types	All standard types
	.....	Text rotation	.....	.....
Artistic tools	All standard tools	Standard tools	Various tools	All standard tools

Animation software	.....	.....	.....	.....
3-D rendering	.....	.....	.....	Phong/Gouraud/other
Menu CRT	No	Integrated display	CRT/terminal	On compose screen
Multi-user system	5 work stations	.....	Yes	Via Ethernet
Remote/data link	RS-422	19.2kbaud/RS-232	RS-232	RS-422 serial
Reader Service Number	611	612	613	614

Graphics/Titling Systems

Manufacturer	Aston Electronics		Chyron		
Model Number	A-3	A-4	VP-1 (VP-2)	SCRIBE	RGU-2
Base computer	Bit-slice	68000 series μ P	8088 (& 80186)	68010 μ P	Unspecified
Subtitling	Any screen area	Any screen position	Any screen area	Any screen area	Any screen area
Subtitle control	Manual/clocked/TC	.....	Manual/remote ctl	Manual/time code	Time code or manual
Page format	40-char/21 line	56-char/14-line	.....	64-char/24-line	62-char/20-line
Resolution	31ns	8.9ns	35ns	.....	27ns
Anti-aliasing type	.....	Software	.....	Hardware	.....
Simultaneous on-line faces	4	8/channel 1600 total	6	8	4
Type styles	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr
Non-Arabic type faces	Cyr/heb/ideographic	Cyr/heb/ideographic	.....	Cyrillic/hebraic	Cyrillic
Type face storage	Disk	Disk	ROM	Disk	Disk
Face/font compose	Option	Option	No	No	Option
Display flashing	Yes	Yes	Yes	By character	Full flash control
Edging control	Full edge control	Full edge control	Full edge control	Full edge control	Surround/shadow
Auto centering	Horizontal	Horizontal	H/V/page	H/V/page	Horizontal
Roll/crawl controls	Variable speeds	Variable speeds	Variable speeds	Variable speeds	Variable speeds
Title keyer/colorizer	Ext key/int color	Int color/ext keyer	Both integral	Both integral	Both integral
Color palette	4096	4096	512	16.7 million	64
Colors/screen	8/screen	32/screen	8/screen (16)	256/screen	8/screen
Internal memory	2 pages	2 pages	1 page/4000 lines	2 pages	2 page
Memory architecture	16-bit	24-bit	8-bit	32-bit	16-bit
Integral still-store	No	No	No	No	No
Off-line mass storage	Floppy	Floppy/Winchester	Floppy	Floppy or Winchester	Floppy
Access time (per page/frame)	<1s	<1s page or screen	.....	0.5s	1s page or frame
Effective imaging planes	1 plane	3	Infinite	2	2
Remote ctl/data interface	RS-232	RS-232/RS-422	RS-232	RS-232/422/	RS-232
Image sources	.....	Camera/still library	None	Camera	Camera
Multi-user system	No	2-station/6-keyboard	Yes	2 stations	2 stations
Automation interface	Various controllers	Various controllers	No	No	No
Reader Service Number	615	616	617	618	619

Manufacturer	Chyron	Dubner Computer		For-A Corporation	
Model Number	Chyron IV EXB	20-K	CBG-2	VTW-210 (-220)	VTW-400
Base computer	68000	68000 series μ P	8080/2901 μ Ps	Proprietary	Proprietary
Subtitling	Any screen area	Lower & upper 1/3s	Lower & upper 1/3s	Any screen location	Any screen location
Subtitle control	Time code	Manual	Manual	Manual	Manual
Page format	62-char/24 line	100-char/16-line	100-char/16-line	32-char/8-line	32-char/8-line
Resolution	27ns	37ns/485x1384-pixel	525x1024-pixel	16x20-pixel	0.52ns
Anti-aliasing type	.....	Software	Hardware/software	Hardware	Hardware
Simultaneous on-line faces	12	255	255	1	1
Type styles	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	.....	.....
Non-Arabic type faces	Cyrillic/hebraic	.....	.....	.....	.....
Type face storage	Disk	Disk	Disk	ROM	ROM
Face/font compose	Option	No	Yes	No	No
Display flashing	Yes	By character	By character	No color on 210	Character

Dealers' choice!



JVC's CR-850U Editing VCR. It's the one video dealers choose when selecting VCRs for $\frac{3}{4}$ " editing.

On-line systems. A-B roll systems. Off-line systems. Remote vans. Rental departments. Newsroom editing. Computer graphics. Animation systems... Just a few of the applications where customers need the best, and dealers choose the CR-850U to make sure they get it.

Why the CR-850U? Excellent picture quality: the result of an increased S/N ratio, Y-688 dubbing, special noise reduction circuitry. Fast, accurate editing: the benefit reaped from the direct drive tape transport system and the separate SMPTE time code address track.

The new front load, rack-mount design with parallel and serial remote control capability allow easy interface with existing and new edit systems. Built-in self

diagnostic circuits with front panel test points speed maintenance and adjustments.

Dealers' choice, yes! But the odds are always in your favor, whatever your application, with the JVC CR-850U.

See your JVC Professional Video Dealer today or, for literature call toll-free:

1-800-JVC-5825

JVC COMPANY OF AMERICA
Professional Video
Communications Division
41 Slater Drive
Elmwood Park, NJ 07407

JVC CANADA,
Scarborough, Ontario

JVC

Circle (120) on Reply Card

Graphics/Titling Systems

Edging control	Full edge control	Full edge control	All edge controls	Surround/shadow/luma	Surround/shadow/luma
Auto centering	Horizontal	H/V/page	Horizontal	Horizontal	Horizontal
Roll/crawl controls	Variable speeds	Variable speeds	Variable speeds	Full control	Full control
Title keyer/colorizer	Both integral	Both integral	Both integral	Ext color (integral)	Integral
Color palette	512	16.7 million	4096	525 on -220	64
Colors/screen	185/screen	256/screen	128/screen	16/screen on -220	64/screen
Internal memory	2 pages	1000 pages	2 pages	4 page (32 page)	8 page
Memory architecture	16-bit	8-bit/frame buffer	Encoded frame buffer	.....	.....
Integral still-store	No	No	Yes	No	No
Off-line mass storage	Floppy or Winchester	Winchester	F-/W-disk/RAM	..... (RAM)	Floppy
Access time (per page/frame)	1s	0.25s page/frame	0.25s page	0.5s/page	0.5s
Effective imaging planes	3	1	3	1	1
Remote ctl/data interface	RS-232	RS-232/422	RS-232/422/IEEE	RS-232 for -220	RS-232
Image sources	Camera/bit-pad/wx	Weather database	Bit-pad/camera/wx	None	None
Multi-user system	3 stations	.....	2 stations	No	No
Automation interface	No	Yes	Yes	No	No
.....	.....	.....	Related models are	.....	.....
.....	.....	.....	TEXTA & CBG-1	.....	.....
.....	.....	.....	622	623	624
Reader Service Number	620	621	622	623	624

Manufacturer	JVC Company		Knox Video	ICM Video	Laird Telemedia
Model Number	M-1000	M-1500 (M-2000)	K100 Opt B	CG-7000P	7200 Communicator
Base computer	Mindset PC	Mindset PC	.....	Z-80	.....
Subtitling	Possible	Yes	Any location	On any line	Lower 1/3s
Subtitle control	Manual/timed	Manual/timed	Manual	Manual/clocked	Manual
Page format	.....	.....	.....	38-char/16-line	60/24 at 12 TVL
Resolution	640x200-pixel	640x400-pixel	.....	48HX64W pixel char	35ns
Anti-aliasing type	None	.....	.....	Hardware	.....
Simultaneous on-line faces	1 face/3 sizes	Multiple	2	8	4
Type styles	Sans serif	Sans serif	Serif/s.serif/it	Serif/s.serif/script	.....
Non-Arabic type faces	.....	No	No	.....	.....
Type face storage	ROM cartridge	ROM cartridge/ROM	ROM	ROM	Disk
Face/font compose	No	Yes	No	Yes	Yes
Display flashing	Yes	Yes	Character	By character	Character
Edging control	Yes	Yes	Right/left sides	Surround	Surround/shadow/C/L
Auto centering	Yes	Yes	Horizontal	.....	Horizontal
Roll/crawl controls	Yes	Yes	Variable	Variable speed	Variable
Title keyer/colorizer	Yes	Yes	Integral circuits	Integral circuitry	Optional equipment
Color palette	512	512	512	Unlimited	32,768
Colors/screen	4/screen	4/screen in title	.....	.....	32/screen
Internal memory	160kByte RAM	40-page/512kByte	64 pages	80 pages	100 lines
Memory architecture	8-bit	8-bit	8-bit	8-bit	8-bit
Integral still-store	NV RAM cartridge	.....	RAM	No	No
Off-line mass storage	NV RAM cartridge	Disk	No	.....	Floppy
Access time (per page/frame)	.....	.....	.....	2s per page	0.5s
Effective imaging planes	Background & title	Background & title	1	1	1
Remote ctl/data interface	None	RS-232	Serial bus	.....	1-prvw/2-prgm
Image sources	Background video	Video background*	None	.....	None
Multi-user system	No	No	No	No	4 keyboards
Automation interface	No	No	No	No	.....
.....	.....	*M-2000 includes	.....	.....	.....
.....	.....	graphics functions	.....	.....	.....
.....	.....	626	627	628	629
Reader Service Number	625	626	627	628	629

Manufacturer	3M Company			PESA Electronics
Model Number	D-2200	D-1512	D-5000	CG-4721B
Base computer	Proprietary	Proprietary	Proprietary	.....
Subtitling	Lower 1/3s	Lower 1/3s	Lower 1/3s	Lower 1/3s
Subtitle control	Manual/clocked/TC	Manual	Manual/clocked/TC	Manual/time code
Page format	24-char/10-line	24-char/10-line	32-char/10-line	32/16 font dependent
Resolution	70ns	70ns	35ns	50ns
Anti-aliasing type	Hardware	Hardware	Hardware	Software
Simultaneous on-line faces	8	2	8	5
Type styles	Serif/s.serif/italic	Serif	Serif/s.serif/it/scr	Serif/s.serif/italic
Non-Arabic type faces	No	.....	Cyr/hebr/ideographic	No
Type face storage	Disk	ROM	ROM & disk	ROM
Face/font compose	No	No	Option	No
Display flashing	By character	By character	By character	By character
Edging control	Full control	Full edge control	Full control	Full edge control
Auto centering	H/V/page	Horizontal	H/V/page	Horizontal/page
Roll/crawl controls	Full control	Full control	Full control	Full control
Title keyer/colorizer	Integral & ext	Integral units	Integral & ext	Integral/ext key opt
Color palette	512	512	512	4096
Colors/screen	16/screen	16/screen	32/page	16/screen
Internal memory	1 page	34 pages	100 pages	600 pages
Memory architecture	8-bit	8-bit	8-bit	8-bit
Integral still-store	No	No	No	No
Off-line mass storage	1000 pages/disk	Floppy	Floppy	Floppy

Graphics/Titling Systems

Access time (per page/frame)	1/30s	1/30s	1/30s	1/30s	<1s
Effective imaging planes	2	2 planes	2	2	1
Remote ctl/data interface	RS-232	.....	RS-232	RS-232/wire service	RS-232
Image sources	Disk library	.....	RS-232/wire/library	Bit-pad/library	Camera
Multi-user system	No	No	Multiple keyboards	No	Yes
Automation interface	No	No	Editor and other	No	Yes
Reader Service Number	630	631	632	633	634

Manufacturer	Quanta	Quantel	Ryley Communications	Thomson-CSF	
Model Number	Quantafont Q8 D	QCG-500	Cypher	Cappgen Series 2	
Base computer	Quanta 280	Quanta 280	68000 series μ P	Proprietary	Proprietary
Subtitling	Any screen location	Lower 1/3s	Possible	.....	Any screen location
Subtitle control	Clocked/time code	Clocked/time code	Manual/programmed	.....	.....
Page format	64-char/24-line	64-char/24-line	.....	32-char/12-line	64-char/31 line
Resolution	26.1ns	29ns	.....	11.11ns	48ns
Anti-aliasing type	.....	.....	Hardware & software	Hardware	Software
Simultaneous on-line faces	6	3	Numerous	2	8/channel
Type styles	Serif/s.serif/it/scr	Serif/s.serif/it/scr	90 available	Serif/s.serif/italic	Serif/s.serif/it/scr
Non-Arabic type faces	Cyrillic	Cyrillic	Yes	.....	Cyrillic/hebraic
Type face storage	Disk	Disk	Disk	ROM	Disk & RAM
Face/font compose	Yes	Option	Yes	No	No
Display flashing	Yes	All flash options	Numerous production	By word	All flash options
Edging control	Full edge control	Full edge control	Effects possible on captions generated	Surround	Full edge control
Auto centering	Horizontal/page	Horizontal/page	Variable	H/V	Horizontal
Roll/crawl controls	Variable	Variable	Within system	Variable speeds	Variable
Title keyer/colorizer	Integral units	Both integral	.....	Int-color/ext-keyer	Integral
Color palette	Camera	.....	16.7 million	64	4096
Colors/screen	.....	.....	16.7 million	64/screen	64/screen
Internal memory	800 pages	800 pages	.....	400 pages	40-page
Memory architecture	8-bit	8-bit	16-bit	8-bit	16-bit/bit-slice
Integral still-store	No	No	Limited	No	Floppy
Off-line mass storage	Floppy/Winchester	No	Floppy/Winchester	Floppy	Floppy/hard
Access time (per page/frame)	0.5s for page	0.5s	Sub-second	0.5s for 1 page	<0.9s typically
Effective imaging planes	2	1	Multiple	2	32
Remote ctl/data interface	RS-232	RS-232	RS-422	.....	RS-232/422
Image sources	Camera/library	Camera/library	Paintbox/video	.....	.....
Multi-user system	2 keyboards	.....	.....	4 keyboards	Yes
Automation interface	Various controllers	Various controllers	Yes	.....	No
Reader Service Number	635	636	637	638	639

Video Signal Processors

Manufacturer	ALTA Group	Applied Video/AVS	Asaca/Shibasoku	Michael Cox Electronics
Model Number	Cygnus system	ADAC	AVS-6500	ASC-300
Design function—				
Image enhancement	H/V detail	H aperture/detail	H aperture	Aperture correction
Noise reduction	.....	9dB L/12dB C	6dB L/9dB C	Inherent
Color correction	.....	RGB gain/pedestals	Chroma retiming	No
Contrast correction	Yes	Manual control	Manual control	.....
Signal/sync regeneration	Yes	Yes	TBC & freeze modes	TBC functions
Standards conversion	No	Yes	N P (S) to N P RGB	NTSC/PAL/SECAM
Recommended use—				
Dubbing	Yes	Yes	Yes	Yes
Production	Yes	No	Yes	Yes
On-air tape playback	Yes	Yes	Yes	Yes
Signal format conversion	No	Yes	Yes	Yes
Video response	.....	-0.3dB/5.5MHz	-3dB/3.5MHz	\pm 0.3dB to 6MHz luma
S/N ratio	55dB	55dB	.....	>50dB
Envelope delay	.....	\pm5ns	.....	<50ns
Differential phase/gain	<3°/<3%	1.5°/1.5%	.....	<1°/< \pm 2%
Adjustable controls—				
Video level range	.....	-30/+100 IRE	-300/+100 IRE	.....
Chroma level range	.....	.....	.....	\pm30 IRE
Setup level range	.....	\pm8.5 IRE	\pm 8.5 IRE	.....
Subcarrier level	.....	.....	.....	\pm30 IRE
Hue phase range	Video production	\pm 180°	\pm 180°	.....
Subcarrier phase	system includes TBC	\pm 180°	\pm 180°	.....
Sync level range	effects and A/V	-5/+15 μ s	.....	.....
RGB gain or pedestal adjust	switching	Gain & pedestal	None	No
Programmable operation	.....	Yes	No	.....
Remote-control format	.....	RS-232/422	No	.....
Reader Service Number	641	642	643	644
				645

Video Signal Processors

Manufacturer	Electrocraft Consult	For-A Corporation	Fortel	Grass Valley Group
Model Number	CPS-84 (PAL)	CCS-4300 (-4400)	ColorEx Y-688-32 TEC	3240 Processor
Design function—				
Image enhancement	H crispening	No	No	No
Noise reduction	>6dB chroma	No	To 12dB chroma noise	10dB luma/20dB chroma
Color correction	RGB gain/lift/gamma	RGB gain/setup/gamma	No	No
Contrast correction	Yes	Yes	No	No
Signal/sync regeneration	Yes	Yes	No	Video AGC
Standards conversion	For PAL only	No	No	Yes w/RS-170A phase For PAL or NTSC only
Recommended use—				
Dubbing	Yes	Yes	Yes	Yes
Production	Yes	Yes	Yes	Yes
On-air tape playback	Yes	Yes	Yes	Yes
Signal format conversion	Y/C to YUV/RGB/PAL	CCS-4400 system	Yes	Yes
Video response	To 3.5MHz luminance	±0.1dB 4MHz (4.2MHz)	.....	±0.2dB to 6MHz
S/N ratio	.....	60dB	65dB	70dB
Envelope delay	480ns adjust range	0ns	280ns (100ns auto)	±10ns to 5MHz
Differential phase/gain	.....	2°/2% (±0.5%)	1.5°/1.5% direct	.....
Adjustable controls—				
Video level range	±6dB	±3dB	.....	±3dB
Chroma level range	±6dB	±3dB	.....	±3dB
Setup level range	150mW range	±20 IRE (±10%)	.....	±20 IRE
Subcarrier level	.....	.....	.....	±15 IRE
Hue phase range	.....	±5° (gamma ≥10%)	.....	+3dB/-6dB
Subcarrier phase	0-180°	.....	.....	±13°
Sync level range	To preset	.....	.....	±13°
RGB gain or pedestal adjust	To 200mV p-p gamma	Gain/pedestal	No	+3dB/-6dB
Programmable operation	No	No	No	No
Remote-control format	.....	Yes	.....	Preset operation
.....	.....	CCS-4300 composite	.....	.....
.....	.....	CCS-4400 component	.....	.....
Reader Service Number	646	647	648	650

Manufacturer	ICM Video	Knox Video	Leitch Video	Marconi Communications	Microtime
Model Number	VC-2000P	K700 (K701)	VPA-330N (-331N)	B2020 ACE	2100 Image Processor
Design function—					
Image enhancement	Horizontal aperture	K700	No	No	H coring/H-V detail
Noise reduction	6dB luminance	K700	No	4dB luma/9dB chroma	6dB luma/6dB chroma
Color correction	No	K701	Chroma AGC	No	No
Contrast correction	Manual control	.....	Luminance AGC	No	No
Signal/sync regeneration	Yes	Yes	RS-170A phasing	Yes	Yes
Standards conversion	No	No	No	Any conversion	No
Recommended use—					
Dubbing	Yes	Yes	Yes	Yes	Yes
Production	Yes	Yes	Yes	.....	Yes
On-air tape playback	Yes	Yes	Yes	No	Yes
Signal format conversion	No	Yes	Yes	Yes	No
Video response	±3dB/5MHz	To 8MHz	±1dB to 5MHz	-3dB/5.5MHz PAL	±1dB to 3MHz
S/N ratio	60dB	.....	>60dB	>50dB wtd	.....
Envelope delay	No L/C separation	.....	.....	<1%	<25ns (+500/-300ns)
Differential phase/gain	1.5°/1.5%	.....	.....	<5°/<3%	2°/2%
Adjustable controls—					
Video level range	0-300% of input	±50 IRE (±10 IRE)	±2.5dB	+3dB/-6dB	.....
Chroma level range	±50 IRE	±50 IRE (RGB on K710)	±2.5dB	+3dB relative	.....
Setup level range	-15/+20 IRE	±20 IRE	±10 IRE	.....	.....
Subcarrier level	±50 IRE	±30 IRE	.....	.....	.....
Hue phase range	±65°	±180°	±20°	.....	.....
Subcarrier phase	.....	±180°	.....	±50Hz	.....
Sync level range	±20 IRE	±30 IRE	±10 IRE	+3dB/-6dB	.....
RGB gain or pedestal adjust	None	No	No	None	No
Programmable operation	No	Manual	No	No	No
Remote-control format	No	.....	.....	Multicore cabling	.....
Reader Service Number	651	652	653	654	655

Manufacturer	Oki Electric	Quantel	Shintron	Snell & Wilcox	Sony Broadcast
Model Number	LT1210	SATIN	MC-1 Intermatrix	DIP9700A Processor	BVX-30 System
Design function—					
Image enhancement	H coring	Yes	.....	H-V	H-V detail
Noise reduction	No	Yes	.....	9dB luma/12dB chroma	15dB luminance
Color correction	No	.....	.....	RG gain & pedestal	RGB gain/lift/gamma
Contrast correction	Auto and manual	.....	.....	No	No
Signal/sync regeneration	Yes	TBC functions	Setup adjustment	Yes	Yes
Standards conversion	NTSC/PAL (-M)/SECAM	NTSC/PAL/SECAM	Sync replacement	Yes	Yes
Recommended use—					
Dubbing	Yes	Yes	Yes	Yes	Yes
Production	Yes	Yes	.....	Yes	Yes
On-air tape playback	Yes	Yes	.....	Yes	Yes

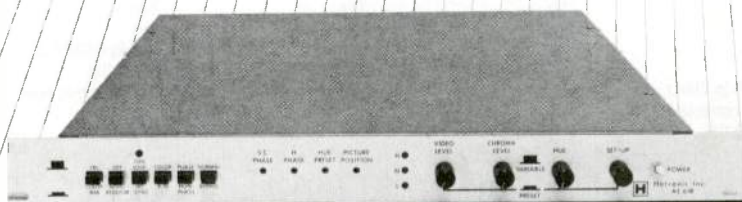
THE POWER OF PERFORMANCE

AE61

TIME BASE CORRECTOR



Time base correction for Heterodyne VTRs, standalone with 3.58 sub-carrier feedback



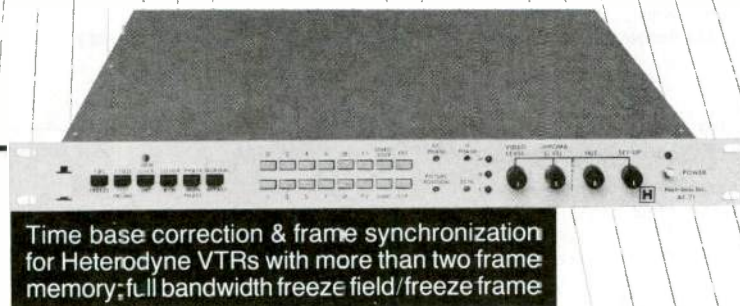
Time base correction for Heterodyne VTRs, standalone without 3.58 sub-carrier feedback

AE61B

TIME BASE CORRECTOR

AF71

TBC/FRAME SYNCHRONIZER



Time base correction & frame synchronization for Heterodyne VTRs with more than two frame memory; full bandwidth freeze field/freeze frame

Performance and Power — the epitomy of the Hotronic heritage — reflects the ceaseless innovative and refined techniques of Hotronic engineers. Compare our TBCs with any other competitive products. Only Hotronic stands up to the stringent standards demanded by our quality-conscious users.



HOTRONIC, INC.

1875 S. Winchester Blvd., Campbell, CA 95008
408/292-1176 or 408/378-3883

Circle (121) on Reply Card

Video Signal Processors

Signal format conversion	Yes	RGB to composite	Yes	Encoded to YUV/RGB	No
Video response	.....	>4.2MHz NTSC	±0.5dB to 10MHz	±0.5dB to 3.3MHz	±0.5dB to 5MHz
S/N ratio	50dB	.....	.....	52dB CCIR wtd	>51dB
Envelope delay	20ns	.....	Conversion accuracy	+600/-100ns adjust	<1%
Differential phase/gain	3°/3%	.....	typically <0.2%	.....	2°/3%
Adjustable controls—					
Video level range	±3 IRE	.....	No	Yes	±3dB
Chroma level range	±3 IRE	.....	No	Yes	±3dB
Setup level range	±3 IRE	.....	Yes	Yes	±20 IRE
Subcarrier level	±10 IRE	.....	N/A	Preset	.....
Hue phase range	±180°	.....	N/A	Yes	±90°
Subcarrier phase	±3 IRE	.....	N/A	.....	360°
Sync level range	±3 IRE	.....	.....	Preset	.....
RGB gain or pedestal adjust	Gain pedestal	No	.....	Red/blue	±30% gain/±15% setup
Programmable operation	No	.....	No	Per panel presets	Yes
Remote-control format	.....	.....	No	.....	BVR-10 or BVR-30
Reader Service Number	656	657	658	659	660

Manufacturer	Tamron Industries	Tektronix	Thomson-CSF		Video International
Model Number	Fotovix	1440	5700 Color Processor	8010 Image Enhancer	DTC-3500
Design function—					
Image enhancement	Through size control	No	No	H-V detail	H-V enhancement
Noise reduction	.....	No	No	Effective	To 15dB luma/chroma
Color correction	Alteration/balance	No	RGB gain/pedestal	No	R-Y/B-Y
Contrast correction	Effective	Automatic	No	Within detail	Inherent
Signal/sync regeneration	Adds sync	Yes	No	No	TBC/synchronizer
Standards conversion	Film to video	No	No	No	N P S PAL-M/N NTSC
Recommended use—					
Dubbing	.....	No	Yes	Yes	Yes
Production	Yes	No	Yes	Yes	Yes
On-air tape playback	.....	Yes	Yes	No	Yes
Signal format conversion	Film to video signal	No	Yes	No	Enc to RGB/Y-C/YUV
Video response	To >4.2MHz	.....	±3dB to 4.2MHz	-1dB to 5MHz	>5.5MHz
S/N ratio	.....	>60dB to 5MHz unwt'd	65dB	>55dB	>52dB worst case
Envelope delay	.....	±3dB correction	840ns	180ns	.....
Differential phase/gain	.....	0.5°/0.5%	0.25°/0.5%	<1°/0.5%	2°/2%
Adjustable controls—					
Video level range	Device uses film	±6dB	±3dB	±1dB	Yes
Chroma level range	positive or negative	±3dB	±3dB (±40 IRE)	.....	Yes
Setup level range	to produce video	±10 IRE	±15 IRE	.....	Yes
Subcarrier level	image. Various	.....	±15 IRE	.....	Yes
Hue phase range	image manipulations	±25°	±15°	.....	Yes
Subcarrier phase	are available.	.....	±15°	.....	±180°
Sync level range	.....	±3dB	±20 IRE	.....	Preset
RGB gain or pedestal adjust	.....	No	Gain/pedestal/phase	No	R-Y/B-Y/Y
Programmable operation	.....	Auto per VIRS ref	No	Per panel settings	.....
Remote-control format	.....	Simple remote ctl	.....	.....	.....
Reader Service Number	661	662	663	664	665

Manufacturer	Vidcraft		
Model Number	IVE-100 Enhancer	Detailer IV	A/V Processor
Design function—			
Image enhancement	Yes	Yes	H-V
Noise reduction	VNX reduction	VNX system	VNX system
Color correction	No	No	Yes
Contrast correction	No	Yes	Yes
Signal/sync regeneration	Yes	.....	Yes
Standards conversion	No	No	No
Recommended use—			
Dubbing	Helical playbacks	For VCRs	VCR material
Production	Yes	.....	.....
On-air tape playback	.....	No	No
Signal format conversion	.....	.....	No
Video response	±1dB to 5MHz	±1dB to 4.2MHz	±1dB to 4.2MHz
S/N ratio	.....	.....	.....
Envelope delay	.....	.....	.....
Differential phase/gain	1°/2%	<2.5°/1.5%	<2.5°/1.5%
Adjustable controls—			
Video level range	.....	None	Yes
Chroma level range	.....	Yes	Yes
Setup level range	.....	Yes	No
Subcarrier level	.....	None	No
Hue phase range	.....	None	±35°
Subcarrier phase	.....	None	-36° to +8° color
Sync level range	.....	None	.....
RGB gain or pedestal adjust	.....	None	.....
Programmable operation	Manual stabilization	No	No
Remote-control format	Enhance & VNX adjust	No	No
Reader Service Number	666	667	668

Additional copies of the 1987 BG/SB are available for \$20 each. Write to **Broadcast Engineering**, P.O. Box 12901, Overland Park, KS 66212, or call 913-888-4664.

Video Production Switchers

These are video switching systems for production and master control.

Manufacturer	Ampex Corporation			Beaveronics	
Model/Series Number	4100 MC-4	4100 H	AVC-33S	712	BI-154 (BI-156)
Design application	Master control	Video production	Video production	Video production	Video production
# of inputs	28V/26 + 5A-stereo	26V/24A stereo opt	32V/16A stereo opt	12 video	15 video
Integral video black source	Yes	Yes	Yes	Yes	Yes
Integral color backgrounds	Yes	Yes	Yes	Yes	Yes
Non-sync signal detector	Yes	Yes	Yes	Integral	Integral
Key sources	26 int/4 ext option	26 int/6 ext option	32 int/6 ext option	3 int/1 ext	4 int/2 ext
Chroma keys	1 enc/4 RGB optional	7 enc/6 RGB option	10 enc/6 RGB option	RGB included	RGB/encoded options
Downstream keyer	All sources	All sources option	All sources	4-source optional	4-source BI-156 only
Switching buses	2/3 optional	8/4 aux option	8/16 aux option	4	4 (6/2-aux option)
Mix/effects amps	None	3	3	1 eff-key/1 mix	1-2 (2-3)
Pattern generator	None	64 + 36 optional	164 patterns	10 patterns	32 patterns
Wipe effects	No	Rotary/soft-edged	Rotary/soft/user prg	Soft-edge	Soft-edge
Spotlight effects	No	Integral	Integral	Integral	Integral
Border effects	No	Integral	Integral	Integral	Integral
Shadow effects	Optional	Optional	Optional	Optional	Optional
Effects positions/modulations		Position/modulation	Position/modulation	Position/modulation	Position/modulation
Quad split feature		Optional	Optional	No	Optional
Re-entry system		Triple	Triple	Single	Single (or double)
Automation interface	Parallel optional	Parallel optional	SMPTE serial option	No	No
Programmable crossfade	X-fade/fade-black	X-fade/fade-black	X-fade/fade-black	.....	No
Memory backup battery	No	No	Yes	No	No
System diagnostic software	No	No	Yes	No	No
Digital effects port	No	Yes	Yes	No	No
Video electrical path length	300µs	700µs	650µs	140ns	200µs (350µs)
Visual crosstalk (3.58MHz)	>60dB	55dB	60dB	53dB	53dB
Separate electronics bay		.....	.....	.....	.....
Audio preview w/audio follow	Yes	No	Optional	.....	.....
Audio metering	Yes	No	Optional	.....	.....
Audio level controls	Yes	No	.....	.....	.....
Audio mix interface	No	No	Yes	.....	.....
Editing control interface	3-telecine/9-VTR	.....	.....	.....	.....
Reader Service Number	671	672	673	674	675

Manufacturer	Robert Bosch Video ¹		Central Dynamics		
Model/Series Number	MCS-2000	R102ME	MC-990	CD-680 (CD-480)	CD-1080
Design application	Master control	Production	Master control	Production	Video production
# of inputs	250V/250A stereo	16 or 24	32V/32A+6A	32 max	32 max
Integral video black source	Yes	Yes	Option	Yes	Yes
Integral color backgrounds	Yes	Yes	Option	Yes	Yes
Non-sync signal detector	Yes	.....	Yes	Integral	Integral
Key sources	Int & ext	Various provisions	Various provisions	All sources + titles	All sources + titles
Chroma keys	No	RGB std/enc opt	Option RGB	Encoded/RGB options	RGB/encoded options
Downstream keyer	250 sources	Yes	External	DMK2180 option	DMK2180 option
Switching buses	150/150 aux	10 prime	7	6 (4) primary	10 primary
Mix/effects amps	No	2	.....	2 SFX units	2 SFX units
Pattern generator	120 patterns	60 patterns	No	38 + options	38 + 52 optional
Wipe effects	User programmable	Rotary/soft-edge	Option	Soft-edge	Rotary/soft-edge
Spotlight effects	No	Yes	No	Yes	Yes
Border effects	No	Yes	Option	Yes	Yes
Shadow effects	Integral	.....	.....	Yes	Yes
Effects positions/modulations		Pos/mod memory	No	Position/modulation	Position/modulation
Quad split feature	No	No	No	Option	Optional
Re-entry system	Single	Yes	No	Double	Double
Automation interface	RS-232/422	Option	APC-990 system	CAD system	CAP system
Programmable crossfade	X-fade/fade-black	Option	Auto transitions	Auto transitions	Auto transitions
Memory backup battery	Yes	Yes	.....	.....	.....
System diagnostic software	Yes	Yes	No	.....	.....
Digital effects port	No	Yes	.....	Yes	Yes
Video electrical path length	100°	.....	.....	.....	.....
Visual crosstalk (3.58MHz)	60dB	.....	56dB	56dB	56dB
Separate electronics bay		Yes	.....	Yes	Yes
Audio preview w/audio follow	Yes	No	Variable voice-over	.....	.....
Audio metering	Yes	No	Yes	.....	.....
Audio level controls	Yes	No	Yes	.....	.....
Audio mix interface	No	No	.....	.....	.....
Editing control interface		RS-422	.....	Yes	Yes
Reader Service Number	676	677	678	679	680

¹See BTS Broadcast Television Systems

Video Production Switchers

Manufacturer	Cox Electronics		Crosspoint Latch	
Model/Series Number	T-24-P0	T24-2	Model T8	6109 (6119) 6129AHK
Design application	Master control	Video production	Video production	Video production
# of inputs	23V/23A stereo	23V	8 video	8 (5)
Integral video black source	Yes	Yes	Yes	Yes
Integral color backgrounds	Yes	Yes	Yes	Yes
Non-sync signal detector	No	No	No	No
Key sources	4 external	4 external	8 int/2 ext	7-int/1-ext (5-int/1)
Chroma keyers	Optional	Encoded or RGB	Encoded or RGB opt	RGB std (option)
Downstream keyer	4 sources	4 sources option	2 sources optional	..... (Yes)
Switching buses	2/2 aux	10/4 aux	3/1 aux	3 primary
Mix/effects amps	1	3	1 multilayer	1
Pattern generator	9 patterns	100 patterns	80 patterns	32 patterns (12)
Wipe effects	Soft edge	Rotary/soft-edged	Rotary/soft-edged	Soft-edge
Spotlight effects	No	Integral	Integral	Integral (not 6119)
Border effects	Integral	Integral	Integral	Integral
Shadow effects	Integral	Integral	Optional	Integral
Effects positions/modulations	No	Position only	Position only	Position/modulation
Quad split feature	No	Integral	No	.....
Re-entry system	No	Triple	Via multilayer M/E	Double
Automation interface	SMPT E optional	Editor or memory	Serial or relay	Serial/parallel opt
Programmable crossfade	X-fade/fade-black	X-fade/fade-black	X-fade/fade-black	X-fade/fade-black
Memory backup battery	Yes	Yes	Yes	No
System diagnostic software	Yes	Yes	Yes	No
Digital effects port	No	Yes	No	Yes
Video electrical path length	1.2µs	1.2µs	2µs	..... (±1.5° diff)
Visual crosstalk (3.58MHz)	56dB	56dB	58dB	50dB
Separate electronics bay	.....	.....	.....	Yes
Audio preview w/audio follow	Yes	No	Optional	No
Audio metering	Yes	No	Optional	No
Audio level controls	Yes	No	No	No
Audio mix interface	Yes	No	Yes	No
Editing control interface	.....	.....	.....	No (Yes)
Reader Service Number	681	682	683	684 685

Manufacturer	Crosspoint Latch	ERCA	Echolab		
Model/Series Number	6150BK	TM2/6C	SE-3	SE-6	DV-5
Design application	Master control	Production/ENG	Video production	Video production	Video production
# of inputs	16V/16SA	PAL or 6 component	10V	10 video	10 video
Integral video black source	Yes	No	Yes	Yes	Yes
Integral color backgrounds	Yes	External source	Yes	Yes	Yes
Non-sync signal detector	No	No	Yes	Yes	Yes
Key sources	4 external	Title only	2 int/3 ext	2 int/5 ext	4 external
Chroma keyers	No	Yes	Encoded or RGB opt	Encoded or RGB opt	Encoded or RGB opt
Downstream keyer	No	Possible	2 sources	2 sources	2 sources
Switching buses	2	3	3	5	4/3 aux
Mix/effects amps	1	2	2½	2½	1½
Pattern generator	Optional patterns	Programmable	40 patterns	40 patterns	1½ patterns
Wipe effects	No	Limited geometrics	Soft & programmed	Soft/programmable	Soft/programmable*
Spotlight effects	No	No	Integral	Integral	Integral
Border effects	Optional	Yes	Integral	Integral	Integral
Shadow effects	No	.....	Optional	Optional	Optional
Effects positions/modulations	No	Position/modulation	Position	Position/modulation	Position/modulation
Quad split feature	No	No	Integral	Integral	Optional
Re-entry system	.....	Possible	Single	Single	.....
Automation interface	Serial	No	No	RS-422	RS-422
Programmable crossfade	Fade-black/X-fade	Limited features	Yes	.....	X-fade/fade-black
Memory backup battery	No	No	Optional	Yes	Yes
System diagnostic software	No	No	Yes	Yes	Yes
Digital effects port	No	No	Optional	Optional	Yes
Video electrical path length	.....	.....	12µs	12µs	0.3µs
Visual crosstalk (3.58MHz)	50dB	.....	52dB	52dB	52dB
Separate electronics bay	.....	No	.....	.....	.....
Audio preview w/audio follow	Yes	No	No	No	No
Audio metering	Yes	No	No	No	No
Audio level controls	Yes	No	No	No	No
Audio mix interface	Yes	No	Yes	Yes	Yes
Editing control interface	.....	No	.....	.....	.....
Reader Service Number	686	687	688	689	690



X-CALIBRE

zooms into view...

Announcing X-Calibre from GML. The new dual channel, multiple input digital video effects unit that gives you a brilliant, highly versatile zoom and trajectory capability with infinite size increase . . . instantly, at the touch of a button.

A cursor can be positioned anywhere on the screen for zoom starting point and for any required trajectory. With further zoom variations such as slide and tumble, spin rotation . . . all the flexibility you need.

Plus a vast repertoire of other effects – including vertical inversion,



horizontal and vertical compression, segmented reveals and conceals between channels, full re-entrant capability – and full digital signal processing, in one superbly designed complete package.

With two TBC's, full frame and field capability and a host of advanced features, X-Calibre is way out in front, with nothing to touch it for anything like the price.

Ask for a demonstration of the X-Calibre DVE now. And see for yourself what high performance, versatility and ease of operation are all about.

GML AMERICA INC., 8150 LEESBURG PIKE, SUITE 910, VIENNA, VIRGINIA 22180 TEL: (703) 790-0101 RCA TELEX: 277682 GML-UR

■ GML, 143,145 CARDIFF ROAD, READING, BERKS RG1 8JF, ENGLAND ■ GML FRANCE, 50 BIS, RUE MAURICE ARNOUX, 92120 MONTROUGE, PARIS

Circle (123) on Reply Card

Video TBCs/Synchronizers

These video signal stabilizing systems are used with VTRs and other electromechanical video sources, as well as remote signal sources. These systems are applicable to NTSC unless noted with model number.

Manufacturer	Ampex Corporation			Apert-Herzog	Crosspoint Latch
Model/Series Number	Zeus 1	TBC-6	TBC-40 (TBC-80)	Model H (Model H2)	8200 Excalibur
Function	TBC & frame store	TBC	TBC	TBC & sync	Dual TBC
Sample freq/bits	14.3MHz/9-bit	14.3MHz/8-bit	14.3MHz/8-bit	14MHz/8-bit	.....
Correction window	60TVL	28TVL	14TVL	2-field	16TVL
Video bandwidth	To 5MHz	To 4.2MHz	To 4.2MHz	To 4.2MHz	.....
S/N ratio	58dB	56dB	56dB	54dB	>52dB video/70dB AF
Diff phase/gain	2°/2%	2°/2%	2°/2%	3°/3%	>3°/3%
Residual error	±2.5ns	±2.5ns	±2.5ns	±12ns	.....
Coherent 3.58 output	Yes	Yes	Yes	Yes	Yes
Advanced sync output	Yes	Yes	Yes	Yes	One each channel
Component video inputs	No	No	No	No	No
Component video outputs	No	No	No	No	No
Velocity compensation	Yes	Yes	Yes	No	.....
Heterodyne processing	Yes	Yes	No (for 1/2 & U)	Model H only	.....
Non-servo capstan	Yes	No	No	Model H only	.....
Dropout compensation	Yes	Yes	Yes	No	.....
Dynamic tracking	Yes	Yes	No (0-1.5X play)	No	.....
Noise reduction	No	No	No	No	.....
Color correction	No	No	No	No	.....
Image enhancement	No	No	No	No	.....
Integral production	No	No	No	No	Pattern/switch/keyer
Hot switching capability	No	No	No	Yes	.....
Reader Service Number	721	722	723	724	725

Manufacturer	FOR-A Corporation				Fortel Inc
Model/Series Number	FA-800	FA-440 (FA-450)	FA-430 (FA-410)	FA-400 (FA-420)	TBC ³²
Function	Sync	TBC/framestore	TBC	TBC/framestore	TBC
Sample freq/bits	...../8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit (9 opt)
Correction window	2-field	2-field	16TVL	2-field	30TVL
Video bandwidth	To 5MHz	To 4.2MHz	To 4.2MHz	2.5MHz (4.2 w/subcar)	To 4.5MHz
S/N ratio	58dB	58dB	58dB	58dB	58dB 8-bit (61dB)
Diff phase/gain	2°/2%	2°/2%	2°/2%	2°/2%	2°/2% 8-bit
Residual error	±10ns	±10ns	±10ns	±10ns	±10ns mono
Coherent 3.58 output	Yes	Yes	Not -430	Not on -420	Yes
Advanced sync output	Yes -2/-14H	Yes -2/-14H	Yes -2/-14H	Yes 1 field	Yes
Component video inputs	No	Not 440	Y-688 (No -410)	No	No
Component video outputs	No	Not 440	Y-688 (No -410)	No	No
Velocity compensation	Yes	Yes	No	No	Yes
Heterodyne processing	Yes	Yes	Yes	Yes	Yes
Non-servo capstan	Yes	Yes	No	Yes (No -420)	Yes
Dropout compensation	Yes	Yes	Yes	Not on -400	Yes
Dynamic tracking	Yes	Yes	Yes	No	Yes
Noise reduction	No	No	6dB (No -410)	No	No
Color correction	No	No	Yes (No -410)	No	No
Image enhancement	No	No	Yes (No -410)	No	No
Integral production	No	No	.....	No	No
Hot switching capability	Yes	Not on 450	Not 410	Yes	No
Reader Service Number	726	727	728	729	730

Manufacturer	Fortel Inc	Gunnerfield Marketing Ltd/GML		Harris Video Systems	
Model/Series Number	TBC ³² HET	Turbo 2	GML8000 (PAL/SECAM)	GML4004S (PAL/SECAM)	AC20A
Function	TBC	TBC	TBC & sync	Dual TBC w/effects	TBC & sync
Sample freq/bits	14.3MHz	.....	13.5MHz/8-bit	13.5MHz/8-bit	14.3MHz/8-bit
Correction window	.....	Infinite	1-field	16TVL	1-field/1-frame opt
Video bandwidth	To 4.5MHz	4.2MHz	5.5MHz lum/3MHz chr	To 3MHz color under	4.2MHz (to 5MHz)
S/N ratio	58dB	60dB	55dB	55dB	56dB (55dB)
Diff phase/gain	2°/2%	0.5°/1.5%	4°/4%	4°/4%	2°/2%
Residual error	±20ns	±25ns	±25ns luminance	±25ns mono	±10ns
Coherent 3.58 output	.....	Yes	No	Yes	Yes
Advanced sync output	.....	Yes	No	Yes	Yes
Component video inputs	No	Y-688	Y/C	No	Y/C YUV
Component video outputs	No	Y/R-Y/B-Y	RGB option	RGB	Y/C YUV RGB
Velocity compensation	Yes	No	Yes	No	No
Heterodyne processing	Yes	No	Yes	Yes	Yes
Non-servo capstan	Yes	No	Yes	Yes	No
Dropout compensation	Yes	Yes	Yes	Yes	Yes
Dynamic tracking	Yes	Yes	Yes	Channel A only	To 40x fwd or rev
Noise reduction	No	Luma	Yes	Noise coring	No
Color correction	No	No	Yes	R-Y/B-Y balance	No
Image enhancement	No	Horiz	Yes	.....	No
Integral production	No	Freeze frame, field	Yes	Yes	Yes
Hot switching capability	No	No	.....	.....	No
Reader Service Number	731	732	733	734	735

Video TBCs/Synchronizers

Manufacturer	Harris Video Systems				Hotronic
Model/Series Number	VW-3	632 (631 PAL)	#540/#550/#560	#640	AE61/AE61B
Function	TBC & sync	Sync	TBC	Frame sync	TBC
Sample freq/bits	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit
Correction window	1-frame	2-field	16TVL	2-field	16TVL
Video bandwidth	±0.5dB/5MHz	±0.5dB/5MHz	To 4.2MHz	To 4.2MHz	±0.5dB to 4.2MHz
S/N ratio	56dB	57dB	59dB	58dB	58dB
Diff phase/gain	<2°/2%	1°/1% (2°/2%)	2°/2% (>3°/3% 560)	2°/2%	<2°/2%
Residual error	±20ns monochrome	±10ns L/±2°C	±20ns (±15ns 560)	±2ns	±20ns monochrome
Coherent 3.58 output	Yes	Yes	Yes	Yes	Yes (Not AE61B)
Advanced sync output	Yes	No	Yes	Yes	Yes
Component video inputs	No	RGB	No	No	No
Component video outputs	No	RGB	No	No	No
Velocity compensation	In direct & hetero	.....	No -560	No	No
Heterodyne processing	Yes	Yes	550 & 560	No	Yes
Non-servo capstan	.....	Yes	No	No	.....
Dropout compensation	TTL & RF	Yes	RF or TTL	Yes	Option
Dynamic tracking	No	No	Option for 540/550	Yes	No
Noise reduction	No	To 12dB L & C	No	12dB	Option
Color correction	No	No	No	No	No
Image enhancement	No	No	No	No	No
Integral production	No	Yes	No	No	No
Hot switching capability	Yes	Yes	No	Yes	.....
Reader Service Number	736	737	738	739	740

Manufacturer	Hotronic	JVC Company	Lenco	Microtime	
Model/Series Number	AE-71	AD51	SA-T100U	TBC-450	S-230
Function	TBC & sync	TBC & sync	TBC	TBC	TBC & sync
Sample freq/bits	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit
Correction window	4-fields	>1 frame	1 frame	16TVL	2-field
Video bandwidth	To 4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.2MHz	±0.5dB/5MHz (w/3.58)
S/N ratio	58dB	58dB	>58dB	58dB	>58dB
Diff phase/gain	<1.5°/1.5%	<2°/2%	2°/2%	<2°/2%	<2°/2%
Residual error	±20ns	±20ns monochrome	±15ns	±20ns	.....
Coherent 3.58 output	Yes	Yes	Yes	Yes	Yes
Advanced sync output	Yes	Yes	Yes	Yes	Yes
Component video inputs	No	No	.....	Composite only	No
Component video outputs	No	No	.....	Composite only	No
Velocity compensation	.....	No	No	.....	No
Heterodyne processing	Yes	And direct	Yes	Yes	Yes
Non-servo capstan	.....	.....	Yes	.....	Yes
Dropout compensation	Yes	.....	Yes	By pixel	No
Dynamic tracking	No	.....	No	.....	No
Noise reduction	3dB chroma noise	No	No	No	No
Color correction	No	No	No	No	No
Image enhancement	No	No	No	No	No
Integral production	No	No	Field/frame freeze	No	No
Hot switching capability	Yes	Yes	No	.....	Yes
Reader Service Number	741	742	743	744	745

Manufacturer	Microtime	NEC America	Nova Systems		
Model/Series Number	T-220 Component	FS-19	FS-18	#620	501
Function	TBC & sync	Sync/TBC opt	Sync/TBC opt	TBC/frame store	TBC
Sample freq/bits	13.5MHz/8-bit	14.3MHz/10-bit	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit
Correction window	1-field	Infinite	Infinite for TBC	2-field	32-line
Video bandwidth	-3dB to 5MHz	To 5MHz	To 5MHz	To 4.2MHz	±0.5dB to 4.2MHz
S/N ratio	59dB	60dB	>53dB	58dB	58dB
Diff phase/gain	2°/2%	1°/11%	2°/2%	2°/2%	<2°/2%
Residual error	±10ns	.....	.....	±10ns	±10ns Y/2° C
Coherent 3.58 output	No	Yes	Yes	Yes	Yes
Advanced sync output	Fixed 56H	+8H	+8H	Yes	Yes
Component video inputs	YIQ-NTSC (YUV-PAL)	No	No	No	No
Component video outputs	YUV Y/R-Y/B-Y	No	No	No	No
Velocity compensation	No	Yes	Yes	No	No
Heterodyne processing	Yes	Yes	Yes	Yes	Direct only
Non-servo capstan	Yes	Yes	Yes	Yes	No
Dropout compensation	Yes	Yes	Yes	Yes	Yes
Dynamic tracking	-1X to 3X play	No	No	Yes	Option
Noise reduction	No	No	No	To 2.6dB	.....
Color correction	No	No	No	No	.....
Image enhancement	No	No	No	No	No
Integral production	No	No	No	No	No
Hot switching capability	Yes	Yes	Yes	No	No
Reader Service Number	746	747	748	749	750

PAY LESS ATTENTION TO YOUR VIDEO CART MACHINE

Now Available in
BetaCam Format



Great idea! Now you can do just that with the TCS2000.

The Cart Machine automatically manages, records and plays-to-air all forms of spots and programs, giving you much more uninterrupted time away from programming concerns.

The Cart Machine holds up to 280 carts on-line. Tracks 65,000 carts in the database. With its 1,000 event look ahead feature, you receive a printed list of needed carts and your saturation spot carts never have to leave the machine.

The Cart Machine's comprehensive software system interacts with your traffic system to download your logs and automatically preplans the spot play lists days in advance.

Now other station operations get your undivided attention—with The Cart Machine.

Odetics

We put *smarts* in The Cart Machine.

Odetics, Inc. 1515 S. Manchester Ave., Anaheim, CA 92802-2907.
Call toll free 1-800-243-2001. In California call 800-238-4422 or 714-774-5000.

Circle (124) on Reply Card

Video TBCs/Synchronizers

Manufacturer	Nova Systems	Panasonic Broadcast	Quantel	Questech Ltd	Regis-BLT
Model/Series Number	#511	AU-TB50	DFS 1750	2101P (6001P) PAL	FSC
Function	TBC	TBC	TBC & sync	Sync	TBC & sync
Sample freq./bits	14.3MHz/8-bit	13.5MHz/8-bit	14.318MHz/8-bit	13.5MHz/8-bit	13.5MHz/8-bit
Correction window	32-line	32TVL	2-field	2-field	1-field
Video bandwidth	±0.5dB/5MHz direct	Y-4.5MHz/IQ-1.5MHz	To 4.2MHz	To 5.5MHz	To 3.5MHz
S/N ratio	58dB	56dB	58dB	54dB	52dB wtd
Diff phase/gain	<2°/2%	2°/2%	1°/1%	1.5°/2.5%	3°/3%
Residual error	±10ns	±10ns	<2ns	±10ns	<±5ns
Coherent 3.58 output	Yes	No	No	No	.....
Advanced sync output	Yes	No	Yes	No	.....
Sync advance adjustment	.....	.....	.....	.....	.....
Component video inputs	No	Y/I/Q	No	Yes	No
Component video outputs	No	Y/I/Q	No	Yes	No
Velocity compensation	No	No	No	Yes (No)	Yes
Heterodyne processing	Yes	No	Yes	Yes	Yes
Non-servo capstan	No	No	No	Yes	Yes
Dropout compensation	Yes	Yes	No	Yes (No)	Yes
Dynamic tracking	Yes	Yes	.....	Yes (No)	Yes
Noise reduction	.....	3dB chroma	.....	No	No
Color correction	No	No	No	No	Yes
Image enhancement	No	No	No	No	No
Integral production	No	No	No	No	No
Hot switching capability	No	No	Yes	Yes	Yes
Reader Service Number	751	752	753	754	755

Manufacturer	Sony Broadcast	Tektronix	Video International		
Model/Series Number	BKH-2100 (-2150)	BVT-2000	BVT-810	110-S	TBC-3000 PAL/SECAM
Function	TBC	TBC	TBC	TBC & sync	TBC & sync
Sample freq./bits	14.3MHz/9-bit	14.3MHz/9-bit	10.7MHz/8-bit	14.3MHz/10-bit	13.5MHz L/8-bit
Correction window	1TVL (15TVL)	4TVL (12TVL option)	15TVL	2-field or 4-field	1-frame
Video bandwidth	To 4.2MHz	±0.3dB to 4.2MHz	To 4.2MHz	To 4.2MHz	>5.5MHz
S/N ratio	58dB	58dB	55dB	60dB unwtwd	>53dB worst case
Diff phase/gain	±2°/2%	±2°/±2%	±2°/±2%	1°/1%	±2°/±2%
Residual error	±2.5ns	±2.5ns	±2.5ns chroma	±20ns	.....
Coherent 3.58 output	No	Yes	Yes	No	Yes
Advanced sync output	No	Yes	Yes	No	Yes
Component video inputs	No	No	No	No	YUV (Y/C)
Component video outputs	No	No	No	No	YUV (Y/C)
Velocity compensation	2nd order	Line-by-line	.....	No	.....
Heterodyne processing	Y/C selectable	Option	.....	Yes	.....
Non-servo capstan	No	No	No	Yes	.....
Dropout compensation	Digital	Digital	Yes	No	TTL
Dynamic tracking	-1X to 3X play	1X rev to 3X fwd	Yes	No	.....
Noise reduction	No	3dB chroma	No	No	4-level selectable
Color correction	No	Noise reduction	No	No	R-Y/B-Y
Image enhancement	No	No	No	No	H detail
Integral production	No	No	No	No	No
Hot switching capability	No	No	.....	Yes	Yes
Reader Service Number	756	757	758	759	760

Time Code Readers/Generators

Manufacturer	Adams-Smith	P. Albrecht	Amtel Systems	Audio + Design/Calrec	Audio Visual/AVS	
Model Number	System 2600	TCU-E	TCR-500 reader	Evertz 3600D	TCR1 Reader	S160TC Reader/Keyer
Portable unit	No	Yes	No	No	Yes	Yes
Operating modes—						
Drop frame	Yes	No	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes	.....
Jam sync	Yes	Yes	No	Yes	Yes	No
Standards supported	SMPTE/EBU	EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video/60Hz/crystal	Video	Video input	Video	Video	Video
BCD data entry for	Time/user bits	Time/user bits	.....	.....	Time/user bits	None
BCD data displays of	Time/user bits	Time/user bits	.....	.....	Time/user bits	Optional
# of display digits	8	8	.....	8	8	8 optional
Display digit size	1/8"	1/2"	.....	3/4"	1"	.....
Reading speed	100x max/0 min	1/10 to 30x play	10x-1/10x of play	1/20x-70x play	±25% of play	1/128 to 128x play
Edit controller interface	Yes	No	.....	No	No	Option
VITC code output	SMPTE/EBU	EBU	No	No	No	No
Synchronizer feature	Yes	Yes	No	No	No	No
LTC output signal	0dBm or 1Vp-p 600Ω	0 to 4Vss	.....	0dBm	0.775Vrms 10kΩ	Video only
Power requirement	110/220Vac	220Vac	110Vac	110Vac	110Vac or 6Vdc	220Vac

Time Code Readers/Generators

Equipment features—

LTC-VITC translation	Yes	No	No	No	No
User bit recognition	No	Yes	Yes	Yes	No
Time-code comparator	Yes	No	No	No	No
Video display key	16/10-100TVL	8-16 char/16TVL	16/32TVL	No	8 char/12x16 matrix
Display window	2-line	2-line	2-line	No	1-line
Reader Service Number	761	762	763	764	765

Manufacturer **Broadcast Systems Group**
Model Number **2047-xx**

Cipher Digital

	6100 Reader/Generator	735V Reader/Insertor	735CD Reader/Control	716A LTC Generator	710A Reader/Regen
Portable unit	No	No	No	No	No
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes
Jam sync	Yes	Yes	.....	Yes	No
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video/60Hz/crystal	.....	.....	Video/60Hz/crystal	Video
BCD data entry for	Time/user bits	.....	.....	Time/user bits	.....
BCD data displays of	Time/user bits/data	Time/user bits/data	Time/user bits	Time/user bits/data	Time/user bits/data
# of display digits	16	8	8	8	8
Display digit size	0.75"	1/2"	1/2"	1/2"	1/2"
Reading speed	1/30x to 80x play	1/50x to 80x play	1/50x to 80x play	.....	1/50x to 80x play
Edit controller interface	Yes	Yes	Yes	Yes	Yes
VITC code output	No	SMPTE/EBU	No	No	No
Synchronizer feature	Yes	No	No	No	No
LTC output signal	0dBm	+4dBm	+4dBm	+4dBm	+4dBm
Power requirement	110/12Vac	110/220Vac	110/220Vac	110/220Vac	110/220Vac
Equipment features—					
LTC-VITC translation	No	Yes	No	.....	No
User bit recognition	Yes	Yes	For event control	.....	Yes
Time-code comparator	No	Yes	Yes	.....	.....
Video display key	8 variable size	16 char/variable	8 char/variable	.....	8 char/variable
Display window	.....	3-line	1-line	.....	2-line
Reader Service Number	767	768	769	771	772

Manufacturer **Coherent Communications**

Datum

	TC100A Master Module	TC200A Recorder Module	5370	5360 TC Reader	5350 TC Generator	5303 Time Processor
Portable unit	Yes	Yes	No	No	No	No
Operating modes—						
Drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Color frame	No	No	No	Yes	Yes	Yes
Jam sync	Yes	No	No	No	No	Yes
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Crystal	Crystal	.....	60Hz	Video/60Hz	Video
BCD data entry for	Time/user bits	Time/user bits	.....	.....	Time	Time/user bits
BCD data displays of	Time/user bits	No	Time code	Time/user bits	Time/user bits	Time/user bits
# of display digits	8	No	.....	8	8	8
Display digit size	1/2"	.....	.....	1"	1"	1"
Reading speed	Sync speed only	.....	.....	1/30x to 90x play	.....	1/30x to 80x play
Edit controller interface	No	No	.....	Yes	Yes	Yes
VITC code output	No	No	.....	No	No	SMPTE/EBU
Synchronizer feature	No	No	.....	No	No	No
LTC output signal	5Vp-p	5Vp-p at 220	.....	2Vp-p 600Ω	2Vp-p 600Ω	2Vp-p 600Ω
Power requirement	9Vdc	12-30Vdc	110/220Vac	110/220Vac	110/220Vac	110/220Vac
Equipment features—						
LTC-VITC translation	No	No	No	No	No	Yes
User bit recognition	Yes	Yes	No	No	No	Yes
Time-code comparator	Yes	No	No	No	No	No
Video display key	No	No	8 char/variable	.....	No	8 char/variable
Display window	No	No	1-line	.....	No	1-line
Reader Service Number	773	774	775	776	777	778

Time Code Readers/Generators

Manufacturer	EECO			ESE Inc		
Model Number	VIG-850	EECOnline Series	ES261 Generator	ES254 Reader	ES255 Reader/Keyer	ES727(257) Comparator
Portable unit	No	Yes	No	No	No	No
Operating modes—						
Drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	No	No	No
Jam sync	Yes	Yes	Yes	No	No	No
Standards supported	SMPTE/EBU	SMPTE	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video/60Hz/crystal	Video/60Hz/crystal	Video	.....	.....
BCD data entry for	Time/user bits	Time/user bits	Time/user bits	.....	No	No
BCD data displays of	Time/user bits/data	Time/user bits/data	.....	Time code	No	Time code
# of display digits	8	8	.....	8	No	8
Display digit size	1/2"	1/2"	.....	0.4"	No	0.4"
Reading speed	Freeze to 45x play	.....	10x-40x play	1/20x-20x play	1/20x-20x of play	1/20x-20x play
Edit controller interface	Yes	No	.....	No	No	No
VITC code output	SMPTE/EBU	No	No	No	No	No
Synchronizer feature	No	No	No	No	No	No
LTC output signal	0dBm	0dBm	1Vp-p 600Ω	.....	1Vp-p 600Ω	No
Power requirement	110/220Vac	110Vac/12-18Vdc	110Vac	110Vac	110Vac	110Vac
Equipment features—						
LTC-VITC translation	Yes	No	No	No	No	No
User bit recognition	Yes	Yes	Yes	No	No	No
Time-code comparator	No	No	No	No	No	Yes
Video display key	8 char	8 char/variable	No	No	8 char/5-175TVL	No
Display window	.....	2-line	No	No	.....	No
		MTG-55 generator	.....	.....	.....	.....
		TCR-65 reader	.....	.....	.....	.....
		VCG-75 char gen	.....	.....	.....	.....
Reader Service Number	779	780	781	782	783	784

Manufacturer	Evertz Microsystems			For-A		Fostex
Model Number	4000 LTC/VITC	4900 LTC/VITC	3700D LTC Gen/Read	TGR-3300	TCR-3500	8700
Portable unit	No	No	No	No	No	Yes
Operating modes—						
Drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes	Yes
Jam sync	Yes	Yes	Yes	Yes	No	No
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE
Timing reference	Video/crystal	Video/crystal	Video/crystal	Video/60Hz ac/xtal	Video/60Hz ac/xtal	Crystal clock
BCD data entry for	Time/user bits	None	Time/user bits	Time/user bits	Time/user bits	Time
BCD data displays of	Time/user bits	Time/user bits	Time/user bits/data	Time/user bits/data	Time/user bits/data	None
# of display digits	Dual 8	8	Dual 8	8	8 in video	None
Display digit size	0.5"	0.5"	0.5"	.....	.....	.....
Reading speed	Still-70x play	Still to 70x play	1/30x-70x	1/32x to 110x	.....	.....
Edit controller interface	No	No	No	No	No	No
VITC code output	SMPTE/EBU	No	No	SMPTE/EBU	No	No
Synchronizer feature	No	No	No	No	No	No
LTC output signal	-12dBm/ +6dBm	3Vp-p 600Ω	-12dBm/ +6dBm	0dBm 600Ω	No	-10dBm
Power requirement	110/220Vac	110/220Vac	110/220Vac	100/220Vac	110/220Vac	9Vdc
Equipment features—						
LTC-VITC translation	Yes	No	No	Yes	No	No
User bit recognition	Yes	Yes	Yes	Yes	Yes	No
Time-code comparator	No	No	No	Yes	Yes	No
Video display key	24 char/16-32TVL	24 char/8-16TVL	24 char/16-32TVL	8 char/18-36TVL	8 char/8-16TVL	No
Display window	1-line or 2-line	1-line	1- or 2-line	.....	1-line	No
Reader Service Number	785	786	787	788	789	790

Manufacturer	Fostex		GTC Film/Fernseh	Gray Engineering Labs		
Model Number	4030/4035	4050	TCR-1 D-CODE	DT-213 Transmitter	DR-107B Receiver	DT-113 Transmitter
Portable unit	No	No	Yes	No	No	No
Operating modes—						
Drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes	Yes
Jam sync	No	No	No	.....	No	No
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Crystal clock	Crystal clock	.....	Sync/crystal	Video	Video/60Hz
BCD data entry for	Time	Time	No	.....	None	Time/user bits
BCD data displays of	Time	Time	Time/user bits	Yes	None	Time/user bits
# of display digits	9	9	8	8-digit	.....	8
Display digit size	1/2"	1/2"	.....	.....	No	0.3"
Reading speed	.....	.....	1/10x to 15x play	.....	1/100x to 100x play	Real time
Edit controller interface	Yes	Yes	Yes	.....	Yes	Yes
VITC code output	No	No	No	No	No	No
Synchronizer feature	Yes	No	No	No	No	No

Time Code Readers/Generators

LTC output signal	Variable	Variable	1Vp-p 2k Ω	To +8dBm/1V video	1dBm	+8dBm
Power requirement	110Vac	110Vac	7-20V ac/dc	115Vac	110/220Vac	110Vac
Equipment features –						
LTC-VITC translation	No	No	No	No	No	No
User bit recognition	No	No	No	.....	Yes	Yes
Time-code comparator	Yes	Yes	No	.....	No	No
Video display key	No	No	No	Yes	8	No
Display window	No	No	No	.....	1-line	No
Reader Service Number	791	792	793	794	795	796

Manufacturer	Gray Engineering Labs			JVC Company	Norlyuki	
Model Number	VIE-224 Encoder	VID-225 Decoder	CI-90 Inserter	TG-P47U	SA300 LTV Read/Video	YAM-7 LTC Gen/Reader
Portable unit	No	No	No	Yes	Yes	Yes
Operating modes –						
Drop frame	Yes	Yes	Yes	Yes	.....	Yes
Non-drop frame	Yes	Yes	Yes	Yes	.....	Yes
Color frame	Yes	Yes	No	No	.....	Yes
Jam sync	No	No	No	No	.....	Yes
Standards supported	SMPTE	SMPTE	SMPTE	SMPTE	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video	.....	Video/crystal	.....	Video/crystal
BCD data entry for	No	Time/user bits	No	Time/user bits	.....	Time
BCD data displays of	Time/user bits	Time/user bits	Time code	Video/crystal	Time/user bits	Time
# of display digits	8	8	.....	.....	No display	8 LCD
Display digit size	0.3"	0.3"	No	.....	.....	8mm
Reading speed	Real time	1/100x to 100x play	.....	.....	1/20x-60x play	1/10x-50x
Edit controller interface	Yes	Yes	No	.....	No	No
VITC code output	SMPTE	SMPTE	No	No	No	No
Synchronizer feature	No	No	No	No	.....	No
LTC output signal	Loop through	+8dBm	.....	.....	.....	2.5Vp-p 10k Ω
Power requirement	110/220Vac	110/220Vac	110Vac	12Vdc	11.2-24Vdc	9Vdc battery
Equipment features –						
LTC-VITC translation	Yes	Yes	No	No	No	No
User bit recognition	Yes	Yes	No	No	No	No
Time-code comparator	No	No	No	No	No	No
Video display key	.....	No	7	.....	8 char/adjustable	No
Display window	.....	No	1-line	No	.....	No
Reader Service Number	797	798	799	800	801	802

IT'S IN THERE SOMEWHERE... you just need time to find it.

Time code. As a video professional, you know the vital role it plays in the editing and tape management process.

DATUM's 5300 ITP

Our Intelligent Time Processor (ITP) can give you all the time code capability you'll ever want. It's available in four models, ranging from a basic SMPTE/EBU time code reader/generator to a comprehensive processor, complete with character generation and VITC code capability. And it's expandable. You can choose the basic unit now and upgrade later. Let us show you what our 5300 ITP can do for you.

Call or write for complete information.

datum inc TIMING DIVISION

1363 S. State College Blvd. • Anaheim, CA 92806 • (714) 533-6333



Circle (46) on Reply Card

Time Code Readers/Generators

Manufacturer	Shintron		Skotek		
Model Number	640 (641)	Model 690 ET	TCG-80N/P Generator	TCR-80/80V Reader	PTC-100 Gen/Reader
Portable unit	Yes	No	No	No	Yes
Operating modes—					
Drop frame	Yes (not 641)	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes
Jam sync	Yes	Yes	Yes	Yes	Yes
Standards supported	SMPTE/EBU/NTSC (EBU)	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video/xtal	Video/60Hz/crystal	Video/60Hz	Video/crystal
BCD data entry for	Time/user bits	Time/user bits	Time/user bits	User bits	Time/user bits
BCD data displays of	Time/user bits	Time/user bits	Time/user bits/data	Time/user bits/data	Time/user bits
# of display digits	8	8	8	8	8
Display digit size	0.125" (0.5")	.....	0.3"	0.3"	0.3"
Reading speed	.....	.....	.....	1/20x to 50x play	Standard speed only
Edit controller interface	No	RS-422 port	Yes	Yes	Remote start/stop
VITC code output	No	Yes	SMPTE/EBU optional	No	No
Synchronizer feature	No	Yes	Optional	No	No
LTC output signal	0dB±2dB 2kΩ	0dBm nominal <10Ω	5Vp-p	0.5-6Vp-p	8dBm
Power requirement	3 AA cells	110/220Vac	110/110Vac	110/220Vac	9-14Vdc
Equipment features—					
LTC-VITC translation	No	Yes	Optional	No	No
User bit recognition	No	Yes	No	No	No
Time-code comparator	No	Yes	No	No	No
Video display key	No	Yes	8 + 8 char/9-18TVL	8 + 8 char/9-18TVL	No
Display window	No	5-line 15-char/line	1- or 2-line	1- or 2-line	No
Reader Service Number	803	804	805	806	807

Manufacturer	Sony Broadcast			TimeLine	United Media
Model Number	BVG-100 Gen/Reader	BVG-1600 Generator	BVG-1500 Reader	Lynx TC Module	Model 205 Generator
Portable unit	Yes	No	No	No	No
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	No	Yes
Jam sync	Yes	Yes	No	Yes	.....
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video	Video	Video/60Hz/crystal	Video
BCD data entry for	Time/user bits	Time/user bits	No	Time/user bits	Time/user bits
BCD data displays of	Time/user bits/data	Time/user bits/data	Time/user bits/data	Time/user bits	Time/user bits
# of display digits	8	8	8	8	Dual 8
Display digit size	1/2"	1/2"	1/2"	0.35"	.....
Reading speed	Normal play speed	.....	1/32x to 110x play	1/20x-60x	.....
Edit controller interface	No	No	Yes	Yes	Yes
VITC code output	SMPTE/EBU	SMPTE/EBU (line 10-25)	SMPTE/EBU	No	No
Synchronizer feature	No	No	No	Yes	.....
LTC output signal	2.5Vp-p 10kΩ	0 or 8dBm	0 or 8dBm	-10/ +8dBm	To +8dBm
Power requirement	9-18Vdc	110/220Vac	110/220Vac	110/220Vac	100-240Vac
Equipment features—					
LTC-VITC translation	No	No	Yes	No	No
User bit recognition	No	No	Yes	Yes	.....
Time-code comparator	No	No	Yes	No	.....
Video display key	No	8	9	No	Various size/format
Display window	.....	1-line	1-line	No	.....
Reader Service Number	808	809	810	811	#310 reader 812

Anything less than a Neve is just a lot of...

Bells and whistles may be all you need for New Year's Eve... or a birthday celebration. But is a desk full of bells and whistles enough for the demanding art and science of broadcast production? You need the Neve difference.

At Neve, the first name in audio mixing control and distribution systems, we offer you all the bells and whistles your creativity demands... as well as the sonic quality, reliability, and ease of operation that sets Neve apart from the rest.

Neve's versatile 51 Series, for example, gives you the full range of advanced facilities you want, plus the virtually unlimited versatility you require... to let your creativity soar. With features that include:

- 16-to-60 inputs
- Custom configurations

- Stereo or mono modules
- A choice of 4 standard consoles
- Up to 8 auxiliary outputs
- Multitrack recording capability
- 4-band Neve Formant Spectrum Equalization

Hear the Neve quality difference for yourself. Find out firsthand how Neve advanced engineering gives you "a touch of the future."

Circle the bingo card for a literature pack. Or call (203) 744-6230 for a demonstration of Neve sound at your location.



- Nothing sounds as good as a Neve... because nothing else is.

Rupert Neve Incorporated
Berkshire Industrial Park
Bethel, Connecticut 06801
Telex 969638
Facsimile (203) 792-7863
(203) 744-6230

Neve Electronics Int'l Ltd.
Cambridge House, Melbourn, Royston
Hertfordshire SG8 6AU, England
ph (0763) 60776 fax (0763) 61886
telex 81381

7533 Sunset Blvd. ●
Hollywood, California 90046
(213) 874-8124
Facsimile (213) 874-1406

P.O. Box 40 ●
Nashville, Tennessee 37204
Telex 786569
(615) 385-2727


A Siemens Company

NOISE

Circle (156) on Reply Card

NEVE 0-004 WLM 467



FINISH UP ON TIME WITHOUT SACRIFICING QUALITY.

You want it quick and you want it good. In today's competitive post-production audio/visual scene, the rewards go to those who can produce results that are quick *and* good. That's why TASCAM designed the MS-16 1" 16-track recorder—to bring together top-notch audio quality plus premium features that streamline production and move you ahead of schedule.

Quality reproduction starts with the heads, and TASCAM has three decades of design experience behind the MS-16's new micro-radii heads. They bring "head bumps" under control and ensure flat frequency response. And unlike most tape machines, the MS-16 record/sync and playback heads are identical in performance. Because sync response equals repro response on the MS-16, you can make critical EQ and processing decisions on overdubs or punch-ins without having to go back and listen a second time. You get what you want sooner and with fewer headaches.

The MS-16 cuts down on the time you spend locking up with other audio and video machines as well. A 38-pin standard SMPTE/EBU interface affords speedy, single-cable connection with most popular synchronizers and editing systems. It's the easy, efficient way to get the most out of today's sophisticated synchronization equipment. The MS-16's new Omega Drive transport is tough enough to stand up to long days of constant shuttling... while handling tapes with the kid-glove kindness they deserve.

Record/Function switches for each track allow effortless, one-button punch-ins. Input Enable allows instant talkback during rewinds, fast forwards and cue searches. These features speed you through sessions and let you concentrate on the project at hand... not on your tape machine.

Take a closer look at the MS-16. See your TASCAM dealer for a demo or write us for more information at 7733 Telegraph Road Montebello, CA 90640.

THE TASCAM MS-16 SIXTEEN TRACK



TASCAM THE SCIENCE OF BRINGING ART TO LIFE.

Videotape Recorders Types B/C

Manufacturer	Ampex Corporation				Robert Bosch Video ¹
	Model Number	VPR-3	VPR-5	VPR-6	VPR-80	BCN-51
Luminance response	±0.5dB to 4.2MHz	±0.5dB/4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.5MHz
S/N ratio	47dB L/47dB C	46dB L	46dB L/46dB C	46dB L/46dB C	47dB
Diff phase/gain	4°/4%	4°/4%	4°/4%	4°/4%	<4°/<4%
K-factor 2T pulse	1%	1%	1%	1%	<1.5%
Moire rating at 75% bars	-40dB	-40dB	-40dB	-40dB	<37dB
Video metering	Yes	Yes	Yes	Yes	Yes
Video confidence head	Yes	Yes	Yes	No	Yes
# of audio channels	3 NTSC/4 PAL	3	3 NTSC/4 PAL	3	3
AF response	±2dB/50-18k	±2dB/50-15k	±2dB/50-18k	±2dB/50-15k	-3/2dB/40-14k
AF S/N ratio	56dB +8dBm out	56dB +8dBm output	56dB unwtd 8dBm out	56dB +8dBm output	57dB ref 254nWb/m
AF distortion	1% 8dBm out 1kHz	1% +8dBm output	1% 8dBm out 1kHz	1% +8dBm out 1kHz	<3% at 254nWb/m out
Audio in vertical blanking	No	No	No	No	No
Audio metering	Yes	Yes	Yes	Yes	Yes
LTC reader and/or generator	Integral	Integral	Integral	Integral	Integral
VITC reader and/or generator	Integral	External	Integral	External	External available
Time-code displays	Yes	Yes	Yes	Yes	Yes
Integral editor circuit	Full feature	Partial feature	Full feature	Full feature	Full feature
Microprocessor deck logic	Multiple µP	Multiple µP	Multiple µP	Multiple µP	Single
Diagnostic software	Yes	Yes	Yes	Yes	No
Diagnostic test probe	Yes	No	Yes	Yes	No
Tape pull method	Vacuum capstan	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller
Tape parameter memories	Yes	No	Yes	No	No
Remote-control format	RS-422	Simple remote	RS-422	RS-422	RS-423 & rmt ctl
System TBC preference	External unit	External required	External required	External required	Integral unit
Variable speed tracking	Yes	No	Standard feature	Yes	Yes
Slow-motion range	-1X/+3X	.....	-1X/+3X	0X/+1.5X	-1/4X/+1/2X
Special slow-motion design	No	No	No	No	No
Single frame animation VTR	Yes	No	No	No	Yes
Component video input/output	No	No	No	No	No
Max reel size/record time	14"/190 min	9"/60 min	11.75"/124 min	11.75"/124 min	12"/196 min
Weight (if portable)	270 lb	15 lb	150 lb	145 lb	.....
Rack-mount machine	19"	With adapter kit	19"	19"	Includes rack
Color standards available	N/P/S/PAL-M	N/P/S/PAL-M	N/P/S/PAL-M	N/P/S/PAL-M	N/S/P/PAL-M
Reader Service Number	816	817	818	819	820

¹See BTS Broadcast Television Systems

Manufacturer	Sony Broadcast				
	Model Number	BVH-500A	BVH-2000 (BVH-2180)	BVH-2500 delta-time	BVH-2700 (Super Motion)*
Luminance response	0.5dB/to 4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.2MHz	±0.5dB to 4.2MHz	±0.5 (0.7)dB 4.2MHz
S/N ratio	48dB	47dB p-p/RMS noise	48dB unwtd	48dB unwtd	47dB (46dB)
Diff phase/gain	3°/3%	<4°/<4%	<±4°/<4%	<4°/<4%	4°/4% (6°/6%)
K-factor 2T pulse	<1%	<1% 2T pulse	<1% for 2T pulse	<1% for 2T pulse	1% (2%)
Moire rating at 75% bars	-40dB	<-40dB 75% bars	-40dB 75% bars	-40dB 75% bars	-40dB 75% bars
Video metering	Multifunction meter	.....	Video-in/tracking	Video-in/tracking	Video-in/tracking
Video confidence head	.....	Yes	Yes	Yes	Yes
# of audio channels	.....	3	3 analog	3 analog	3
AF response	1.5/-3dB 50-15k	-3/1.5dB 50-15k	-3/1.5dB 50-15k	-3/1.5dB 50-15k	-3/1.5dB 70-15k
AF S/N ratio	56dB unwtd +8dBm out	56dB 3% distortion	56dB 3% distortion	56dB Ch 1/2	>56dB
AF distortion	1% +8dBm 1kHz	1% 1kHz 0dBm	1% 1kHz 0dBm	1% 1kHz 100nWb/m	1% 1kHz 0dBm
Audio in vertical blanking	No	No	No	No	No
Audio metering	Yes	3-channel selectable	3/one per channel	Meter per channel	Meter/channel
LTC reader and/or generator	Integral option	Integral	Integral available	Integral	Generator
VITC reader and/or generator	Integral option	Integral	Integral available	Integral	Generator
Time-code displays	Yes	Yes	Yes	Yes	Yes
Integral editor circuit	Full feature	Assembly only	Full feature	Full feature	Back space edits
Microprocessor deck logic	Multiple	No	Multiple	Multiple	Multiple
Diagnostic software	Yes	N/A	Yes	Yes	Yes
Diagnostic test probe	No	No	.....	No	No
Tape pull method	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller
Tape parameter memories	Yes	No	No	No	No
Remote-control format	RS-422/RP-113	Rmt ctl	RS-422	RS-422	RS-422
System TBC preference	Integral unit	External required	Integral	External required	BVT-2700 required
Variable speed tracking	Yes	No	Yes	Still/step/slow mode	Per Type C function
Slow-motion range	-1X/+3X	.....	-1X/+3X	-1X/+3X	To +1X (3X)
Special slow-motion design	No	No	No	No	Dual mode VTR
Single frame animation VTR	No	No	No	Yes	No
Component video input/output	No	No	No	No	No
Max reel size/record time	14"/180 min	9"/62 min	11.75(14)"/126(188) min	11.75"/126 min	11.75"/126 (or 42) min
Weight (if portable)	.....	35 lb	.....	.....	.....
Rack-mount machine	Yes	No	19" (24") rack	19" rack	19" rack
Color standards available	NTSC	NTSC w/ color framing	NTSC	NTSC	NTSC
Reader Service Number	821	822	823	824	825

*3X standard record speed for 1/3X slow motion playback

Videocassette Recorder, U-Matic

Manufacturer	JVC Company			Sony Broadcast	
	Model Number	CR-8250U	CR-4900U	CR-850U	BUVU-800 (BUVU-820)	BUVU-110 (BUVU-50)
Luminance response	260 TVL color mode	260 TVL color mode	260 TVL color mode	340 TVL L/260 TVL C	340 TVL L/260 TVL C
S/N ratio	49dB L/46dB C	46dB L color mode	49dB L/47dB C	49dB L/47dB C	>45dB (>46dB)
Video AGC circuit	Yes	No	Yes	Yes	Yes
Video headswitch in	Vertical interval	Vertical interval	Vertical interval	Vertical interval	In VBI
AF input connection	Balanced	Balanced	Balanced	Balanced	Xfmr
AF input level	-20dBs, 10kΩ line	-60dBs, 600Ω	-20/+4dBs, 10kΩ	+4dBm	-60dB 3kΩ/+4dB 10kΩ
AF response	50Hz-15kHz	50Hz-15kHz	50Hz-15kHz	±3dB/50Hz-15kHz	±3dB/50Hz-15kHz
AF output connection	Balanced	Balanced	Balanced	Balanced	Balanced (N/A)
AF output level	-20dBm	0dBs, low Z	-20/+4dBs low Z	+4dBm	+4dBm 600Ω (N/A)
Audio S/N ratio	>48dB at 3% THD	48dB	48dB	48dB	48dB (N/A)
Audio distortion	.....	.....	.....	3%	2.5% (N/A)
Audio AGC circuit	Yes	Yes	Yes	Yes	AGC or manual
Audio and/or video metering	Video/track/audio	Track/video/audio	Video/track/audio	Video/track/audio	Audio/video/+Vdc
Time-code track (dedicated)	Yes	On audio 2	Yes	Yes	0dB 10kΩ unbal
LTC reader and/or generator	No	External generator	.....	Integral on -800	External
VITC reader and/or generator	No	No	.....	No	External
Time-code display/size	No	No	.....	8-digit	Yes
Display of time-code/user bits	No	No	.....	1/2"	Real time
Integral editor circuit	Yes	Back space only	Yes	Assemble/insert	Back space only
Edit controller	VE-93 or RM-86U	No	RM-G850U/VE-93/other	Various	No
Microprocessor deck control	Yes	Yes	Yes	Yes	.....
Remote-control format	Multiwire cable	Multiwire cable	RS-422/simple remote	RS-422	No
Reference inputs	Sync/subcarrier	Sync/subcarrier	Sync/subcarrier	Sync/subc/adv sync	Adv sync/subc/video
System TBC preference	Any external	External required	External required	Various	BVT-2000 (No)
RF Y/C dub input/output	No	Yes	Y/C	Yes	RF out for ext DOC
Dynamic tracking	No	No	No	Yes	No
Slow motion range	.....	.....	-1/30X/+15X	-1X/+3X play	No
Search speeds	15X rev/15X fwd	10X rev/10X fwd	20X rev/15X fwd	1/30X rev/10X fwd	Continuous
Component video input/output	No	No	No	No	No
Weight (if portable)	.....	19.6 lb	.....	.....	20 lb (13 lb)
Operating time	.....	75 min w/ 12Vdc	.....	.....	4 hr BP-90 (1.25 hr)
Color standards	NTSC	NTSC	NTSC	NTSC	NTSC
Reader Service Number	826	827	828	829	830

VCRs, Small Format

Manufacturer	Ampex				Robert Bosch ¹
	Model Number	CVR-10 (CVR-15)	CVR-21	CVR-25 recorder	CVR-40 Recorder	BCF9/10
Cassette type	1/2" Beta/HG series	1/2" Beta/HG series	1/2" Beta/HG series	1/2" Beta/HG series	1/4" CVC
Recording format	Betacam Y/R-Y/B-Y	Betacam Y/R-Y/B-Y	Betacam	Betacam	LinePlex
Luminance response	0.5/-6dB to 4.1MHz	0.5/-6dB to 4.1MHz	0.5/-6dB to 4.1MHz	0.5/-6dB to 4.1MHz	-3dB to 3.6MHz
Chroma response	0.5/-6dB to 1.5MHz	0.5/-6dB to 1.5MHz	0.5/-6dB to 1.5MHz	0.5/-6dB to 1.5MHz	-3dB to 1.2MHz
Video S/N ratio	48dB L/50dB C	48dB L/50dB C	48dB L/50dB C	48dB L/50dB C	47dB L/47dB C
Resolution	.....	.....	.....	.....	.....
Video AGC circuit	No	.....	.....	.....	Switchable
# of audio channels	2	2	2	2	2
AF input connection type	Player only	Player only	High-Z bal	Xfmr bal	Xfmr bal
AF input level	.....	.....	-60/-20/+4dBm	-60dB 3kΩ/4dB 10kΩ	+6dBm nominal
AF response	±3dB 50-15k	±3dB 50-15k	±3dB 50-15k	±3dB 50-15k	-4/+3dB 50-15k
AF output connection	Balanced	Balanced	Low-Z bal	Balanced	Xfmr bal
AF output level	+4dBm nominal	+4dBm	+4dBm	+4dBm/+4dB 10kΩ	+6dBm nominal
AF S/N ratio	50dB	50dB	50dB	50dB w/o Dolby	.....
AF noise reduction	Dolby C	Dolby C	Dolby C NR	Dolby C NR	Yes
AF distortion	3%	3%	3%	<3%	<3%
Audio AGC circuit	No	.....	.....	.....	Switchable
Audio and/or video metering	Audio only	Audio only	Yes	Yes	Yes
Time-code channel (dedicated)	Yes	Option	Yes	Yes	LTC included
Time-code generator	LTC reader	No	LTC	LTC	LTC included
Integral editor	No	No	Back space editor	Full feature	Full feature
Dynamic scanner tracking	CVR-15 only	No	No	No	No
Search speeds	1/30X rev/10X fwd	To 3.5X play	3.5X rev/3.5X fwd	1/30X rev/10X fwd	8X rev/10X fwd
Remote-control format	RS-422	.....	.....	RS-422	RS-422
System TBC preference	Integral CVR-15	No	.....	Integral TBC	Integral
Composite video input/output	NTSC output	NTSC and RF	Yes	NTSC/PAL/SECAM	Yes
Component video input/output	Y/R-Y/B-Y outputs	Yes, Y/R-Y/B-Y	Yes	Y/R-Y/B-Y	Y/U/V
RF dub input/output	Y/C output	.....	Yes	Yes	.....
19-inch rack space required	Rack or tabletop	No	Portable	Yes	.....
Weight (of portable unit)	.....	17.4 lb	17 lb	.....	17 lb
Operating time	Vac operation	1.3hr w/ 12Vdc bat	40 min NP-1x2 bat	ac operation only	1.5hr 14.4V battery
Reader Service Number	831	832	833	834	835

¹See BTS Broadcast Television Systems

COLOR RADIO!



TEXAR does for radio what color did for television. The digitally-controlled TEXAR AUDIO PRISM™ delivers power and clarity at the same time, like no

other audio processor in the world. Detail in the music you never knew was there is suddenly all around you... without any loss of modulation power.

Don't take our word for it. Call Barry Honel today at (412) 85-MICRO to arrange for a 10 day in-station demo.

TEXAR

616 Beatty Road • Monroeville, PA 15146-1502 • 412/856-4276 • 412/85-MICRO

Circle (125) on Reply Card

VCRs, Small Format

Manufacturer	Hitachi Denshi	Panasonic Broadcast			
		AU-650 Studio	AU-400 Cam. Recorder	AU-500 Portable	AU-600
Model Number	HR-50 Portable				
Cassette type	T-120HG 1/2" VHS	1/2" MP-10(-90)	1/2" MP-10(-20)	1/2" MP-10(-90)	1/2" MP-60 metal
Recording format	M-format Y/I/Q	M-II (Y/R-Y/B-Y)	M-II Y/R-Y/B-Y	M-II (Y/R-Y/B-Y)	M-II format
Luminance response	-3dB to 3.6MHz	0.5/-3.0dB 4.5MHz	-3/0.5dB to 4.5MHz	-3/0.5dB to 4.5MHz	To 4.5MHz
Chroma response	-1dB to 1MHz	0.5/-3.0dB 1.5MHz	-3/0.5dB to 1.5MHz	-3/0.5dB to 1.5MHz	To 1.5MHz
Video S/N ratio	>47dB L/>48dB C	50dB L/50dB C	50dB L/50dB C	50dB L/50dB C	45dB L/50dB C
Resolution	.....	.....	.....	.....	.....
Video AGC circuit	2	Switchable	No	.....	2
# of audio channels	2	4	4	4	Bal
AF input connection type	Bal mic	Xfmr bal	Active bal	Active bal	.....
AF input level	-60dBm	-20/+4/+8dBm 600Ω	+4dBm/-60dB 600Ω	-60,+2dB/+4dBm 600Ω	.....
AF response	±3dB 50-15k	1.5/-3dB 50-15k*	-3/1.5dB /50-15k*	-3/1.5dB 50-15k*Bal	.....
AF output connection	Headphones	Xfmr bal	No playback	Balanced	.....
AF output level	-20/-32dB 8Ω	-20/+4/+8dB 600Ω	.....	-20/-4dBm	.....
AF S/N ratio	>50dB	56dB unwt'd	56dB unwt'd equiv	56dB unwt'd	65dB
AF noise reduction	No	Dolby	Dolby	Dolby	Dolby C
AF distortion	.....	1% 8dBm out 1kHz	.....	1%	.....
Audio AGC circuit	.....	Switchable	Switchable	Switched	Yes
Audio and/or video metering	Audio	A-V	No	Both	Yes
Time-code channel (dedicated)	Yes	Yes	Yes	Yes	Yes
Time-code generator	Integral	LTC-R/G VITC-R/G	LTC-R/G VITC-G	LTC-R/G VITC-G	LTC
Integral editor	No	Full feature	Back space	Back space	Full feature
Dynamic scanner tracking	No	Yes	No	No	Yes
Search speeds	Fwd/rwtd only	32X rev/32X fwd	Fi/rew no search	5X rev/5X fwd/ff/rwd	32X rev/32X fwd
Remote-control format	None	RS-422/simple remote	None	No	RS-422
System TBC preference	.....	Integral unit	N/A	External for airing*	Integral
Composite video input/output	Yes	Yes	With AU5400 adapter	Yes	Yes
Component video input/output	Y/I/Q	Y/R-Y/B-Y	Y/R-Y/B-Y	Y/C & Y/R-Y/B-Y	YIQ Y/C Y/B-Y/R-Y
RF dub input/output	.....	.....	.....	.....	.....
19-inch rack space required	.....	6 rack units	N/A	N/A	6 rack units
Weight (of portable unit)	13.2 lb	.....	7.3 lb w/o battery	16 lb with battery	.....
Operating time	.....	.....	>1hr 13Vdc 4AH and with camera	1hr 30 min 12Vdc 4AH	.....
.....	.....	*-2/1dB 20-20k for FM audio channels	*-2/1dB 20-20k for FM audio channels	*-3/1.5dB 20-20k on FM audio channels	.....
.....	.....	.....	.....	*Color play w/o TBC in field	.....
.....
Reader Service Number	836	837	838	839	840

Manufacturer	Sony Broadcast			
	BVW-10 (BVW-15)	BVW-20 (21) player	BVW-25 recorder	BVW-40 Studio System
Model Number				
Cassette type	1/2" Beta/HG series	1/2" Beta/HG series	1/2" Beta/HG series	1/2" Beta/HG series
Recording format	Betacam Y/R-Y/B-Y	Betacam Y/R-Y/B-Y	Betacam	Betacam
Luminance response	0.5/-6dB/to 4.1MHz	0.5/-6dB/to 4.1MHz	0.5/-6dB/to 4.1MHz	0.5/-6dB/to 4.1MHz
Chroma response	0.5/-6dB/to 1.5MHz	0.5/-6dB/to 1.5MHz	0.5/-6dB/to 1.5MHz	0.5/-6dB/to 1.5MHz
Video S/N ratio	48dB L/50dB C	48dB L/50dB C	48dB L/50dB C	48dB L/50dB C
Resolution	.....	.....	.....	.....
Video AGC circuit	No	.....	.....	.....
# of audio channels	2	2	2	2
AF input connection type	Player only	Player only	High-Z bal	Xfmr bal
AF input level	.....	.....	-60/-20/+4dBm	+60dB 3kΩ/4dB 10kΩ
AF response	±3dB 50-15k	±3dB 50-15k	±3dB 50-15k	±3dB 50-15k
AF output connection	Balanced	Balanced	Low-Z bal	Balanced
AF output level	+4dBm nominal	+4dBm	+4dBm	+4dBm or +4dB 10kΩ
AF S/N ratio	50dB	50dB	50dB	50dB w/o Dolby
AF noise reduction	Dolby C	Dolby C	Dolby C NR	Dolby C NR
AF distortion	3%	3%	3%	<3%
Audio AGC circuit	No	.....	.....	.....
Audio and/or video metering	Audio only	Audio only	Yes	Yes
Time-code channel (dedicated)	Yes	Yes (option)	Yes	Yes
Time-code generator	LTC reader	No	LTC	LTC
Integral editor	No	No	Back space editor	Full feature
Dynamic scanner tracking	BVW-15 only	No	No	No
Search speeds	1/30X rev/10X fwd	No (to 3.5X)	3.5X rev/3.5X fwd	1/30X rev/10X fwd
Remote-control format	RS-422	.....	.....	RS-422
System TBC preference	Integral BVW-15	No	.....	Integral TBC
Composite video input/output	NTSC output	NTSC and RF	Yes	NTSC/PAL/SECAM
Component video input/output	Y/R-Y/B-Y outputs	Yes, Y/R-Y/B-Y	Yes	Y/R-Y/B-Y
RF dub input/output	Y/C output	.....	Yes	Yes
19-inch rack space required	Rack or tabletop	No	Portable	Yes
Weight (of portable unit)	.....	17.4 lb	17 lb	.....
Operating time	Vac operation	1.3hr w/ 12Vdc bat	40 min NP-1X2 bat	ac operation only
Reader Service Number	841	842	843	844

Automated VCR Systems

These automated playback systems are based on videocassette material of 1/2-inch and 1-inch widths. These systems, combining multiple playback and/or record-play decks with computer control, are designed to form a single integrated product. Simple controllers, to which assorted playback units may be connected, are not included in this category.

Manufacturer	Ampex	ASACA/Shibasoku	Robert Bosch¹	Odetics	Panasonic Broadcast
Model Number	ACR225	ACL-6000C	BCN-100	TCS-2000	MVP-100
Tape width/record format	Composite digital	Betacam or M-II	1" B-format	Betacam/M/M-II	M-format
# of play decks	3 min/4 max	2 min/5 max	2 to 3	4 min/6 max	4 to 24
Specific play deck	All record & play	.....	.....	Any per format	Yes
Output channels	2 simultaneous	5 simultaneous	1 channel	1 (6 optional)	2/TBC 1 uncorrected
# of record decks	3 to 4	1 to 4	1 to 3	2	1 to 8
Specific record deck	Ampex	Betacam or M-II	.....	BVW-40/AU-300	#MVP-100
Editing features .....	.....	per VCR	Full-feature	.....	Integral feature
Controlling computer	Ampex	Universe 6853	Integral	IBM PC-AT	Enhanced IBM-PC
Control interface	RS-232/422/ESbus	.....	RS-423	RS-232	RS-232/422/disk
Master automation	Yes	Yes	.....	Yes	Yes
Station automation	Yes	Yes	.....	Yes	Optional interface
Auto record w/delayed play .....	.....	Yes	Yes	Yes	Software option
As-run log feature	Yes	Yes	Yes	Yes	Yes
Event verification	Yes	Yes	Yes	Yes	Yes
Cassette/program ID type	Bar code/time code	Bar code	Time code/data/LTC	Bar code/time code	Time code/data/LTC
Time-code reader or generator	LTC	.....	LTC	LTC	LTC
Automatic cueing	Yes	Yes	Yes	Yes	Yes
Random-access storage magazine	256 max	600 cassettes max	32 1" cassettes	280 max	1 cassette per deck
Shortest program element	1s	.....	2 frames + 22s	1 frame	1s
System TBC preference	All functions	Integral per deck	All functions	per deck	.....
Manual override function	N/A	All functions	Yes	All functions	All functions
Reader Service Number	845	846	847	848	849

¹See BTS Broadcast Television Systems

Manufacturer	Panasonic Broadcast	Sony Broadcast
Model Number .....	.....	BVC-10
Tape width/record format	M-II 1/2"	Betacam
# of play decks	2 to 5	4 max
Specific play deck	AU-650	Yes
Output channels	2	3 simultaneous
# of record decks	1 to 2	0
Specific record deck	AU-650	Yes
Editing features	Software option	No
Controlling computer	IBM PC/AT	Integral w/disk
Control interface	RS-422	RS-422
Master automation	Interface option	Yes
Station automation	Interface option	Yes
Auto record w/delayed play	Software option	No
As-run log feature	Yes	Yes
Event verification	No	Yes
Cassette/program ID type	Bar code/time code	Bar code
Time-code reader or generator	No	LTC
Automatic cueing	Yes	Yes
Random-access storage magazine	100 cassettes max	40 cassettes max
Shortest program element	15s by 4 VCRs	1s/4-event sequence
System TBC preference	AU-TB50	Per deck
Manual override function	Limited functions	Yes
Reader Service Number	850	851

Audio On-Air Mixers

Manufacturer	ADM Technology	Arrakis Systems	Audio Technologies
Model/Series Number	ST-240 Series II	2000SC/2100SC	Vanguard Series
Modular construction	Yes	No	Yes
# of mixer positions	24	12 (24 or 34 input)	8
Output channels	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue	2pgm/2aud/1cue/2mono
Fader type	Slider	Slider	P&G slider for VCAs
Bus switching	Push button	Push button	Push button
Input patch points	Yes	No	Prefader patching
Automation control port	None	No	No
Internal switching	Solid-state	Mechanical relay	Solid-state
Machine start/stop	48 relay contacts	Yes	Yes
Talkback circuit	Yes	Yes	4 contacts
Cueing circuits	On-fade/bus switch	Fader detents	.....
Metering types	VU/PPM	Mechanical VU	Fader detents
Speaker muting	Programmable	Yes	Mechanical VU
Internal cue amp/speaker	Amp & speaker	Amp	Yes
Internal line amp	Yes	Yes	2W/channel amps
		
			Yes

Audio On-Air Mixers

AF input connection	Xfmr bal
Input impedance (as a load)	600Ω
Input levels	Mic & line
Output connection	Xfmr bal
Output impedance (as source)	600Ω
Output level	+8dBm = 0VU
AF response	±1dB +24dBm
Distortion	0.07% 1kHz +24dBm
S/N ratio (mic/line)	-125.5dBm EIN/72dB
Crosstalk (worst case)	-72dB 100-10k +8dBm
Reader Service Number	856

Active bal	1kΩ mic/10kΩ line
	Mic or line jumpers
	Bal w/mono mix std
	600Ω
	+27dBm max
	±0.5dB 20-20k
	0.02% +88dBm
	62dB/82dB
	-75dB 16kHz +18dBm
Reader Service Number	857

Active bal	100kΩ line/1kΩ mic
	Line and mic
	Balanced
	600Ω
	+27dBm max
	±0.5dB 20-20k
	0.02% +8dBm output
	72dB/82dB
	-90dB 2kHz
Reader Service Number	858

Balanced	1kΩ mic/100kΩ line
	Mic/line selected
	Balanced
	600Ω
	+27dBm max
	±0.5dB 20-20k
	0.02% +8dBm
	62dB/82dB
	Below noise
Reader Service Number	859

Active bal	20kΩ
	Mic/line/xtched line
	Active bal
	600Ω
	+26dBm/+4dBm =0VU
	±0.25dB +4dBm
	0.15% 20-20k +18dBm
	-124dBm EIN/92dB
	-74dB 10kHz +14dBm
Reader Service Number	860

Manufacturer: Audiotronics Model/Series Number: 200 series

Modular construction	Yes
# of mixer positions	24 max
Output channel	Pgm/aud/cue
Fader type	Slider
Bus switching	Push button
Input patch points	
Automation control port	
Internal switching	Mechanical
Machine start/stop	24 circuits
Talkback circuit	Yes
Cueing circuits	Fader detent/cue bus
Metering types	VU
Speaker muting	Yes
Internal cue amp/speaker	Speaker
Internal line amp	Yes
AF input connection	Xfmr or active bal
Input impedance (as a load)	150Ω mic/600Ω line
Input levels	Mic & line
Output connection	Xfmr and active bal
Output impedance (as source)	600Ω
Output level	+4dBm = 0VU
AF response	±0.1dB +4dBm
Distortion	0.01% 1kHz +24dBm
S/N ratio (mic/line)	-128.5dBm EIN
Crosstalk (worst case)	-85dB 1kHz
Reader Service Number	861

Manufacturer: Audix Ltd Model/Series Number: Assignable mixer

Modular construction	Yes
# of mixer positions	96
Output channel	Pgm/aud/aux/cue/mono
Fader type	Slider/automated
Bus switching	Software controlled
Input patch points	Yes
Automation control port	Yes
Internal switching	Solid-state
Machine start/stop	2/channel relay
Talkback circuit	Yes
Cueing circuits	On-fader
Metering types	VU/PPM/LED/plasma
Speaker muting	Programmable
Internal cue amp/speaker	Speaker only
Internal line amp	Yes
AF input connection	Xfmr bal
Input impedance (as a load)	1.2kΩ mic/10kΩ line
Input levels	Switchable mic/line
Output connection	Active bal
Output impedance (as source)	75Ω
Output level	+24dBm
AF response	±0.5dB +24dBm
Distortion	0.05% 1kHz +24dBm
S/N ratio (mic/line)	-125dBm EIN/80dB
Crosstalk (worst case)	-80dB 1kHz +20dBm
Reader Service Number	862

Manufacturer: Autogram Model/Series Number: R/TV-20, IC-10 (LC-10), Microgram

Modular construction	Yes	Yes	Yes
# of mixer positions	20	20	10
Output channel	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue/mono
Fader type	Slider	Slider	Rotary (slider)
Bus switching	Push button	Push button	Key switch
Input patch points	Yes	Yes	No
Automation control port	Yes	RS-232	No
Internal switching	Solid-state	Solid-state	Mechanical
Machine start/stop	2/channel relay	Solid-state & relay	28 relay contacts
Talkback circuit	Yes	No	No
Cueing circuits	On-fader	On-fader	On-fader
Metering types	VU	VU	VU
Speaker muting	Programmable	Programmable	Programmable
Internal cue amp/speaker	Speaker only	Amp only	Amp only
Internal line amp	Yes	Yes	Yes
AF input connection	Xfmr bal	Active bal	Xfmr bal
Input impedance (as a load)	150Ω mic/600Ω line	600Ω/20kΩ	600Ω/10kΩ
Input levels	Mic & line	Switchable mic/line	Mic or line
Output connection	Active bal	Active bal	Xfmr bal
Output impedance (as source)	600Ω	600Ω	600Ω
Output level	+4dBm	+8dBm	+8dBm
AF response	±0.1dB +4dBm	±0.1dB +8dBm	±1dB +18dBm
Distortion	0.01% 1kHz +24dBm	0.05% 15kHz +18dBm	0.5% 15kHz +18dBm
S/N ratio (mic/line)	-128.5dBm EIN	-124dBm EIN/92dB	-120dBm EIN/82dB
Crosstalk (worst case)	-85dB 1kHz	-68dB 15kHz +18dBm	-68dBm 15kHz +18dBm
		Mix-minus output	AC-6 6-mixer no mono
			AC-8 8-mixer no mono
Reader Service Number	863	864	865

Manufacturer: BFE Model/Series Number: BC 20 12/4

Modular construction	Yes
# of mixer positions	20
Output channel	Pgm/aud/cue
Fader type	Slider
Bus switching	Push button
Input patch points	
Automation control port	
Internal switching	Mechanical
Machine start/stop	10 contacts
Talkback circuit	Yes
Cueing circuits	Yes
Metering types	
Speaker muting	Yes
Internal cue amp/speaker	Speaker
Internal line amp	Yes
AF input connection	Xfmr/active bal
Input impedance (as a load)	
Input levels	
Output connection	Xfmr/active bal
Output impedance (as source)	600Ω
Output level	
AF response	±0.5dB
Distortion	0.2% 1kHz +27dBm
S/N ratio	-126dBm EIN
Crosstalk (worst case)	-80dB 15kHz 6dBm
Reader Service Number	866

Manufacturer: Broadcast Audio Model/Series Number: System 16 Series IV

Modular construction	Yes
# of mixer positions	16 + 6-mixer extender
Output channel	Pgm/aud/aux/cue/mono
Fader type	Slider
Bus switching	Push button
Input patch points	Yes
Automation control port	No
Internal switching	Solid-state
Machine start/stop	Solid-state/relay
Talkback circuit	Yes
Cueing circuits	On-fader/key switch
Metering types	VU/LED
Speaker muting	Yes
Internal cue amp/speaker	Amp only
Internal line amp	Yes
AF input connection	Xfmr/active bal
Input impedance (as a load)	1.5kΩ mic/20kΩ line
Input levels	Switchable mic/line
Output connection	Xfmr
Output impedance (as source)	150Ω
Output level	+8dBm
AF response	-0.5dB +8dBm
Distortion	0.02% 1kHz +28dBm
S/N ratio	-125dBm EIN/90dB
Crosstalk (worst case)	-80dB 15kHz +8dBm
	Series IV includes
	6-12 mixer versions
Reader Service Number	867

Manufacturer: Broadcast Electronics Model/Series Number: 10S250A (8S250A), 10S350A

Modular construction	No
# of mixer positions	10 (8)
Output channel	2pgm/2aud/1cue/1mono
Fader type	Rotary
Bus switching	Key switch
Input patch points	No
Automation control port	No
Internal switching	Solid-state
Machine start/stop	None
Talkback circuit	Yes (no)
Cueing circuits	On-fader
Metering types	VU
Speaker muting	Yes
Internal cue amp/speaker	Amp and speaker
Internal line amp	Yes
AF input connection	Active bal
Input impedance (as a load)	54kΩ
Input levels	Switchable mic/line
Output connection	Xfmr
Output impedance (as source)	600Ω
Output level	+8dBm
AF response	-0.5dB +8dBm
Distortion	0.5% 1kHz +18dBm
S/N ratio	65dB
Crosstalk (worst case)	
Reader Service Number	868

Manufacturer: EELA Audio Model/Series Number: SBM series

Modular construction	Yes
# of mixer positions	18
Output channel	Pgm/aud/aux/cue/mono
Fader type	Slider (VCA)
Bus switching	Push button
Input patch points	No
Automation control port	No
Internal switching	Solid-state
Machine start/stop	Yes
Talkback circuit	Yes
Cueing circuits	Bus-switch
Metering types	LED
Speaker muting	Programmable
Internal cue amp/speaker	Amp & speaker
Internal line amp	Yes
AF input connection	Xfmr bal
Input impedance (as a load)	150Ω/600Ω
Input levels	Mic & line
Output connection	Xfmr bal or unbal
Output impedance (as source)	150Ω or 600Ω
Output level	+6dBm
AF response	±1dB +6dBm
Distortion	0.05%
S/N ratio	< -126dBm EIN
Crosstalk (worst case)	< -66dB 15kHz +6dBm
Reader Service Number	870



LEGEND

Forget everything you know about production consoles. A new era has begun. Introducing the 310 Series, from Auditronics. Performance, reliability and ease of maintenance that set new standards for the industry. And make the 310 Series a legend in its own time.



auditronics. inc.

3750 Old Getwell Road
Memphis, Tenn. 38118
(901) 362-1350

Write or call for a free brochure
and technical information

Circle (126) on Reply Card

Audio On-Air Mixers

Manufacturer	EMT-Franz/Gotham	Enertec-Schlumberger	Hallikainen & Friends	Harris Broadcast	
Model/Series Number	Multi-output Mixer	UPS 6000	TVA142/TVA132	Medallist series Medallist-AU	
Modular construction	Yes	Yes	Yes	Yes	Partial
# of mixer positions	30 max	16	36 max	8/10/12	12 max
Output channels	Pgm/aux/aud/cue/mono	4-pgm/2-aux	Pgm/aud/cue	Pgm/aud/mono option	Pgm/aud/mono
Fader type	Slider	Slider	Rotary	Slider or rotary	P&G slider
Bus switching	Push button	Push button	Key switch	Push button	Push button
Input patch points	.....	No	.....	Punch-block	Punch-block
Automation control port	No	None	.....	None	Partial remote ctl
Internal switching	Mechanical	Solid-state/mechanic	Mechanical	Solid-state	Solid-state
Machine start/stop	30 contact sets	Yes	12 solid-state sinks	8 solid-state/relay	36
Talkback circuit	Yes	Yes	No	No	No
Cueing circuits	Fader detent	On-fader/bus switch	Fader detent	Bus switching	Slider detent & bus
Metering types	LED/PPM/RTW	VU/PPM	VU	VU	VU
Speaker muting	No	Yes	Programmable	Programmable	Programmable
Internal cue amp/speaker	Amp & speaker	Amp & speaker	Amp	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes	Yes
AF input connection	Xfmr bal	Xfmr bal	Xfmr bal	Active bal	Active bal
Input impedance (as a load)	150Ω/600Ω	150Ω/600Ω	150Ω/600Ω	8kΩ	8kΩ
Input levels	Switchable mic/line	Switchable mic/line	Switchable mic/line	1-mic/2-line	Switchable mic/line
Output connection	Xfmr bal	Balanced	Xfmr bal	Active bal	Active bal
Output impedance (as source)	600Ω	600Ω	600Ω	200Ω	200Ω
Output level	+20dBm	.....	+8dBm/ +24dBm clip	+24dBm	+24dBm
AF response	-1dB +6dBm	.....	±10B +8dBm = 0VU	-0.5dB +8dBm	-0.5dB +8dBm out
Distortion	0.1% 1kHz +6dBm	.....	0.5% 1kHz +8dBm	0.05% 20-20k +8dBm	0.05% 20-20k +8dBm
S/N ratio (mic/line)	54dB	.....	-115dBm EIN	-127dBm EIN/>95dB	-127dBm EIN/>95dB
Crosstalk (worst case)	-70dB 1kHz +6dBm	.....	-70dB 1kHz +8dBm	-85dB 15kHz +18dBm	-85dB 15kHz +18dBm
Reader Service Number	871	872	873	874	875

Manufacturer	Harrison Systems	Howe Audio	LPB Inc.	
Model/Series Number	AIR-7	7512 A	8000 (9000) Citation Series Signature III	
Modular construction	Yes	No	Yes	No
# of mixer positions	36	12	22	8 or 10
Output channels	Pgm/aud/aux/cue	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue/mono	Pgm/aud/cue/mono
Fader type	Slider	Slider	Rotary (slider)	Rotary
Bus switching	Push button	Push button	Push button	Push button
Input patch points	No	No	Yes	No
Automation control port	No	No	No	None
Internal switching	Solid-state	Solid-state	Solid-state	Dry contact relay
Machine start/stop	2 circuits	12 solid-state	Relay option (note 1)	8 or 10 relay
Talkback circuit	Yes	Yes	No	Yes
Cueing circuits	Fader detent	Bus switch	On-fader (bus switch)	On-fader/bus switch
Metering types	VU/PPM/LED	VU/PPM	VU/PPM/LED	VU
Speaker muting	Yes	Programmable	Programmable	Programmable
Internal cue amp/speaker	Speaker	Amp & speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
AF input connection	Active bal	Active bal	Active bal	Xfmr bal
Input impedance (as a load)	1.2kΩ mic/10kΩ line	600Ω/10kΩ	600Ω/10kΩ	150Ω & 600Ω
Input levels	Mic/line/remote	Switchable mic/line	Switchable mic/line	Mic and line
Output connection	Active bal	Active bal	Active bal	Xfmr bal
Output impedance (as source)	600Ω	150Ω	150Ω	600Ω
Output level	+24dBm max	+4dBm	+4dBm = 0VU	+24dBm
AF response	±0.2dB +4dBm = 0VU	±0.1dB +4dBm	±0.1dB +4dBm	±0.5dB +8dBm
Distortion	0.1% 7kHz +18dBm	0.03% 1kHz +4dBm	0.03% 1kHz +4dBm	0.1% 20-20k +8dBm
S/N ratio (mic/line)	-128dBm EIN	-124dBm EIN	-124dBm EIN	74dB +18dBm
Crosstalk (worst case)	-65dB 15kHz +4dBm	-70dB 10kHz +4dBm	-70dB 10kHz +4dBm	-78dB 1kHz +8dBm
.....	.....	.....	Model 9000 has 22	.....
.....	.....	.....	solid-state start-stop	.....
.....	.....	.....	circuits	.....
Reader Service Number	876	877	878	879

Manufacturer	LPB Inc.	Logitek	McCurdy Radio Ind.	Micro-Trak	Neve Electronics
Model/Series Number	Alpha A-8S	Perfectionist-8 (12)	SS8800E	IIXL-10	5104/5114
Modular construction	No	No	Yes	No	Yes
# of mixer positions	8	8 (12)	24 max	10 max (2 input/ch)	36
Output channels	Pgm/mono	4pgm/4aud/1cue/4mono	Pgm/aux/cue/mono	Pgm/aud/cue/mono opt	2pgm/aud/4aux/2solo
Fader type	Rotary	Slider or rotary opt	Slider	Slider	P&G slider
Bus switching	Push button	Push button	Push button	Key switch	Push button
Input patch points	No	Yes	.....	No	Yes
Automation control port	No	Contact closure	.....	No	For Necam 96
Internal switching	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state & mech
Machine start/stop	10 circuits	48 solid-state	24 circuits	For all 10 channels	36 max relay contact
Talkback circuit	No	No	Yes	No	Yes
Cueing circuits	Bus switch	On-fader	Fader detent	Bus switch	On-fader & bus switch
Metering types	LED	VU	VU/PPM	VU	VU or PPM
Speaker muting	Programmable	Programmable	Yes	Programmable	Programmable

Audio On-Air Mixers

Internal cue amp/speaker	Amp & speaker	Amp & speaker	Amp & speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	.....	Yes	Yes
AF input connection	Active bal	Active bal	Xfmr or active bal	Active bal	Xfmr or active bal
Input impedance (as a load)	150Ω mic/600Ω line	600Ω/1kΩ for mics	150Ω mic/600Ω line	150Ω/600Ω	1.2kΩ mic/10kΩ line
Input levels	Switchable mic/line	Mic or line	Mic or line	Switched mic/line	Mic/line switchable
Output connection	Xfmr/active bal	Active bal	Active bal	Active bal (xfmr opt)	Xfmr bal or unbal
Output impedance (as source)	600Ω	600Ω	600Ω	600Ω	<10Ω
Output level	+24dBm	+4dBm	+8dBm = 0VU	+8dBm = 0VU	+4/+8dBm +26dBm max
AF response	±0.3dB +8dBm	±0.25dB +4dBm	±1dB +8dBm	±1dB +8dBm	±0.5dB +4/+8dBm=0VU
Distortion	0.5% 20-20k +8dBm	0.008% 1kHz +4dBm	0.1% 30-20k +8dBm	0.07% 1kHz +8dBm	<0.03% 40-15k +20dBm
S/N ratio (mic/line)	76dB/80dB	-125dBm EIN/88dB	80dB	-140dBm EIN	-125dBm EIN/80dB
Crosstalk (worst case)	-65dB 1kHz +8dBm	-80dB 1kHz +21dBm	<-65dB 30-15k	-55dB 1kHz +8dBm	-60dB 15kHz +20dBm
	.....	.....	.....	IIXL-5 5-channel	5106/5116 48-mixer
	.....	.....	.....	IIXL-PM-S panel mount	.....
Reader Service Number	881	882	883	884	885

Manufacturer	Orion Research
Model/Series Number	AMU
Modular construction	Yes
# of mixer positions	32 stereo
Output channels	4pgm/4aud/1cue
Fader type	Slider (automation)
Bus switching	Automated
Input patch points	Yes
Automation control port	RS-232/422
Internal switching	Solid-state
Machine start/stop	8 solid-state
Talkback circuit	Yes
Cueing circuits	On-fader
Metering types	VU/LED
Speaker muting	Programmable
Internal cue amp/speaker	Amp only
Internal line amp	No
AF input connection	Balanced
Input impedance (as a load)	10Ω as load
Input levels	Switchable mic/line
Output connection	Active bal
Output impedance (as source)	600Ω
Output level	+27dBm
AF response	±1dB +8dBm = 0VU
Distortion	0.05% 20kHz +27dBm
S/N ratio (mic/line)	-127dBm/ -125dBm EIN
Crosstalk (worst case)	-85dB 1kHz +8dBm
Reader Service Number	886

Pacific Recorders & Engineering	
BMX Series II	BMX Series III
Yes	Yes
26 max	34 max
Pgm/aud/cue/mono	Pgm/aud/aux/cue/mono
Slider	Slider
Push button	Push button
.....
.....
Mechanical	Solid-state/mechanic
Solid-state circuits	Solid-state
Yes	Yes
Bus switched	Bus switched
VU/PPM	VU/PPM/NTP
Programmable	Programmable
Amp & speaker	Amp only
Yes	Yes
Xfmr or active bal	Xfmr or active bal
150Ω/600Ω/40kΩ	150Ω/600Ω/40kΩ
Mic & line	Mic & line
Xfmr or active bal	Xfmr or active
600Ω	600Ω
+28dBm max	+28dBm max
-1.5dB +8dBm = 0VU	-0.9dB +8dBm = 0VU
0.02% 1kHz +28dBm	0.008%
-127dBu EIN	-127dBu EIN
-85dBm 1kHz +28dBm	-85dB 1kHz +28dBm
887	888

Radio Systems	Radio Systems	Russco Electronics
ESA-10	ESA-10	505 Series
No	No	No
10 max	10 max	5
Pgm/aud/cue/mono	Pgm/aud/cue/mono	Pgm
Slider	Slider	Rotary
Push button	Push button	Push button
Yes	Yes	No
No	No	No
Solid-state	Solid-state	Solid-state
10 circuits	10 circuits	No
No	No	No
On-fader	On-fader	Bus switch
LED	LED	VU
Programmable	Programmable	Yes
Amp & speaker	Amp & speaker	Speaker
Yes	Yes	Yes
Active bal	Active bal	Xfmr bal
10kΩ	10kΩ	47kΩ
Switchable mic/line	Switchable mic/line	Adaptable
Active bal	Active bal	Xfmr bal
150Ω	150Ω	600Ω
+22dBm	+22dBm	+4/+8dBm = 0VU
±0.1dB +22dBm	±0.1dB +22dBm	±1dB +8dBm
0.02% 1kHz +22dBm	0.02% 1kHz +22dBm	0.5% 1kHz +8dBm
80dB/90dB	80dB/90dB	60dB
-90dB 1kHz +22dBm	-90dB 1kHz +22dBm	-60dB 1kHz +8dBm
889	889	890

Manufacturer	SATT Communications
Model/Series Number	SAM-83
Modular construction	No
# of mixer positions	8
Output channels	2pgm/2aux/2cue/mono
Fader type	Slider
Bus switching	Key switch
Input patch points	No
Automation control port	No
Internal switching	Mechanical
Machine start/stop	2 relay contacts
Talkback circuit	Yes
Cueing circuits	On-fader
Metering types	PPM (VU option)
Speaker muting	No
Internal cue amp/speaker	None
Internal line amp	Yes
AF input connection	Xfmr bal
Input impedance (as a load)	1kΩ mic/600Ω line
Input levels	Switchable mic/line
Output connection	Xfmr bal
Output impedance (as source)	600Ω
Output level	+6dBm at 0VU
AF response	-1/0.5dB +6dBm
Distortion	0.015% 1kHz +6dBm
S/N ratio (mic/line)	-128dBm EIN/85dB
Crosstalk (worst case)	-95dB 15kHz +6dBm
Reader Service Number	891

Solid State Logic	Sonosax
SL 5000 M	SX series
Yes	Yes
64	32
Pgm/aud/cue/aux/mono	4pgm/2aud/4aux
Slider	Slider
Centrally assignable	Push button
Yes	Yes
.....	Yes
.....	Yes
Solid-state	Solid-state
Relay contacts	Solid-state/relay
Yes	Yes
On-fader	On-fader
VU/PPM/LCD	LED
Programmable	Yes
Amp and speaker	Amp only
No	Yes
Xfmr/active bal	Xfmr/active bal
1.2kΩ mic/10kΩ line	600Ω
-80/-10dBu 5dB steps	Switchable mic/line
Balanced	Xfmr/active bal
35Ω	25Ω
+28dBm	+26dBm
±0.5dB +8dBm	±0.1dB +6dBm
0.05% 1kHz +20dBm	0.02% 1kHz +6dBm
-127.5dBm EIN	-128dBm EIN/ -115dBm
-80dB 20kHz +8dBm	-80dB 1kHz +6dBm
892	893

Soundcraft	Soundtracs
SAC-2000	FM Broadcast
Yes	Yes
24 max	.....
Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue/mono
Slider	Slider
Push button	Push button
.....	No
.....	None
Solid-state	Mechanical
Solid-state/relay	8 circuits
Yes	Yes
Bus switched	Bus switched
VU	LED
Yes	Yes
Speaker	Amp only
Yes	Yes
Active bal	Xfmr
150Ω/600Ω	.....
Switched mic/line	Switched mic/line
Active bal	Xfmr
600Ω	.....
+26dBm max	+4dBm or -10dBv
-1dB +8dBm = 0VU	.....
0.01% 20-20k +8dBm	0.015% 1kHz
80dB	.....
-65dB 1kHz +8dBm	.....
894	895

Audio On-Air Mixers

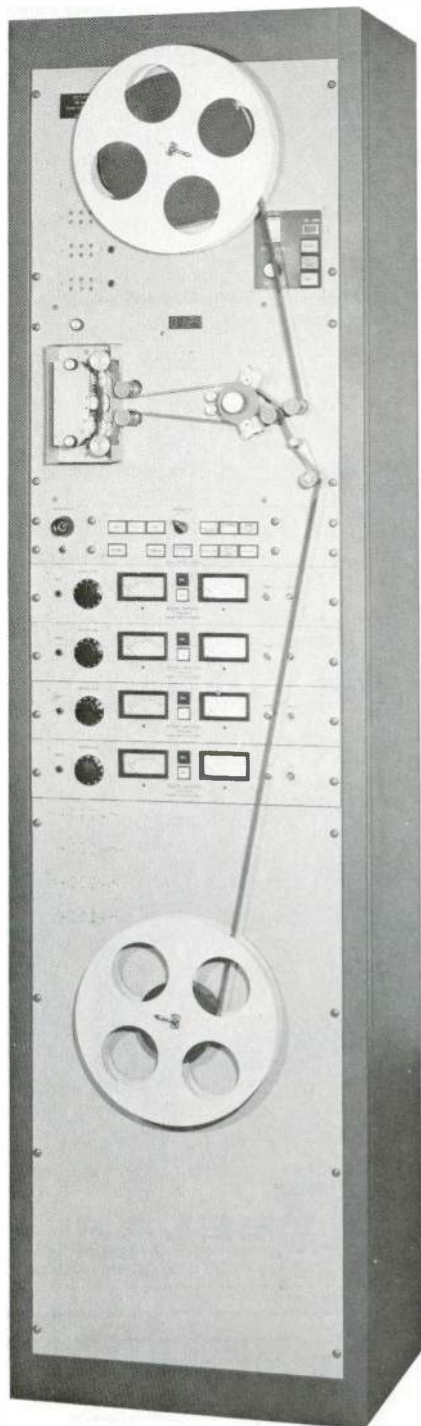
Manufacturer	TTC/Ampro Div.	UREI	Ward-Beck Systems	Wheatstone Group
Model/Series Number	Microtouch	1653	Series ST R2200	A-500a
Modular construction	No	No	Yes	Yes
# of mixer positions	5 or 8	5 max	36	22 expands to 48
Output channels	Pgm/aud/cue	Pgm/aud	Pgm/aud/aux/cue/mono	Pgm/aud/aux/mono
Fader type	Slider or rotary	Slider	Slider	Slider
Bus switching	Push button	Push button	Push button	Push button
Input patch points	.....	.....	Yes	Side chain patching
Automation control port	.....	.....	None	No
Internal switching	Mechanical	Solid-state	Solid-state/mechanical	Mechanical
Machine start/stop	User selectable	5 solid-state	6 relay contacts	22 relay contacts
Talkback circuit	Yes	No	Yes	Yes
Cueing circuits	Fader detent	Yes	On-fader/bus switch	On-fader
Metering types	VU	VU	VU (optional PPM)	VU (optional PPM)
Speaker muting	Yes	Yes	Programmable	Programmable
Internal cue amp/speaker	Yes	Speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
AF input connection	Xfmr bal	Active	Xfmr bal	Xfmr
Input impedance (as a load)	600Ω	150Ω/600Ω	1.5kΩ mic/20kΩ line	750Ω mic/24kΩ line
Input levels	Mic or line strapped	Mic or line	Line, mic/line	Mic and line
Output connection	Xfmr or active bal	Xfmr	Balanced	Balanced
Output impedance (as source)	600Ω	600Ω	<100Ω	600Ω
Output level	+18dBm	+4/+8dBm = 0VU	+8dBm	+8dBm = 0VU
AF response	±1dB +18dBm	±1dB +8dBm	±0.5dB +8dBm	±1dB +8dBm
Distortion	1% 1kHz +18dBm	0.25% +24dBm	0.2% 20kHz +24dBm	0.25% 15kHz +18dBm
S/N ratio (mic/line)	70dB	90dB	-125dBm EIN/80dB	-125dBm EIN/78dB
Crosstalk (worst case)	-50dB 1kHz +18dBm	-70dB 1kHz +24dBm	-75dB 15kHz +8dBm	-75dB 15kHz +8dBm
Reader Service Number	896	897	898	899

Audio Mixers, Portable

Manufacturer	ADM Technology	AMEK Consoles	Allen/Heath Brenell	Audio + Design/Calrec	Audio Developments
Model/Series Number	RM 1083	BC-II Series	SR Series	M Series	AD145 Pico Mixer
Modular construction	Yes	3-chassis sizes	No	Yes	Yes
# of mixer positions	8	32 maximum	8/16/24	.....	.....
# of inputs	16	28	14/22/30	16	4/6/8
# of mixing buses	3	6 to 4 subs to 2 out	2 or 6	2	2
Stereo outputs	Yes	Yes	3 pairs	Yes	1 pair
Output provisions	Line/aux/headphones	Line/aux/headphones	Line/monitor/aux	Aux/headphones/line	Mic/line/headphones
Fader type	Rotary	Slider	TBM slider	Slider	Slider
EQ and/or filtering	Prefader	Pre & post	4-band/shelving-peak	Pre & post	Prefader
Tone oscillator	None	Variable	No	Variable	1kHz
Meter types	VU	VU/PPM/LED	LED displays	VU & PPM	VU/PPM
Integral compressor/limiter	None	Option	No	Yes	No
Integral telephone interface	No	No	No	No	No
Power requirement	110Vac	120Vac	110Vac	110-220Vac	9-48Vdc
Operating weight w/o battery	.....	.....	.....	.....	14 lb
AF input connection	Xfmr bal	Xfmr/active bal	Active	Xfmr bal	Xfmr bal
Input impedance (as a load)	600Ω	150Ω	.....	600Ω	1kΩ as a load
Input level	Switched mic/line	Mic/line switched	.....	Switchable mic/line	-32/+20dBm switched
AF output connection	Xfmr bal	Active bal	Unbalanced	Xfmr bal	Xfmr bal
Output impedance (as source)	600Ω	150Ω	.....	600Ω	75Ω as a source
AF output level	+8dBm	+22dBm or 25dBv 6kΩ	.....	24dBm	+24dBm max
AF response	±1dB +24dBm	±0.5dB +20dBm	±1dB 20-20k	±0.5dB +12dBm	±1dB
Distortion	0.07% 1kHz +24dBm	0.02% 1kHz 0dBm	<0.05% +4dBm	0.05% 40-16k +12dBm	0.05% 1kHz +0dBm
S/N ratio (mic/line)	-125.5dBm EIN	-128dBm EIN	-125dBv EIN	80dBm	-126dB EIN
Crosstalk (worst case)	-72dB 100-10k +8dBm	-88dB 1kHz +20dBm	<-60dB 4dBm overall	-70dB 10kHz	<-70dB 40-15kHz 0dBm
Reader Service Number	901	902	903	904	905

Manufacturer	Audio Developments	Audix Ltd.	Bandiva/Connectronics
Model/Series Number	AD062	AD 160 (AD 260)	MXT500
Modular construction	Yes	Yes	No
# of mixer positions	.....	.....	7
# of inputs	4-16	3 (4)	14
# of mixing buses	5	1 (2)	4
Stereo outputs	Yes	No (Yes)	Yes
Output provisions	Line/mic/headphones	Line/mic/headphones	Line/mono/aux/phones
Fader type	Slider	Rotary	Slider & rotary
EQ and/or filtering	Prefader	Prefader filtering	Yes
Tone oscillator	Fixed & variable	Fixed frequency	Fixed frequency
Meter types	VU/PPM	VU/PPM	VU & PPM
Integral compressor/limiter	Yes	Limiting	No

SECK62 (SECK112)	SECK 1882
No	No
6 (12)	18
6M/6L (12M/12L) 4aux	72 (mic/line/tape/ins)
L/R & solo	L/R + 8 subgroup
Yes	Yes
Line/phones/4aux	Line/mon/group/solo
Slider	Slider + rot pan
HF/LF/mid-sweep	Shelving/peak-dip
.....	30Hz slate
LED bar graph	LED bar graph/pk hold
No	No



MAGNA-TECH

THE SOUND HEARD AROUND THE WORLD

Magnetic Film
Recorders and Reproducers
for Television and Film
Sound Post-Production

HIGH SPEED

Telecine Magnetic Followers
Video Tape-Film Interlock
Electronic Looping
Dubbing Systems
16 and 35mm Electronic Projectors
Total Facility Engineering

WORLDWIDE SALES OFFICES

Paris
Hi-Fidelity Services
4 Rue Semard
75009 Paris, France

Sydney
Magna-Techtronics (Aust.)
PO Box 150
Crows Nest NSW 2064
Australia — Telex 24655

Johannesburg
General Optical Co., Ltd.
15 Hulbert Road
Johannesburg 2001,
South Africa

Rome
Alberto Sciarretta
Via Siria 24
Rome 00179
Telephone 7943618

Brussels
A.R.C.
Rue de Boisde Linthout 45
1200 Brussels Belgium

Hong Kong
Paul Yang and Associates
901 Star House
3 Salisbury Road
Kowloon, Hong Kong

Bombay
Capt. P.K. Vishwanath
234/4 Rama Baug,
Deodhar Road
Bombay 400 019, India

Kehl West Germany
Zenon GMBH
Postfach 1743
Hauptstrasse 128
Kehl am Rhein
Tel: 07851/2991
Telex: 753537

London
Branch & Appleby
42 High Street
Harrow-on-the-Hill
Middlesex HA1 3LL,
England

Kuala Lumpur
Kinematronika Sdn. Bhd.
2852, Jalan Selangor/
Persekutuan,
Federal Hill
Kuala Lumpur, Malaysia

Caracas
Cine Materiales srl
Apartado Postal 61.098
Caracas 106 Venezuela

MAGNA-TECH ELECTRONIC CO., INC.

630 Ninth Avenue, New York, N.Y. 10036

Telephone (212) 586-7240

Telex 126191

Cables "Magtech"

Circle (127) on Reply Card

Audio Mixers, Portable

Integral telephone interface	No	No	No	No
Power requirement	9-48Vdc	9-48Vdc	110-220Vac/24Vdc	220-240Vac/50Hz
Operating weight w/o battery	20 lb	3 lb (5 lb)	50 lb	11 lb (17.6 lb) ps 2.2 lb
AF input connection	Xfmr bal	Xfmr bal	Xfmr bal	Balanced
Input impedance (as a load)	1k Ω	1k Ω (3k Ω)	1.2k Ω mic/10k Ω line	1k Ω mic/50k Ω line
Input level	Switched mic/line	Mic/line (switched)	Switchable mic/line	-65/-30/-15dBu
AF output connection	Xfmr bal	Active (xfmr) bal	Xfmr bal	Balanced
Output impedance (as source)	75 Ω	20 Ω (75 Ω)	150 Ω	600 Ω /1k Ω aux
AF output level	+24dBm	+24dBm	+24dBm	+21dBm max
AF response	\pm 1dB 0dBm	\pm 1dB 0dBm	\pm 0.5dB +24dBm	-2dB 20-20k
Distortion	0.05% 0dBm	0.035% 1kHz 0dBm	0.1% 40-14k +18dBm	0.03% 1kHz/0.04% 10k
S/N ratio (mic/line)	-126dBm EIN	-125dBm EIN	-125dB EIN	-127.5dB EIN/74dB
Crosstalk (worst case)	-70dB 40-15k	-60dB 40-15k +15dBm	<-70dB 30-15k +18dBm	<-0.0056% 1kHz
Reader Service Number	906	907	908	909

Manufacturer	Broadcast Electronics	Comprehensive Video	Comrex Corporation	EELA Audio	Electro-Voice
Model/Series Number	4S50AP(4M50AP/4R50A)	MX1001 (MX1002)	SLX Sports Mixer	S50 Reportomix	ELX-1
Modular construction	No	.....	No	Yes	No
# of mixer positions	4 max	3 max	4 max	4	4
# of inputs	12 (8/10)	3 max	7 max	4	5
# of mixing buses	1 stereo (1/1)	3	1	2	1
Stereo outputs	Yes (No/no)	No	No	Yes	No
Output provisions	Line/aux/headphones	Line/mic/aux/phones*	Line/aux feed/phones	Line/headphones	Line/mic/headphones
Fader type	Rotary	Rotary	Slider	P&G slider	Rotary
EQ and/or filtering	None	No	Yes	Hi-pass	Yes
Tone oscillator	None (none/fixd)	Fixed (none)	Fixed	Yes	Lo-freq 100Hz
Meter types	VU	VU	VU	VU	LED VU + PPM display
Integral compressor/limiter	No	No	Yes	Yes	Yes
Integral telephone interface	No	No	Yes	No	Yes
Power requirement	110Vac	12Vdc (3x9V)	110Vac/external dc	220Vac or +12Vdc	110-130Vac/24-45Vdc
Operating weight w/o battery	20 lb (20/10) w/o bat	3 lb (38oz)	15 lb	20 lb w/ batteries	5.5 lb w/ batteries
AF input connection	Act bal (act/xfmr)	Xfmr bal	Active bal	Xfmr bal	Active bal
Input impedance (as a load)	20k Ω	50-600 Ω autosensing	150 Ω	150 Ω /600 Ω	6k Ω for lo-Z mics
Input level	Switchable mic/line	Switchable mic/line	Switchable mic/line	Switched mic/line	Switched mic/line
AF output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output impedance (as source)	600 Ω	50-600 Ω autosensing	600 Ω	150 Ω /600 Ω	10 Ω and 60 Ω



ONE-STEP

COAXIAL CABLE STRIPPER

Fast consistent cable preparation is easy with the CX-2 Motorized Coaxial Cable Stripper. Prepares a 3-level strip in a single action for any connector configuration. Strips cables from .100 to .430" diameter. Twenty years proven use by leading networks and independent stations. Also available is the CX-1 hand-operated mechanical Co-ax stripper with similar capabilities. Call us for complete descriptive literature.

WESTERN ELECTRONIC PRODUCTS CO.

107 Los Molinos, San Clemente, Calif. 92672
Telephone: (714) 492-4677

Circle (128) on Reply Card



For AM, FM, SCA and TV modulation monitors.

WHEN ACCURACY COUNTS...COUNT ON...

Call (215) 687-5550 or write for more information on Belar AM, FM, Stereo, SCA and TV monitors.

BELAR
ELECTRONICS LABORATORY, INC.
LANCASTER AVE. AT DORSET, DEVON, PA 19333

Circle (129) on Reply Card

FREE 32pg Catalog & 50 Audio/Video Applic.

PWR SUPP. EQ.
PHONO, MIC,
TRANS, ACM,
TAPE, VIDEO,
LINE, OSC

Stereo/Mono Pwr Ampl. 8-in/2-out, 12-in/4-out, 18-in/4-out
Video & Audio Dist Amps. TV Audio & Recd Prod Consoles

OPAMP LABS INC (213) 934-3566
1033 N Sycamore Av LOS ANGELES CA, 90038

Circle (130) on Reply Card

PRECISION MAGNETIC TEST TAPES

STL

Standard Tape Laboratory, Inc.
26120 Eden Landing Road #5, Hayward, CA 94545
(415) 786-3546

Circle (131) on Reply Card



CART'EM UP ON AUDIOPAK AA-4!

Sales - Service
Broadcast Cartridge Service
(714) 898-7224

Circle (132) on Reply Card

SESCOM, INC.
"the audio source"

FOR ALL OF YOUR AUDIO NEEDS
2100 Ward Drive Henderson, NV 89015 U.S.A.

CALL TO RECEIVE A COPY OF
OUR POCKET-SIZED CATALOG

CATALOGS & ORDERS: (800)634-3457
OTHER BUSINESS: (702)565-3400
TWX (910)397-6996

Circle (133) on Reply Card

Audio Mixers, Portable

AF output level	+8dBm	-20 to +4dBm	-9 to +6dBm	+6dBm	.....
AF response	-1 (-2/-2)dB +8dBm	.....	±0.5dB	-1dB 20-20k	-1.25dB +4dBm
Distortion	0.1% (0.5/0.3) 1kHz	.....	<0.5% 50-15k	<0.1% 1kHz 6dBm	<0.15% 50-20k +18dBu
S/N ratio (mic/line)	65dB (60dB/70dB)	60dB EIN	-127dB EIN	-125dBm EIN	-129dBu EIN 150Ω in
Crosstalk (worst case)	Not specified	.....	<-60dB 1kHz +8dBm	<-80dB 6dBm 15kHz	.....
	.....	.....	Includes bandwidth extender circuitry	.....	.....
Reader Service Number	911	912	913	914	915

Manufacturer	Gotham Audio/EMT		Harrison Systems		Logitek		Micro-Trak Corporation	
	Model/	Series Number	Model/	Series Number	Model/	Series Number	Model/	Series Number
	EMT	Multioutput Mix	MX-8	(PRO-7)	Stereorack	Audiorack	Sport III	(Sport IV)
Modular construction	Yes		Yes		No	No	No	
# of mixer positions	30 max		10 (36)		6	6	2 (4) max	
# of inputs	30 max		8 (24)		11	6	3 (5) max	
# of mixing buses	4		2-st/2-mono (4-group)		2	2	1	
Stereo outputs	Yes		Yes		Yes	No	No	
Output provisions	Line/aux feed/phones		Line/headphones (aux)		Line/aux/headphones	Line/aux/mic/phones	Line/phones	
Fader type	Slider		Slider		Rotary	Rotary	Rotary	
EQ and/or filtering	Post-fader only		No (prefader)		No	No	No	
Tone oscillator	Variable		Fixed (variable)		Fixed frequency	Fixed	None	
Meter types	VU/PPM/LED		VU (PPM/LED)		VU	VU	VU	
Integral compressor/limiter	Yes		No		No	No	No	
Integral telephone interface	No		No		No	No	Yes	
Power requirement	120Vac		±15Vdc		110Vac	117Vac/12Vdc	110/220Vac or dc	
Operating weight w/o battery	60 lb		25 lb (125 lb)		25 lb	20 lb	8 lb	
AF input connection	Xfmr bal		Active bal		Active bal	Active bal	Xfmr bal	
Input impedance (as a load)	600Ω		150Ω		150Ω/600Ω	150Ω/600Ω	600Ω/150Ω	
Input level	Switchable mic/line		Mic (mic & line)		Mic & line	Switchable mic/line	Switchable mic/line	
AF output connection	Xfmr bal		Active bal		Active bal	Xfmr bal	Xfmr bal (telephone)	
Output impedance (as source)	600Ω		600Ω		600Ω	600Ω	600Ω	
AF output level	+6dBm		-24dBm max		0dBm	0dBm	+8dBm	
AF response	0.5/-1dB +6dBm		±0.2dB +4dBm = 0VU		±0.3dB 0dBm	±0.3dB 0dBm	Per Telco regulation	
Distortion	0.1% 1kHz 6dBm		.....		0.01% 1kHz 0dBm	0.1% 1kHz +4dBm	0.5% 1kHz +8dBm	
S/N ratio (mic/line)	>54dB		-129dBm EIN		-125dBm EIN	-114dBm EIN	-120dBm EIN	
Crosstalk (worst case)	<-70dB 1kHz 6dBm		-65dB 15kHz +4cBm		-80dB 1kHz 0dBm	-70dB 1kHz +4dBm	.....
Reader Service Number	916		917		918	919	920	

Manufacturer	Rupert Neve Inc.		Ramko Research		RAMSA		SATT Communications	
	Model/	Series Number	Model/	Series Number	Model/	Series Number	Model/	Series Number
	5422		Primus	Sidekick	P-4MS	(P-5MX)	WR-500	SAM-42
Modular construction	Yes		No		No	No	No	
# of mixer positions	8 max		4 max		4 (5)	8	4	
# of inputs	10		2-line/2-mic or line		4 (5)	8/12	6	
# of mixing buses	2 + 2 aux		1		2 (1)	3	2	
Stereo outputs	Yes		No		Yes (mono only)	3	Yes	
Output provisions	Line/2-aux/phones		Line/phones		Line/phones (line)	1 pair	Line/-20dBm/phones	
Fader type	P&G slider		Rotary		Rotary	Proprietary slider	Slider	
EQ and/or filtering	3-band/3-freq hi-pass		No		Yes (no)	2-band fixed	No	
Tone oscillator	Variable		Yes		No	No	Fixed tone	
Meter types	VU & PPM		VU		LED ladder (no)	VU movements	PPM (VU option)	
Integral compressor/limiter	No		Yes		No	No	Opt feature	
Integral telephone interface	No		No		No	No	Yes	
Power requirement	120Vac or int Vdc		9Vdc		120Vac/240Vac	ac or 12Vdc	110-220Vac/±15Vdc	
Operating weight w/o battery	42 lb w/ batteries		2.5 lb		.....	22 lb	8.5 lb	
AF input connection	Xfmr bal		Balanced		Active bal	Bal mic/line	Xfmr bal	
Input impedance (as a load)	1.2kΩ mic/10kΩ line		.....		.....	600Ω	1kΩ-mic/600Ω	
Input level	Switchable mic/line		Switchable mic/line		Switchable mic/line	-70 to +4dBm	Switched mic/line	
AF output connection	Xfmr bal		Balanced		Active bal	Bal & unbal	Xfmr bal	
Output impedance (as source)	<50Ω		Low-Z source		600Ω	For 600Ω load	600Ω	
AF output level	+4/+8/+20dBu 600Ω		+16dBm (0dBm=0VU)		+26dBm max	+4dBm	+20dBm/+21dBm 5kΩ	
AF response	±0.5dB +4/+8dBm=0VU		<+1.5dB/20Hz-20kHz		0-1.5dB 1kHz +8dBm	0.5/-2dB/20-20k	-1/0.5dB +6dBm	
Distortion	<0.05% 30-15k +20dBm		0.08% +8dBm		0.008% 1kHz 8dBm	<0.3% 18dBm	0.015% 1kHz +6dBm	
S/N ratio (mic/line)	-125dBm EIN		72dB/90dB		70dB/83dB	-128dB EIN	-128dBm EIN	
Crosstalk (worst case)	<-60dB 15kHz +20dBm		.....		<-65dB 1kHz	.....	-90dB 15kHz +6dBm	
Reader Service Number	921		922		923	924	925	

Manufacturer	SQN Electronics			Shure Brothers					
	Model/	Series Number	Model/	Series Number	Model/	Series Number			
	SQN-4S		SQN-3	Type M	M267	(M67)	FP32	(FP31)	FP42
Modular construction	No		No		No		No		No
# of mixer positions	4		4		4 max		3 max		4 max
# of inputs	4		4		4 max		3 max		4 max
# of mixing buses	2		1		1		2 (1)		2
Stereo outputs	Yes/ganged limiting		No		No		Yes (No)		Yes
Output provisions	Line/mic/aux/phones		Line/mic/aux/phones		Line/phones/mic		Line/aux/mic/phones		Line/phones/mic
Fader type	Rotary w/ panpots		Rotary		Rotary		Rotary		Rotary

Audio Mixers, Portable

EQ and/or filtering	Bass-cut each input	Bass-cut each input	Prefader	Prefader	Prefader
Tone oscillator	Variable	Fixed frequency	Fixed tone	Fixed	Fixed
Meter types	VU or PPM	PPM	VU/LED (VU only)	VU/LED	VU/LED
Integral compressor/limiter	Peak limiter	Peak limiting	Limiting (no)	Limiting	Limiting
Integral telephone interface	No	No	No	No	No
Power requirement	±6 to 24Vdc	±5 to 18Vdc	120/240Vac/27Vdc	18Vdc	120/240Vac/27Vdc
Operating weight w/o battery	4.75 lb w/o batteries	2.75 lb w/o batteries	5 lb (2 lb)	2.5 lb	6 lb
AF input connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Input impedance (as a load)	2kΩ	2kΩ	150Ω/600Ω	150Ω/600Ω	150Ω/600Ω
Input level	4-switched mic/line*	3-mic/1-line*	Switchable mic/line	Switchable mic/line	Switchable mic/line
AF output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output impedance (as source)	150Ω	150Ω	150Ω/600Ω	150Ω/600Ω	150Ω/600Ω
AF output level	+18dBm	+18dBm	+18dBm/-34dBv 150Ω	+18dBm/-34dBv 150Ω	+18dBm/-34dBv 150Ω
AF response	-1dB +4dBm	-1dB +4dBm	±2dB +4dBm	±2dB +4dBm	±0.2dB +4dBm
Distortion	0.1% 20-20k +15dBm	0.1% 20-20k +15dBm	0.35% 20kHz +15dBm	0.25% 20kHz +4dBm	0.3% 20kHz +15dBm
S/N ratio (mic/line)	-125dB EIN	-125dB EIN	-129.5dB EIN	-129dBm EIN	-129dBm EIN
Crosstalk (worst case)	-60dB 15kHz +4dBm	.....	.....	<-40dB 10kHz +15dBm	<-40dB 10kHz +15dBm
	*Aux monitor input level	*Aux monitor input level	.....	.....	.....
	-20/+22dBm	-10/+20dBm	.....	.....	.....
Reader Service Number	926	927	928	929	930

Manufacturer	Sonosax			Sony Broadcast/Audio	
Model/Series Number	SX-S10 (-S6)	SX-PR	SX-S	MX-P61	MX-P42
Modular construction	Yes	Yes	Yes	Yes	No
# of mixer positions	10 max	6	.....	12	4
# of inputs	10 max	2/4/6	6/8/10	17	6
# of mixing buses	3	2	5	7	2
Stereo outputs	Yes	Yes	Yes	Yes	2 pair
Output provisions	Line/aux/phones	Line/mic/headphones	Line/headphones/aux	Line/aux/phones	Line/mic/phones
Fader type	Slider	Rotary	Slider	Slider	Rotary
EQ and/or filtering	Yes	Low-cut 80Hz/120Hz	Yes	Prefader	Prefader
Tone oscillator	Fixed	Fixed frequency	1kHz/10kHz fixed	1kHz	None
Meter types	VU/PPM/LED	LED	PPM/LED	VU/PPM/LED	VU movement
Integral compressor/limiter	Yes	Yes	Yes	Adjustable limiting	Compress/comp-exp
Integral telephone interface	No	No	No	No	No
Power requirement	10 +15Vdc	±3Vdc±12Vdc	9-18Vdc	110-220Vac/12Vdc	9Vdc(3hr)/ext 12Vdc
Operating weight w/o battery	14.8 lb w/ batteries	2.5 lb	15 lb	40.3 lb	8 lb 10 oz
AF input connection	Xfmr or active bal	Xfmr/active bal	Xfmr/active bal	Active bal	Xfmr
Input impedance (as a load)	150Ω/600Ω	600Ω	600Ω	10kΩ	600Ω
Input level	Switchable mic/line	Switched mic/line	Switched mic/line	Switchable mic/line	Switched mic/line
AF output connection	Xfmr or active bal	Xfmr/active bal	Xfmr/active bal	Active bal	Xfmr
Output impedance (as source)	600Ω	25Ω	50Ω	150Ω	For 600Ω loads
AF output level	+6dBm or +15dBm	+21dBm	+18dBm	+24dBm	+4dBm
AF response	±0.5dB +6dBm	±0.1dB +6dBm = 0VU	±0.5dB +6dBm = 0VU	±0.5dB 30-20k	±1dB 30-20k
Distortion	0.01% 1kHz +6dBm	0.02% 1kHz +6dBm	0.25% 1kHz +6dBm	<0.1% 1kHz +4dBm out	0.1% 1kHz +4dBm
S/N ratio (mic/line)	-131.5dBm EIN A-wtd	-128dBm EIN	-129dBm EIN	-125dBm DIN	-125dBm EIN
Crosstalk (worst case)	<-70dB 10kHz +6dBm	-80dB 1kHz +6dBm	-80dB 1kHz +6dBm	-70dB 15kHz +4dBm	<-70dB 10kHz
Reader Service Number	931	932	933	934	935

Manufacturer	Sony Broadcast/Audio	Soundtracs		Spectra Sonics	Stellavox
Model/Series Number	MX-P21	Model M (Model T)	Model FM	#1100 Line/mic mixer	AMI48
Modular construction	No	Yes (No)	Yes	No	.....
# of mixer positions	8	.....	.....	6 max	5 max
# of inputs	22	32	12	6 max	10 max
# of mixing buses	4	8	8	1	1
Stereo outputs	Yes	Yes	Yes	No	Yes
Output provisions	Line	Line/mic/aux/phones	Line/mix/aux/phones	Line/headphones	Line/aux/headphones
Fader type	Slider	Slider	Slider	Rotary	Slider
EQ and/or filtering	Prefader	Pre and post	Pre & post	Postfader	Yes
Tone oscillator	Fixed	Variable (fixed)	Fixed frequency	No	Fixed
Meter types	VU/LED	LED	LED	VU	PPM
Integral compressor/limiter	No	No	No	No	Yes
Integral telephone interface	No	No	No	No	No
Power requirement	12Vdc or 110Vac	ac power	ac power	ac or dc	18Vdc
Operating weight w/o battery	28 lb	160 lb (.....)	80 lb	10 lb	9 lb
AF input connection	Active bal	Balanced	Balanced	Xfmr bal	Balanced
Input impedance (as a load)	600Ω	.....	.....	150Ω/600Ω	600Ω
Input level	Mic and line	Switched mic/line	Mic/line switched	Switchable mic/line	Switchable mic/line
AF output connection	Active bal	..... (bal)	Balanced	Xfmr bal	Balanced
Output impedance (as source)	600Ω	.....	.....	600Ω	200Ω/600Ω
AF output level	+4dBm	-4dBm or +10dBv*	+4dBm or -10dBv	+4dBm or +8dBm	+6dBm and +15dBm
AF response	±0.5dB at +4dBm out	.....	.....	±0.75dB +18dBm	-1dB +6dBm
Distortion	0.03% 1kHz +24dBm	0.015% 1kHz +4dBm	0.015% 1kHz +4dBm	0.01% 1kHz +18dBm	0.03% 1kHz +6dBm
S/N ratio (mic/line)	-126dBm EIN	.....	76dB	-130dBm EIN	-125dBm EIN
Crosstalk (worst case)	-60dB 1kHz +4dBm	-80dB 1-10kHz (-74dB)	.....	.....	-80dB 1kHz +6dBm
	.....	*+4dBm or -10dBv for Model T mixer	.....	.....	.....
Reader Service Number	936	937	938	939	940



INNOVATIVE & AFFORDABLE SYSTEMS ENGINEERING

- Production Facilities
- Broadcast Facilities
- Mobile Systems

CENTRO CORPORATION, (619) 560-1578, 9516 CHESAPEAKE DRIVE, SAN DIEGO, CALIFORNIA 92123

Circle (134) on Reply Card

Covering All the Bases

Meet the team of innovative Time Base Correctors from FOR-A. These high performance systems combine the latest advances in digital and component signal processing with the versatility to handle every professional broadcast and post-production application.

* *FA-410 Time Base Corrector*—The full-feature "Workhorse" TBC with Dynamic Tracking™ for the Sony BVU-820 and Panasonic NV-8950 VTRs.

- *FA-400/FA-420 TBCs with Frame/Field Picture Freeze* plus processing of Non-Synchronous signals from remote locations or Non-V-Locked VTRs.
- *FA-430 TBC with Image Processor*—Providing the ultimate in color correction, image enhancement and noise reduction with Y/C Dub, Dynamic Tracking and DOC.
- *FA-440 TBC with Video Production Effects*—An exciting array of multiple digital effects including Compression, Inversion, Mosaics, Posterization and Multi-Move.
- *FA-800 AUTOCOR Frame Synchronizer with Automatic Level Control*—Now with capability for correcting 1" (Type C) VTRs, including Velocity Correction, DOC and VTR SC mode.

- *FA-450 Component Interfacing TBC*—Handles any component, Y/C Dub or Composite Signal and provides Full Transcoding Interface capabilities including decoding and encoding functions. Employing 4:2:2 sampling and 8-bit encoding for each component, the FA-450 provides Full-Frame Correction, Color Picture Freeze, DOC and Dynamic Tracking. Designed with future video technology in mind, the FA-450 updates existing systems and insures against format obsolescence.

So cover all the bases and join the winning team. FOR-A is ready to review its versatile line-up with you. Call your FOR-A dealer . . . and ask about our new 2-year warranty.

U-matic and Dynamic Tracking are registered trademarks of Sony Corporation.



FOR-A[®]
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

FOR-A CORPORATION OF AMERICA Nonantum Office Park, 320 Nevada Street, Newton, MA 02160
East Coast: (617) 244-3223 West Coast: (213) 402-5391

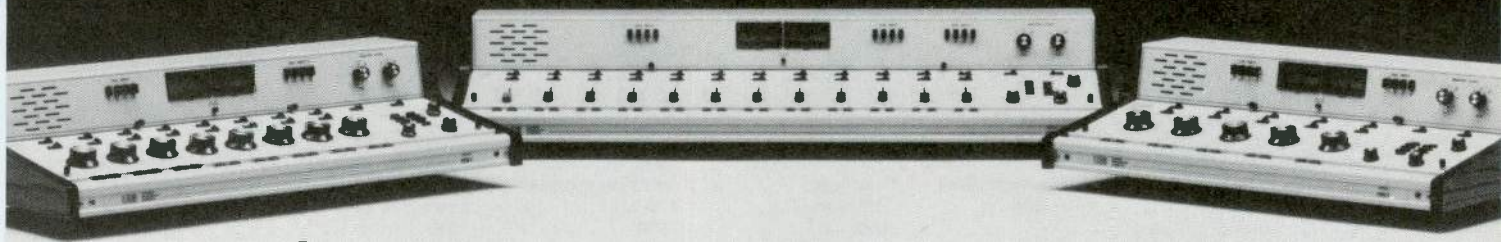
Circle (135) on Reply Card

Audio Mixing Consoles, Studio Production

Filtering types	Hi-/lo-pass	Hi-/lo-pass	Hi-/lo-pass	.....	Hi-/lo-pass var
Panpots	No	Yes	Yes	Yes	Yes
Groups/subgroups	2 groups	2 groups/4 subs	3 groups/4 subs	3 groups	10 groups
Sends-returns pre/post	None	2-pre/2-post	5-pre/5-post	1-pre/1-post	6-pre/post
Solo monitor	None	PFL	AFL/PFL	PFL	AFL/PFL/in-place
Integral compressor/limiter	No	No	Yes	Yes	Optional
Machine start/stops	No	32 relay contacts	6 relay contacts	No	No
Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	No	Yes
Tone oscillator	Fixed frequency	Variable	Variable	Variable frequency	Variable
Meter types	VU	VU	VU/PPM	VU/PPM	VU/PPM/LED
VU calibrate range	-2/+10dBm	-2/+10dBm	-2/+10dBm	-2/+10dBu	.....
Automation provisions	Dual-bus system	No	Yes	Dual-bus system	Yes
Input connection	Balanced	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr/active bal
Input impedance	600Ω	600Ω	600Ω	600Ω	150Ω
Input levels	Line	Line & line	Switched mic/line	Switched mic/line	Switchable mic/line
Output connection	Balanced	Xfmr bal	Xfmr bal	Xfmr	Unbalanced
Output impedance	600Ω	600Ω	600Ω	600Ω	150Ω
Output levels	+8dBm	+8dBm = 0VU	+8dBm	+8dBm = 0VU	+22dBm
AF response	±0.4dB	±1dB	±1dB	±1dB at +24dBm	±1dB 4dBm
Distortion	0.05% at 1kHz +24dBm	0.07% 1kHz +24dBm	0.07% 1kHz +24dBm	0.07% 1kHz +24dBm	0.2% 1kHz +10dBm
S/N ratio (mic/line)	75dB line	-125.5dBm EIN/72dB	-125.5dBm/72dB	-125.5dBm EIN/72dB	-127dBm EIN mic
Crosstalk (worst case)	-85dB 1kHz+8dBm	-72dB100-10k+8dBm	-72dB 100-10k+8dBm	-72dB 100-10k+8dBm	-78dB 1kHz
	Post-Pro 8 8-input	S/TV24 24-input	BCS-2443-PC 24-input	VP-1203 12 channel	.....
	.....	S/TV16 16-input	.....	VP-803 8 channel	.....
Reader Service Number	951	952	953	954	955

Manufacturer	AMEK	ANT Nachrichtentechnik	Allen/Heath Brenell	Audio + Design/Calrec	
Model/Series Number	Angela M65	APC 1000	TRS800 ik	Syncom series	UA8000
Modular construction	Yes	Yes	Yes	Yes	Yes
# of mixer positions	65	150	.....	8 to 44	64 max
# of inputs	62	128	Mic & line per input	88	128 max
# of mixing buses	24	64	12	26	32
# of multitrack outs	48	48	Per input	24	32
Input patch points	Yes	Yes	Yes	Yes	Yes
Output patch points	Yes	Yes	Yes	Yes	Yes
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider	Slider
EQ type	4-band shelf/swept	4-band parametric	3-band parametric	4-band/shelf/swept	4-band/shelf/parametric
Filtering types	Hi-/lo-pass	Hi-/lo-pass	Hi-/lo-pass	.....	Hi-/lo-pass
Panpots	Yes	Yes	4/4	Yes	Yes
Groups/subgroups	4 stereo subs	10 subs	24 groups	30 groups	32 S/9 R
Sends-returns pre/post	6 each pre/post	8 sends pre/post	4 each	6S/8-44R pre/post	Pre & post
Solo monitor	AFL/PFL/in-place	AFL/PFL/in-place	Solo X-Y & PFL	PFL & in-place	AFL/PFL/in-place
Integral compressor/limiter	No	Option	Compression only	No	Yes
Machine start/stops	No	Solid-state outputs	.....	No	Yes
Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	Yes	Yes
Tone oscillator	Variable	Variable	5-freq & pink noise	Variable	Variable
Meter types	VU/LED	Plasma	Peak & ladder LEDs	LED displays	VU/PPM/LED
VU calibrate range	.....	.....	.....	.....	.....
Automation provisions	Yes	Yes	-64dBm to +22dBm	Option	Yes
Input connection	Active bal	Active bal	Balanced	Xfmr bal/unbal	Xfmr/active bal
Input impedance	150Ω	150Ω	>1.5kΩ mic/>1.7kΩ	1kΩ mic/22kΩ line	20kΩ
Input levels	Switchable mic/line	Switchable mic/line	-64/+22dBm	Switchable mic/line	Switchable mic/line
Output connection	Unbalanced	Active unbal	Balanced	Xfmr bal	Active bal
Output impedance	150Ω	150Ω	600Ω	600Ω	22Ω
Output levels	+21dBm	+22dBm	+6/+9/+15/+22dBm	+4dBm = 0VU	+26dBm
AF response	±1dB +4dBm	±1dB +4dBm	±0.5dBm 40-15k	±1dBm +4dBm	-0.25dB +4dBm
Distortion	0.02% at 1kHz +10dBm	0.02% 1kHz +10dBm	<0.15% 1kHz +22dBm	<0.05% +4dBm	0.007% 1kHz +20dBm
S/N ratio (mic/line)	-128dBm EIN mic	-128dBm EIN mic	-127dBm EIN A-wtd	-129dBm EIN	80dB
Crosstalk (worst case)	-80dB 1kHz	-80dB 1kHz	-90dB 40-15k	-76dB 30-10k +4dBm	-80dB 100-10k +4dBm
Reader Service Number	956	957	958	959	960

Manufacturer	Auditronics	Audix Ltd	Broadcast Audio Corp	EELA Audio
Model/Series Number	Model 310	MXT 1200	System 20	S-3000 II VCA
Modular construction	Yes	Yes	Yes	Yes
# of mixer positions	48	32	48	.....
# of inputs	48	32	32	60 max
# of mixing buses	24 + 2 + 1 + 1	4 or 8 + 2 + 1	8	4
# of multitrack outs	24	4 or 8	32 direct channel	4
Input patch points	Yes	Yes	Yes	.....
Output patch points	Yes	.....	Yes	.....
Stereo output pair	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider
EQ type	Swept/shelving	Peak/shelving/swept	4-band shelving	Peak/shelf/graphic
Filtering types	Hi-/lo-pass	Hi-/lo-pass	Hi-pass	Hi-pass
Panpots	Yes	Yes	Yes	Yes



THE DESIGN WILL INSPIRE YOU. THE NAME WILL IMPRESS YOU. THE PRICE WILL CONSOLE YOU.

UREI has some consoling news for stations with ideas that are bigger than their budgets: our superior line of broadcast consoles put a better on-air board within your reach.

All nine of our 5, 8 or 12 mixer consoles offer the design and performance features your on-air staff and engineers are after. At a price general managers only dreamed of before.

Working jocks and announcers helped us lay out a control panel that puts you instantly at ease. Phone jacks are logically placed. Recessed push buttons and gold-contact rocker switches operate surely, quietly. Cueing and monitoring are simple, yet versatile. Plus, you choose the attenuators—Penny and Giles faders, Shallco or conductive plastic pots.

We consulted station engineers to bring you consoles that perform reliably, adapt easily and install quickly, without special tools or accessories. Hinged panels allow fast access to plug-in cards and circuitry. And no other consoles in this class can deliver greater head room, lower noise or less distortion.

Built-in flexibility plus optional accessories such as our copy stand and turntable preamp mean any UREI console can adapt to your station's special on-air needs. Standard features include monitor, cue, headphone amp and cue speaker. Reliability is built-in too. Because UREI has been researching and advancing broadcast products for over 25 years.

UREI Broadcast Consoles. Why make do with less when you can afford to move up to more? Learn more about our 1650, 1680 and 1690 Series by contacting your UREI dealer today.

IBL Professional
8500 Balboa Boulevard
Northridge, CA 91329

Urei

Audio Mixing Consoles, Studio Production

Groups/subgroups	9 groups	4 or 8	8 each	User configured	4 VCA
Sends-returns pre/post	4 each	2-4 pre & post	4 pre or post	20 post	2 pre/2 post
Solo monitor	AFL	In-place	AFL & PFL	None	PFL/in-place
Integral compressor/limiter	No	Accessory	Yes	No	No
Machine start/stops	No	Yes	2 w/relay contacts	14 circuits	Yes
Talkback circuits	Yes	Accessory	Yes	Yes	Yes
Speaker muting	No	No	Yes	Yes	No
Tone oscillator	Variable	Variable	Variable	Variable	Variable
Meter types	VU/PPM/RTW	VU/PPM/RTW	VU/PPM/LED	VU/LED displays	VU/LED/Plasma
VU calibrate range	.....	.....	-8 to +8	.....	.....
Automation provisions	Yes	.....	No	Yes	Yes
Input connection	Xfmr/active bal	Active bal	Xfmr bal	Xfmr/active bal	Xfmr bal
Input impedance	20k Ω & 15k Ω bridging	15k Ω mic and line	1.2k Ω mic/10k Ω line	150k Ω mic/20k Ω line	1.2k Ω mic/12k Ω line
Input levels	Mic/line switchable	+4dBv 60	Switchable mic/line	Switched mic/line	Mic/line switchable
Output connection	Xfmr/active bal	Active bal	Xfmr bal	Xfmr/active bal	Xfmr unbal
Output impedance	.....	60 Ω	150 Ω	150 Ω	50 Ω
Output levels	.....	+4dBm at 60 Ω	+24dBm	+8dBm	+4dBm
AF response	\pm 1dB +20dBm	\pm 0.5dB +24dBm	\pm 0.5dB +24dBm	\pm 0.5dB +8dBm	\pm 1dB +4dBm
Distortion	0.01% 1kHz +20dBm	0.01% 1kHz +24dBm	0.1% 30-20k +18dBm	0.007% 1kHz +8dBm	0.05% 15kHz +18dBm
S/N ratio (mic/line)	-127dBm EIN	-129dBm EIN	-125dBm EIN/80dB	-125dBm EIN	-126dBm EIN mic/line
Crosstalk (worst case)	-76dB 1kHz +4dBm	-89dB 1kHz +18dBm	-70dB 30-15k +18dBm	-90dB 1kHz +8dBm	-70dB 15kHz +4dBm
Reader Service Number	951	962	953	954	965

Manufacturer	EELA Audio	EMT-Franz/Gotham	Electro-Voice		
Model/Series Number	S-300 series	Model 10.02	C12	EVT-5208RM (5212/16)	8108 matrix mixer
Modular construction	Yes	Yes	No	No	No
# of mixer positions	Variable	30	12/expands to 44	8 (12/16)	8
# of inputs	37	60	12/expands to 44	8 (12/16)	12
# of mixing buses	13	2	4	2	4
# of multitrack outs	8	16	12	0	None
Input patch points	Yes	Yes	Yes	No	Yes
Output patch points	Yes	Yes	Yes	No	No
Stereo output pair	Yes	Yes	Yes	Yes	No
Fader type	Slider	Slider	Slider	Slider	Rotary
EQ type	Swept/shelving	3-band parametric	3-band/mid-swept	2-band	2-band
Filtering types	Hi-/lo-/bandpass	Hi-pass	.....	.....	.....
Panpots	Yes	Yes	Yes	Yes	No
Groups/subgroups	Variable	None	4/2	2 groups	4 groups
Sends-returns pre/post	4 pre/4 post	Echos pre/post	2 pre/2 post	1 pre/1 post	None
Solo monitor	PFL	PFL	AFL	None	None
Integral compressor/limiter	Yes	Yes	No	No	No
Machine start/stops	.....	Relay contacts	No	No	No
Talkback circuits	Yes	Yes	No	No	No
Speaker muting	Yes	Yes	No	No	No
Tone oscillator	Variable	Fixed frequency	None	None	None
Meter types	VU/PPM/LED	VU/PPM/plasma	VU/LED	LED	LED
VU calibrate range	.....	.....	+4	+4	2 + dB cal range
Automation provisions	None	No	No	No	No
Input connection	Xfmr bal	Xfmr bal	Xfmr bal/unbal line	Active bal/unbal line	Xfmr bal
Input impedance	1.2k Ω mic/10k Ω line	150 Ω /600 Ω	.....	4 Ω for lo-Z mics	1.5k Ω mic/12k Ω line
Input levels	-60/-40dBm	Mic/line switched	Mic or line	Mic or line	Switchable mic/line
	-14/+16dBm	.....	.....	.....	.....
Output connection	Xfmr bal	Xfmr bal	Xfmr bal/unbal opt	Unbal	Xfmr bal or unbal
Output impedance	<40 Ω	600 Ω	175 Ω	50 Ω	27 Ω
Output levels	+6dBm nom/+20dB max	+4dBm	+4dBu any Ω value	+4dBu	+4/+8dBu any Ω value
AF response	\pm 1dB +6dBm	\pm 0.5dB +4dBm = 0VU	\pm 0.5dB 4dBm	\pm 1dB +4dBm	\pm 2dB +4dBm
Distortion	0.06% 1kHz +20dBm	0.1% 1kHz +4dBm	0.01% 1kHz 4dBm	0.05% 20-20k +4dBm	<0.1dB 50-20k +18dBm
S/N ratio (mic/line)	-126dBm EIN mic	-124dBm EIN/80dB	-129dBm mic	-128dBm EIN mic	-128dBu EIN mic
Crosstalk (worst case)	-61dB 15kHz +6dBm	-70dB 1kHz +0dBm	.....	-50dB 20-20k +4dBm	-65dB 1kHz +4dBu
Reader Service Number	966	967	968	969	970

Manufacturer	Entertec-Schlumberger	Fostex Corporation	Graham Patten System	Grass Valley Group	
Model/Series Number	UPS-5000 (UPS-6166)	UPS-6500	450 (450-16)	600 series ESAM	AMX-90
Modular construction	Yes	Yes	No	No	Yes
# of mixer positions	24 (16)	48	8 (16)	12 or 16	.....
# of inputs	24 (16)	48	15	12 or 16	12
# of mixing buses	6 to 8	1	7	4	3
# of multitrack outs	2 or 4	48	12	12 or 16	.....
Input patch points	.....	No	.....	No	No
Output patch points	.....	No	.....	No	No
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider	.....
EQ type	.....	.....	3-band parametric	5-band programmable	None
Filtering types	Hi-/lo-pass	Hi-/lo-/bandpass	No	.....	.....
Panpots	Yes	Yes	Yes	No	No
Groups/subgroups	4 groups	8-16 groups	4x2	None	.....
Sends-returns pre/post	None	Pre and post	2 pre/3 post	None	.....

Audio Mixing Consoles, Studio Production

Solo monitor	PFL	PFL	AFL	No	AFL
Integral compressor/limiter	No	No	No	Proc loops available	No
Machine start/stops	Yes	Yes	No	No	Relay contacts
Talkback circuits	Yes	Yes	None	No	No
Speaker muting	Yes	Yes	No	No	No
Tone oscillator	Fixed	Fixed	No	None	None
Meter types	VU/PPM	VU/PPM/LED	VU/PPM/LED	VU/PPM	VU/PPM/LED
VU calibrate range	.....	.....	.....	.....	- 10 to + 8dBu
Automation provisions	.....	Yes	No	Editor controlled*	Full serial
Input connection	Balanced	Balanced	Active bal/unbal	Active bal	Active bal
Input impedance	>1k Ω	>1k Ω	1.2k Ω /10k Ω	20 Ω	>20k Ω
Input levels	Switchable mic/line	Switchable mic/line	Switchable mic/line	Line	Line
Output connection	Balanced	Balanced	Unbalanced	Active bal	Active bal
Output impedance	<20 Ω	<20 Ω	500 Ω	30 Ω	60 Ω
Output levels	+ 12dBm	+ 18dBm	10dBv 10 Ω	+ 30dBm	+ 8dBu = 0VU
AF response	\pm 0.5dB	\pm 0.5dB	- 2/1dB ref - 10dBv	\pm 0.5dB	\pm 1dB below clipping
Distortion	0.2% 30-20k	0.2% 30-20k	0.05% 1kHz - 10dBv	0.1% + 16dBu	0.01% 1kHz + 8dBu
S/N ratio (mic/line)	- 125dBm EIN	- 125dBm EIN	- 126dBm EIN	>77dBu per input	73dB
Crosstalk (worst case)	- 70dB 10k-20k	- 70dB 10k-20k	- 60dB 1kHz - 10dBv	< - 82dB 15kHz	- 90dB 15kHz + 22dBu
.....	.....	.....	.....	*Auto-fade 0-299 frame/	.....
.....	.....	.....	.....	RS-422 link	.....
Reader Service Number	971	972	973	974	975

Manufacturer	Harrison Systems	Howe Audio	JVC Company		
Model/Series Number	MR-4	TV-3 (TV-4)	MR-2 (MR-3)	Model 10000	MI-20000
Modular construction	Yes	Yes	Yes	Yes	No
# of mixer positions	60	60	60	24	8
# of inputs	56	54	56	84	8-mic/6 line/phone
# of mixing buses	2 stereo	8 stereo (10 stereo)	2 stereo	6	Pgm/aux/mon
# of multitrack outs	24	24 (16 group level)	48 (24)	4	None
Input patch points	Yes	Yes	Yes	Yes	No
Output patch points	No	Yes (No)	No	Yes	No
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider	Slider
EQ type	3-band swept	3-band swept/param	4 (3)-band parametric	3-band shelving	3-band
Filtering types	Hi-pass	Hi-/lo-pass (hi-pass)	Hi-/lo-pass (hi-pass)	.....	None
Panpots	Yes	Yes	Yes	Yes	Yes
Groups/subgroups	No	8	.....	4 each	.....
Sends-returns pre/post	6 prefader	6 pre (6 pre/6 post)	8 (6) prefader	2 pre/2 post	Through aux
Solo monitor	PFL & in-place	AFL/PFL/in-place	PFL & in-place	In-place	PFL
Integral compressor/limiter	No	No	No	No	No
Machine start/stops	Solid-state sinks	Solid-state on TV-4	No	Solid-state outputs	No
Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	Yes	Yes
Tone oscillator	Variable	Variable	Variable	Variable	1kHz
Meter types	VU/PPM/LED	VU/PPM/LED	VU/PPM/LED	VU/PPM/LED	None/peak LEDs
VU calibrate range	0/ + 8dBm	0/ + 8dBm	0/ + 8dBm	0 to + 10	.....
Automation provisions	Yes	Yes	Yes	No	None
Input connection	Active bal	Active bal	Active bal	Active bal	Bal/unbal phono
Input impedance	150 Ω	150 Ω	150 Ω	10k Ω	low-Z/10k Ω /50k Ω
Input levels	Switched mic/line	Mic & mic/line	Switched mic/line	Switchable mic/line	- 70/ - 10dB
Output connection	Active bal	Active bal	Active bal	Active bal	Bal/unbal
Output impedance	600 Ω	600 Ω	600 Ω	150 Ω	600 Ω /10k Ω
Output levels	+ 24dBm	+ 24dBm	+ 24dBm	+ 4dBm	0dBm/0dB
AF response	\pm 0.2dB + 4dBm	\pm 0.2dB + 4dBm = 0VU	\pm 0.2dB + 4dBm = 0VU	\pm 0.1dB + 4dBm	- 2dB 20-20k mic
Distortion	.....	.....	.....	0.03% 1kHz + 4dBm	< 0.3% 30-20k + 20dB
S/N ratio (mic/line)	- 129dBm EIN mic	- 129dBm EIN mic	- 129dBm EIN mic	- 124dBm EIN mic/line	- 128dB EIN 150 Ω
Crosstalk (worst case)	- 65dB 15kHz + 4dBm	- 65dB 15kHz + 4dBm	- 65dB 15kHz + 4dBm	- 70dB 10kHz + 4dBm	- 12dB 1kHz pgm/aux
Reader Service Number	976	977	978	979	980

Manufacturer	Klark Teknik/DDA	Logitek	McCurdy Radio Ind	Mitsubishi Pro Audio	
Model/Series Number	D-series	AMR-24	Custom Audio Series	SS8900E	Westar 8200
Modular construction	Yes	.....	Yes	0.1% 30-20k + 18dBm	Yes
# of mixer positions	.....	.....	12	32 std	.....
# of inputs	40	36	28	96 w/o external	60+
# of mixing buses	8	24	2	8 sub/2 master	24
# of multitrack outs	16	24	0	32	16 + direct outs
Input patch points	Yes	Yes	No	Yes	Yes
Output patch points	Yes	Yes	No	Yes	Yes
Stereo output pair	Yes	Yes	Yes	Yes	2
Fader type	Slider	Slider	Slider	Slider	Slider
EQ type	4-band shelf/swept	4-band swept/shelf	3-band shelving	3-/4-band parametric	4-band/shlf/swpt/grph
Filtering types	Hi-pass	Hi-pass	.....	Hi-pass	Hi-/lo-pass
Panpots	Yes	Yes	Yes	Yes	Yes
Groups/subgroups	8 groups	24 groups	None	8 sub/2 master	8 groups
Sends-returns pre/post	8 selectable	2ST 4M pre or post	None	4 switch selected	8-pre/8-post
Solo monitor	PFL	AFL/PFL/in-place	.....	In-place	AFL/PFL/in-band

Audio Mixing Consoles, Studio Production

Integral compressor/limiter	No	No	No	Optional feature
Machine start/stops	No	Relay contacts	24 solid-state out	Optional contacts
Talkback circuits	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	No
Tone oscillator	Variable	Variable	None	Variable
Meter types	VU/PPM	VU	VU	VU/PPM/LED
VU calibrate range	.....	.....	-10 to +8	0 / +8
Automation provisions	No	Yes	Yes	Yes
Input connection	Active bal	Active bal	Active bal	Xfmr/active bal
Input impedance	.....	.....	150Ω/600Ω	10kΩ
Input levels	Switchable mic/line	Switchable mic/line	Switchable mic/line	Mic/line switched
Output connection	Active bal	Unbalanced	Active bal	Xfmr/active bal
Output impedance	<75Ω	.....	600Ω	30Ω
Output levels	+26dBv	+24dBm	+4dBm	+28dBm
AF response	-0.75dB +4dBm out	.....	±0.5dB +4dBm out	±0.5dB +4dBm out
Distortion	<0.05% 1kHz +4dBm	.....	0.04% 1kHz +4dBm	0.05% 1kHz +24dBm
S/N ratio (mic/line)	-127dBm EIN/80dB	.....	-126dBm EIN mic	-129dBm EIN/90dB
Crosstalk (worst case)	-90dB 1kHz +4dBm	.....	-80dB 1kHz +4dBm	-70dB 16kHz +27dBm
Reader Service Number	981	982	983	985

Manufacturer **Mitsubishi Pro Audio**
Model/Series Number **Westar 8000**

Modular construction	Yes
of mixer positions	.....
# of inputs	60 +
# of mixing buses	24
# of multitrack outs	24 + direct outs
Input patch points	Yes
Output patch points	Yes
Stereo output pair	2
Fader type	Slider
EQ type	4-band/shlf/swpt/grph
Filtering types	Hi-/lo-pass
Panpots	Yes
Groups/subgroups	8 groups
Sends-returns pre/post	8-pre/8-post
Solo monitor	AFL/PFL/in-place
Integral compressor/limiter	Option
Machine start/stops	Optional contacts
Talkback circuits	Yes
Speaker muting	No
Tone oscillator	Variable
Meter types	VU/PPM/LED
VU calibrate range	0/ +8
Automation provisions	Yes
Input connection	Xfmr/active bal
Input impedance	10kΩ
Input levels	Mic/line switchable
Output connection	Xfmr/active bal
Output impedance	30Ω
Output levels	+28dBm
AF response	±0.5dB +4dBm
Distortion	0.05% 1kHz +25dBm
S/N ratio (mic/line)	-129dBm EIN/90dB
Crosstalk (worst case)	-70dB 16kHz +27dBm
.....
.....
.....
Reader Service Number	986

Manufacturer **Orion Research**
Model/Series Number **AMU series**

Modular construction	Yes
# of mixer positions	32
# of inputs	256
# of mixing buses	8 stereo
# of multitrack outs	32 direct out
Input patch points	Yes
Output patch points	Yes
Stereo output pair	Yes
Fader type	Slider
EQ type	7-band peak/dip
Filtering types	Hi-/lo-pass
Panpots	Yes
Groups/subgroups	2/2 all stereo
Sends-returns pre/post	4 pre or post
Solo monitor	PFL
Integral compressor/limiter	No

Neve Electronics

	5432 (5452/5455)	5106/5116	V series	8128 (8232)
Modular construction	Yes	Yes	Yes	Yes
# of mixer positions	8 (12-16)	48	60	56 (32)
# of inputs	10 (15-19)	240	120	112 (64)
# of mixing buses	2+2 aux (+4 grp 5455)	4 + 8 aux	4 + 8 aux	4 + 6 aux
# of multitrack outs	Direct out options	To 48 direct outs	24 or 48	48 (24)
Input patch points	No	Yes	Yes	Yes
Output patch points	No	Yes	Yes	Yes
Stereo output pair	Yes	2 pair	Yes	2 pair
Fader type	P&G slider	P&G slider	P&G slider	P&G slider
EQ type	3-band shelf/mid-peak	4-band shlf/swpt/peak	4-band shlf/swpt/peak	4-band shlf/swpt/peak
Filtering types	3-freq hi-pass	Hi-/lo-pass	Hi-/lo-pass	Hi-/lo-pass
Panpots	Yes	Yes	Yes	Yes
Groups/subgroups	(4 groups 5455)	8/8	To 48/48	8 VCA optional
Sends-returns pre/post	2 send pre/post xtch	8 pre/post switched	8-pre/post switchable	6 pre/post switched
Solo monitor	PFL	AFL/PFL/in-place	AFL/PFL/in-place	AFL/in-place
Integral compressor/limiter	No	Yes	Yes	No
Machine start/stops	No (option)	Yes	Option	Option
Talkback circuits	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	Yes
Tone oscillator	Variable	Variable	Variable	Variable
Meter types	VU or PPM	VU or PPM	VU + PPM/plasma	VU + PPM/plasma
VU calibrate range	+4 or +8dBu	+4 to +8	+4 to +8dBu	+4 to +8dBu
Automation provisions	Opt AFV/VCA system	For Necam 96	For Necam 96	For Necam 96
Input connection	Xfmr bal	Xfmr or active bal	Xfmr & active bal	Xfmr & active bal
Input impedance	1.2kΩ mic/10kΩ line	1.2kΩ mic/10kΩ line	1.2kΩ mic/10kΩ line	1.2kΩ mic/20kΩ line
Input levels	Switchable mic/line	Switchable mic/line	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr bal (unbal opt)	Active bal	Xfmr bal or unbal
Output impedance	<50Ω	<10Ω	<15Ω	<10Ω
Output levels	+20dBm max	+4/+8dBm +26dBm max	+4/+8dBm +26dBm max	+4/+8dBm +22dBm max
AF response	±0.5dB +4 = 0VU	±0.5dB +4/+8dBm out	±0.5dB +4/+8dBm out	±0.5dB +4/+8dBm 0VU
Distortion	<0.05% 30-15k +20dBm	<0.03% 40+15k+20dBm	<0.04% 20-20k +20dBm	<0.06% 100-10k +20dB
S/N ratio (mic/line)	-125dBm EIN/80dB	-125dBm EIN/80dB	-125dBm EIN/80dB	-124dBm EIN/76dB
Crosstalk (worst case)	-60dB 15kHz +20dBm	-60dB 15kHz +20dBm	-80dB 20kHz +20dBm	-60dB 15kHz +20dBm
.....	5455 12 & 16 channel	5104/5114 36 channel	.....	.....
.....	5452 12 & 16 channel	and 2-band EQ option	.....	.....
.....	5432/5442 8 channel	.....	.....	.....
Reader Service Number	987	988	989	990

Pacific Recorders
AMX (ABX)

Modular construction	Yes
# of mixer positions	34 max
# of inputs	58 max
# of mixing buses	3 (4)
# of multitrack outs	34 (8)
Input patch points	.....
Output patch points	.....
Stereo output pair	Yes
Fader type	Slider
EQ type	Shelving/swept/peak
Filtering types	Hi-/lo-/bandpass
Panpots	Yes
Groups/subgroups	3 sub (8 grp/1 sub)
Sends-returns pre/post	2 pre/post (4 pre/post)
Solo monitor	AFL/PFL/in-place
Integral compressor/limiter	Yes

RAMSA
WR-8616

Modular construction	Yes
# of mixer positions	16 max
# of inputs	32 max
# of mixing buses	11
# of multitrack outs	16
Input patch points	.....
Output patch points	.....
Stereo output pair	Yes
Fader type	Slider
EQ type	3-band swept/shelv in
Filtering types	Hi-/lo-pass
Panpots	Yes
Groups/subgroups	2 groups
Sends-returns pre/post	2 pre/post
Solo monitor	PFL
Integral compressor/limiter	No

Ramko Research
DC38-10S

Modular construction	No
# of mixer positions	10 max
# of inputs	40 max
# of mixing buses	2
# of multitrack outs	0
Input patch points	No
Output patch points	No
Stereo output pair	Yes
Fader type	Slider
EQ type	No
Filtering types	No
Panpots	No
Groups/subgroups	No
Sends-returns pre/post	No
Solo monitor	No
Integral compressor/limiter	No

Scantex Laboratories
AFDM 208 200 series

Modular construction	Yes
# of mixer positions	16
# of inputs	16
# of mixing buses	2
# of multitrack outs	2
Input patch points	No
Output patch points	No
Stereo output pair	Yes
Fader type	Slider (A/B X-fades)
EQ type	None
Filtering types	None
Panpots	No
Groups/subgroups	None
Sends-returns pre/post	None
Solo monitor	.....
Integral compressor/limiter	No

Found, The Missing Link. Gauss Coaxial Monitors

It's a well known fact that loudspeakers are the missing link in studio, post production and broadcast facilities' audio chain. The accepted criteria for ideal speakers are: balanced, phase-coherent or time aligned, and with as little color as possible.

Gauss Coaxial Monitors let you hear it all, even the mistakes... without adding color. These time coherent monitors provide an extremely stable stereo image so you know exactly what you're mixing. And, if you're mixing digital sound, they offer the cleanest reproduction you've ever heard... with no high-end harshness. And, with 400 watts of power handling, you'll hear all the dynamics.

If you're upgrading for better sound, be sure to include Gauss coaxial monitors in your plans. Your choice of 12" or 15" Remember, if you can't hear the mistakes, they end up in your finished product. Let your speakers be the strongest link!

Call us today for the name of your nearest dealer or rep so you can arrange a demonstration.



gauss
by Cetec

Sound Ideas for Tomorrow... Today!

Cetec Gauss
9130 Glenoaks Boulevard, Sun Valley, CA 91352
213/875-1900 Telex: 194 989

Circle (48) on Reply Card

Audio Mixing Consoles, Studio Production

Machine start/stops	8 solid-state	Solid-state	Yes	Option	No
Talkback circuits	Yes	Yes	Option	Yes	No
Speaker muting	Yes	Yes	Option	Yes	No
Tone oscillator	Variable	Yes	Yes	Yes	None
Meter types	VU/LED	VU/PPM/NTP	Xfmr/active bal	LED	VU/PPM
VU calibrate range	.....	.....	.....	.....	.....
Automation provisions	Yes	No	No	No	Editor controlled*
Input connection	Active bal	Xfmr/active bal	Xfmr/active bal	Bal	Active bal
Input impedance	10k Ω	150 Ω /600 Ω /40k Ω	.....	150 Ω & high-Z	600 Ω
Input levels	Switchable mic/line	Mic & line	Mic/line switched	Mic/line	Line
Output connection	Bal	Active bal	Xfmr/active bal	Balanced	Active bal
Output impedance	600 Ω	600 Ω	.....	600 Ω	600 Ω
Output levels	+27dBm	+28dBm	+4dBm nominal	+8dBm nominal	8dBm
AF response	\pm 0.5dB +8dBm	-0.9dB +8dBm	-1.5dB +20dBm	-2dB ref +8dBm	\pm 0dB +8dBm
Distortion	0.05% 20kHz +8dBm	0.008% 1kHz +28dBm	0.1% 1kHz +20dBm	0.5% +8dBm	0.05% 1kHz +24dBm
S/N ratio (mic/line)	-128dBm EIN/-129dBm	-127dBu EIN	-128dBm EIN	63dB	-75dBm EIN mic
Crosstalk (worst case)	-85dB 1kHz +8dBm	-85dB 1kHz +28dBm	-60dB 1kHz +4dBm	-70dB 1kHz +8dBm	-70dB 20kHz +18dBm
.....	.....	.....	.....	.....	*Fades over 999
.....	.....	.....	.....	.....	frames \pm 0 error
Reader Service Number	991	992	993	994	995

Manufacturer	Solid State Logic	Sonosax	Sony Pro Audio	Soundcraft
Model/Series Number	SL 6000E stereo	SL 4000E Master	MXP-3000 Series	TS24
Modular construction	Yes	Yes	Yes	Yes
# of mixer positions	64	64	18-52	56 max
# of inputs	128	128	52	112 max
# of mixing buses	6	4	10	24
# of multitrack outs	32	32	On request	24
Input patch points	Yes	Yes	Yes	.....
Output patch points	Yes	Yes	Yes	.....
Stereo output pair	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider
EQ type	4-band swept	4-band swept	3-band shelf/swept	4-band mid-parametric
Filtering types	Hi-/lo-pass	Hi-/lo-pass	Low-pass	.....
Panpots	Yes	Yes	Yes	Yes
Groups/subgroups	32 groups/8 + 6 subs	32 groups/8 VCA subs	Subs on request	24 groups/multiple
Sends-returns pre/post	6 pre/6 post	4M-ST send/4ST ret	.....	6 pre or post
Solo monitor	AFL/PFL/in-place	AFL/PFL/in-place	AFL or PFL	AFL/PFL/in-place
Integral compressor/limiter	Yes	With expander gate	Yes	No
Machine start/stops	Relay contacts	Relay contacts	Yes	Option
Talkback circuits	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	Yes	Yes
Tone oscillator	Variable	Variable	Fixed frequency	Variable
Meter types	VU/PPM/bar graph	VU/PPM/plasma	PPM/LED	VU/PPM/LED
VU calibrate range	0 to +8/0VU = +4dBm	0 to +8/0VU = +4dBm	-24 to +12	.....
Automation provisions	Yes	Yes	Yes	Yes
Input connection	Bal or unbal	Xfmr/active bal	Xfmr/active bal	Active bal
Input impedance	600 Ω	600 Ω	5k Ω	3k Ω /47k Ω
Input levels	Mic/line switchable	Mic/line switchable	Switchable mic/line	Switched mic/line
Output connection	Balanced	Active bal	Xfmr/active bal	Active bal
Output impedance	35 Ω	35 Ω	25 Ω	<75 Ω
Output levels	+26dBm/4dB	+26dBm	+26dBm	+4dBm = 0VU
AF response	\pm 0.5dB	\pm 0.5dBm +4dBm	\pm 0.1dB +6dBm	-1dB at +20dBm
Distortion	0.03% 1kHz +4dBm	0.03% 1kHz +4dBm	0.02% 1kHz +6dBm	0.006% 1kHz +12dBm
S/N ratio (mic/line)	-128.5dBm EIN/84dB	-84dB EIN line	-129dBm EIN/-115dBm	-128dBm EIN
Crosstalk (worst case)	-64dB 10kHz +4dBm	-64dB 10kHz +4dBm	-80dB 1kHz +6dBm	-85dB 10kHz +4dBm
Reader Service Number	996	997	998	1000

Manufacturer	Soundcraft	Soundtracs	Spectra Sonics
Model/Series Number	400B	MR CM4400	8-16 1032 (1024/1026)
Modular construction	Yes	Yes	Yes
# of mixer positions	32 max	.....	32 (24/26)
# of inputs	32 max	32	32 (24/26)
# of mixing buses	6	8	32 (24/26) maxtrix
# of multitrack outs	8	16	32 (24/26)
Input patch points	.....	No	Yes
Output patch points	.....	No	Yes
Stereo output pair	Yes	Yes	Yes
Fader type	Slider	Slider	Slider
EQ type	4-band/shelf/swept	4-band swept	3-band shelving
Filtering types	Hi-pass	Hi-pass	Hi-pass
Panpots	Yes	Yes	Yes
Groups/subgroups	4 & 4	8/16	8/16
Sends-returns pre/post	2 post/2 pre or post	6 pre	3 pre
Solo monitor	AFL/PFL	PFL	PFL
Integral compressor/limiter	No	No	No
Machine start/stops	No	No	Solid-state outputs

Audio Mixing Consoles, Studio Production

Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	No	Yes	Yes	No	Yes
Tone oscillator	700Hz & 10kHz	Variable	Variable	Fixed	Variable
Meter types	VU	LED	VU/LED	LED	VU
VU calibrate range	.....	.....	.....	.....	.....
Automation provisions	No	No	Yes	No	Yes
Input connection	Balanced	Balanced	Balanced	Balanced	Xfmr or active bal
Input impedance	3k Ω /10k Ω	.....	.....	.....	600 Ω
Input levels	Switched mic/line	Switchable mic/line	Switchable mic/line	Switchable mic/line	Switchable mic/line
Output connection	Unbalanced	Xfmr	Xfmr	Unbalanced	Xfmr/active bal
Output impedance	<75 Ω	.....	.....	.....	600 Ω
Output levels	+4dBm = 0VU	+4dBm/ -10dBV	-4dBm/ -10dBV	-4dBm/ -10dBV	+24dBm max
AF response	-1dB 1kHz +12dBm	.....	.....	.....	\pm0.2dB +4dBm
Distortion	0.007% 1kHz +12dBm	0.015% 1kHz +4dBm	0.01% 1kHz +4dBm	0.015% 1kHz +4dBm	<0.01% 1kHz +18dBm
S/N ratio (mic/line)	-128dBm EIN	.....	.....	.....	-130dBv 50 Ω source
Crosstalk (worst case)	-80dB 10kHz	.....	.....	.....	-75dB 20kHz +18dBm
Reader Service Number	1001	1002	1003	1004	1005

Manufacturer	Studer Revox		TASCAM		
Model/Series Number	900 series	963 series	M520 (500 series)	M-320 (M-312/308)	Studio B
Modular construction	Yes	Yes	No	No	No
# of mixer positions	64	50	20 max	20 (12/8)	8 max
# of inputs	56	40	44 max	50 max	18 max
# of mixing buses	24	8	8	4	10
# of multitrack outs	48	16	16	8	8
Input patch points	Yes	Yes	No	.....	.....
Output patch points	Yes	Yes	No	.....	.....
Stereo output pair	Yes	Yes	No	Yes	Yes
Fader type	Slider	Slider	Slider	Slider	Slider
EQ type	4-band swept	3-band shelf/swept	3-band swept	3-band swept	3-band swept
Filtering types	Hi-pass & lo-pass	Hi-pass	None	None	None
Panpots	Yes	Yes	Yes	Yes	Yes
Groups/subgroups	10 groups	8	8 groups/8 subs	5 groups/4 subs	None
Sends-returns pre/post	5 pre/post switched	4 pre/post switched	4 pre or post	5 send/2 return	1 pre/2 post
Solo monitor	In-place	PFL	In-place	AFL/PFL	Stereo in-place
Integral compressor/limiter	With VCA faders	Yes	No	No	No
Machine start/stops	Custom/solid-state	.....	Yes	No	No
Talkback circuits	Yes	Yes	Yes	Yes	No
Speaker muting	Yes	.....	Yes	No	No
Tone oscillator	Variable frequency	Fixed frequency	Variable	No	No
Meter types	VU & PPM	.....	VU	VU	VU
VU calibrate range	0 to +8	0 to +8	.....	.....	.....
Automation provisions	Yes	None	.....	No	No
Input connection	Xfmr or active bal	Xfmr bal	Active bal	Active bal	Active bal/unbal
Input impedance	75k Ω	>5k Ω	2k Ω	2.8k Ω	>10k Ω mic & line
Input levels	Switchable mic/line	Switchable mic/line	Mic & line	Mic & line	Mic/line switched
Output connection	Xfmr bal	Xfmr bal	Active bal	Active bal	Active bal/unbal
Output impedance	50 Ω	50 Ω	100 Ω	20 Ω	100 Ω
Output levels	+6dBm	24dBm/2.4dBu 50 Ω	-10dBv or +4dBm	-10dBv or +4dBm	-10dB or +4dB 100 Ω
AF response	-1/0.5dB +6dBm	-1/0.5dB +4dBm	\pm 1dB +4dBm	\pm 1dB or +4dBm	-1.5/1dB
Distortion	0.1% 31-16k +6dBm	0.03% 30-15k +4dBm	0.025% 1kHz +4dBm	0.025% +4dBm	0.03% 1kHz
S/N ratio (mic/line)	-125dBm EIN mic	-125dBm EIN mic	-132dBm EIN	-132dBm EIN	80dB mic-to-pgrm
Crosstalk (worst case)	-85dB 31-16k +6dBm	-80dB 15kHz +4dBm	-70dB 1kHz +4dBm	-70dB 1kHz	-60dB 1kHz
	.....	.....	M-512 12-input	.....	Includes 8-track ATR
Reader Service Number	1006	1007	1008	1009	1010

Manufacturer	TTC/Ampro Div	Ward-Beck Systems		Wheatstone	
Model/Series Number	LC series (AC series)	ST3642 (ST series)	R-2200 (Series R)	8x (3224) recording	SP-5 production
Modular construction	No	Yes	Yes	Yes	Yes
# of mixer positions	6-12	36	22 max	48	48
# of inputs	24-48	48-mic/24-line stereo	44	96	96
# of mixing buses	2	23	8	8 (24)	8
# of multitrack outs	.....	24 as option	8	48	8
Input patch points	.....	Yes	Option	Yes	Yes
Output patch points	.....	Yes	Option	Yes	Yes
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider (rotary)	Slider	Slider	Slider	Slider
EQ type	None	3-band	4-band	3-band swept	3-band/module type
Filtering types	None	Hi-pass	Hi-pass	12dB/octave low-cut	Hi-pass
Panpots	No	Yes	Yes	Yes	Yes
Groups/subgroups	None	2-ST 2-M/4-ST	2 groups	8 (24) groups	8 groups
Sends-returns pre/post	None	6 pre/6 post	None	2 pre/4 post	4 pre or post
Solo monitor	None	AFL/PFL	PFL	AFL/PFL	PFL
Integral compressor/limiter	No	Yes	Yes	No	No
Machine start/stops	Yes	Contacts per request	22 relay contacts	No	Yes
Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	Programmable	Yes	Yes	No	Yes
Tone oscillator	None	Variable	Variable	Variable	Variable

Audio Mixing Consoles, Studio Production

Meter types	VU/PPM/LED	VU/PPM	VU/PPM	VU	Mechanical VU
VU calibrate range	No	0 to +8dB	.....	Adjustable	Adjustable
Automation provisions	No	No	No	.....	.....
Input connection	Xfmr bal	Xfmr bal	Xfmr bal	Active bal	Xfmr or active gal
Input impedance	150Ω/600Ω	1.5kΩ mic/20kΩ line	750Ω mic/24kΩ line	150Ω bal/40kΩ bal	150Ω mic/20kΩ line
Input levels	Switchable mic/line	Mic/line switchable	Mic & line	Mic & line	Switched mic/line
Output connection	Xfmr bal	Balanced	Balanced	Active bal	Active bal
Output impedance	150Ω/600Ω	<100Ω	600Ω	600Ω/10Ω unbal	600Ω
Output levels	+18dBm	+8dBm	+8dBm	+20dBm/+28dBm max	+22dBm
AF response	±1dBm at +18dBm	±0.5dB +8dBm	±1dB +8dBm	±0.1dB 0dBm	±0.5dB 0dBm
Distortion	0.5% 7.1kHz +18dBm	0.2% 20kHz +24dBm	0.25% 15kHz +18dBm	±0.05% +20dBm	<0.005% +18dBm
S/N ratio (mic/line)	-74dBm	-125dBm EIN/80dB	-125dBm EIN/78dB	-129dBm EIN/90dB	-128dBm EIN/>90dB
Crosstalk (worst case)	-68dB 1kHz +18dBm	-75dB 15kHz +8dBm	75dB 15kHz +8dBm	<-90dB 1kHz	-90dB 1kHz 0dBm
Reader Service Number	1011	1012	1013	1014	1015

Manufacturer	Yamaha Int'l	
Model/Series Number	RMM2408	PM2000-32

Modular construction	Yes	Yes
# of mixer positions	24 max	32 max
# of inputs	24 max	56 max
# of mixing buses	8	15
# of multitrack outs	8	8
Input patch points	Yes	Yes
Output patch points	Yes	Yes
Stereo output pair	Yes	No
Fader type	Slider	Slider
EQ type	3-band/swept/param	4-band swept
Filtering types	Hi-pass	Hi-pass
Panpots	Yes	Yes
Groups/subgroups	8 groups	8 each
Sends-returns pre/post	2 send switchable	6 switchable
Solo monitor	AFL	PFL & in-place
Integral compressor/limiter	No	No
Machine start/stops	No	No
Talkback circuits	Yes	Yes
Speaker muting	No	No
Tone oscillator	Variable	Variable
Meter types	VU	VU
VU calibrate range	.....	.....
Automation provisions	No	No
Input connection	Xfmr bal	Xfmr bal
Input impedance	600Ω	1kΩ
Input levels	Switchable mic/line	Mic/line switchable
Output connection	Unbalanced	Xfmr bal
Output impedance	600Ω	150Ω
Output levels	+4dBm = 0VU	+4dBm = 0VU
AF response	-3dB +4dBm	0/-3dB
Distortion	0.1% 29-20k +4dBm	0.5% +10dBm
S/N ratio (mic/line)	-128dBm EIN	-128dBm EIN
Crosstalk (worst case)	-70dB 1kHz +4dBm	-60dB 1kHz
Reader Service Number	1016	1017

Audio Compact Disk Players

Manufacturer	Audiometrics/Allied	Numarck	Sony Pro Audio		Studer Revox/Philips
Model Number	AMCDS1000A	CD9000 Vari-speed	CDP (CDS)-3000	CDP-5000	Philips LHH-2002
System configuration	Multiplayer	Single player	Multiplayer	Single player	Multiplayer
Total player trays	100 max	1	2 per controller	1 per controller	99 max
Programmable	2,000-event max	10-event	Yes	Yes	To 55 events
Output connection	Active bal	.....	Balanced	Bal 600Ω	Xfmr bal
Output level	+4dBm	1.7V	+4dBm nominal	+4dBm	+6dBm
AF response (+dB/Hz-kHz)	±0.5dB 20-20k	...../20-20k	-1/0.8dB 20-20k	-1/0.5dB 20-20k	-0.05dB 20-20k
Distortion rating	0.009% 1kHz +4dBm	.....	0.01%	0.01%	0.01% at +6dBm
Dynamic range	90dB	.....	94dB	>94dB	>90dB
Crosstalk rating	-90dB 1kHz +4dBm	-80dB	-90dB 1kHz	-90dB 1kHz	-80dB at 20kHz +6dBm
S/N rating	90dB unwt'd +4dBm	80dB	.....	.....	>90dB unwt'd +6dBm
Access time (worst case)	27s	.....	2s	2s	2s
.....	.....	Rmt-ctl allows ±10%	.....	.....	.....
.....	.....	pitch and key control	.....	.....	.....
Reader Service Number	1018	1019	1020	1021	1022

Do We Have Connections!



We're very close to most of the world's top personalities! They may not realize it, but Switchcraft audio connectors have long been the audio engineer's first choice for everything from a major address by one of our presidents to the smallest studio recording session. Professionals such as yourself appreciate the kind of reproduction quality, product flexibility and durability that results from our 40 year commitment to excellence in all our products.



From stereo phono jacks to quick-ground connectors, from versatile audio adapters to advanced mixers and switching components,

Switchcraft makes just the right connection for the most demanding requirements.

To improve your connections and make a very sound quality decision, plug into the possibilities with Switchcraft.



Tell me more about your impressive connections:

- Please have a representative contact me.
 Please send me your Short Form Catalog covering the complete Switchcraft line.
 My area(s) of interest is: Switches Connectors Power Cords
 EAC Receptacles Jacks/Plugs
 Molded Cable Assemblies Jack Panels/ Jack Fields
 My application is Current Future (date) _____

Name _____

Company _____ Title _____

Address _____

City _____ State _____ Zip _____

Telephone (_____) _____

Mail To: Marketing Communications Dept., Switchcraft, Inc.
 5555 N. Elston Ave., Chicago, IL 60630

Switchcraft

A Raytheon Company

5555 N. Elston Ave.
 Chicago, IL 60630
 (312) 792-2700

Circle (137) on Reply Card

Audio Compact Disc Players

Manufacturer	Studer Revox/Philips	Technics	
Model Number	Philips LHH-2000	Revex B225	SL-P50P
System configuration	Multiplayer	Single player	Single player
Total player trays	3 max	.....	1
Programmable	To 3 events	19-event	Yes
Output connection	Xfmr bal or unbal	Xfmr bal or unbal	600Ω bal
Output level	+6dBm	+3/+15dBm var.	0 to 2V var
AF response (+dB/Hz-kHz)	-0.5dB 20-20k	-0.6dB 20-20k	-0.6dB 20-20k
Distortion rating	0.01% at +6dBm	0.006% +4dBm	0.006% 20-20k
Dynamic range	>90dB	96dB	>96dB
Crosstalk rating	-80dB at 20kHz	-90dB +4dBm	-90dB 20-20k
S/N rating	>90dB unwt'd	96dB unwt'd +4dBm	>96dB
Access time (worst case)	2s	3s	<6s
Reader Service Number	1023	1024	1026

AF Recorders, Cartridge

These audio recording systems use continuous loop tape cartridges of the NAB AA type.

Manufacturer	APPEL	Audi-Cord	Broadcast Electronics
Model/Series Number	#578	A, S, TDS series	3000 series 2100RPS (series) 5400 series
Other cart sizes	None	BB	BB/CC/B/C
Deck control logic	Transistor-logic	CMOS logic	TTL
Remote-control bus port	No	Yes	None
Replay inhibit	Yes	Yes	No
Recording timer	Yes	No	No
Secondary/tertiary tones	Yes	Yes	Sec only
Stereo record/play system	No	Yes/also mono	Yes
Stereo phase correction	None	None	No
Capstan motor	ac-synchronous	ac-synchronous	ac-synchronous
Capstan drive	Belt	Direct	Direct
Play speed(s) (ips)	7.5	7.5	3.75 & 7.5
Fast forward mode	.....	.....	Yes
Sec/tert cue output form	TTL	Solid-state	Relay closure
Meter types	VU record/play/erase	VU mechanical	Taut-band A
Related monaural	.....	S21 or A21	3000P
Related play only	Model 557	S11/-16 or A11/-16	3000P
Related multideck	Model 2214	TDS-1/TDS-6 twin	None
Input connection	Bal 5kΩ	Xfmr bal	Xfmr
Input level	-5/+20dBm	-22dBm to -12dBm	-10dBm
Output connection	110Ω bal	Xfmr bal	Xfmr bal
Output level	+12dBm (+18dBm max)	-8dBm	0dBm
AF response (R/P)	±1.5dB 40-12.5k	±2dB 50-15k	±2dB 50-15k
Measured at (dB) below SOL	1dB under saturation	ref 1kHz 160nWb/m	10dB 160nWb/m
S/N ratio (R/P)	54dB	>47dB stereo	52dB unwt'd
Crosstalk (L to R)	.....	<-50dB	-50dB 1kHz
Crosstalk (Cue to L or R)	.....	<-50dB	-50dB
Distortion (R/P)	<1.5% 1kHz	1% 1kHz 160nWb/m	2% 1kHz
Flutter (ANSI S4.3)	±0.3% unwt'd	0.15% peak wtd max	0.15%
Reader Service Number	1027	1028	1030

Manufacturer	Cartridge Technology	Dynamax/CTR34 3-deck	Fidelipac	Dynamax CTR124	ITC/3M
Model/Series Number	CT1001		Dynamax/CTR14		99B RPSE
Other cart sizes	None	None	None	BB/B	None
Deck control logic	CMOS	CMOS	CMOS	CMOS	Microprocessor
Remote-control bus port	15-pin D-connector	Simple remote	Simple remote	Simple remote	Simple remote
Replay inhibit	No	.....	Yes	Yes	Programmable
Recording timer	Yes	No	No	Yes	Trigger for external
Secondary/tertiary tones	Yes	Yes	Yes	Yes	Yes
Stereo record/play system	Yes	Yes	Yes	Yes	Yes
Stereo phase correction	No	No	No	Yes	Yes/ELSA
Capstan motor	dc-servo	ac-synchronous	ac-synchronous	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct	Direct
Play speed(s) (ips)	3.75	7.5	7.5	3.75/7.5/15/var	7.5 (3.75/15/var opt)
Fast forward mode	Yes	No	3X	3X (2X at 15ips)	High-speed recue
Sec/tert cue output form	Solid-state	Solid-state/relay	Solid-state/relay	Solid-state/relay	Solid-state/relay
Meter types	VU/PPM movement	Bar graph	Bar graph	Bar graph	Taut-band A/Peaks
Related monaural	.....	CTR33	CTR13	CTR123	RPME
Related play only	.....	.....	CTR12/CTR11	CTR112/CTR111	PM mono/PS stereo
Related multideck	.....	.....	CTR 30 series	.....	None
Input connection	Active bal/Xfmr opt	Active bal	Active bal	Active bal	Xfmr/active bal
Input level	-10/0dBm (30kΩ)	-17/+26dBm	-17/+26dBm	-17/+26dBm	-20/+28dB 20kΩ*
Output connection	Floating Xfmr bal	Active bal	Active bal	Active bal	Xfmr bal
Output level	-10/0dBm (150Ω)	+20dBm	+20dBm	+20dBm	-18/+25dBm 600Ω*
AF response (R/P)	±1dB 40-15k	±2dB 50-15k	±2dB 50-16k	±2dB 50-16k	±1dB 31.5-16k

AF Recorders, Cartridge

Measured at (dB) below SOL	ref 405nWb/m	10dB 250nWb/m	10dB 250nWb/m	10dB 250nWb/m	10dB 250nWb/m
S/N ratio (R/P)	>44dB 22-22k PPM	59dB unwt'd 0VU	59dB unwt'd 0VU	59dB unwt'd 0VU	56dB unwt'd 0VU
Crosstalk (L to R)	< -36dB 15kHz	-50dB 1kHz 0VU	-50dB 1kHz 0VU	-50dB 1kHz 0VU	< -50dB 1kHz 0VU
Crosstalk (Cue to L or R)	< -45dB 1kHz	-50dB	-50dB	-50dB	< -50dB
Distortion (R/P)	1.5% 1kHz 405nWb/m	1% 1kHz 0VU	1% 1kHz 0VU	1% 1kHz 0VU	< 0.8% 1kHz 0VU THD
Flutter (ANSI S4.3)	< 0.12% DIN wtd	0.12%	0.12%	0.12%	0.12% DIN wtd
		CTR33/34 include record amp w/deck-3			*150Ω/600Ω termination. Output is 180Ω source.
Reader Service Number	1032	1033	1034	1035	1036

Manufacturer	ITC/3M		Pacific Recorders		Radio Systems
	Delta IV/Delta I	OMEGA Mono	TOMCAT	MICROMAX	Key/Cart 1000 SRP
Other cart sizes	None	None	None	None	None
Deck control logic	Microprocessor	Microprocessor	Microprocessor	CMOS	Bipolar discrete
Remote-control bus port	Simple	Simple remote	Yes	Yes	Simple remote
Replay inhibit	Programmable	Programmable	No	No	Yes
Recording timer	No	No	Yes	Yes	No
Secondary/tertiary tones	Yes	Sec only	Yes	Yes	None
Stereo record/play system	Yes	Playback unit only	Yes	Yes	Yes
Stereo phase correction	No	No	None	.....	No
Capstan motor	dc-servo	dc-serve	dc-servo	dc-servo	ac-synchronous
Capstan drive	Direct	Direct	Direct	Belt	Belt
Play speed(s) (ips)	7.5 (3.75/15 opt)	7.5 (3.75 opt)	7.5/15	7.5	7.5
Fast forward mode	High-speed recue	No	.....	.....	No
Sec/tert cue output form	Solid-state or relay	Solid-state	Solid-state	Solid-state	Relay closure
Meter types	Taut-band A	Taut-band A	VU movement	VU movement	Bar graph
Related monaural	Delta IV/I mono	OMEGA mono playback	.....	.....	KC-1000-MRP
Related play only	Delta I M or S	OMEGA Player M or S	.....	.....	KC-1000-SP
Related multideck	Delta III M or S	None	.....	.....	None
Input connection	Xfmr or active bal	Xfmr bal & unbal	Active	Active bal	Unbalanced
Input level	-18/+18dB 20kΩ load	-18/+18dB 20kΩ load	+8dBm	+8dBm	0dBm
Output connection	Xfmr or active bal	Xfmr bal	Xfmr bal	Active bal	Unbalanced
Output level	-18/+18dBm (275Ω)	+18dBm/180Ω source	+8dBm	+8dBm	0dBm = 0VU
AF response (R/P)	±2dB 50-16k	±2dB 50-16k	±1dB 40-15k	-1/0.5dB 40-16k	±2dB 15-15k
Measured at (dB) below SOL	10dB 250nWb/m 0VU	10dB 250nWb/m 0VU	10dB 250nWb/m	10dB 250nWb/m	10dB 160nWb/m
S/N ratio (R/P)	60dBm unwt'd 0VU	56dBm unwt'd (58dBa)	59dB 1kHz 0VU	58dB unwt'd 1kHz 0VU	52dB
Crosstalk (L to R)	< -50dB 1kHz 0VU	< 50dB 1kHz 0VU	-60dB	-60dB	50dB 1kHz 0VU
Crosstalk (Cue to L or R)	< -50dB	< -50dB	-50dB 1kHz 0VU	-50dB 1kHz 0VU	50dB
Distortion (R/P)	< 1.5% 1kHz 0VU THD	1.5% 1kHz 0VU out	0.9% 1kHz 0VU	0.9% 1kHz 0VU	< 2% 1kHz 0VU
Flutter (ANSI S4.3)	0.15% DIN wtd	0.15% DIN wtd	0.1%	0.08%	±0.2%
Reader Service Number	1037	1038	1039	1040	1041

Manufacturer	Ramko Research		Sonifex		
	PhaseMaster RPS-1	Primus RP-18	HS200RX	CQ20R	Micro HS200R
Other cart sizes	Yes	Yes	None	No	None
Deck control logic	Microprocessor	Microprocessor	CMOS	CMOS	CMOS
Remote-control bus port	No	No	Simple remote	Simple remote	Simple remote
Replay inhibit	Yes	Option	No	No	No
Recording timer	Yes	Yes	No	No	No
Secondary/tertiary tones	Yes	Yes	Yes	Sec only	Yes
Stereo record/play system	Yes	Yes	Yes	Yes	Yes
Stereo phase correction	Yes	No	No	No	No
Capstan motor	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Belt	Belt	Belt
Play speed(s) (ips)	7.5/15/3.75	7.5/15/3.75	7.5	3.75/7.5	7.5
Fast forward mode	.....	.....	Yes	Yes	Yes
Sec/tert cue output form	Relay & solid-state	Relay closure	Solid-state	Solid-state	Solid-state
Meter types	Bar graph	Bar graph	VU-movement	Bar graph	VU movement
Related monaural	PS-1	RP-1m	HS100RX	CQ10R	HS100R
Related play only	PM-1/PS-1	P-1m	HS200X	CQ20/10	HS200
Related multideck	None	None	HS200XST	CQ20-ST	HS200ST
Input connection	Active bal	Active bal	Xfmr	Unbalanced	Active
Input level	Typical line levels	Typical line levels	0dBm 600Ω/0dB 10kΩ	0dB 10kΩ	0dB 10kΩ
Output connection	Active bal	Active bal	Xfmr	Unbalanced	Active
Output level	+25dBm	+25dBm max	0dBm 600Ω/0dB 10kΩ	0dB 25Ω	0dB 25Ω
AF response (R/P)	1.5dB 50-16k	1.5dB 50-16k	-1.5/1dB 40-16k	-2.5/1dB 40-16k	±1.5dB 40-16k
Measured at (dB) below SOL	.....	.....	10dB 160nWb/m	10dB 160nWb/m	10dB 160nWb/m
S/N ratio (R/P)	64dB typical	62dB stereo typical	45dB unwt'd	45dB unwt'd	45dB unwt'd
Crosstalk (L to R)	< -50dB	< -50dB	-60dB 1kHz	-60dB 1kHz	-60dB 1kHz
Crosstalk (Cue to L or R)	< -50dB	< -50dB	-50dB	-50dB	-50dB
Distortion (R/P)	0.3% amp only	< 0.9%	1% 1kHz	1% 1kHz	1% 1kHz
Flutter (ANSI S4.3)	0.05% max DIN wtd	0.05% max DIN wtd	0.06%	0.09%	0.06%
Reader Service Number	1042	1043	1044	1045	1046

AF Recorders, Cartridge

Manufacturer	TTC/Scully	TTC/Ampro	Telex Communications
Model/Series Number	8300 3-deck playback	CT-3500	MC-II series
Other cart sizes	A/B/BB	A/B/BB	BB
Deck control logic	TTL	Buffered TTL	TTL logic
Remote-control bus port	Yes	Yes	Yes
Replay inhibit	No	Option	No
Recording timer	Yes	Yes	Yes
Secondary/tertiary tones	Yes	Yes	Yes
Stereo record/play system	Option	Option	Yes
Stereo phase correction	None	No	No
Capstan motor	dc-servo	ac-hysteresis	dc-servo
Capstan drive	Direct	Direct	Belt
Play speed(s) (ips)	3.75/7.5	3.75/7.5	3.75/7.5
Fast forward mode	.....	Yes	.....
Sec/tert cue output form	Solid-state	Contact closure	Relay closure
Meter types	VU	VU	VU movement
Related monaural	8321 mono play	Available	MC-P3/MC-PR3
Related play only	8322 stereo play	Available	MC-PS3/PS-PRS3
Related multideck	Model 8300	.....	None
Input connection	Xfmr or active bal	Xfmr bal	Xfmr bal
Input level	.....	-20/+20dBm	(-65/-30dB) -18/+20dB
Output connection	Xfmr/active bal	Xfmr bal	Xfmr bal
Output level	+14dBm ref 160nWb/m	+8dBm/clip at 20dBm	+18dBm maximum
AF response (R/P)	±2dB 50-15k	2dB 50-15k	1dB 50-15k
Measured at (dB) below SOL	.....	ref to 160Wb/m	.....
S/N ratio (R/P)	>58dB stereo	>58dB overall	48dB stereo 160nWb/m
Crosstalk (L to R)	<-50dB overall	<-50dB 1kHz	<-50dB
Crosstalk (Cue to L or R)	<-50dB 50-15k	<-50dB 1kHz	<-50dB
Distortion (R/P)	<0.5% +18dBm out	<3% max 8dB over ref	<2% 160nWb/m system
Flutter (ANSI S4.3)	0.15% peak wtd	0.15%	<0.1% peak wtd
Reader Service Number	1047	1048	1049

Audio Cassette Recorders

This audiocassette recording/playback equipment is designed for broadcast use, based on Philips C-type cassettes.

Manufacturer	Fostex	Nakamichi	Studer Revox
Model/Series Number	X-15	MR-1	MR-2
Deck control logic	Mechanical	TTL	Microprocessor
Recording timer	No	Yes	Yes
Cue tone track	No	No	No
Stereo phase correction	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo
Capstan drive	Belt	Belt	Belt
Reel motor type	dc-servo	dc-servo	dc-servo
Play speed(s) (ips)	1.875	3.75 (1.875)	1.875 ±6%
Number of heads	2	2	2
Meter types	Bar graph	VU mvmt & peak lamp	Bar graph
Input connection	Unbal	Unbal	Unbal
Input level	-50dBv 10kΩ	-60dBv 10kΩ	-10dBv 50kΩ
Output connection	Unbal	Unbal	Unbal
Output level	-20dBv 20kΩ	-10dBv 10kΩ	+4dBm
AF response (R/P)	±3dB 20-12.5k	-3/2dB 20-18k	±3dB/20-20k +4dBm
Measured -dB below SOL nWB/m	ref -10dBm	w/Dolby C	20dB 200nWb/m
S/N ratio (R/P)	50dB unwtd	71dB wtd	70dB A-wtd Dolby C
Crosstalk (L to R)	-40dB 1kHz 0VU	-50dB 1kHz 0VU	-60dB 1kHz 0VU
Distortion (R/P)	1.5% 1kHz 0VU	1.5% 315Hz	1% 400Hz 0VU
Flutter (ANSI S4.3)	±0.1%	<0.02%	±0.048% wtd peak
Equalization	3180μs + 70μs	3180μs + 70μs	3180μs + 120μs/70μs
Reader Service Number	1050	1051	1052

Manufacturer	Studer Revox	TASCAM
Model/Series Number	B215	122B
Deck control logic	Microprocessor	TTL
Recording timer	Yes	No
Cue tone track	No	No
Stereo phase correction	.....	No
Capstan motor type	dc-servo	dc-servo
Capstan drive	Direct	Direct
Reel motor type	dc-servo	dc-servo
Play speed(s) (ips)	1.875	1.875/3.75
Number of heads	3	3
Meter types	Bar graph	Bar graph
Input connection	Unbal	Active bal/unbal
Input level	-34dBm 100kΩ	+4dBm or -10dBv

Audio Cassette Recorders

Output connection	Unbal	Active bal/unbal	Active bal/unbal	Unbal	Unbal
Output level	0dBm 47 Ω	+4dBm or -10dBv	+4dBm or -10dBv	-10dBV	-10dBV 3.5k Ω
AF response (R/P)	-3/2dB 20-22k	\pm 3dB 35-14k	\pm 3dB 30-15k +4dBm	\pm 3dB 40-14k	\pm 3dB 25-20k metal
Measured -dB below SOL nWB/m	.....	ref to 4dBm	.....	0dB 160nWb/m	.....
S/N ratio (R/P)	72dB A-wtd Dolby C	60dB unwt'd 00VU	55dB wtd 0VU	55dB unwt'd 0VU	80dB Dolby C >1kHz
Crosstalk (L to R)	-40dB 1kHz 0VU	-40dB 1kHz 0VU	-45dB	-50dB 1kHz 0VU	<-45dB 1kHz
Distortion (R/P)	<1.5% 315Hz 0VU	1% 1kHz 0VU	1.5% 1kHz 0VU	1% 1kHz 0VU	1% 400Hz
Flutter (ANSI S4.3)	0.1% DIN 45507	0.055%	0.07%	0.06%	\pm 0.06% DIN/IEC/ANSI
Equalization	3180 μ s + 12 μ s/70 μ s	3180 μ s-70 μ s/120 μ s	3180 μ s + 70 μ s	3180 μ s + 70 μ s	Normal/metal/CrO2
Reader Service Number	1055	1056	1057	1058	1059

Manufacturer Tandberg Audio
Model/Serial Number TCD 910/TCD 911

Deck control logic μ P/RS-232
 Recording timer Real time/multimode
 Cue tone track No
 Stereo phase correction No
 Capstan motor type dc-servo
 Capstan drive Direct
 Reel motor type dc-servo
 Play speed(s) (ips) 1-7/8 \pm 0.5%
 Number of heads 3-head
 Meter types R/L PPM
 Input connection Active bal
 Input level -6/+12dBu >40k Ω
 Output connection Active bal
 Output level +8dBu <30 Ω as source
 AF response (R/P) \pm 2dB 20-20k w/ Dolby
 Measured -dB below SOL nWB/m -20dB 250nWb/m
 S/N ratio (R/P) >70dB A-wtd 20-20k
 Crosstalk (L to R) >45dB 1kHz
 Distortion (R/P) <1.8% 1kHz 250nW/m
 Flutter (ANSI S4.3) 0.1% DIN/IEC wtd
 Equalization DYNEQ/types I/II/IV
 Reader Service Number 1060

Yamaha
C200

Microprocessor
 Linear counter
 No
 No
 dc-servo
 Direct
 dc-motor
 1.875 \pm 15%
 4
 LED peak meters
 Bal
 +4/8dBm
 Bal
 +4/8dBm (18dBm max)
 \pm 3dB 20-20k

 >68dB w/Dolby B NR
 >42dB 3150Hz (EIAJ)
 <0.8% unsaturated
 0.08% max peak wtd
 Tape types I/II/IV
 1061

Audio Recorders, Reel

This audio recorder/playback equipment uses reel-type magnetic materials. Portable units are included.

Manufacturer	AEG			Elektroimpex	Enertec/Schlumberger
Model/Serial Number	M-21-2 (M-21-2 1/2)	M-20-TC	M-20-2	STM-631 Editor	F500
# of tracks	2	2	2	Various on request	2-3
Tape width (inches)	3/4 (1/2)	3/4	3/4	3/4	3/4
Deck control logic	8085 μ P	8085 μ P	8085 μ P	.....	Microprocessor
Edit control interface	.....	RS-232 or RS-422	RS-232 or RS-422	None	Sync/RS-232
Recording timer	Yes	Yes	Yes	.....	LED readout option
Cue track	None	SMPT center TC	None	No	SMPT center TC
Stereo phase correction	No	Yes	Yes	No	No
Capstan motor	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct	Direct
Reel motor	dc-servo	dc-servo	dc-servo	.....	dc-servo
Tape speed(s) (ips)	Any 2 (3.75-30 + var)	3.75-30 & var	3.75-30 & var	7.5/15	3.75/7.5/15/var
# of heads	3	6	3	2	2
Meter types	VU movement	VU movement	VU movement	None	VU movement
Equalization	NAB	NAB	NAB	DIN	NAB/CCIR
Input connection	Active bal	Active bal	Active bal	.....	Balanced
Input level	+4dBm nominal	+4dBm	+4dBm	.....	+12dBm max
Output connection	Active bal	Active bal	Active bal	.....	Balanced
Output level	+4dBm nominal	+4dBm	+4dBm nominal	.....	+20dBu 600 Ω
AF response (R/P)	\pm 1dB 30-18k	\pm 1dB 30-18k	\pm 1dB 30-18k	-3dB 40-16k	2dB 31-16k
Measured -dB below SOL nWB/m	0dB 250nWb/m 15ips	0dB 250nWb/m 15ips	0dB 250nWb/m 15ips	65dB 7.5ips	(7.5ips)
S/N ratio (R/P)	>74dB A-wtd (>72dB)	>74dB A-wtd	>74dB A-wtd	.....	59dB 510nWb/m
Crosstalk (cue-program)	.....	-80dB	-65dB A-wtd	.....	.....
Crosstalk (program-program)	-60dB 1kHz (-65dB)	-60dB	.....	.....	<-40dB stereo
Distortion	<0.06% THD	<0.06% THD	<0.06% THD	0.08% 7.5ips	<1% 185nWb/m
Flutter (ANSI S4.3)	<0.04% 15-30ips	<0.04% 15-30ips	<0.04% 15-30ips	.....	<0.08% DIN 7.5ips
Reader Service Number	1062	1063	1064	1065	1066

Audio Recorders, Reel

Manufacturer	Fostex				Lyrec Mfg. A/S
Model/Series Number	B-16/B-160/B-16DM	#20	#80	TR-55	TR533
# of tracks	16	3	8	2	24
Tape width (inches)	1/2	1/4	1/4	1/4 or 1/2	2
Deck control logic	Microprocessor	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Edit control interface	Synchronizer	SMPT E port	SMPT E port	Available	.....
Recording timer	Yes	Real time	Yes	Electronic	Yes
Cue track	No	SMPT E center track	.....	None	None
Stereo phase correction	No	No	No	Yes	Yes
Capstan motor	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct or belt	Belt	Belt	Direct	Direct
Reel motor	dc-servo	dc-servo	dc-servo	dc-servo	ac-servo
Tape speed(s) (ips)	15/30	7.5/15	15	7.5/15/var	15/32/var
# of heads	2 (-DM has 3)	3	2	3	3
Meter types	Bar graph	Bar graph	Bar graph	VU movement	VU movement
Equalization	IEC 15ips/AES 30ips	NAB/IEC	IEC	NAB/CCIR	NAB/CCIR
Input connection	RCA unbal	Active unbal	Active unbal	Xfmr bal	Xfmr bal
Input level	-10dBv 25kΩ	-10dBv 30kΩ	-10dBv 30kΩ	+4dBm (+24dB 8kΩ)	+4dBm (+24dB 8kΩ)
Output connection	RCA unbal	Active unbal	Active unbal	Xfmr bal	Xfmr bal
Output level	-10dBv 10kΩ	-10dBv 10kΩ	-10dBv 10kΩ	+4dBm (+8dB 40Ω)	+4dBm (+8dB 40Ω)
AF response (R/P)	±3dB 40-18k	±3dB 30-20k	±3dB 40-18k	±1dB 60-18k	±1dB 60-18k
Measured -dB below SOL nWB/m	0dB below 320nWb/m	0dB below 514nWb/m	0dB below 320nWb/m	23dB 510nWb/m	20dB below 510nWb/m
S/N ratio (R/P)	80dB wtd	70dB wtd	60dB unwtd/Dolby C	62dB unwtd/68dB wtd	61dB unwtd/63dB wtd
Crosstalk (cue-program)	.....	-70dB	.....	.....	.....
Crosstalk (program-program)	-55dB 1kHz 0VU	-70dB 1kHz 0VU	<-70dB	-40dB 1kHz 0VU	-46dB 1kHz 0VU
Distortion	1% 1kHz 0VU	<1% 1kHz 0VU	1% 1kHz 0VU	0.4% 1kHz 0VU	0.4% 1kHz 0VU
Flutter (ANSI S4.3)	±0.05% peak wtd	±0.06% 15ips	±0.06%	0.04%	0.04%
Reader Service Number	1067	1068	1069	1070	1071

Manufacturer	Lyrec	Nagra-Kudelski		Otari Corporation	
Model/Series Number	FRED Player/Editor	T-Audio Time Code	IV-STC	MX5050B-II	MX-70
# of tracks	2	2-track or stereo	3	2	8 or 16
Tape width (inches)	1/4	1/4	1/4	1/4	1
Deck control logic	CMOS	Microprocessor	Mechanical	TTL	Microprocessor
Edit control interface	None	RS-232/422/SMPT E	To synchronizers	None	RS-232/422
Recording timer	Yes	Electronic <0.1% error	Mechanical	Yes	Yes
Cue track	None	Center time code	SMPT E time code	No	No
Stereo phase correction	No	No/rated ±10° 10kHz	No	No	Yes
Capstan motor	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	.....	Dual direct	Direct	Direct	Direct
Reel motor	dc-servo	Servo	dc	ac-synchronous	dc-servo
Tape speed(s) (ips)	7.5/15	3.75-30 var	3.75/7.5/15	3.75/7.5/15/var	7.5/15/30/var
# of heads	2	4	4	4	3
Meter types	None	LEDs	VU movement	VU w/peak LED	VU movement
Equalization	NAB/CCIR	NAB/DIN/IEC/CCIE/EIA	NAB/CCIR/NAGRA	NAB/IEC	NAB/IEC/AES-30ips
Input connection	N/A	Bal floating	Bal/unbal	Active bal	Active bal
Input level	.....	390mV-4.4V 10kΩ	Mic & line levels	..... 10kΩ	+30dBm (switchable)
Output connection	Unbalanced	Bal floating 30Ω	Resistive bal	Active bal	Active bal
Output level	Monitor only	775mV-4.4V 0dB	1V 5kΩ	+27dB	-28dBm (switchable)
AF response (R/P)	Limited/compensated	±1.5dB 30-15k 7.5ips	2dB 30-30k	±2dB 20-20k	±2dB 30-20k
Measured -dB below SOL nWB/m	.....	6dB below 810nWb/m	.....	10dB below 250nWb/m	0dB below 250nWb/m
S/N ratio (R/P)	.....	72dB 160-1.6k +24dB	>72dB 810nWb/m 400Hz	72dB unwtd	72dB unwtd 8-channel
Crosstalk (cue-program)	.....	<-88dB	.....	-55dB	.....
Crosstalk (program-program)	.....	0.3% NAB H2 7.5ips	<-60dB 1kHz	-55dB 1kHz 0VU	-55dB 1kHz
Distortion	.....	<0.025% 7.5ips	<1% 810nWb/m 400Hz	0.5% 1kHz 0VU	0.2% 1kHz 0VU
Flutter (ANSI S4.3)	.....	.....	0.028% NAB 15ips	0.04% 15ips	0.04% 30ips
	For editing only	.....	.....	.....	.....
	portable unit	.....	.....	.....	.....
Reader Service Number	1072	1073	1074	1075	1076

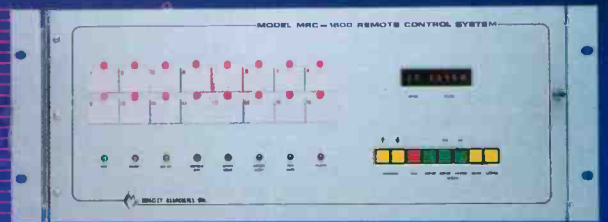
Manufacturer	Otari Corporation	L. J. Scully	Sony Pro Audio		Soundcraft
Model/Series Number	MTR-10-2	LJ-12-2/1	APR-2003 Portable	APR-5000 Series	#760
# of tracks	2	2	3	Full/half/half + TC	16 or 24
Tape width (inches)	1/4	1/4 (also 1/2)	1/4	1/4	1 or 2
Deck control logic	Microprocessor	Microprocessor	.....	16-bit μP	CMOS
Edit control interface	RS-422	RS-232/422	No	Serial & parallel	37 wyD type
Recording timer	Yes	Electronic	Tape counter	.....	No
Cue track	SMPT E center option	SMPT E center TC	Yes	APR-5003 only	Yes
Stereo phase correction	Yes	No	.....	.....	Yes
Capstan motor	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct	Direct
Reel motor	dc-servo	dc-servo	dc	dc	ac-synchronous
Tape speed(s) (ips)	3.75-30/var	3.75-30/var	3.75-7.5	7.5/15/30 ±50%	15/30/var
# of heads	3 or 4	3 (4 w/TC + spare)	3	.....	3
Meter types	VU w/peak LED	VU movement	VU movement	.....	VU movement
Equalization	NAB/IEC/AES at 30ips	NAB/IEC	.....	NAB/AES	NAB
Input connection	Active bal/xfmr opt	Active bal	Bal 10kΩ	.....	Unbal 10kΩ

When Quality is Everything...

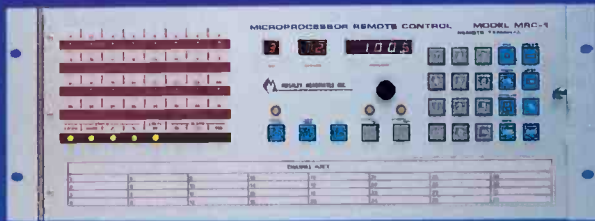


MRC-2

MRC-1600



MRC-1



PCL-606



PCL-505



**Transmitter Remote Control
Monaural and Composite STL
Superior Specifications
Proven Performance**



Moseley Associates, Inc. • 111 Castilian Drive • Goleta, CA 93117
(805) 968-9621 • Telex: 658-448 • Cable: MOSELEY A Flow General Company

Contact Moseley Marketing or your authorized Moseley Distributor.

Circle (138) on Reply Card

Audio Recorders, Reel

Input level	+4dBm	+28dBm max	-70dBs to +4dBs	.....	-10/+20dB
Output connection	Active bal/xfmr opt	Active bal	Unbal 600Ω	.....	Unbal
Output level	+28dBm max	+28dBm max	1V (0dB) 10kΩ load	.....	+22dBm
AF response (R/P)	±2dB 30-25k	±1.5dB 30-22k	±3dB 30-18k 7.5ips	.....	-2/1dB 40-24k
Measured -dB below SOL nWB/m	0dB below 250nWb/m	0dB 20nWb/m	.....	.....	ref 30ips 510nWb/m
S/N ratio (R/P)	73dB unwt'd 30ips	60dB a-wt/65dB unwt'd	.....	>67dB 7.5ips	60dB unwt'd
Crosstalk (cue-program)	-60dB	-60dB 1kHz 0VU	<-90dB audio-tc	.....	.....
Crosstalk (program-program)	-60dB 1kHz 0VU	.....	.....	.....	-55dB 1kHz 0VU
Distortion	0.25% 1kHz 0VU	<1% 15ips Ampex #456	.....	Var w/bias	0.1% 1kHz 0VU
Flutter (ANSI S4.3)	0.04%	0.04% 15ips DIN wtd	±0.08% 7.5ips	.....	<0.04%
	.....	*Nominal inputs and	.....	.....	.....
	.....	outputs 0/+4/+6/+8	.....	.....	.....
Reader Service Number	1077	1078	1079	1080	1081

Manufacturer	Stellavox			Studer Revox	
Model/Series Number	SP8	TD9	A820	PR99 MKII	A810
# of tracks	3	1 to 5	2	2	2
Tape width (inches)	¼	¼ or ½	¼ or ½	¼	¼
Deck control logic	Mechanical	CMDS/μP	TTL/CMOS/μP	TTL/microprocessor	μP
Edit control interface	Manual editing	RS-422 or direct	RS-232/422	.....	RS-232/422
Recording timer	Option	Yes	Yes	Yes	Yes
Cue track	SMPT center	SMPT center	SMPT center	No	SMPT center
Stereo phase correction	No	No	Yes	.....	Yes
Capstan motor	dc-servo	dc-servo	dc-servo	Servo	ac-servo
Capstan drive	Direct	Special	Direct	Direct	Direct
Reel motor	dc-servo	dc-servo	dc-servo	Triac controlled	ac-servo
Tape speed(s) (ips)	3.75/7.5/15 var	3.75-30ips/var	3.75-30/var	3.75/7.5, 7.5/15	3.75/7.5/15/30
# of heads	4	5*	3 or 4	3	3
Meter types	Tautband A	Tautband A	VU movement	VU movement	VU
Equalization	NAB/IEC/DIN/CCIR	NAB/IEC/DIN/EIA/CCIR	NAB/CCIR	NAB/CCIR	NAB/CCIR
Input connection	Balanced	Balanced	Active or xfmr bal	Xfmr bal	Xfmr or active bal
Input level	-72dBm	+6dBm	600Ω	+4dBu 5kΩ	.....
Output connection	Balanced	Balanced	Active or xfmr bal	Xfmr bal	Xfmr or active bal
Output level	+6dBm	+6dBm (+15dBm max)	+28dBm	+4dBu 600Ω	0/+10dB adjustable
AF response (R/P)	-2/1dB 20-20k	-2/1dB 30-20k	±2dB 30-20k	-3/2dB 30-22k	±2dB 20-20k
Measured -dB below SOL nWB/m	10dB below 510nWb/m	10dB below 510nWb/m	0dB below 200nWb/m	20dB below 255nWb/m	20dB below 250nWb/m
S/N ratio (R/P)	68dB	70dB	69dB unwt'd/75dB wtd	72dB ASA A-wtd	75dB ASA A-wtd
Crosstalk (cue-program)	-90dB	-90dB	-85dB 1kHz 0VU	-45dB 1kHz 0VU	-55dB 1kHz 0VU
Crosstalk (program-program)	-55dB 1kHz 0VU	-55dB	-90dB	-60dB	-65dB
Distortion	0.6% 1kHz 0VU	0.5% 1kHz 0VU	0.3% 1kHz 0VU	0.3% 1kHz 0VU	0.6% 1kHz 510nWb/m
Flutter (ANSI S4.3)	0.02%	0.02%	0.04% DIN wtd	0.06% DIN45507 15ips	0.05% DIN45507 15ips
	.....	*Modular head block	.....	.....	.....
	.....	changes heads & tape	.....	.....	.....
	.....	width	.....	.....	.....
Reader Service Number	1082	1083	1084	1085	1086

Manufacturer	TTC/Ampro Div.	TASCAM			
Model/Series Number	Model 280B	42 NB (40 Series)	44-0B (48-0B)	ATR 60 Series	MS-16
# of tracks	1/2/4	2	4 (8)	1/2 4 & 8 tracks	16
Tape width (inches)	¼ or ½	¼	¼ (½)	¼ and ½	1
Deck control logic	Solenoid	Microprocessor	Microprocessor	μP control	Microprocessor
Edit control interface	No	Elco 8016	Elco 8016	Accessory connector	Elco 8016
Recording timer	No	Yes	No	Yes	.....
Cue track	No	No	No	Yes	No
Stereo phase correction	No	No	No	.....	.....
Capstan motor	dc-servo optional	dc-servo	dc-servo	dc servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct	Direct
Reel motor	ac-hysteresis	dc-servo	dc-servo	Direct drive	dc-servo
Tape speed(s) (ips)	3.75-30 avail	7.5/15ips	7.5/15 (15)	7.5-15, 15-30	15
# of heads	3	3	3	.....	3
Meter types	VU movement optional	VU movement	VU movement	.....	VU movement
Equalization	NAB/IEC	NAB/IEC	NAB/IEC (IEC)	AES/NAB/IEC	IEC
Input connection	Xfmr bal	Active bal/unbal	Active bal/unbal	.....	Active bal/unbal
Input level	200mV 10kΩ min	+4dBm or -10dBv	+4dBm or -10dBv	.....	+4dBm or -10dBv
Output connection	Xfmr bal	Active bal/unbal	Active bal/unbal	.....	Active bal/unbal
Output level	+24dBm max	+4dBm or -10dBv	+4dBm or -10dBv	.....	+4dBm or -10dBv
AF response (R/P)	±2dB 30-15k	±2dB 30-15k	±2dB 30-22k	.....	±3dB 40-22k
Measured -dB below SOL nWB/m	Below 500nWb/m NAB	0dB below 250nWb/m	0dB below 250nWb/m	.....	0dB below 250nWb/m
S/N ratio (R/P)	68dB 2-Tr 7.5ips	70dB Awt'd/62dB unwt'd	69dB Awt'd/62dB unwt'd	.....	69dB Awt'd/62dB unwt'd
Crosstalk (cue-program)	.....	.....	.....	.....	.....
Crosstalk (program-program)	<-60dB 250nWb/m 1kHz	-55dB 1kHz 0VU	-55dB 1kHz 0VU	.....	-55dB 1kHz 0VU
Distortion	<3%	0.8% 1kHz 0VU	0.8% 1kHz 0VU	.....	0.6% 1kHz 0VU
Flutter (ANSI S4.3)	0.05% w/dc-servo	0.08%	0.08%	.....	0.08%
Reader Service Number	1087	1088	1089	1090	1091

Audio Recorders, Reel

Manufacturer	TASCAM	Tandberg Audio	Telex Communications
Model/Series Number	Studio 8	T020A-SE	3000 Series
# of tracks	8	2-track	1/2/4
Tape width (inches)	1/4	1/4	1/4
Deck control logic	Microprocessor	PROM	CMOS logic
Edit control interface	Elco 8016	Remote control only	.....
Recording timer	.....	Tape counter	4-digit linear
Cue track	.....	No	No
Stereo phase correction	.....	Yes	No
Capstan motor	dc-servo	ac-synchronous	ac-synchronous
Capstan drive	Belt	Belt	Direct
Reel motor	dc-servo	ac	ac-synchronous
Tape speed(s) (ips)	7.5	7.5/15	3.75/7.5, 7.5/15
# of heads	3	2	3
Meter types	VU movement	Extended peak	None
Equalization	IEC	IEC/NAB/DYNEQ	NAB/IEC/DIN/CCIR/EIA
Input connection	Active bal/unbal	Unbal 800Ω/250kΩ	Xfmr bal
Input level	+4dBm or -10dBv	0.2-20mV/50mV-5V	-75dB mic/120mV line
Output connection	Active bal/unbal	Unbal 100Ω	Xfmr bal/unbal
Output level	+4dBm or -10dBv	1.5V	+20dBm max bal
AF response (R/P)	±3dB 30-16k	±2dB 20-30k 15ips	±3dB 30-18k
Measured -dB below SOL nWB/m	0dB below 250nWb/m	.....	.....
S/N ratio (R/P)	90dB unwt'd	80dB A-wtd/70dB lin	>55dB NAB wtd
Crosstalk (cue-program)	.....	54dB stereo 1kHz	<-50dB
Crosstalk (program-program)	-75dB 1kHz 0VU	.....	<-50dB
Distortion	0.5% 1kHz 0VU	0.5% 320nWb/m	<1% 0VU rec/play
Flutter (ANSI S4.3)	0.1%	0.03% 15ips	0.15% DIN 7ips
Reader Service Number	1092	1093	1094

Telephone Bandwidth Extenders

Manufacturer	Comrex Corporation	Gentner Engineering	C. N. Rood Electronics
Model/system	PTLX/RTLX	PLX II/RLX II	System 114
System type	Dual line	Single line	Single line
Frequency offset	250Hz/2kHz	250Hz	250Hz
AF response (±dB/Hz-kHz)	±2dB 50-50k	±1.5dB 50-3k	±0.5dB 50-3.5k
Translation error	0.08Hz	0.08Hz	0.006Hz
Transmitter model	PTLX	PLX II w/coupler	EFT-1000
Source inputs	Line 600Ω	Line 600Ω	Mic 150Ω/line 600Ω
Output connection	Xfmr balanced	Xfmr balanced	Active balanced
Output level	-9dBm/+8dBm	-10dBm to +4dBm	-13dBm
Packaging	Portable	Portable	Portable or rack
Powering	120/240Vac	120Vac	110/220Vac & 9Vdc
Receiver model	RTLX	RLX II w/coupler	EFT-1000
Input connection	Xfmr bal	Xfmr bal	Balanced
Input level	-40dBm	-40dBm	-25dBm
AF output connection	Unbalanced	Xfmr bal	Active bal
AF output level	0dBm	0dBm	+10dBm
Packaging	Rack-mount	Desktop unit	Rack or desktop unit
Reader Service Number	1095	1096	1098

Manufacturer	C. N. Rood Electronics	C. N. Rood Electronics
Model/system	System 110	System 111
System type	Dual line	Dual line*
Frequency offset	#1 350Hz/#2 2.1kHz	#1 350Hz/#2 2.1kHz
AF response (±dB/Hz-kHz)	±0.5dB 50-4.95k 0dBm	±0.5dB 50-4.95k 0dBm
Translation error	±1Hz	±1Hz
Transmitter model	110M	111M
Source inputs	Mic 5kΩ/line 600Ω	Mic 5kΩ/line 600Ω
Output connection	Xfmr bal	Xfmr bal
Output level	0dBm (adj ±12dBm)	0dBm (adj ±12dBm)
Packaging	Rack-mount	Rack-mount
Powering	110/220Vac	110/220Vac
Receiver model	110D	111D
Input connection	Xfmr bal	Xfmr bal
Input level	-30/+17dBm	-30/+17dBm
AF output connection	Active bal	Active bal
AF output level	0dBm	0dBm
Packaging	Rack-mount	Rack-mount
.....	.....	*Also 2 unshifted channels/return 1 & 2 for engineering or metering
Reader Service Number	1100	1101

Audio Delay Systems

Manufacturer	AKG Acoustics	ART/Applied Research and Technology			
Model Number	ADR 68K	P03	Pitch Transposer	DR1 (DR2)	1500
Design function—					
Talk show delay	No	No	No	No	1.5s
Delay catchup	No	No	No	No	No
Plate/room simulation	Yes	Room correction for	No	Variable	No
Reverb/echo	Yes	sound distribution	No	Variable	Variable echo
A-V synchronizer	Yes	No	No	No	No
Time alteration	No	No	50% comp/100% expand	No	No
Time reversal	No	No	Yes	No	No
Phasing/flanging	Yes	No	No	No	Yes
Pitch change	No	No	No	No	No
Programmability	User/factory	Yes	User programmed	User programmed	No
Delay mechanism	Digital	Digital	Digital	Digital	Digital
Delay range	Infinite freeze	0-255ms	.....	.....	1.5s
Stereo system	Yes	No	No	Yes	No
Multiband delay control	No	No	No	No	No
AF bandwidth	20kHz pgm dep	-3dB to 20kHz	12kHz	14kHz (10kHz)	20kHz
Input connection	Active bal	Bal 20kΩ	Active unbal	Active bal	Active unbal
Input level	+10/0/+8/+18dBV	-20dBm	16dBm	15dBm (6dBm)	17dBm
Output connection	Xfmr balanced	Bal 600Ω	Active unbal	Active unbal	Active unbal
Output level	+17dBm	+14dBm 600Ω	.....	.....	.....
Reader Service Number	1103	1104	1105	1106	1107

Manufacturer	Advanced Music Systems	Alesis	Audio Digital	
Model Number	DMX 15-80S	DMX-15T Timeflex	XTiC	TC2 delay processor
Design function—				
Talk show delay	To 16s	No	No	No
Delay catchup	No	No	No	No
Plate/room simulation	No	Yes	Yes	Through regeneration
Reverb/echo	Yes	No	Yes	Through regeneration
A-V synchronizer	Yes	No	.....	No
Time alteration	No	No	50% comp/100% expand	No
Time reversal	Yes	No	Yes	No
Phasing/flanging	Yes	No	No	Various effects
Pitch change	±1 octave	No	±1 octave	.....
Programmability	User programmed	Factory/user program	User programmed	Yes
Delay mechanism	Digital	Digital	Digital	Digital 39kHz/16-bit
Delay range	16s	1.6s	.....	0-12s pre-delay
Stereo system	Yes	Yes	Yes	No
Multiband delay control	No	No	No	No
AF bandwidth	18kHz	18kHz	18kHz	16kHz
Input connection	Active bal	Active bal	Active bal	500kΩ
Input level	+4dB 10kΩ	+4dB 10kΩ	+4dB 10kΩ	-10/+20dB peak
Output connection	Active bal	Active bal	Active bal	500Ω
Output level	+20dBv	+20dBv	+20dBv	+12dB peak
Reader Service Number	1108	1109	1110	1111

Manufacturer	Audio Digital	BEL Electronics	Eventide Inc.		
Model Number	TC4 Broadcast Delay	BD320	H969(H949) Harmonizer	BD980 (955/931)	SP2016
Design function—					
Talk show delay	Yes	Yes	To 3.06s (No)	To 10s (to 6.4s)	To 3.2s
Delay catchup	Option	.....	No	Yes	No
Plate/room simulation	No	Possible	No	No	Variable
Reverb/echo	No	Yes	Variable	No	Variable
A-V synchronizer	No	No	No	No	No
Time alteration	No	By editing	100% comp/200% exp	30% comp (No)	No
Time reversal	No	No	Yes	No	No
Phasing/flanging	No	Yes	Yes	No	Yes
Pitch change	No	No	-3/+1 (-2/+1) octave	No	No
Programmability	Fixed functions	Manual settings	User programmed	User programmed	Factory/user
Delay mechanism	Digital delay	Digital	Digital	Digital	Digital
Delay range	6.8s	8s std expandable	3.06s (392.75ms)	10s (6.4s)	3.2s
Stereo system	With 2 units	Possible	With 2 units	Yes (2 units/yes)	Yes
Multiband delay control	No	.....	No	No	No
AF bandwidth	To 15kHz	15kHz for 8s	16kHz (15kHz)	20kHz (15kHz/16kHz)	16kHz
Input connection	Bal 50kΩ	Bridging bal 39kΩ	Active bal	Active bal	Active bal
Input level	Standard levels	.....	+24dB 10kΩ	+3dBm 600Ω	-10/+24dBm
Output connection	Balanced	Unbalanced 600Ω	Active balanced	Active balanced	Active balanced
Output level	Standard levels	.....	+21dB (+18dB) 150Ω	+3dBm (+22dBm)	+18dBm
Reader Service Number	1113	1114	1115	1116	1117

Audio Delay Systems

Manufacturer	Fostex	Gotham Audio/EMT			Granite Telcom
Model Number	3050	EMT245 Reverb	EMT251/252 Reverb	EMT445 Digital Delay	Bleepmate 675 (675II)
Design function--					
Talk show delay	No	No	No	To 21.8s	Yes
Delay catchup	No	No	No	Variable	No
Plate/room simulation	No	Variable	Variable	No	No
Reverb/echo	Echo	Variable	Variable	No	No
A-V synchronizer	No	No	No	No	No
Time alteration	No	No	No	No	No
Time reversal	No	No	No	No	No
Phasing/flanging	No	No	Yes	No	No
Pitch change	No	No	No	No	No
Programmability	No	No	Factory/user program	User programmed	No
Delay mechanism	Digital	Digital	Digital	Digital	Digital
Delay range	270ms	4.5s	10s	21.8s	3s or 6s (6s & opts)
Stereo system	No	Yes	Yes	Yes	No
Multiband delay control	No	No	No	No	No
AF bandwidth	±2dB 30-10k	8kHz	14.8kHz	20kHz	7.5kHz mono
Input connection	RCA unbal	Xfmr bal	Xfmr bal	Active bal	Balanced
Input level	-10dBv 50kΩ	+15dBm	+15dBm	+8dBm	.....
Output connection	RCA unbal	Xfmr bal	Xfmr bal	Balanced	Balanced 600Ω
Output level	.....	.....	.....	+8dBm	.....
Reader Service Number	1118	1119	1120	1121	1122

Manufacturer	Klark-Teknik Electronics		Lexicon		
Model Number	DN716	DN780	224XL (200)	97 Super Prime Time	PCM-41 (-42)
Design function--					
Talk show delay	To 10s	No	No	No	No
Delay catchup	No	No	No	No	No
Plate/room simulation	No	Variable	Variable	No	No
Reverb/echo	No	Variable	Infinite reverb	Variable	No
A-V synchronizer	Yes	No	No	No	No
Time alteration	No	No	No	No	No
Time reversal	No	No	Yes (no)	Yes	No
Phasing/flanging	No	No	Yes (no)	Yes	Yes
Pitch change	No	No	Yes (no)	Yes	Yes
Programmability	User programmed	User programmed	User programmed	User programmed	Factory only
Delay mechanism	Digital	Digital	Digital	Digital	Digital
Delay range	1.3s	1s	1.88s (0.06-99s)	0-1.96s	To 800ms (to 4.2s)
Stereo system	No	Yes	Yes	No	No
Multiband delay control	No	No	2-band/6-voice (No)	No	No
AF bandwidth	20kHz	12kHz	20kHz	20kHz	16kHz
Input connection	Active bal	Active bal	Xfmr bal	Active bal	Active bal
Input level	0dBm	0dBm	+18dB 20kΩ (+24dBm)	-20/+19dBv >50kΩ	+18dB 40kΩ
Output connection	Balanced	Xfmr bal	Balanced	Balanced	Balanced
Output level	+22dBm	+18dBm	+18dBm 90Ω (+24dBm)	+22dBv 200Ω	+16dBv 600Ω
.....	.....	.....	.....	Model 95 delay 0-7.6s	.....
Reader Service Number	1123	1124	1125	1126	1127

Manufacturer	Lexicon			McCurdy Radio Ind.	
Model Number	PCM-70 effects	480L (PCM-60)	1300/M-S	1200C & 2400	ADU-10
Design function--					
Talk show delay	No	No	To 8 seconds	Products for time	Yes
Delay catchup	No	No	.....	alteration w/o	Yes
Plate/room simulation	Yes	Variable	No	pitch change. Not	No
Reverb/echo	Infinite reverb	Variable	No	typical delay or	No
A-V synchronizer	No	No	Yes	effects equipment.	No
Time alteration	No	No	No	0.75X-1.333X speed	No
Time reversal	Yes	Yes (No)	No	factor range.	No
Phasing/flanging	Yes	Yes (No)	Yes	At 1X speed factor	No
Pitch change	No	No	No	-25/+33.3% shift	No
Programmability	User programmed	Factory/user	No	.....	User programmed
Delay mechanism	Digital	Digital	Digital	.....	Digital
Delay range	936ms	0.5s (0.02-4.1s)	0-8s	.....	7.1s
Stereo system	No	Yes (w/2 units)	No	1200C w/2 (2400 Yes)	No
Multiband delay control	2-band + 6-voice	No	No	No	No
AF bandwidth	20-15kHz	20kHz	15kHz	-0.5/+0.25dB 20-15k	20kHz
Input connection	Active bal	Active bal	Xfmr bal	Xfmr 150Ω/600Ω/20kΩ	Balanced
Input level	-20/+4dBv	+24dBm (-20/+4dBv)	+9/+24dBm	+4/+24dBm range	-8dBm
Output connection	Balanced	Balanced	Balanced	Xfmr bal: <100Ω/600Ω	Balanced
Output level	+4/+10dBv	+24dBm (+4/+10dBv)	+24dBm	+24dBm max 600Ω	.....
Reader Service Number	1128	1129	1130	1131	1132

Audio Delay Systems

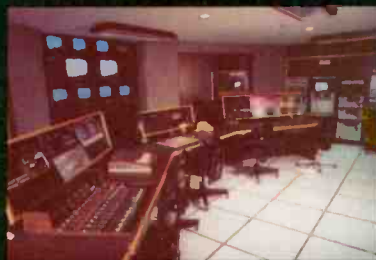
Manufacturer	Urban Associates	Spectra Sound	Tektronix	Yamaha	
Model Number	111B Dual Reverb	4020 Audio Delay	118-AS	YD0-2600/YDM-2600	D-1500 Digital Delay
Design function—					
Talk show delay	No	No	No	Yes	No
Delay catchup	No	No	No	.....	No
Plate/room simulation	No	Variable	No	No	Yes
Reverb/echo	Yes	Variable	No	No	Yes
A-V synchronizer	No	No	Yes	Yes	No
Time alteration	No	No	No	No	No
Time reversal	No	Yes	No	No	No
Phasing/flanging	No	Yes	No	No	Yes
Pitch change	No	No	No	No	No
Programmability	No	No	No	Yes	User programmed
Delay mechanism	Spring	Analog	Digital	Digital & analog	Digital
Delay range	30ms fixed/2s delay	To 120ms	160ms expandable	To 2.66s adjustable	1023ms in 1ms steps
Stereo system	Yes	With 2 units	No	Yes	w/2 units
Multiband delay control	2-band EQ	No	No	Yes	Adjustable low-pass
AF bandwidth	6kHz	16kHz	20kHz	20Hz-20kHz	+/-3dB/20Hz-18kHz
Input connection	Active bal	Active bal/unbal	Bal	Bal	Active bal
Input level	-30/+4dBm	+16dBm	+24dBm max	+4dBu 10k	+4/-20dB 20k
Output connection	Xfmr balanced	Active bal/unbal	Balanced	Balanced	Active bal
Output level	0dBm	.....	.....	.....	.....
Reader Service Number	1133	1134	1135	1136	1137

Manufacturer	Yamaha	
Model Number	REV-1	SPX90
Design function—		
Talk show delay	No	No/delay to 500ms
Delay catchup	No	Delay modulation
Plate/room simulation	Yes	Hall/room/vocal/plate
Reverb/echo	Yes	To 250ms stereo
A-V synchronizer	No	.....
Time alteration	No	.....
Time reversal	No	No/early reflection
Phasing/flanging	Yes	In stereo*
Pitch change	No	4 programs
Programmability	User programmed	Yes
Delay mechanism	Digital	Dig. 31.25kHz/16-bit
Delay range	To 99.9s	To 500ms
Stereo system	Yes	Yes
Multiband delay control	Yes	Integral param EQ
AF bandwidth	30Hz-18kHz stereo	20Hz-12kHz stereo
Input connection	Bal	Unbalanced
Input level	+4dB 10k	-20dBm/+4dB
Output connection	Balanced	600Ω unbal
Output level	.....	-20/+4dBm
.....	.....	*Auto-pan, freeze,
.....	.....	compression, vibrato
.....	.....	(MIDI ctl).
Reader Service Number	1138	1139

Audio Processors, Level Control

Manufacturer	ATI-Audio Technologies	Aphex Systems		Audio + Design/Calrec	
Model Number	Emph'a'Sizer EM1000	700 Studio Dominator	300 Compellor	F769X Stresser	F601-RS
Design function—					
Compression	Yes	No	Yes	Yes	No
Peak limiting	Yes	Yes	Yes	Yes	Yes
Asymmetric limiting	No	No	No	No	No
Expansion	Yes	No	AGC action	Yes	No
Multiband level control	No	3-band	No	No	No
Programmable	No	No	No	Yes	Yes
Digital signal processing	No	No	No	.....	No
Stereo system	w/ 2 units	Yes	Yes	Yes	Yes
Meter type	LED ladder	LED ladder	LED ladder	Peak	Peak LEDs
Meter functions	Output/GR/peak	Gain reduction	In/out/GR/peak/VU	GR/peak	In/out/GR/peak
Time constants	Pgrm dep/var	Program dep	Program dep	Var/pgrm dep	Var/pgrm dep
Input connection	Xfmr/active bal	Active bal	Active bal/unbal	Xfmr bal	Xfmr/active bal
Input level	-10dBm/-50dB 150Ω	+24dBm	+27dBm	+22dBm	+24dBm
Output connection	Xfmr/active bal	Active bal/unbal	Active bal/unbal	Xfmr bal	Xfmr/active bal
Output level	+25dBm or mic level	+24dBm	+27dBm	+22dBm	+24dBm
AF response	±0.25dB 30-20k +4dBm	±0.5dB 20-50k +20dBm	±1dB 5-65k +20dBm	-0.05dB 20-20k	-0.5dB 20-20k +8dBm
Distortion	<0.5% 30Hz +22dBm	0.04% 1kHz +20dBm	<0.1% 1kHz +20dBm	<0.1% 1kHz +22dBm	<0.15% 1kHz +24dBm
S/N ratio	80dB unwt'd +4dBm out	80dB unwt'd +20dBm	95dB +27dBm unwt'd	89dB unwt'd +8dBm	105dB unwt'd +8dBm
Test compression level	10dB comp	15dB comp	20dB comp	6dB comp	10dB comp
Reader Service Number	1141	1142	1143	1144	1145

STUDIOS • POST PRODUCTION • MOBILE UNITS
MASTER CONTROL • MICROWAVE • FIBER OPTICS



If your future plans include an individual component, a turnkey system, or something in between, we can develop your ideas into a complete television facility.

THE
LERRO
CORPORATION

3125 N. Broad St., Philadelphia, Pa. 19132
215 - 223-8200

Contact Bob McTamney

Audio Processors, Level Control

Manufacturer	Audio + Design/Calrec	Broadcast Electronics	Brooke Siren Systems	CRL Audio	
Model Number	Scamp	FM-601	DPR 402	SEP 800	SPP 800/APP 400
Design function—					
Compression	Yes	Yes	Yes	Yes	No
Peak limiting	Yes	Yes	Yes	No	No
Asymmetric limiting	No	No	No	No	Yes
Expansion	Yes	Yes	Yes	No	Gain controller
Multiband level control	4-band	No	4-band	4-band	2-band
Programmable	Yes	No	Yes	Yes	Yes
Digital signal processing	Yes	No	No	No	No
Stereo system	Yes	Yes	Yes	Yes	Yes
Meter type	Peak/LED	VU meter movement	LED ladder	Peak LED	Peak LEDs
Meter functions	In/out/GR/peak	Output/GR	In/out/GR	Input/peak	In/out/GR
Time constants	Var/pgm dep	Variable	Var/pgm dep	Var/pgm dep	Var/pgm dep
Input connection	Active bal	Xfmr	Active bal	Active bal/unbal	Active bal/unbal
Input level	+24dBm	-20/+26dBm	0dBm	+4dBm	+4dBm
Output connection	Active bal	Xfmr	Xfmr/active bal/unbal	Active bal/unbal	Active bal/unbal
Output level	+24dBm	+20dBm	+20dBm	+4dBm	0dBm
AF response	-0.5dB 20-20k + 8dBm	±0.5dB 30-20k + 20dBm	±1dB 25-20k + 4dBm	±1dB 50-15k	±1dB 50-15k + 0dBm
Distortion	<0.05% 1kHz + 10dBm	<0.75% 30-20k + 20dBm	<0.003% 20-20k + 10dBm	<0.25% 1kHz + 4dBm	<0.4% 1kHz + 0dBm
S/N ratio	100dB unwt'd + 8dBm	60dB unwt'd + 20dBm	>86dB unwt'd 0dBm	>65dB unwt'd + 4dBm	>65dB unwt'd 0dBm
Test compression level	10dB comp	.....	0dB C/L	9dB comp	In Proof mode
Reader Service Number	1146	1147	1148	1149	1150

Manufacturer	CRL Audio				dbx
Model Number	SEP400B	SMP 800	SMP 900	PMC 300A	165A
Design function—					
Compression	Yes	No	No	No	Yes
Peak limiting	Yes	Yes	Yes	Yes	Yes
Asymmetric limiting	No	No	No	No	No
Expansion	No	No	No	No	No
Multiband level control	4-band	2-band	2-band	2-band	No
Programmable	Yes	Yes	No	Yes	No
Digital signal processing	No	No	No	No	No
Stereo system	No	Yes	Yes	No	2 units needed
Meter type	Peak LEDs	Peak LEDs	Peak LEDs	Peak LED	VU movement
Meter functions	Gain reduction	Input/peak	Input/peak	Input/peak	In/out/GR
Time constants	Var/pgm dep	Var/pgm dep	Var/pgm dep	Var/pgm dep	Var/pgm dep
Input connection	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active bal
Input level	+4dBm	+4dBm	+4dBm	+4dBm	+24dBm
Output connection	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active unbal
Output level	+4dBm	+10dBm	+4dBm	+10dBm	+24dBm
AF response	±1dB 50-15k + 4dBm	±1dB to 50kHz + 15dBm	-1.5dB 50-15k + 4dBm	±1dB 50-15k + 10dBm	0/-1dB 20-20k
Distortion	<0.5dB 1kHz + 4dBm	<0.2% 1kHz + 10dBm	<0.5% 1kHz + 4dBm	<0.5% 1kHz + 10dBm	0.45% 0dBm 1kHz
S/N ratio	65dB unwt'd + 4dBm	70dB unwt'd + 10dBm	60dB unwt'd + 4dBm	>65dB unwt'd + 10dBm	94dB 4dBm unwt'd
Test compression level	9dB comp	10dB comp	0dB C/L	0dB C/L proof mode	.....
Reader Service Number	1151	1152	1153	1154	1155

Manufacturer	dbx	Dorrough Electronics		EMT-Franz/Gotham	
Model Number	160x	610FM(610TV/TV stereo)	610 AM/AM stereo	EMT 277DX	EMT 266X
Design function—					
Compression	Yes	Yes	Yes	Yes	Yes
Peak limiting	No	Yes	Yes	Yes	Transient limiter
Asymmetric limiting	No	No	Yes	Yes	No
Expansion	No	Yes	Yes	Yes	No
Multiband level control	No	3-band	3-band	2-band	2-band
Programmable	No	Yes	Yes	Yes	No
Digital signal processing	No	Yes	Yes	No	No
Stereo system	2 units required	With 2 units	With 2 units	With 2 units	Yes
Meter type	LED ladder	LED display	LED display	Peak LED/VU movement	Peak LED
Meter functions	In/out/GR	Peak/average	Peak/average	GR/peak	Peak
Time constants	Pgrm dep	Variable	Variable	Pgrm dep	Pgrm dep
Input connection	Active bal	Active bal or unbal	Active bal or unbal	Xfmr bal	Xfmr bal
Input level	+24dBm	0/-26dB 10kΩ bridged	0/-26dB 10kΩ bridged	+8dBm	+8dBm
Output connection	Active unbal (bal opt)	Active bal	Active bal	Xfmr bal	Xfmr bal
Output level	+24dBm	+26dBm	+26dBm	+8dBm	+8dBm
AF response	0/-1dB 20-20k	0dB ±5-15k + 8dBm	0dB 15-15k + 8dBm	±0.5dB 30-15k	0.3dB 30-15k
Distortion	0.07% 0dBm 1kHz	<0.025% + 18dBm	<0.025% + 18dBm out	<0.25% 1kHz + 8dBm	<0.2% 1kHz + 8dBm
S/N ratio	93dB 4dBm unwt'd	70dB	70dB comp	72dB unwt'd + 8dBm	92dB unwt'd + 8dBm
Test compression level	Referred to 4dBm	15dB comp	15dB C/L	.....	.....
Reader Service Number	1156	1157	1158	1159	1160

PERFORMANCE AND ECONOMY. SIDE BY SIDE!

Now get more performance for the money in two new additions to Tek's 1700 Series family: the 1720 Vectorscope and 1730 Waveform Monitor.

For years television facilities have looked to the Tek 528A and 1420 for reliable, consistent signal monitoring. Our two new monitors do the job faster, better—and at a substantial reduction in cost.

Even easier to use. Now four front panel setups can be stored—from the front panel—and recalled at the touch of a button. You get complete line select capabilities including field selection,

15-line display and CRT read-out of field and line number. You can display Channel A and Channel B inputs simultaneously. The information you need is there at a glance.

Each monitor includes its own advanced feature set. There's an X-Y input for stereo audio monitoring in the 1720. Dual filter operation in the 1730. Plus proven 1700 Series family advantages. Excellent viewability. Low power consumption. All in a compact package suited for stand alone use or rack-

mounting and available in NTSC and PAL versions.

The new 1720 Vectorscope can also be combined with a 1710B Waveform Monitor—for even greater side-by-side economy!

Get the full story from your Tektronix representative. Ask for a demo and see what makes the 1720 and 1730 the leading price/performance values on the market today

Behind the Scenes in Quality Television.



Tektronix
COMMITTED TO EXCELLENCE

Circle (158) on Reply Card

THE TEKTRONIX SPG-170A. ITS FEATURES AND VALUE CAN'T BE MATCHED.

Introducing the new Tektronix Master Sync Generator, the SPG-170A. It has the features you need in an RS-170A sync generator... all in an affordable, 1 $\frac{3}{4}$ -inch package. Just plug it in, set and forget it. You can't do better than that!

All SPG-170A signals are digitally generated to provide excellent SCH and timing accuracy.

Included are digital genlock, high stability internal reference and digitally generated black burst.

With the SPG-170A, outputs are always color framed correctly—regardless of input signal SCH phase.

The SPG-170A's sync timing controls enable you to advance or delay subcarrier and pulse outputs relative to the black burst output. This eliminates the need for separate delay lines.

Offered as options... an exclusive audio tone output for setting program levels, in addition to color bars with 12 character I.D. and tape leader countdown.

Don't settle for less. Get the full story from your Tektronix representative. Ask for a demonstration and see why we say the SPG-170A's features and value can't be matched!

Behind the Scenes in Quality Television.



I.D.
AUDIO TONE

RS-170A

DIGITAL GENLOCK

COLOR BARS

TRANSMITTING/TEST &
MEASURING SPECS

Tektronix
COMMITTED TO EXCELLENCE

Circle (159) on Reply Card

Audio Processors, Level Control

Manufacturer	EMT/Gotham Audio	Fostex	Gotham Audio/Neumann	Harris Corporation	Inovonics
Model Number	EMT 261	3070	U473A	UR1-Mate 91	250 (260)
Design function—					
Compression	Yes	Yes	Yes	Yes	Includes slow AGC
Peak limiting	Yes	Yes	Yes	Yes	Yes
Asymmetric limiting	No	No	No	No	250 only
Expansion	Yes	Yes	Yes	No	No
Multiband level control	No	No	No	3-band	5-band for 250
Programmable	No	No	No	Yes	Yes
Digital signal processing	No	No	No	No	Yes
Stereo system	With 2 units	Yes	2 units needed	With 2 units	Yes
Meter type	VU movement	LED ladder	Peak LED & ladder	LED ladder	LED ladder
Meter functions	GR	GR	GR/peak	GR	GR/peak
Time constants	Variable	Variable	Var/pgm dep	Var/pgm dep	Pgm dep
Input connection	Xfmr bal	Unbal	Xfmr bal	Active bal	Active bal
Input level	6dBm	-10dBv 50kΩ	-10 + 22dB 5kΩ	-10 + 15dBm	-15 + 5dBm
Output connection	Xfmr bal	Unbal	Xfmr bal	Active bal	Active bal
Output level	6dBm	-10dBv 10kΩ	+22dBv 300Ω	+24dBm	0 + 15dBm
AF response	±0.5dB 40-15k	±1dB 20-20k	±0.3dB 40-15k	±1dB 100-20k	±1dB 50-15k 15dB
Distortion	0.2% 0dBm	0.1% 0dBm	0.3% 6dBm	1% 20dBm	0.5% 15dBm
S/N ratio	73dB 0dBm unwt'd	80dB unwt'd	87dB 6dBm wtd	90dB 20dBm unwt'd	65dB 15dBm unwt'd
Test compression level	0dB C/L	20dB C/L	0dB C/L	40dB C/L	15dB C/L
Reader Service Number	1161	1162	1163	1164	1165

Manufacturer	Inovonics	Marti Electronics	Modular Devices	Moseley Associates
Model Number	231 MAP-II	201	CLA-40A	MAP 3320
Design function—				
Compression	With slow AGC	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes	Yes
Asymmetric limiting	Yes	No	Yes	No
Expansion	No	No	No	No
Multiband level control	8-band	No	No	No
Programmable	No	No	Yes	No
Digital signal processing	No	No	No	No
Stereo system	With 2 units	With 2 units	With 2 units	With 2 units
Meter type	VU movement	VU movement	VU movement	LED ladder
Meter functions	GR/peak	GR	Out/GR	In/GR
Time constants	Pgm dep	Variable	Variable	Fixed
Input connection	Xfmr bal	Xfmr bal	Xfmr bal	Active unbal
Input level	-20 + 10dBm	+4dBm	-15dBm	-20 + 18dBm
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output level	0 + 5dBm	+4dBm	+20dBm	+4dBm
AF response	±1dB 50-15k 15dB	0/-0.5dB 20-20k	±0.5dB 50-15k + 20dBm	±0.5dB 20-20k
Distortion	1% 15dBm	0.5% 4dBm	1% 4dBm	1% 4dBm
S/N ratio	60dB 15dBm unwt'd	70dB 4dBm unwt'd	66dB unwt'd + 10dBm	91dB 20dBm unwt'd
Test compression level	10dB C/L	10dB C/L	any C/L	30dB C/L
Reader Service Number	1166	1167	1168	1169

Manufacturer	Moseley Associates	Rupert Neve Inc	Orban Associates
Model Number	TAL-320	TFL-280B	33609 series
Design function—			
Compression	No	No	Yes
Peak limiting	Yes	Yes	Yes
Asymmetric limiting	Yes	No	Yes
Expansion	No	No	No
Multiband level control	No	No	No
Programmable	No	No	No
Digital signal processing	No	No	No
Stereo system	With 2 units	With 2 units	Yes
Meter type	VU movement	VU movement	PPM movement
Meter functions	.....	.....	GR
Time constants	.....	.....	Var/pgm dep
Input connection	Balanced	Balanced	Xfmr bal
Input level	-26dBm	-20dBm	+4dBm adjustable
Output connection	Balanced	.....	Xfmr bal
Output level	+18dBm	+17dBm	+4dBm nom/26dBm max
AF response	±1dB 30-15k	±1dB 50-15k	±0.5dB 20-20k + 4dBm
Distortion	<0.3%	<0.7% 50-15k	<0.2% + 4dBm
S/N ratio	>70dB 20-20k	>70dB de-emphasized	>79dB 20-20k + 4dBm
Test compression level	.....	.....	6.1dB C/L
Reader Service Number	1171	1172	1173

Manufacturer	Orban Associates	Richmond Sound Design	Spectra Sonics	Symtrix Inc.
Model Number	Optimod-TV 8182A	424A (422A) Studio	VCA-4	610 Compilimiter
Design function—				
Compression	Yes	Yes	Yes	Yes
Peak limiting	Yes	No	Yes	Yes
Asymmetric limiting	No	No	No	No
Expansion	Gating	Gating	No	No (Yes)
Multiband level control	3-band	No	No	No

Audio Processors, Level Control

Programmable	No	No	No	No
Digital signal processing	No	No	No	No
Stereo system	Yes	Yes (No)	Yes	With 2 units
Meter type	VU/peak LEDs	VU meter	.....	Peak LED/VU movement
Meter functions	In/out/GR/peak	Output/GR/peak	.....	Out/GR
Time constants	Var/pgm dep	Var/pgm dep	Variable	Variable
Input connection	Active bal	Active bal	Active bal	Xmfr bal
Input level	-30/+10dBm	-15/+10dBm 10kΩ	+4dBm	+4dBm
Output connection	Active bal	Active	Active bal	Xfmr bal
Output level	+10dBm	+4dBm	+18dBm	+16dBm max
AF response	±0.75dB 30-15k	±0.25dB 20-20k	±1dB 20-20k +8dBm	±0.1dB/10-40k
Distortion	<0.25% 50-15k	<0.03% 1kHz	<0.2% 1kHz +4dBm	<0.001% 16dBm
S/N ratio	75dB unwt'd	-85dB below clipping	82dB wtd +4dBm	80dB 4dBm unwt'd
Test compression level	.....	15dB C/L	0dB comp	30dB BC
Reader Service Number	1176	1177	1178	1179

Manufacturer	Symatrix	TEXAR	Thomson-CSF	UREI
Model Number	522	Audio Prism	Volumax 4300/4101FM Audimax 4440A/4450A	1178

Design function—				
Compression	Yes	Yes	Yes	Includes AGC action
Peak limiting	Yes	Yes	Yes	No
Asymmetric limiting	No	Yes	Yes	No
Expansion	Yes	Yes	Yes	Yes
Multiband level control	No	4-band	Yes	Yes
Programmable	No	Yes	Yes	Yes
Digital signal processing	No	Yes	Yes	No
Stereo system	Yes	With 2 units	Yes	Yes
Meter type	LED ladder	LED ladder	VU movement	VU movement
Meter functions	Output	GR	GR	GR/peak
Time constants	Variable	Pgm dep	Var/Pgm dep	Pgm dep
Input connection	Balanced	Active bal	Xfmr oal/unbal	Bal or unbal
Input level	.....	-10dBm	-22dBm	-25dBm
Output connection	Balanced	Active bal	.....	.....
Output level	+20dBm	+14dBm	24dBm	26dBm
AF response	-1dB 20-20k	-1dB 50-16k 10dB	±0.5dB 50-15k	±0.5dB 50-15k
Distortion	<0.03% 1kHz 0dBm	0.3% 10dBm	<1% 24dBm	<0.5% 16dBm
S/N ratio	.....	72dB 10dBm unwt'd	>70dB 24dBm unwt'd	>70dBm 8dBm unwt'd
Test compression level	10dB C/L	10dB C/L	23dB C/L	10dB C/L
Reader Service Number	1181	1182	1183	1184

Manufacturer	Valley People	Wheatstone
Model Number	610 dual compressor 430 Dyna-Mite	Leveller Model 440 Model 1202

Design function—				
Compression	Yes	Yes	No	Yes
Peak limiting	Yes	Yes	Averaging limiting	Yes
Asymmetric limiting	No	No	No	Sibilance processor
Expansion	Yes	Yes	No	Yes
Multiband level control	No	No	No	No
Programmable	No	No	No	No
Digital signal processing	No	No	No	No
Stereo system	Yes	Yes	Yes	With 2 units
Meter type	LED ladder	LED ladder	LED ladder	LED ladder
Meter functions	GR	GR	Input	In/out/GR
Time constants	Pgm dep	Fixed	Pgm dep	Variable
Input connection	Active bal	Active bal	Active bal	Active bal
Input level	+24dB 100kΩ	+24dB >110kΩ	-10/0/+4dB 75kΩ	+24dB 100kΩ
Output connection	Balanced	Unbal	Active bal	Active bal
Output level	+20dBm	+14dBm	24dBm	26dBm
AF response	±0.5dB 20-20k +4dBm	±0.5dB 20-20k +4dBm	-3/0.1dB 15-25k 0dBm	±0.5dB 20-20k +4dBm
Distortion	<0.03% 1kHz 0dBm	<0.03% 10dBm	<1% 24dBm	<0.5% 16dBm
S/N ratio	88dB 4dBm unwt'd	88dB 4dBm unwt'd	83dB 0dBm unwt'd	87dB +4dBm unwt'd
Test compression level	20dB C/L	20dB C/L	20dB C/L	20dB C/L
Reader Service Number	1186	1187	1188	1189

Wireless Microphone Systems

This section is devoted to FM radio systems which allow unwired microphone use by performers on stage or in the studio. Distance capability, depending upon environment, will average 1,000 feet for all systems. Performance quality audio is intended.

Manufacturer	AKG Acoustics	Eugene Beyer	Cetec Vega	
Model/System Number	#185	System 185	66A/77D11 R42/77D11	67A/T82
RF frequency band	130-190MHz	135-250MHz (US)	150-216MHz	150-216MHz
AF response (overall system)	±2dB 20-20k*	-2dB 40-15k 0dBm	±1.5dB 40-15k	±1.5dB 40-15k
S/N ratio (overall system)	90dB ref 1mV RF in	63dB -2dB wtd	103dB 0dBm A-wtd	103dB A-wtd
Distortion (overall system)	<0.5%	0.5% +2dBm output	0.3% 0dBm output	0.3%
Modulation control	Peak limiting	Peak limit/compress	Soft compression	Soft compression
Companding	Yes	Yes	No	No
Transmitter model #	T185	TS185-US	77/D11	T82
Transmitter style	Hand-held	Hand-held/body pack	Body/pocket pack	Hand-held
RF output power	25mW	25mW	50mW	50mW
Carrier deviation	±60kHz	±60kHz	±15kHz	±15kHz

Wireless Microphone Systems

Carrier stability	0.005%	.....	0.005%	0.005%	0.005%
Microphone type	Dynamic or electret	Dynam/electr/ribbon	Dynamic	External mic	Internal
Aux line input	No	No	No	No	No
Line input level	.....	.....	.....	.....	.....
Power requirement	9Vdc	18Vdc	9Vdc	9Vdc	9Vdc
Operating weight	13.4oz w/battery	4 oz w/battery	5oz	5oz	9.5oz
Receiver Model #	SR185	NE 185.10/NE 185.11	66A	R42	67A
Sensitivity	.....	1 μ V 20dB quieting	0.8 μ V 20dB quieting	0.6 μ V 20dB quieting	0.8 μ V 20dB quieting
Spurious rejection	110dB	110dB	-85dB	-90dB	-85dB
Output connection	Bal	Xfmr bal	Active bal	.....	Active bal
Audio output level	+6dBm	+6dBm	+16dBm	+20dBm	+16dBm
Power requirement	+18Vdc/117Vac	15-27Vdc/117Vac	-18/+8.5Vdc	15Vdc/110-220Vac	10.5-18Vdc
Metering	RF/AF level battery	RF/battery	RF level/VU/battery	RF level/AF/VU	RF/AF VU/battery
Panel indicators	Power/carrier	RF/power/channel	Carrier present	Carrier present LED	.....
Antenna type	Whip furnished	Dipole furnished	Whip furnished	Whip or dipole incl	Whip
Diversity receiving system	Yes	NE185.11 option	No	Yes	Yes
Multiple channels	1 per channel	To 3 per receiver	1/receiver	2/receiver	2/receiver
	*Measured at +6dBm output, S/N includes companding	.....	.....	.....	.....
Reader Service Number	1191	1192	1193	1194	1195

Manufacturer	Coherent Communications	Com Tek		Base/Personal	Ecor
Model/System Number	RM400/RM110 (120)	72	172		E COM Highband
RF frequency band	160-240MHz	170-216MHz	170-216MHz	170-216MHz	150-216MHz
AF response (overall system)	\pm 2dB 80-20k	\pm 3dB 40-15k 0dBm	-2dB 40-15k +10dBm	\pm 3dB 100-10k	\pm 2dB 200-16k
S/N ratio (overall system)	69dB ref 10dBm A-wtd	75dB 0dBm Unwtd	95dB +10dBm Unwtd	65dB +10dBm Unwtd	.....
Distortion (overall system)	<1% +10dBm output	<1% 0dBm output	0.5% +10dBm output	1% +10dBm output	1%
Modulation control	Compression	Compression	Compression	Compression	Soft compression
Companding	No	No	Yes	No	.....
Transmitter model #	RM110/RM120	M72L	M72-CL	M72BS	E COM 1
Transmitter style	Pocket pack	Body/pocket pack	Body/pocket pack	Base station	Hand-held
RF output power	50/250mW	50mW	50mW	50mW	100mW
Carrier deviation	\pm 12kHz	\pm 30kHz (\pm 15kHz US)	\pm 30kHz (\pm 15kHz US)	\pm 30kHz (\pm 15kHz US)	\pm 7.5kHz
Carrier stability	0.0025%	0.005%	0.005%	0.005%	0.005%
Microphone type	Dynamic or electret	Dynamic or electret	Dynamic or electret	Electret	EV671 element
Aux line input	No	Optional unbal	Optional unbal	Active unbal	No
Line input level	.....	10dBm (-50dB 200 Ω)	10dBm (-50dB 200 Ω)	10dBm	.....
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc/115Vac	12Vdc
Operating weight	6.5 oz	4 oz	4.5 oz	40 oz	8.7 oz w/o battery
Receiver Model #	RM400	MR-72	MR172	PR-72b	E COM 5
Sensitivity	<0.8 μ V 20dB quieting	0.5 μ V 20dB quieting	0.3 μ V 20dB quieting	0.7 μ V 20dB quieting	1 μ V 20dB quieting
Spurious rejection	<-85dB	-85dB	-80dB	45dB	-70dB
Output connection	Xfmr bal	Active bal	Active bal	Active unbal	.....
Audio output level	-60dBm (+10dB 50 Ω)	0dBm (-40dB 150 Ω)	+8dBm (-40dB 150 Ω)	+10dBm	3Vp-p
Power requirement	9Vdc	12Vdc/115Vac	12Vdc/115Vac	9Vdc	12Vdc/115Vac
Metering	RF level/battery	AF level	RF/AF level	Battery	.....
Panel indicators	Power/carrier	Power/carrier	Power/carrier	Power	Carrier present
Antenna type	Whip furnished	Whip or dipole	Whip or dipole	With output cable	Furnished
Diversity receiving system	No	No	Option	No	Yes
Multiple channels	1/receiver	4/receiver	8/receiver	2/receiver	1/receiver
Reader Service Number	1196	1197	1198	1199	1200

Manufacturer	Ecor	HM Electronics			
Model/System Number	E COM Highband	System 87 (870)	System 85/850	System 82/820	System 42/420
RF frequency band	150-216MHz	150-216MHz*	150-216MHz*	150-216MHz*	150-216MHz*
AF response (overall system)	\pm 2dB 200-16k	\pm 3dB 50-15k -20dBm	\pm 3dB/50+15k 0dBm	\pm 3dB 30-15k -20dBm	\pm 1dB 100-12k -20dBm
S/N ratio (overall system)	.....	115dB dynamic range	115dB dynamic range	115dB dynamic range	>60dB -20dBm A-wtd
Distortion (overall system)	1%	0.3% -45dBm output	0.3% -45dBm output	<0.7%	1% -40dBm input
Modulation control	Soft compression	.....	.....	.....	Compression
Companding	.....	Yes	Yes	Yes	No

Call (214) 381-7161



Continental Electronics

a Division of Varian Associates, Inc. PO Box 270879 Dallas, Texas 75227 Ph: (214) 381-7161 Telex: 73-398



AM & FM transmitters from 1 to 60 kW; Shortwave to 500 kW; FM antennas; Studio & Related Equipment

Wireless Microphone Systems

Transmitter model #	E COM 1 lavaller	TX872 or TX872TV	TX852 or TX852TV	TX822 or TX822TV	TX425/TX425TV
Transmitter style	Hand-held	Hand-held	Hand-held	Body/pocket pack	Body/pocket pack
RF output power	100mW	50mW	50mW	50mW	50mW
Carrier deviation	±7.5kHz	±15kHz	±15kHz	±15kHz	±15kHz
Carrier stability	0.005%	±0.005%	0.005%	0.005%	0.005%
Microphone type	Various lavaliers	Electret	Electret	Dynamic or electret	Dynamic or electret
Aux line input	No	No	No	No	No
Line input level	.....	.....	.....	.....	.....
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc	9Vdc
Operating weight	10.7 oz w/o battery	15 oz	15 oz	4.5 oz	4.5 oz
Receiver Model #	E COM 2 or 3	RX722 (RX752)	RX752 (RX722)	RX722 (RX752)	WM 125 (WM300A)
Sensitivity	1µV/12dB SINAD	1µV 30dB quieting	1µV 30dB quieting	1µV 30dB quieting	1µV 20(30)dB quieting
Spurious rejection	-70dB	>60dB (>65dB)	>60dB (>65dB)	>60dB (>65dB)	>60dB
Output connection	.....	Xfmr bal	Xfmr bal	Xfmr bal	Active (xfmr) bal
Audio output level	100mV or line	+18dBm (10dBm) & mic	+18dBm (10dBm) & mic	+18dBm (10dBm) & mic	0(-20)dBm/33(-60dB)
Power requirement	12Vdc/115Vac	12-30Vdc/115Vac	12-30Vdc/110Vac	12-30Vdc/115Vac	10-30Vdc/115Vac
Metering	.....	RF/AF/low + V	RF/AF level/battery	RF/AF/ + V low	RF/AF/ + V WM125 only
Panel indicators	Carrier present	+ V/carrier	+ V/carrier	+ V/carrier	+ V/carrier
Antenna type	Whip furnished	Whip furnished	Whip furnished	Whip furnished	Whip furnished
Diversity receiving system	No	Option	Option	Option	Option
Multiple channels	1/receiver	1/receiver	1/receiver	1/receiver	1/receiver
.....	.....	*To 240MHz export;	.....	.....	.....
.....	.....	max spl to A-wtd	.....	.....	.....
.....	.....	noise level	.....	.....	.....
Reader Service Number	1201	1202	1203	1204	1205

Manufacturer	HM Electronics	Micron Audio			
Model/System Number	System 58/580	System 25/25RA			
RF frequency band	150-216MHz*	150-216MHz	150-216MHz	150-216MHz	150-216MHz
AF response (overall system)	±3dB 50-15k -20dBm	±1dB 100-12k -20dBm	±2dB 50-15k 0dBm	±2dB 50-15k 0dBm	±2dB 50-15k
S/N ratio (overall system)	115dB dynamic range	>60dB -20dBm A-wtd	115dB	115dB	115dB
Distortion (overall system)	0.3% -45dBm output	1% -40dBm input	<0.3% 1kHz line tone	<0.3%	<0.3% 1kHz tone
Modulation control	.....	Compression	Peak limiting	Peak limiting	Peak limiting
Companding	Yes	No	Yes	Yes	Yes
Transmitter model #	TX582/TV (TX580/TV)	WM250/WM250TV	TX-501/TX-503	TX-503 (TX-501)	TX-501 (TX-503)
Transmitter style	Hand-held	Hand-held	Hand-held/body pack	Hand-held (body pack)	Body pack (hand-held)
RF output power	50mW	50mW	50mW	50mW	50mW
Carrier deviation	±15kHz	±15kHz	±15kHz	±15kHz	±15kHz
Carrier stability	±0.005%	0.005%	0.005%	0.005%	0.005%
Microphone type	Dynamic	Dynamic	Dynamic or electret	Electret (& dynamic)	Dynamic or electret
Aux line input	No	No	Xfmr bal or unbal	No (Yes)	Act bal/unbal (No)
Line input level	.....	.....	0dBm	..... (0dBm xfmr)	0dBm TX-501 only
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc	9Vdc
Operating weight	15 oz	15 oz	8.5-11 oz	11 oz (8.5 oz)	8.5 oz (11 oz)
Receiver Model #	RX722 or RX752	WM125A (WM300A)	MDR-540*	MDR-530	MR-510
Sensitivity	1µV 30dB quieting	1µV 30(20)dB quieting	1µV 20dB quieting	1µV 20dB quieting	1µV 20db quieting
Spurious rejection	>60dB (>65dB)	>60dB	>80dB	>80dB	>80dB
Output connection	Xfmr bal	Active (xfmr) bal	Xfmr bal	Xfmr bal	Xfmr bal/unbal
Audio output level	+18dBm (10dBm) & mic	0(-20)dBm/33(-60)dB	0dBm	0dBm	0dBm
Power requirement	12-30Vdc/115Vac	12-30Vdc/115Vac	12Vdc/120-240Vac	10-20Vdc/100-240Vac	10-22Vdc
Metering	RF/AF/low + V	RF/AF/ + V/WM125A only	RF level/battery	RF level/battery	RF level/battery
Panel indicators	+ V/carrier	+ V/carrier	Power/RF/channel	Power/carrier	Power/carrier
Antenna type	Whip furnished	Whip furnished	Dipole furnished	Dipole furnished	Whip furnished
Diversity receiving system	Option	Option	Yes	Yes	Optional
Multiple channels	1/receiver	1/receiver	1 to 8/receiver	1/receiver	1/receiver
.....	.....	.....	*Modular system; with	.....	.....
.....	.....	.....	1, 2, 4, 6 or 8-channel	.....	.....
.....	.....	.....	configurations	.....	.....
Reader Service Number	1206	1207	1208	1209	1210

Manufacturer	Nady Systems	RF Technology	Sennheiser Electronics
Model/System Number	601LT (701HT)	RM-102 (RM-100)	VHF 1B
RF frequency band	150-216MHz	947-952MHz	150-216MHz
AF response (overall system)	±3dB 25-20k 0dBm	±1dB 50-10k	40-12k
S/N ratio (overall system)	120dB max spl A-wtd	60dB ref 8dBm unwt'd	94dB A-wtd
Distortion (overall system)	>0.3% ref 0dBm out	1% 8dBm out w/AGC	.....
Modulation control	None	Soft limiting	Compression
Companding	Yes	No	Yes
Transmitter model #	LT (HT)	Standard unit	SK 2012-9H
Transmitter style	Body pack (hand-held)	Pocket pack	Body/pocket pack
RF output power	50mW	50mW	30mW constant output
Carrier deviation	±15kHz	±50kHz	±8kHz nominal
Carrier stability	0.005%	0.005%	.....
Microphone type	Dynamic or electret	External mic	Electret
Aux line input	Yes (No)	No	No
Line input level	-20/+20dB 10kΩ LT	.....	.....
Power requirement	9Vdc	9Vdc	4.5Vdc 3 AAA-cells
Operating weight	2.6 oz (8.5 oz)	12.5 oz	6.3 oz
Receiver Model #	601 (701)	RM-102 (RM-100)	EK 2012-9H
Sensitivity	1.5µV/20dB quieting	.....	.....
Spurious rejection	-80dB	-70dB	.....
Output connection	Active bal/unbal	.....	Unbalanced
Audio output level	+22dBm max	+8dBm for RM-100	.....
Power requirement	24Vdc/115-230Vac	12Vdc/115Vac	4.5Vdc

Wireless Microphone Systems

Metering	RF level/AF level
Panel indicators	Power/carrier/channel
Antenna type	Whip furnished
Diversity receiving system	No (yes)
Multiple channels	1 (2) per receiver
Reader Service Number	1211

RF level/AF level	.....
Power/carrier	Power/carrier
Dipole furnished	Furnished
No	Yes
1/receiver	1/receiver (5 RM-100)
1212	1213

Battery	.....
Power	Power/RF/channel
Whip furnished	Whip furnished
No	Ground plane incl
1/rcvr std/2 option	Yes
1214	1215

Manufacturer	Sennheiser Electronics
Model/System Number	UHF 1B

RF frequency band	950MHz
AF response (overall system)	20Hz-20kHz
S/N ratio (overall system)	94dB
Distortion (overall system)	.....
Modulation control	Compression
Companding	Yes
Transmitter model #	SK 2012-TVH
Transmitter style	Body/pocket pack
RF output power	20mW constant output
Carrier deviation	±40kHz nominal
Carrier stability	.....
Microphone type	Electret
Aux line input	No
Line input level	.....
Power requirement	4.5Vdc 3 AAA cells
Operating weight	6.3 oz
Receiver Model #	EK 2012-TVH
Sensitivity	.....
Spurious rejection	.....
Output connection	Unbalanced
Audio output level	.....
Power requirement	4.5Vdc
Metering	Battery
Panel indicators	Power
Antenna type	Whip
Diversity receiving system	No
Multiple channels	1/rcvr std/2 option
Reader Service Number	1216

Sony Broadcast	
VHF Systems	UHF Systems

174.6-215.4MHz	470-900MHz
±2.5dB 100-15k	±2dB 75-13k
>60dB	60dB
<0.7% at 15kHz	2%
.....
Yes	.....
WRT210/WRT220	WRT27/27A
Hand-held	Body pack
50mW 50Ω load	6mW
±1.9kHz at -64dB	±150kHz
0.005%	0.005%
Various for WRT220	Electret
No	No
.....
3Vdc	9Vdc
14 oz	8 oz
WRR210/WRR220	WRR27/37/57
>65μV/20dB at ±200kHz	20dBμ/30dB S/N
<-70dB	<-80dB
.....	Xfmr bal
-58dBm	-20dBm
9Vdc (6 AA cells)	9Vdc/120Vac
RF level/AF level	RF level/AF level
.....	Power/carrier/channel
Whip furnished	Furnished
Option	Optional
2/receiver	1/receiver
1217	1218

Swintek Enterprises	
Mark 2L RFS0 50A	

150-470MHz	165-216MHz
±1dB 20-12k 0dBm	±1dB 100-15k
96dB ref -20dBm	104dB +14dBm
1% ref -20dBm out	1% +14dBm output
Compression	Compression
Yes	Switchable
Mark 50A/dbs	WT-400
Body/pocket pack	Body/pocket pack
50mW	50mW
±10kHz	±12kHz
0.001%	0.005%
SM87/ECM-50 electret	Electret
Xfmr bal	No
0dBm	.....
9Vdc	9Vdc
6 oz	7 oz
Mark 2L/RFS0	ENG-4
0.2μV/20dB quieting	1.3μV 20dB quieting
<-80dB	70dB
Bal	Balanced
-40dBm/0dBm	+14dBm
12Vdc/115-230Vac	12Vdc
RF/AF level/battery	RF/AF/battery
Carrier present	RF/power/channel
Whip furnished	Whip furnished
Yes	No
2/receiver	4/receiver
1219	1220

Manufacturer	FMR-2/WT-200
Model/System Number	

RF frequency band	165-216MHz
AF response (overall system)	±1dB 50-15k +14dBm
S/N ratio (overall system)	96dB A-wtd (102dBm)
Distortion (overall system)	0.3% +14dBm
Modulation control	Compression
Companding	Yes
Transmitter model #	WT-200
Transmitter style	Belt pack
RF output power	50mW
Carrier deviation	±12kHz
Carrier stability	0.005%
Microphone type	Electret
Aux line input	No
Line input level	.....
Power requirement	9Vdc
Operating weight	6 oz
Receiver Model #	FMR-2
Sensitivity	1μV 20dB quieting
Spurious rejection	70dB
Output connection	Balanced
Audio output level	+14dBm
Power requirement	12Vdc/115Vac
Metering	RF/AF
Panel indicators	Power/carrier
Antenna type	Whip
Diversity receiving system	Yes
Multiple channels	1/receiver
Reader Service Number	1221

Telex	
FMR50/WT-50	FMR-50/WHM-500

165-216MHz	165-216MHz
±1dB 50-15k 0dBm out	±1dB 50-15k
92dB A-wtd (76dBm)	92dB (98dBm)
0.3% 0dBm out	0.3% 0dBm out
Compression	Compression
Yes	Yes
WT-50	WHM-500
Belt pack	Hand-held
50mW	15mW
±12kHz	±12kHz
0.005%	0.005%
Electret	Electret
No	No
.....
9Vdc	9Vdc
6 oz	15 oz
FMR-50	FMR-50
1μV 20dB quieting	1μV 20dB quieting
70dB	70dB
Balanced	Balanced
0dBm	0dBm
12Vdc/115Vac	12Vdc/115Vac
AF	AF level
Power/carrier	Power/carrier
Whip furnished	Whip furnished
No	No
1/receiver	1/receiver
1222	1223

Remote Pickup Units

Manufacturer	RPT-2
Model/Serial	

Service band (MHz)	148-174/450-470MHz
Multichannel system	2-channel
Typical range (whip antenna)	6 miles
AF response	±1.5dB 50-15k
S/N ratio (overall system)	55dB 100% mod unwdt
Harmonic distortion (system)	<0.2% 100% mod
Transmitter designation	RPT-2

Mart Electronics	
RPT-15	

148-174/450-470MHz	148-174/450-470MHz
2-channel	2-channel
15 miles	15 miles
±1.5dB 50-15k	±1.5dB 50-15k
55dB 100% mod unwdt	55dB 100% mod unwdt
<0.2% 100% mod	<0.2% 100% mod
RPT-15	RPT-15

RPT-30	
--------	--

148-174/450-470MHz	148-174/450-470MHz
2-channel	2-channel
25 miles	25 miles
±1.5dB 50-15k	±1.5dB 50-15k
55dB unwdt 100% mod	55dB unwdt 100% mod
<0.2% 100% mod	<0.2% 100% mod
RPT-30	RPT-30

Moseley Associates	
RPL-4C	

450-470MHz	450-470MHz
2-channel	2-channel
.....
±1.5B 30-10k	±1.5B 30-10k
55dB 100% mod	55dB 100% mod
<2%	<2%
RPL-4C	RPL-4C

AM Radio Transmitters

Computer diagnostics	No	No	No	Yes	No
Automatic recycle feature	Yes	Yes	Yes	Yes	Yes
		*208-380V 3 ϕ 50-60Hz	*In 419E 4CV250000B		701B rated 1kW out
		for 416E	w/4160Vac		
Reader Service Number	1236	1237	1238	1239	1240

Manufacturer	Elcom-Bauer	SX-5A	Harris Broadcast	MW-50C3
Model/Serial Number	715C	750	MW-10B	MW-50C3
Type of service	Broadcast/shortwave	Broadcast/shortwave	Broadcast	Broadcast
RF power output	15kW (25kW)	50kW	5kW	50kW
RF output connection	1-5/8		7/8 EIA female	3-1/8 EIA male
Carrier stability	\pm 5Hz	\pm 5Hz	\pm 20Hz	\pm 20Hz
Carrier shift	3% 100% mod 400Hz	3% 100% mod 400Hz	2%	2%
Modulation (maximum)	125%	125%	125%	125%
AF input connection	Balanced		Active bal	Active bal
AF response (\pm dB/Hz-kHz)	\pm 1dB 50-10k	\pm 1dB 50-7.5kHz	0.5/1.5dB 20-12.5K	\pm 1dB 20-12.5k
THD distortion	2% (2.5%) 95% mod	<2.5%	1% 95% mod overall	2.4% 95% mod
AM noise figure	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd
Final amp device	4CX20000B	4CX20000B	Solid-state	4CX35000C tetrode
Modulator final device	4CX20000B	4CX20000B	Solid-state	4CX15000A tetrode
IPA amp device	Solid-state	Solid-state	Solid-state	Tube
Stereo exciter preference	Any exciter	Any exciter usable	Harris STX-1B	Harris STX-1B
Floor space required	70Wx31D (138Wx30D)	144Wx40D	28Wx30D	144Wx48D
Separate power rack	Yes (No)	Yes	No	Yes
Input ac power	208-240Vac 3 ϕ	380-450Vac 3 ϕ	208V 3 ϕ	480V 3 ϕ
Power factor	0.9	0.9	0.95	0.95
Power consumption	40kW (60kW)	86kW	11.6kW	28kW
System efficiency	54%	54%	65%	20.5%
Monitoring output	5Vrms 0 Ω	5Vrms at 50 Ω	10Vrms 50 Ω	10Vrms 50 Ω
Logic/fault architecture	Relay	Relay	μ P	Relay
Computer diagnostics	No	No	Yes	No
Automatic recycle feature	Yes	Yes	Yes	Yes
			SX-1A rated 1kW	
			SX-2.5A rated 2.5kW	
Reader Service Number	1241	1242	1243	1244

Will Your Station Be Next?

One violent strike and you're fried—downtime and lost revenue. Only our unique surge protection truly handles the big hits without exposing your equipment. Competitive systems can't. Before you get hit... call us.



12516 Lakeland Road, Santa Fe Springs, CA 90670 • TWX 910-586-1381 (in CA) (213) 944-0916 • (outside CA) (800) 654-8087

Circle (142) on Reply Card

AM Radio Transmitters

Monitoring output	5Vrms 50Ω	5Vrms 50Ω	Audio output	1-10Vrms 50Ω	1-10Vrms 50Ω
Logic/fault architecture	CMOS/TTL	CMOS/TTL	Relay	Relay	Relay
Computer diagnostics	No	No	No	No	No
Automatic recycle feature	Yes	Yes	Yes	Yes	Yes
	AMPFET-2.5 2.5kW	.....		AM-1000B rated 1kW	AM-5000D rated 5kW
	AMPFET-1 1kW	.....		uses 4-400C tubes	.....
	.....	.....		M-2500B rated 2.5kW	.....
Reader Service Number	1256	1257	1258	1259	1260

FM Radio Transmitters

Manufacturer	ANT-Nachrichten	Broadcast Electronics			CSI Electronics
Model/Series Number	S-3152 (S-3168)	FM-30	FM-35A	FM-10A	T-25-F
RF output power	10kW (3kW)	30kW	350W	10kW	27.5kW
RF output connection	.....	3-1/8 EIA female	3-1/8 EIA female	3-1/8 EIA female	3-1/8 EIA female
Modulating capacity	<100kHz	±200Hz	±200Hz	±200Hz	±150Hz
Operating VSWR	.....	<1.8:1	<1.8:1	<1.8:1	.....
Final device	Tetrode	Tetrode	4CX20000C	4CX7500A	3CX15000A7
IPA amp device	Solid-state	Solid-state	Solid-state	Solid-state	3CX3000A7 & 8874
AF input connection	Unbalanced	Active bal	Active bal	Active bal	Balanced
AF response	±0.2dB 40-43k	±0.1dB 30-15k	±0.1dB 30-15k	±0.1dB 30-15k	±0.5dB 30-15k
THD distortion (100% mod mono)	<0.4%	0.08% 50-15k	0.08% 50-15k	0.08% 50-15k	0.5%
Pre-emphasis	Any standard value	Switchable	Switchable	Switchable	75μs standard
AM mod noise	<-50dB unwt'd	-55dB	-55dB	-55dB	-55dB
FM noise (mono)	<-62dB unwt'd	-72dB de-emph unwt'd	2/372dB de-emph unwt'd	-72dB de-emph unwt'd	-65dB
Recommended exciter	ANT S3150 50W	FX-30	FX-30	FX-30	CSI EX-20-F
Wideband comp input	.....	Yes	Yes	Yes	Yes
Stereo capable	Yes	Yes	Yes	Yes	Yes
Floor space required	23.6Wx39.4D	81Wx63D	91Wx63D	56.4Wx74.4D	76.5Wx37.8D
Separate power supply	No	Separate/adjacent	Separate/adjacent	Separate/adjacent	No
Input ac power	380VA 3π (110/220)	208-240V 3π 50-60Hz	208/240V 3π 50-60Hz	208/240V 3π 50-60Hz	190-460Vac range
Power factor	.....	>0.9	>0.9	>0.9	.....
Power consumption	20kVA (5.5kVA)	50kW	58kW	17.2kW	36kW
System efficiency	.....	60%	60%	60%	.....
Monitoring output	.....	5Vrms 50Ω	5Vrms 50Ω	5Vrms 50Ω	Yes
Fault architecture	.....	CMOS/TTL	CMOS/TTL	CMOS/TTL	Relays/resistors

A-MAZE

The Unlimited Limiter



A New Dimension in Audio.

- **DRAMATIC RESULTS** in program definition, increased separation, higher average level modulation.
- **TRANSPARENCY** preserves intact even the processing artifacts of other processors!
- **IDEAL** processor for compact disc and other pure audio sources. With its incredible 5v/us system slew rate, the A-MAZE easily processes a 10 kilohertz square wave burst!

- **PERFECT** solution to STL headroom problems. Improves signal to noise ratios up to 10Db with absolutely no coloration.

Suggested price of \$1,595.

Call or write today for a complete technical description of the A-MAZE concept, or arrange for a demonstration unit.

hnat hinders inc

42 Elaine St., R.R. 1 • Thompson, CT 06277 • (203) 935-9066

AVAILABLE FROM THESE OUTSTANDING DISTRIBUTORS: ELEFTREX • (305) 651-5752; PRO AUDIO GENERAL STORE • (312) 231-7120, (304) 622-9058, (404) 425-0630; CONTINENTAL TRANSMITTERS • (214) 381-7161; RF SPECIALTIES • (412) 733-1994, (402) 736-5521; MARCOM • (818) 703-0381; RADIO SYSTEMS • (215) 356-4700; PIERCE PHELPS • (215) 879-7286; RADIO RESOURCES • 1-800-547-2346; SCMS • (704) 889-4508; ONE STOP BROADCAST SUPPLY • (805) 688-6879; BROADCAST SERVICES • (703) 635-1413, (919) 934-6869; AUDUBON BROADCASTING • (803) 771-0105; LAKE SYSTEMS • (617) 244-6881; NORTHEAST EQUIPMENT EXCHANGE • (317) 262-0311

FM Radio Transmitters

Computer diagnostics	Yes	Yes	Yes	No
Auto recycle	Yes	Yes	VSWR foldback std	VSWR foldback std
	Models from 50W-1kW	.....	.....	.....
Reader Service Number	1261	1262	1263	1264

Manufacturer	Continental Electronics/Varian				
Model/Series Number	814R-1 (814B)	817A	816R-2A (-3/-4)	816R-5	817R-2A (-1/-4)
RF output power	2.5kW (4.3kW)	60kW	20kW (25kW/27.5kW)	35kW	40kW (50kW/55kW)
RF output connection	1-5/8 EIA male	6-1/8 EIA male	3-1/8 EIA flange	3-1/8 EIA	3-1/8 (6-1/8)
Modulating capacity	±150kHz	±150kHz	±150kHz	±150kHz	±150kHz
Operating VSWR	<2:1	<2:1	<2:1	<2:1	<2:1
Final amp device	5CX1500B (4CX3500A)	4CX40000G	4CX15000A	9019/YC130 tetrode	4CX15000A
IPA amp device	Solid-state	Solid-state	Tube	.....	Tube
AF input connection	Active bal	Active bal	Active bal	Active bal	Active bal
AF response	±0.5dB 20-15k	±0.5dB 20-15k	±0.5dB 20-15k	±0.5dB 20-15k	±0.5dB 20-10k
THD distortion (100% mod mono)	0.08% 20-15k	0.2% 20-15k	0.08% 20-15k	0.08% 20-15k	0.08% 20-15k
Pre-emphasis	25/50/75µs	25/50/75µs	25/50/75µs	25/50/75µs	25/50/75µs
AM mod noise	-40dB (-55dB)	-55dB	-55dB	-55dB	-55dB
FM noise (mono)	-55dB (-75dB)	-72dB unwt'd	-75dB unwt'd	-75dB unwt'd	-75dB
Recommended exciter	Continental 802A	Continental 802A	Continental 802A	Continental 802A	Continental 802A
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Stereo capable	Yes	Yes	Yes	Yes	Yes
Floor space required (inches)	35Wx24D (35Wx28D)	128Wx40D	72Wx28D	72Wx28D	165Wx28D + combiner
Separate power supply	No	No	No	Yes	No
Input ac power	230VA 1φ 60Hz	208/250V 3φ 60Hz	208/240V 3φ 60Hz	208-240V 3φ 60Hz	208/240V 3φ 60Hz
Power factor	>0.94 (>0.92)	>0.95	>0.92	>0.92	>0.92
Power consumption	4.9kVA (7.6kVA)	99kVA	33.5kVA (43/45kVA)	57kVA	67.3kVA (86.7/91kVA)
System efficiency	57% (55%)	64%	58%	66%	57%
Monitoring output	10-40Vrms 50Ω	10-40Vrms 50Ω	10-40Vrms 50Ω	10-40Vrms 50Ω	10-40Vrms 50Ω
Fault architecture	Relay	µP	Relay	Relay	Relay
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	yes	Yes
	.....	.....	816R-1A rated 10kW	.....	.....
	.....	.....	uses 4CX10000A	.....	.....
Reader Service Number	1266	1267	1268	1269	1270

Manufacturer	Elcom-Bauer			Energy-Onix	
Model/Series Number	SS-500 (SS Series)	6100	630C	MK-12 (-22/-30)	MK-3.5 (-3.5/-8.5)
RF output power	0.5kW	100W	30kW	12kW (22kW/30kW)	1.5-3.5kW (5.5/8.5)
RF output connection	Type N	N connector	6-1/8 EIA female	1-5/8 (3-1/8)	1-5/8
Modulating capacity	±150kHz	±200kHz	±200kHz max	±200kHz	±200kHz
Operating VSWR	.....	.....	.....	<1.5:1	<1.5:1
Final amp device	Solid-state	Solid-state	4CX30000C	Triode*	3CX4500A7 triode
IPA amp device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
AF input connection	Balanced	Active bal	Active bal	Xfmr	Xfmr
AF response	±0.5dB 50-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 75kHz	±0.5dB 75kHz
THD distortion (100% mod mono)	<0.2% 400Hz	<0.08% 100% mod	0.08% 100% mod	0.08% 100% mod 1kHz	0.08% 100% mod 1kHz
Pre-emphasis	75µs	Any standard value	Any standard value	Any value switchable	25/50/75µs switched
AM mod noise	-60dB	-60dB	-60dB	-60dB	-60dB
FM noise (mono)	-65dB	-72dB de-emph	-72dB de-emph	-75dB de-emph	-75dB de-emph
Recommended exciter	Elcom-Bauer 690	Elcom-Bauer 6020	Elcom-Bauer SS-20	Power Pak SX-40	Power Pak SX-40
Wideband comp input	Solid-state	Yes	Yes	Yes	Yes
Stereo capable	Yes	Yes	Yes	Yes	Yes
Floor space required (inches)	24Wx12D	19Wx8.5D rack-mount	58Wx29D	27.5Wx31.5D	27.5Wx31.5D
Separate power supply	No	No	No (Yes)	No (Yes)	No
Input ac power	208-240Vac 1φ	110Vac 1φ	230Vac 3φ	220-330Vac 3φ	220Vac 3φ 50-60Hz
Power factor	>0.9	0.9	0.9	>0.95	>0.95
Power consumption	1kW	250W	55kVA	18.5kVA (35/48kVA)	5kVA (8.2kVA/13kVA)
System efficiency	50%	50%	50%	65% (63%)	70% (67%/65%)
Monitoring output	.....	2Vrms 50Ω	2Vrms 50Ω	1Vrms 50Ω	1Vrms 50Ω
Fault architecture	.....	CMOS/TTL	Relay	CMOS/TTL	CMOS/TTL
Computer diagnostics	.....	No	No	Yes	Yes
Auto recycle	No	Yes	Yes	Yes	Yes
	100W & 250W units also available	#6300 rated 300W #6600 rated 600W	601C rated 1.5kW 610C rated 10kW 605C rated 5kW 603C rated 3kW	*output tubes - 12kW - 3CX10000A7 22kW - 3CX15000A7 30kW - 3CX20000A7	....................
Reader Service Number	1271	1272	1273	1274	1275

Manufacturer	Energy-Onix		Harris Broadcast		
Model/Series Number	SS-1000 (-2000/3500)	FM-3.5K (FM-1K)	FM-35K	FM-25K (FM-20K)	FMD-50K (FM-40K)
RF output power	1kW (2kW/3.5kW)	4kW (1kW)	35kW	25kW (20kW)	50kW (40kW)
RF output connection	7/8 (7/8 1-5/8)	1-5/8 EIA female	3-1/8 EIA flange	3-1/8 EIA	6-1/8 (3-1/8)
Modulating capacity	±200kHz	±100kHz	±75kHz	±100kHz	±150kHz
Operating VSWR	<1.5:1	<2:1	<2:1	<2:1	<2:1
Final amp device	Solid-state	4CX3500A (4CX1000A)	4CX20000D tetrode	4CX20000B(4CX15000A)	4CX20000A(4CX15000)
IPA amp device	Solid-state	Solid-state	Solid-state	Solid-state (tube)	Solid-state (tube)
AF input connection	Xfmr	Balanced	Active bal	Balanced	Active bal
AF response	±0.5dB 75kHz	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k
THD distortion (100% mod mono)	0.08% 100% mod 1kHz	0.15% 100% mod	0.15%	0.15% 100% mod	0.15% 100% mod
Pre-emphasis	25/50/75µs switched	Any standard value	Switchable	All std values	Any std value

Bogner—20 years, over 1000 TV transmitting antennas and still climbing!



In the twenty years since we innovated a remarkable slot array design we have succeeded to a leadership role in TV broadcast antennas. We had to be better than the competition. We still are.

Today there are over 1000 Bogner TV transmitting antennas in use, more than from any other single manufacturer. Antennas with a long history of trouble-free performance and unequalled coverage.

Bogner antennas come in every power range and with the largest number of standard patterns in the industry. In addition, Bogner offers hundreds of custom patterns plus special designs to meet particular requirements.

Find out more. Call or write: Bogner Broadcast Equipment Corp.,
401 Railroad Avenue,
Westbury, New York 11590,
(516) 997-7800.

**When you need us
we'll be there.**

BOGNER®
WE MAKE THEM SMARTER

FM Radio Transmitters

AM mod noise	..... -60dB	-55dB	-55dB	-52dB (-55dB)	-55dB (-50dB)
FM noise (mono)	..... -75dB de-emph	-80dB de-emph unwtd	-80dB	-80dB	-80dB de-emph unwtd
Recommended exciter	..... Power-Pak SX-40	Harris MX-15	Harris MX-15	Harris MX-15	Harris MX-15
Wideband comp input	..... Yes	Yes	Yes	4CX2000A(4CX15000A)	Yes
Stereo capable	..... Yes	Yes	Yes	Yes	Yes
Floor space required (inches)	..... 27.5Wx31.5D	33Wx34D	33.5Wx33.5D	35Wx31D	90Wx31D (133Wx33D)
Separate power supply	..... No	No	Yes	48Wx24D needed	48Wx25D needed
Input ac power	..... 220Vac 1ϕ 50/60Hz	220V 1ϕ	208-240/360-415V 3ϕ	208-240V 3ϕ	220V 3ϕ
Power factor	..... >0.95	0.9	>0.95	0.9	0.95
Power consumption	..... 2kVA (4kVA 7kVA)	7kW (2.25kW)	52.2kW	40kW (30.15kW)	80kW (60kW)
System efficiency	..... 50%	50% (45%)	80%	62.5% (66%)	63% (66%)
Monitoring output	..... 1Vrms 50Ω	10Vrms 50Ω	10Vrms 50Ω	10Vrms 50Ω	10Vrms 50Ω
Fault architecture	..... CMOS/TTL	CMOS/TTL	μP	CMOS/TTL/Relay	CMOS/TTL (relay)
Computer diagnostics	..... Yes	No	Yes	No	No
Auto recycle	..... Yes	Yes	Yes	Yes	Yes
Reader Service Number	..... 1276	FM-5K rated 5kW FM-300K rated 300W 1277	..... 1278	FM-10K rated 10kW 1279	..... 1280
Manufacturer	.....	ITELCO	Larcan Communications	Marconi Communications	
Model/Series Number	..... MPFM 2000 (500)	T-294 (T-234)	FMT-25L	B6528 (-29/-30DS)	B6525
RF output power	..... 2kW (0.5kW)	55kW (12.5kW)	25kW	500W (1kW/4kW)	10kW
RF output connection	.....	.....	3-1/8 unflanged	Type HN	3-1/8 EIA
Modulating capacity	..... ±75kHz	±75kHz	±100kHz	±75kHz	±75kHz
Operating VSWR	.....	.....	<1.5:1	<1.4:1	<1.4:1
Final amp device	..... Solid-state modules	Tetrode	5911 tetrode	4-500W modules	8986
IPA amp device	..... Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
AF input connection	..... 600Ω balanced	600Ω balanced	Active bal	600Ω bal or Hi-Z	Xfmr bal
AF response	..... 0.2dB 20-15k	0.2dB 20-15k	<0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 40-15k
THD distortion (100% mod mono)	..... <0.05% +75kHz	<0.05% ±75kHz	<0.1% ±75kHz	<-50dB ±75kHz dev	<0.4% 40-15k 100% mod
Pre-emphasis	..... 50/75μs int jumper	0/50/75μs jumpered	75μs	0/50μs jumpered	0/50μs switchable
AM mod noise	..... -70dB	<-70dB	-55dB	<-55dB 50kHz band	-50dB
FM noise (mono)	..... -70dB	<-84dB CCIR-rms wtd	-75dB de-emph	<-40dB ±75kHz dev	-70dB de-emph unwtd
Recommended exciter	..... ESINT05 or EFM05	ESINT05B/ESINT20B	Integral FME-30L	B6506 drive system	Integral unit
Wideband comp input	..... 20Hz-100kHz	20Hz-100kHz	Yes	Yes	Yes
Stereo capable	..... Yes	Yes	Yes	Integral unit	Integral unit
Floor space required (inches)	..... 19Wx30D	86Wx32D (43Wx32D)	48Wx32.5D	21Wx24D	24Wx40D
Separate power supply	..... No	No	No	No	No
Input ac power	..... 110/220V 50-60Hz	208-380V 3ϕ 50-60Hz	208V 3ϕ 60Hz	190/260V 1ϕ 6.5A	380/415V 3ϕ 50-60Hz
Power factor	.....	.....	0.95	>0.95	>0.9
Power consumption	..... 3.8kVA (1kVA)	96kVA (19kVA)	37kVA	.....	<19kVA
System efficiency	.....	.....	71%	55%	60%
Monitoring output	..... Yes	Yes	1.5Vrms 50Ω	.....	4Vrms 50Ω
Fault architecture	..... CMOS/TTL	μP	CMOS	Solid-state	CMOS/TTL & relay
Computer diagnostics	..... No	.....	No	No	No
Auto recycle	..... Yes	Yes	Yes	Yes	Yes
Reader Service Number	..... 1281	T-283 rated 5kW T-254 rated 27.5kW 1282	FMT-10L rated 10kW 30W model available 1283	..... 1284	..... 1285
Manufacturer	..... Marconi Communications	NEC America	LDM-1239 (LDM-1238)	Pye TVT/Philips*	
Model/Series Number	..... B6526	FBN-11K20E	LDM-1233	LDM-1236	LDM-1236
RF output power	..... 20kW	20kW	1kW (0.5kW)	10kW	27.5kW
RF output connection	..... 3-1/8 EIA	3-1/8 EIA female	Type N female	1-5/8 EIA male	3-1/8 EIA male
Modulating capacity	..... ±75kHz	±150kHz	±100kHz	±100kHz	±100kHz
Operating VSWR	..... <1.4:1	.....	.....	.....	.....
Final amp device	..... 9011 tetrode	4CX15000A	Solid-state	TH-399	TH-374
IPA amp device	..... Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
AF input connection	..... Xfmr bal	Balanced	Bal/unbal	Bal or unbal	Bal or unbal
AF response	..... 0.5dB 40-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k
THD distortion (100% mod mono)	..... <0.4% 40-14k	0.3% 1kHz 100% mod	0.3% ±75kHz	0.3% ±75kHz 100% mod	0.3% ±75kHz 100% mod
Pre-emphasis	..... 0/50μs switchable	Any standard value	Switch selectable	Any standard value	Any standard value

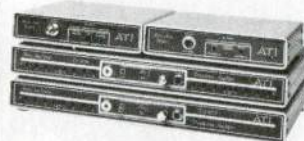
Micro Amp
Series™
by



**AUDIO TECHNOLOGIES
INCORPORATED**
328 Maple Avenue
Horsham, PA. 19044
(215) 443-0330
Free Detailed Brochures



**Audio Processors
Modular Distribution
Amplifiers**



Distribution Amplifiers



Phono Preamplifiers



**Dual Mike,
Line, & Power
Amplifiers
Rack Mounting**

Circle (68) on Reply Card

FM Radio Transmitters

AM mod noise	-50dB	-50dB	-65dB	-65dB
FM noise (mono)	-70dB de-emph unwt'd	-70dB de-emph unwt'd	-75dB (-76dB wtd)	-75dB (-76dB wtd)
Recommended exciter	Integral	HPB-1210	Pye TVT LDM-1248	Pye TVT LDM-1248
Wideband comp input	Yes	Yes	Yes	Yes
Stereo capable	Integral unit	Solid-state	Yes	Per exciter
Floor space required (inches)	42Wx40D	51Wx29D	22Wx29D	44Wx23D
Separate power supply	No	No	No	No
Input ac power	380/415V 3 ϕ 50-60Hz	208V 3 ϕ 60Hz	220V 1 ϕ 47-63Hz	220Vac 3 ϕ 47-63Hz
Power factor	>0.9	0.9	>0.9	0.9
Power consumption	<37kVA	33.5kVA	2.1kVA (1.3kVA)	18.5kVA
System efficiency	61%	60%	48%	55%
Monitoring output	5Vrms 50 Ω	0.5Vrms 50 Ω	0.5Vrms 50 Ω	0.5Vrms 50 Ω
Fault architecture	CMOS/TTL & relay	CMOS/TTL	CMOS/TTL	CMOS/TTL
Computer diagnostics	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes
			LDM-1237 rated 0.3kW	
			LDM-1248 rated 0.1kW	
			*IN U.S. BTS Broadcast	
			Television Systems	
Reader Service Number	1286	1287	1288	1289

Manufacturer	QEI Corporation			Rohde & Schwarz	
Model/Series Number	695T30kW (-20kW)	695T5kW (695T3.5kW)	675T500 (675T300)	NU 421	NU 331
RF output power	30kW (20kW)	5kW (3.5kW)	500W (300W)	20kW	3kW
RF output connection	3-1/8 EIA male	1-5/8 male	Type N male	Air line 25/58	As required
Modulating capacity	\pm 75kHz	\pm 75kHz	\pm 75kHz	.....	.....
Operating VSWR	<1.1:1	<1.1:1	<1.1:1	<1.5:1	<1.5:1
Final amp device	3CX15000A7 triode	3CX30000A7 triode	Solid-state	Tetrode	Solid-state
IPA amp device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
AF input connection	Balanced	Balanced	Balanced	5k Ω bal/unbal	Bal/unbal 5k Ω
AF response	0.01dB 30-15k	0.01dB 30-15k	0.01dB 30-15k	\pm 0.1dB 40-43k	\pm 0.1dB 40-43kHz
THD distortion (100% mod mono)	0.025% 100% mod	0.025% 100% mod	0.025% 100% mod	<0.4% \pm 40kHz dev	<0.4% \pm 75kHz dev
Pre-emphasis	75 μ s	75 μ s	75 μ s	50/75 μ s	50/75 μ s
AM mod noise	-60dB	-60dB	-60dB	.....	.....
FM noise (mono)	-70dB de-emph	-75dB de-emph	-75dB de-emph	>68dB \pm 40kHz dev	>68dB μ 40kHz dev
Recommended exciter	QEI 695	QEI 695	QEI 695	R&S SU155 R2	R&S SU155 R2
Wideband comp input	Yes	Yes	Yes	.....	.....
Stereo capable	Yes	Yes	Yes	Integral generator	Integral generator
Floor space required (inches)	72Wx30D	24Wx30D	Rack-mounted	70Wx98Hx29D	44Wx78Hx33D
Separate power supply	Yes	No	No	No	No
Input ac power	208/240V 3 ϕ 50-60Hz	208/240V 1 ϕ 50-60Hz	120/240V 1 ϕ 50-60Hz	220/380V 3 ϕ	220/380V 3 ϕ
Power factor	>0.95	>0.9	>0.9	>0.95	>0.92
Power consumption	48kVA	9.5kVA	1.2kVA	42kVA	6.4kVA
System efficiency	62%	60%	50%	.....	.....
Monitoring output	1Vrms 50 Ω	1Vrms 50 Ω	1Vrms 50 Ω	Yes	Yes
Fault architecture	CMOS/TTL	CMOS/TTL	Relay	Yes	Yes
Computer diagnostics	Optional	Optional	No	.....	.....
Auto recycle	Yes	Yes	No	Yes	Yes
	695T10kW rated 10kW	.....	675T150 rated 150W	NU 351 rated 5kW	NU series units
	.....	.....	.....	NU 411 rated 10kW	from 0.5-2kW
Reader Service Number	1291	1292	1293	1294	1295

Manufacturer	TEM-Milano	TTC/Wilkinson Div			Thomson-LGT
Model/Series Number	AR-10E (AR-10F)	8090 Series C	8090 Series F	8090 Series G	EVHF 5000
RF output power	>1kW (>10kW)	1.25kW	15kW	21.5kW	5kW
RF output connection	7/8 EIA (1-5/8)	1-5/8 EIA male	3-1/8 EIA male	3-1/8 EIA male	EIA type
Modulating capacity	\pm 100kHz	\pm 500kHz	\pm 500kHz	\pm 500kHz	> \pm 75kHz
Operating VSWR	.....	.....	.....	.....	.....
Final amp device	Solid-state (4CX7500A)	Solid-state	Single tetrode	4CX15000	Solid-state
IPA amp device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
AF input connection	Bal or unbal	Active bal	0.01% at 100%	Active bal	Balanced
AF response	\pm 0.1dB 30-40k	\pm 0.25dB 25-15k	\pm 0.25dB 25-15k	\pm 0.25dB 25-15k	\pm 0.2dB 40-15k

Call (214) 381-7161



Continental Electronics

a Division of Varian Associates, Inc. PO Box 270879 Dallas, Texas 75227 Ph: (214) 381-7161 Telex: 73-398



AM & FM transmitters from 1 to 60 kW; Shortwave to 500 kW; FM antennas; Studio & Related Equipment

Circle (144) on Reply Card

FM Radio Transmitters

THD distortion (100% mod mono)	0.4% 75kHz dev	0.01% 100% mod	0.01% 100% mod	0.01% 100% mod	<0.5%
Pre-emphasis	50/75µs	75µs	75µs	75µs	50µs (75µs opt)
AM mod noise	<-70dB	-80dB	-80dB	-80dB	<-52dB
FM noise (mono)	<-70dB	-90dB	-90dB	-90dB	<-60dB
Recommended exciter	TEM 7A-100	TTC Model X	TTC Model X	TTC Model X	Integral unit
Wideband comp input	Solid-state(4CX7500A)	Yes	Yes	Yes	Solid-state
Stereo capable	Solid-state	Yes	Yes	Yes	Solid-state
Floor space required (inches)	Yes	Rack-mount	.....	.....	23Wx30D
Separate power supply	22.5Wx26.4D (56D)	No	No	Yes	No
Input ac power	240V 1φ (380V 3φ)	240Vac 1φ	240Vac 3φ	240Vac 3φ	110-240Vac
Power factor	>0.85 (>0.88)	0.9	0.9	0.9	.....
Power consumption	<1.9kVA (<21.2kVA)	.....	.....	.....	6.5kW
System efficiency	.....	75%	75%	75%	.....
Monitoring output	Yes	1-10Vrms 50Ω	1-10Vrms 50Ω	1-10Vrms	.....
Fault architecture	CMOS	Relay	Relay	Relay	CMOS/TTL
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	Yes
	Models from 20W to 30kW available	Model A rated 350W Model B rated 700W	Model D rated 4.4kW Model E rated 7.5kW	Model H rated 32kW	.....
Reader Service Number	1296	1297	1298	1299	1300

UHF TV Transmitters

Manufacturer	Acrodyne Industries		Comark Communications/Thomson-LGT		
Model/Series Number	TRU-10KVC (TRU-10KA)	TRU/5KA (TRU-5KA)	CTT-U-10MX (-5MX)	CCT-U-30S (-60SE)	CTT-U-30SK/-120SK
Peak visual RF power	10kW	5kW	10kW (5kW)	30kW (60kW)	30kW (120kW)
Carrier level regulation	3%	3%	3%	3%	3%
Modulation capacity	3%	3%	97%	97%	97%
Response/brightness	±0.75dB	±0.75dB	±0.5dB	±0.75dB	±0.75dB
Uncorrected ICPM	±3° w/o correction	±3° uncorrected	±2° uncorrected	±1°	±1°
ICPM corrector preference	Integral circuitry	Integral unit	None	Integral circuitry	Integral circuitry
Diff phase/gain	±3°/5%	±3°/5%	±2°/3%	±3°/0.5dB	±3°/0.5dB
Linearity (low frequency)	5%	5%	±2%	1dB	<1dB
S/N ratio	52dB	52dB	55dB	55dB	55dB below peak sync
K-factor 2T/12.5T	2% & 5%	2% & 5%	2% & 5%	2%/5%	2%/5%
Harmonics below visual carrier	-60dB	-60dB	60dB	-60dB	>60dB
Visual PA device	TH-582 tetrode	TH-382 tetrode	Tetrode	Klystron	Klystron
Visual IPA device	TH-347 tetrode	Solid-state (TH-338)	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	1kW	0.5kW	1kW (0.5kW)	3kW (6kW)	3kW (12kW)
Carrier deviation	±100kHz max	±100kHz max	±150kHz	±150kHz	±25kHz NTSC/±50kHz
AF response	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB per FCC curve
THD distortion	1% 1kHz 100% mod	1% 1kHz 100% mod	0.3% 1kHz 100% mod	0.5% 1kHz	<0.5% to 50kHz dev
AM/FM noise	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB
Aural PA device	Diplexed	Diplexed	Tetrode (5MX diplex)	Klystron	Tetrode
Aural IPA device	.....	.....	Solid-state	Solid-state	Solid-state
Cooling system	Vapor-phase (air)	Forced air	Forced air	Water	Air/water
Integral heat exchanger	Yes (No)	No	No	External unit	.....
Input ac power	208Vac 3-phase	208Vac 3-phase	204-280Vac 1φ-3φ	460-500Vac 3φ	460-500Vac 3φ
Power consumption	26kW	20kW	14kVA (20kVA)	128kVA (245kVA)	.....
Power factor	0.95	0.95	.....	0.95	>0.95
Visual PA efficiency	.....	.....	.....	75%	.....
Recommended ac regulator	Acrodyne	Acrodyne	.....	.....	.....
Stereo aural bandwidth	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
Recommended BTSC equipment	BEI	BEI	.....	.....	.....
	.....	TRU/1KAC rated 1kW	CCT-U-2MX 2kW w/ 10% aural power	CCT-U-120S 120kW CCT-U-240S 240kW	Various systems CCT-U-60SK 60kW CCT-U-240SK 240kW
Reader Service Number	1301	1302	1303	1304	1305

Manufacturer	EMCEE		Harris Broadcast		ITELCO
Model/Series Number	TTU5000DP	TTU1000E	TVE-60S	TVE-120S	T-683 (T-634)
Peak visual RF power	5kW	1kW	60kW	120kW	5kW (20kW)
Carrier level regulation	2%	2%	<2%	<2%	3%
Modulation capacity	2%	2%	0%	0%	5%
Response/brightness	±0.5dB	±0.5dB	±0.75dB	±0.75dB	0.5dB
Uncorrected ICPM	±2°	±2°	±4°/2° corrected	±4°/2° corrected	.....
ICPM corrector preference	None recommended	None recommended	Integral unit	Integral unit	.....
Diff phase/gain	±3°/0.5dB	±3°/0.5dB	<±3°/0.5dB	<±3°/0.5dB	±<2°/3%
Linearity (low frequency)	5%	5%	<1dB	1dB	>96%
S/N ratio	55dB	55dB	55dB	55dB	>56dB
K-factor 2T/12.5T	2%/3%	2%/2%	2%/5%	2%/5%	.....
Harmonics below visual carrier	-60dB	-60dB	-70dB	-70dB	-60dB
Visual PA device	TH-382 tetrode	TH-347 tetrode	VKP-7550S klystron	VKP-7550S klystrons	1-tetrode (2-tube)
Visual IPA device	TH-327 tetrode	Tube	Solid-state	Solid-state	Tube
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	0.5kW	0.1kW	12kW	24kW	0.5kW (2kW)
Carrier deviation	±75kHz	±100kHz	±120kHz	±120kHz	±50kHz
AF response	±0.2dB 30-110k	±0.5dB 20-100k	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 40-15k
THD distortion	0.15% 100% mod 1kHz	0.1%	0.5%	0.5% 100% mod 1kHz	0.2% 40-15k ±50kHz
AM/FM noise	-55dB/-60dB	-55dB/-60dB	-55dB/-59dB	-55dB/-60dB	<-50dB/-50dB
Aural PA device	Diplexed	Diplexed	VKP-7550S klystron	VKP-7550 klystron	Int (ext) diplexed
Aural IPA device	Tube	Tube	Solid-state	Solid-state	Solid-state

UHF TV Transmitters

Cooling system	Forced air	Forced air	Vapor-phase	Vapor-phase	Air (Vapor phase)
Integral heat exchanger	No	.....	External	External unit	No (external)
Input ac power	208/220V 3 ϕ	208/220V 1 ϕ or 3 ϕ	480V 3 ϕ	460V 3 ϕ	208/380V 3 ϕ
Power consumption	18kVA	5.5kVA w/ bars-tone	135kW	245kVA	.....
Power factor	0.95	0.98	>0.95	0.9	.....
Visual PA efficiency	45%	53%	65%	65%	.....
Recommended ac regulator	No recommendation	None	No recommendation	No recommendation	None
Stereo aural bandwidth	BTSC ready	BTSC ready	BTSC ready	BTSC ready	.....
Recommended BTSC equipment	Modulation Sciences	Modulation Sciences	Any system	Any system	.....
.....	.....	.....	.....	.....	Also models rated
.....	.....	.....	.....	.....	1kW, 2.5kW and 10kW
Reader Service Number	1306	1307	1308	1309	1310

Manufacturer	ITS Corporation		NEC America		Philips/Pye TVT*
Model/Series Number	ITS-230	ITS-240 (ITS-235)	PCU-960H	PCU-912-KS	LDM-1780 (1781)
Peak visual RF power	1kW	10kW (5kW)	60kW	120kW	5kW (10kW)
Carrier level regulation	2%	2%	2%	2%	100%
Modulation capacity	1%	1%	0%	0%	100%
Response/brightness	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.75 dB	± 0.5 dB
Uncorrected ICPM	.....	.....	$\pm 3^\circ$ with correction	$\pm 3^\circ$ /typical $\pm 2^\circ$	$\pm 4^\circ$
ICPM corrector preference	Integral corrector	Integral corrector	Integral corrector	NEC HPB-1390	None recommended
Diff phase/gain	.....	.....	$\pm 3^\circ/0.5$ dB	$\pm 3^\circ/0.5$ dB	$\pm 3^\circ/0.5$ dB
Linearity (low frequency)	5%	5%	1dB	5%	90%
S/N ratio	55dB	55dB	60dB wtd	60dB	60dB
K-factor 2T/12.5T	2%/2%	2%/4%	1.5% & 5%	1.5%	2%/2%
Harmonics below visual carrier	-60dB	-60dB	-80dB	-60dB/approx 1mW	-70dB
Visual PA device	RCA-9017 tetrode	TH-382 tetrode	YK-1265 klystron	Klystron	TH-382 tetrode
Visual IPA device	Solid-state	RCA-9017 tetrode	Solid-state	Solid-state	Philips solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	0.1kW	1kW (0.5kW)	6kW	12kW	0.5kW (1kW)
Carrier deviation	± 75 kHz	± 75 kHz	± 150 kHz	± 150 kHz	± 100 kHz
AF response	± 0.5 dB 30-15k	± 0.5 dB 30-15k	± 0.5 dB 30-15k	± 0.5 dB 30-15k	± 0.5 dB 30-15k
THD distortion	0.5% 1kHz 100% mod	0.5% 1kHz 100% mod	0.5% 1kHz 100%	0.5% typically 0.3%	0.5% 1kHz 100% mod
AM/FM noise	-55dB/-60dB	-55dB/-60dB	-50dB/-60dB	-55dB/-60dB	-50dB/-60dB
Aural PA device	Diplexed	Diplexed	Klystron	Klystron	Diplexed (tetrode)
Aural IPA device	Solid-state	Tube	Solid-state	Solid-state	Philips solid-state
Cooling system	Forced air	Forced air	Water & vapor-phase	Air/water/vapor	Forced air
Integral heat exchanger	No	No	External equipment	Yes	No
Input ac power	208/240V 1 ϕ	208/240V 3 ϕ or 1 ϕ	480Vac 3 ϕ	480Vac 3 ϕ	220Vac
Power consumption	5kVA w/ bars-tone	36kVA (20kVA)	132kVA	275kW black signal	21kVA (23kVA)
Power factor	0.95	0.95	0.9	0.9	0.9
Visual PA efficiency	.....	.....	75%	75% black/tone test	75%
Recommended ac regulator	None	None	None	No	Not required
Stereo aural bandwidth	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
Recommended BTSC equipment	Integral unit	Integral unit	None	Any	Modulation Sciences
.....	.....	.....	.....	.....	*In U.S. BTS Broadcast
.....	.....	.....	.....	.....	Television Systems
Reader Service Number	1311	1312	1313	1314	1315

Manufacturer	Philips/Pye TVT*		Rohde & Schwarz	TTC	Thomson-LGT
Model/Series Number	LDM-1791 (1791/1790)	LDM-1791/2x90	NT425A1 (NT444A1)	XL1000TU	EUHF 5000S
Peak visual RF power	60kW (120kW)	180kW	20kW (40kW)	1kW	5kW
Carrier level regulation	100%	100%	.....	.....	.....
Modulation capacity	100%	100%	.....	1%	100%
Response/brightness	± 0.5 dB	± 0.5 dB	<0.3dB	0.5dB	0.5dB
Uncorrected ICPM	$\pm 4^\circ$	$\pm 4^\circ$	.....	$\pm 2^\circ$	$\pm 1^\circ$
ICPM corrector preference	None recommended	None recommended	.....	.....	.....
Diff phase/gain	$\pm 3^\circ/0.5$ dB	$\pm 3^\circ/0.5$ dB	$> \pm 3^\circ$	$\pm 2^\circ$	$\pm 3^\circ/0.3$ dB
Linearity (low frequency)	90%	90%	>0.9 to 4.43MHz	1dB	0.5dB
S/N ratio	60dB	60dB	>56dB unwtid	55dB	60dB
K-factor 2T/12.5T	2%/2%	2%/2%	<2% for 20T pulse	2%	2%/2%
Harmonics below visual carrier	-70dB	-70dB	<20mW	-80dB	-60dB below visual
Visual PA device	Klystron 2-YK1265	Klystron	Tetrode (klystron)	TH-347 tetrode	TH-382 tetrode
Visual IPA device	Philips solid-state	Solid-state	Tetrode	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	5.5kW	18kW	2kW (4kW)	0.1kW	0.5kW
Carrier deviation	± 100 kHz max	± 100 kHz	± 50 kHz	± 50 kHz	± 100 kHz
AF response	± 0.5 dB 30-15k	± 0.5 dB 30-15k	± 1 dB 30-15k	± 0.5 dB 30-15k	± 0.5 dB 30-15k
THD distortion	0.5% 1kHz 100%	0.5% 1kHz 100%	<0.4% 50kHz dev	0.5% 1kHz 100%	0.5% w/ +10dBm drive
AM/FM noise	-50dB/-60dB	-50dB/-60dB	<-46dB/<-56dB unwtid	-60dB/-60dB	-50dB/-60dB
Aural PA device	Klystron	Klystron	Tetrode (klystron)	TH347 tetrode	Diplexed
Aural IPA device	Philips solid-state	Solid-state	.....	Solid-state	Solid-state
Cooling system	Vapor-phase	Vapor-phase	Vapor-phase	Forced air	Forced air
Integral heat exchanger	Yes	Integral	.....	No	No
Input ac power	226V 3 ϕ	226V 3 ϕ	220-380Vac 3 ϕ	208-240Vac 1 ϕ	220-380Vac 3 ϕ
Power consumption	135kVA	375kVA	60kVA (119kVA)	4.8kW	19kW
Power factor	0.9	0.9	>0.92	0.9	>0.95
Visual PA efficiency	65%	65%	.....	Not available	.....
Recommended ac regulator	Not required	Not required	.....	.....	.....
Stereo aural bandwidth	BTSC ready	BTSC ready	Dual carrier stereo	.....	Dual carrier system
Recommended BTSC equipment	Modulation Sciences	Modulation Sciences	.....	.....	.....
.....	*In U.S. BTS Broadcast	*LDM-4x1790 at 240kW	Models for CCIR G/D/	.....	EUHF100S 100W vis
.....	Television Systems	.....	H/I/K/M/N available	.....	EUHF1000S 1kW vis
Reader Service Number	1316	1317	1318	1319	1320

UHF TV Transmitters

Manufacturer	Thomson-LGT	Townsend Associates
Model/Series Number	EUHF 1000S	TA-55NE-10
Peak visual RF power	10kW	55kW
Carrier level regulation	.....	5%
Modulation capacity	100%	5%
Response/brightness	0.7dB	-1.5dB
Uncorrected ICPM	±1°	Not available
ICPM corrector preference	.....	.....
Diff phase/gain	±3°/0.3dB	±3°/1dB
Linearity (low frequency)	0.5dB	1dB
S/N ratio	>60dB below visual	.....
K-factor 2T/12.5T	2%/2%	<30ns
Harmonics below visual carrier	-60dB	-60dB
Visual PA device	TH-382 tetrode	K3276/4KM150 klystron
Visual IPA device	Solid-state	Solid-state
IF level modulation	Yes	Yes
Aural power output	1kW	5.5kW
Carrier deviation	±75kHz max	±50kHz
AF response	±0.5dB 30-15k	±1dB/FCC curve
THD distortion	<0.5%	<1.2%
AM/FM noise	-50dB/-60dB	-60dB/-60dB
Aural PA device	Diplexed	EEV-370W
Aural IPA device	Solid-state	Solid-state
Cooling system	Forced air	Water
Integral heat exchanger	No	External required
Input ac power	220-380Vac 3φ	480Vac
Power consumption	24kW	189.7kW
Power factor	>0.95	.....
Visual PA efficiency	.....	31.9% w/o pulser
Recommended ac regulator	.....	No recommendation
Stereo aural bandwidth	Dual carrier system	BTSC ready
Recommended BTSC equipment	.....	No recommendation
Reader Service Number	1321	1322

VHF TV Transmitters

Manufacturer	Acrodyne Industries	EMCEE	Harris Broadcast
Model/Series Number	TRL-5KA (TRH-5KA)	TRL-10KA (TRH-20KA)	TTV100RM
Band of service	Ch 2-6/7-13	Ch 2-6 (Ch 7-13)	Ch 7-13
Peak visual RF power	5kW	10kW (20kW)	1kW
Carrier level regulation	.....	.....	2%
Modulation capacity	3%	3%	5% (100%)
Response/brightness	±0.75dB	±0.75dB	±0.5dB
Uncorrected ICPM	±3° w/o correction	±3° w/o correction	±2°
ICPM corrector preference	Internal circuitry	Internal circuitry	None recommended
Diff phase/gain	±3°/5%	±3°/5%	±3°/0.5dB
Linearity (low frequency)	5%	5%	5%
S/N ratio	52dB	52dB	55dB
K-factor 2T/12.5T	2% & 5%	2% & 5%	2%/3%
Harmonic below visual carrier	60dB	60dB below visual	-60dB
Visual PA device	TH-361 tetrode	TH-371 tetrode	TH-298 tetrode
Visual IPA device	8791	8791	Solid-state
IF level modulation	Yes	Yes	Yes
Aural power output	0.5kW	1kW (2kW)	0.1kW
Carrier deviation	±100kHz	±100kHz	±40kHz
AF response	±0.5dB 30-15k	±0.5dB 30-15k	±0.5dB 20-100k
THD distortion	1% 1kHz 100% mod	1% 1kHz 100% mod	0.1%
AM/FM noise	-50dB/-60dB	-50dB/-60dB	-55dB/-60dB
Aural PA device	Diplexed	Diplexed	Diplexed
Aural IPA device	Solid-state	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Forced air
Integral heat exchanger	No	No	.....
Input ac power spec	230Vac 1φ	208Vac 3φ	208-220V 1φ or 3φ
Power consumption	20.7kW	31kW (39kW)	8.5kVA
Power factor	>0.95	>0.95dB	0.97
Visual PA efficiency	.....	.....	22%
Recommended ac regulator	Acrodyne	Acrodyne	None
Stereo aural bandwidth	BTSC ready	BTSC ready	BTSC ready
Recommended BTSC equipment	BEI	BEI	Modulation Sciences
	Other models range from 10W to 60kW	.....	.....
Reader Service Number	1323	1324	1325

Manufacturer	ITELCO	Larcen Communications	Marconi Communications
Model/Series Number	T-134 (T-374)	TTC-30LLS	TTC-50LH
Band of service	Ch 7-13	Ch 2-6	Ch 7-13
Peak visual RF power	20kW (40kW)	30kW	50kW
Carrier level regulation	.....	2%	3%
Modulation capacity	5%	<1%	<1%
Response/brightness	±0.5dB	±0.75dB	±0.75dB
Uncorrected ICPM	.....	±1° corrected	±1° corrected
ICPM corrector preference	.....	Integral unit	Integral unit
Diff phase/gain	<±2°/3%	±2°/0.5dB	±2°/0.5dB

VHF TV Transmitters

Manufacturer Model/Series Number	Rohde & Schwarz VU Series	Thomson-LGT		Townsend Associates TA-10NTL (-H)
		EVHF 10000S (-5000S)	EVHF 30000S	
Band of service	Ch 7-13	Ch 2-6 & 7-13	Ch 2-6 & 7-13	Ch 2-6 & 7-13
Peak visual RF power	2-20kW	10kW (5kW)	30kW	10kW
Carrier level regulation	.....	.....	.....	3%
Modulation capacity	.....	100%	100%	5%
Response/brightness	<0.3dB	<0.7dB	0.7dB	0.75dB
Uncorrected ICPM	.....	<$\pm 1^\circ$	< $\pm 3^\circ$	.....
ICPM corrector preference	.....	.....	.....	.....
Diff phase/gain	$\pm 3^\circ$ /.....	$\pm 3^\circ$ /3%	< $\pm 2.5^\circ$ / $\pm 5\%$	...../1dB
Linearity (low frequency)	>0.9 (4.43MHz)	0.5%	0.5%	1dB
S/N ratio	>63dB wtd	60dB	>55dB unwtd	.....
K-factor 2T/12.5T	...../ <2%	2%/2%	1.5%	< ± 60 ns
Harmonic below visual carrier	<1mW	-60dB	-60dB <20mW	-80dB
Visual PA device	Tetrode	TH-361 tetrode	Solid-state	EIMAC 3CX10000U7
Visual IPA device	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes
Aural power output	0.2-2kW	1kW(500W + 100W)	3kW	1kW
Carrier deviation	± 50 kHz	± 100 kHz	± 100 kHz max	± 50 kHz
AF response	< ± 1 dB 30-15k	± 0.5 dB 30-15k	± 0.5 dB 30-15k	± 1 dB 30-15k
THD distortion	0.4% 40-15k	0.5%	<0.5% 30-15k	<1% overall
AM/FM noise	< -36dB/< -56dB	-50dB/ -60dB	-50dB/ -60dB	-55dB/ -58dB
Aural PA device	MUX'd or tetrode	Solid-state	Solid-state	Solid-state
Aural IPA device	Solid-state	Solid-state	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Forced air	Forced air
Integral heat exchanger	No	.....	.....	No
Input ac power spec	220-380Vac 3 ϕ	220-380Vac 3 ϕ	220-380Vac 3 ϕ	208-240Vac
Power consumption	52kVA for 20kW	24kW (19kW)	54kW nominal	35kVA
Power factor	>0.9	>0.95	>0.9	.....
Visual PA efficiency	.....	.....	.....	.....
Recommended ac regulator	.....	.....	.....	.....
Stereo aural bandwidth	European system	FM/FM stereo	Per request	BTSC ready
Recommended BTSC equipment	.....	.....	.....	.....
Reader Service Number	1338	1339	1340	1341

Aural STL Systems

Manufacturer Model/Series Number	Marti Electronics STL-10	Micro Control PTS-10C	Moseley Associates		TFT 8300
			PCL-505/C	PCL-606/C	
System type for stereo	Dual	Composite	Composite	Composite	Composite
AF response (composite)	± 0.25 dB/30-60k	± 0.3 dB/30-15k	± 0.1 dB/30-53k	± 0.3 dB/30-75k
AF response (dual)	± 0.25 dB/20-15k	.....	.....	.....	.....
Distortion THD (composite)	.....	0.4% 30-60k	0.4% 30-15k	0.3% 30-53k	0.2% 30-53k
Distortion THD (dual)	0.2% 20Hz-15k	.....	.....	.....	.....
Distortion IMD (composite)	.....	.....	0.4% 100% mod	0.3% 100% mod	0.2%
Distortion IMD (dual)	0.25% 20-15k	.....	.....	.....	.....
S/N ratio (composite)	.....	65dB wtd 100% mod	68dB 100% mod	72dB 100% mod	75dB 100% mod de-emph
S/N ratio (dual)	75dB unwtd 100% mod	.....	.....	.....	.....
Crosstalk (main to sub)	.....	-46dB 100% mod	-43dB	-50dB	-50dB
Crosstalk (sub to main)	-50dB 100% mod	-45dB 100% mod	-43dB	-50dB	-50dB
Stereo separation	72dB	36dB	>38dB	>48dB	+50dB
Hot standby system	Yes	Option on transmit	Option	Transmit option	Option xfmr/std rcvr
Transmitter designation	STL-10/950	PTS-10C	PCL-505/C	PCL-606/C	8300B
RF power output	10W	10W	5-7W	5-10W	14W
RF output connector	N female (UG-58)	Type N	Type N female 50 Ω	Type N female 50 Ω	N female
RF carrier stability	0.00025%	0.0005%	$\pm 0.0005\%$	$\pm 0.00025\%$	$\pm 0.0001\%$
AM noise rating	-72dB	-65dB	-60dB	-60dB	-65dB
AF input level/imped-	.....	1Vp-p/3k Ω	3.5Vp-p 12k Ω	3.5Vp-p 6k Ω	3.5Vp-p 10k Ω
Composite	.....	.....	.....	.....	.....
Dual	8dBm/600 Ω	.....	.....	.....	.....
Multiplexed	.....	1V/600 Ω	1.5Vp-p/12k Ω	1.5Vp-p/4k Ω	1.5Vp-p/10k Ω
Transmitter metering	RF/final I/driver I	RF/final I/main mod	RF/final I/main mod	RF/final I/driver I	RF/main-mod/mux-mod
Metered parameters	Main-mux mod/V/multi	Mux	AFC/ + volts	Multi/AFC/main/mux/V	+ V
Rack-space requirement	3.5"	3.5"	3.5"	3.5"	5.25"
Receiver designation	R-10	PRC-10C	PCL-505/C	PCL-606/C	8301
Conversion design	Dual	Dual	Dual	Triple	.....
Sensitivity (composite)	.....	.....	<125 μ V 60dB S/N	<150 μ V 60dB S/N	30 μ V 60dB S/N
Sensitivity (dual)	14 μ V 60dB S/N	.....	.....	.....	.....
Bandwidth (dual baseband)	10-16k	.....	.....	.....	.....
Dual multiplexed	20k-80k	.....	.....	.....	.....
Composite baseband	.....	20-75k (95k opt)	± 165 kHz 3dB IF	± 100 kHz 3dB IF	50-75k (92k opt)
Composite multiplexed	.....	110k-185k	.....	.....	110-220k
Metered parameters	RF/mult/L.O./subcar	RF/multi/main/ + volts	RF/AFC/L0/AF levels	RF/AF/AFC/L0/multi/V	RF/AF/mux/ + V
	AF level/ + volts	.....	subcarrier/ + volts	subcarrier	.....
Rack-space requirement	3.5"	3.5"	1.75"	3.5"	3.5"
.....	.....	.....	PCL-505 for mono	PCL-606 for mono	.....
Reader Service Number	1342	1343	1344	1345	1346

Aural STL Systems

Manufacturer	TFT
Model/Serial Number 7700B	8500
System type for stereo Dual or composite	Dual
AF response (composite) $\pm 0.5\text{dB}/20\text{-}75\text{k}$	.....
AF response (dual) $\pm 0.2\text{dB}/20\text{-}15\text{k}$	$\pm 0.2\text{dB}$ 30-15k
Distortion THD (composite) 0.25% 30-75k	.....
Distortion THD (dual) 0.2% 30-15k	0.2% 1kHz
Distortion IMD (composite) 0.25% 100% mod	.....
Distortion IMD (dual) 0.2% 100% mod	0.2%
S/N ratio (composite) 72dB de-emph	.....
S/N ratio (dual) 72dB de-emph	70dB
Crosstalk (main to sub) -46dB	.....
Crosstalk (sub to main) -46dB	.....
Stereo separation +40dB	.....
Hot standby system Xmt'r opt/std rcvr	Option xmt'r & rcvr
Transmitter designation 7700B	8600
RF power output 14W	6.5W
RF output connector N female 50 Ω	N female
RF carrier stability $\pm 0.0001\%$	$\pm 0.0001\%$
AM noise rating -65dB	-60dB
AF input level/imped—	
Composite 3.5Vp-p 10k Ω	.....
Dual 10dBm 10k Ω	3.5Vp-p 10k Ω bal/unb
Multiplexed 1.5Vp-p 110k Ω	1.5Vp-p 10k Ω SCA int
Transmitter metering RF/main-mod/mux-mod	RF/main-mod/mux-mod
Metered parameters +V	+V
Rack-space requirement 5.25"	3.5"
Receiver designation 7707	8601
Conversion design Triple conversion	Dual
Sensitivity (composite) 40 μV 60dB S/N	.....
Sensitivity (dual) 20 μV 60dB S/N	14 μV 60dB S/N
Bandwidth (dual baseband) 50-15k	30-15k
Dual multiplexed 39k-67k (92k opt)	26-39k int SCA
Composite baseband 50-15k	.....
Composite multiplexed 110k-220k	.....
Metered parameters RF/AF/mux/ +V	AF/mux/ +V
Rack-space requirement 3.5"	3.5"
Reader Service Number 1347	1348

Audio Distortion Analyzers

These measurement systems determine total harmonic distortion (THD) and, where available, intermodulation distortion (IMD).

Manufacturer	Amber Electro Design	ASACA/Shibasoku	Audio Precision	Boonton Electronics
Model Number	3501	5500	725B Automatic	1120 audio analyzer
Frequency range	10Hz-100kHz	10Hz-100kHz	5Hz-500kHz	10Hz-140kHz
Input connection	Active bal	Active bal	Unbalanced	Differential bal
Input level range/impedance	30mV-100V 100k Ω	30mV-100V 100k Ω	0.1-100V	100 μV -140V 100k Ω
Input level switchable	Yes	Yes	Manual & autorange	Yes
Fundamental rejection . . . . .	.....	>100dB	>90dB overall	100dB
Auto level set	Yes	Yes	Yes	Yes
Auto null	Yes	Yes	Yes	Yes
Minimum THD reading	0.0008%	0.001%	0.0001% w/o noise	0.0003%
THD accuracy	$\pm 1\text{dB}$	$\pm 1\text{dB}$	.....	$\pm 5\%$
IMD measurements	Optional	Optional	.....	Optional
IMD procedure	SMPTE DIN CCIF	CCIF DIN SMPTE	.....	SMPTE/CCIR/DIN/TIM
IMD accuracy	$\pm 1\text{dB}$	$\pm 1\text{dB}$	.....	$\pm 10\%$
Minimum IMD reading	0.001%	0.001%	.....	0.0001%
Additional functions				
ac volts/full scale accuracy	-100/+40dBm $\pm 1\%$ fs	-100/+40dBm $\pm 1\%$ fs	30 μV -100V $\pm 3\%$	-114/+45dBm $\pm 1\%$ fs
AF noise	-120dBm	-120dBm	>100dB	-114dBm
AF signal generator	10Hz-100kHz +28dBm	10Hz-100kHz +30dBm	No	10Hz-204kHz
AF signal generator stability	$\pm 1\%$	$\pm 0.5\%$	.....	$\pm 0.5\%$
Generator output connection	Xfmr bal/unbal	Xfmr bal	.....	Xfmr bal
AM RF detector	Option	Option	No	No
Recorder tests	No	No	No	Yes
Frequency counter	Option	Yes	5Hz-500kHz autorange	Yes
Meter types	Analog movement	LED	Analog meter w/LEDs	Bar graph on CRT
Microprocessor design	No	Yes	Yes	IBM-PC based
Automated test device . . . . .	.....	GPIO & RS-232	GPIO option	Through PC
Oscilloscope output/level	Possible	Possible	Yes	Terminal CRT
Plotter output/level . . . . .	.....	Option 054	.....	Epson printer
.....	.....	.....	.....	Also phase; wow/flutter;
.....	.....	.....	.....	wtd/unwtd noise; quanti-
.....	.....	.....	.....	zation noise; selected
.....	.....	.....	.....	band level.
Reader Service Number	1350	1351	1352	1354

Audio Distortion Analyzers

Manufacturer	Hewlett-Packard	Leader Instruments	Potomac Instruments	RE Instruments	Rohde & Schwarz
Model Number	8903B/8903E	LDM-170	AA-51 Analyzer	RE201	SUN-2
Frequency range	20Hz-100kHz	20Hz-20kHz	20Hz-20kHz	1Hz-25kHz	40Hz, 1000Hz, 4700Hz
Input connection	Balanced BNC	0.35-30Vrms	0.1 to 80Vrms	Active bal	-20 to 32dBm 1M 20
Input level range/impedance	425V peak/100kΩ		Balanced	2mV to 15.5V/300kΩ	unbal or Xfmr bal
Input level switchable	Automatic		Autoranging		Yes
Fundamental rejection	>100dB		>80dB 20Hz-20kHz	105dB 20Hz-12.5kHz	>65dB
Auto level set	Yes		Yes	Yes	Also auto-ranging
Auto null	Yes		Yes	Yes	No
Minimum THD reading	<-90dB/0.003%	0.01%	0.1% of full scale	0.006%	0.06%
THD accuracy	±1dB 20-20k*		±5% full scale	2.5dB	±0.1dB
IMD measurements	No		Yes	Yes	Yes
IMD procedure	n.a.		SMPTE	SMPTE/DIN/CCIR	DIN
IMD accuracy	n.a.		±5% full scale	2.5dB	
Minimum IMD reading	n.a.		0.1%	0.025%	
Additional functions		100μV-300Vrms	1mV to 100Vrms		Yes
ac volts/full scale accuracy	0.3mV-300V ±2%	To 70dB	Signal + noise/noise	-51.8/ +25.7dBm ±3%	Yes
AF noise	-85dB (17μV) 80kHz BW		With AG-51 package	-99dBm	Yes
AF signal generator	(8903B) 20-100k			1Hz-25kHz 24.2dBu	
AF signal generator stability	0.3% of setting				
Generator output connection	0.6mV-6V open-circuit				
AM RF detector	No		Xfmrless bal/unbal	Active bal	ac/dc linear
Recorder tests	Possible	No	DX-51 option	No	No
Frequency counter	To ±0.004% + 1 digit	No	Wow/flutter IEEE193	Yes	No
Meter types	Digital readout		No	Yes	No
Microprocessor design	Yes		Movement	CRT	LED
Automated test device	HP-IB		No	Yes	Microprocessor cti
Oscilloscope output/level			No	GPB	No
Plotter output/level	0-10Vdc 1kΩ X & Y		100mVp-p full scale		Possible
	*Indication accurate		No		Possible
	±2dB 20k-100k				
Reader Service Number	1355	1356	1357	1358	1359
Manufacturer	Schmid Telecomm.		Sound Technology		Technical Projects
Model Number	SZ-340	3100A/3200A System	1710A	1510A	MJS401D/MD404B
Frequency range	20Hz-20kHz	5Hz-105kHz	10Hz-110kHz	20Hz-40kHz	10Hz-300kHz
Input connection	Floating bal	Active bal	Active bal	Active bal	Active bal
Input level range/impedance	-100/ +20dB autorange	1mV-100V 200kΩ	0.03mV-100V 200kΩ	0.1mV-40V/100kΩ	30μV-100V 100kΩ
Input level switchable	Yes	Yes	Yes	Yes	Yes
Fundamental rejection		110dB	>100dB	100dB	94dB
Auto level set	Yes	Yes	Yes	Yes	Yes
Auto null	Yes	Yes	Yes	Yes	Yes
Minimum THD reading	-70dB THD	0.001%	0.002%	Measure 2nd/3rd har	Yes
THD accuracy		±10% of full scale	±10%	0.01%	0.002%
IMD measurements	No	Optional	Optional	±5% of full scale	±2%
IMD procedure		SMPTE	SMPTE DIN	No	Optional
IMD accuracy		±4%	±4% of full scale		SMPTE/DIN/CCIR
Minimum IMD reading		0.001%	0.0025%		±2% of full scale
Additional functions	-100/ +20dB <±0.1dB				0.02%
ac volts/full scale accuracy	-110dB & quantizing	30μV-100V ±0.05% fs	100μV/100V 600Ω	300μV/40Vrms ±1% fs	-107/ +40dBm ±0.1dB
AF noise	20Hz-20kHz		-103dBm	-78dBm	<-115dBm 30kHz bw
AF signal generator	<1% ±1Hz	1Hz-105kHz +30dBm	10Hz-110kHz +26dBm	20Hz-40kHz 30dBm	10Hz-300kHz +30dBm
AF signal generator stability	±0.03%		±2%		±1% ±0.1dB
Generator output connection	Floating bal	Active bal	Active bal	Active bal	Active bal/unbal
AM RF detector	No	No	No	No	No
Recorder tests	Telco/program lines	No	No	Yes	Yes
Frequency counter	Yes	Yes	No	No	Yes
Meter types	Analog meter & CRT	Analog & LED	Analog	Bar graph on CRT	Analog/7-segment
Microprocessor design	Yes	Yes	No	Yes	Yes
Automated test device	GPB	GPB & RS-232		GPB option 009	GPB option
Oscilloscope output/level	Yes	Yes	Yes	Possible	Yes
Plotter output/level	Yes	Through bus		Video printer	Through bus
		Includes ±180° phase measurements			
Reader Service Number	1360	1361	1362	1363	1364
Manufacturer		Tektronix		Wandel & Gottermann	
Model Number	AA501	AA5001		NFA-1*	
Frequency range	10Hz-100kHz	10Hz-100kHz		15Hz-200kHz	
Input connection	Balanced	Balanced		Bal/unbal XLR/BNC	
Input level range/impedance	60mV-200V/100kΩ	60mV-200V/100kΩ		140nV-30V 100kΩ	
Input level switchable	No	No		Yes	
Fundamental rejection	See note*	See note*		90dB 1kHz	
Auto level set	Yes	Yes		-135dB/+35dB range	
Auto null	Yes	Yes		No 6Hz band tuning	
Minimum THD reading	0.0025%	0.0025%		0.003%	
THD accuracy	±10%	±10%		±0.003% absolute	
IMD measurements	Optional	Optional		Yes	
IMD procedure	SMPTE/DIN/CCIF	SMPTE/DIN/CCIF		All programmable	
IMD accuracy	±10%	±10%		±0.01%	
Minimum IMD reading	0.0018%	0.0018%		0.01%	
Additional functions					
ac volts/full scale accuracy	-108/+48dBm ±2% fs	-108/+4dBm ±2% fs		-135/+30dB selective	
AF noise	-108dBm	-108dBm		-100dBm A-filter	
AF signal generator	10Hz-100kHz 28dBm	10Hz-163.8kHz 28dBm		10Hz-60kHz +26dB	
AF signal generator stability	±0.01%	±0.01%		±30ppm	

Audio Distortion Analyzers

Generator output connection	Balanced	Balanced	Bal/unbal BNC/XLR/CF
AM RF detector	No	No	No
Recorder tests	No	No	Yes
Frequency counter	No	No	Yes w/ -10dB S/N
Meter types	LED	LED	CRT graphics
Microprocessor design	Yes	Yes	Yes
Automated test device	No	GPIB	GPIB
Oscilloscope output/level		Per system	Yes
Plotter output/level		Per system	Via bus
	*Below specified residual THD + noise of actual whichever is greater		*Also phase; wow & flutter; wtd/unwtd noise with selective bandwidths
Reader Service Number	1365	1366	1367

AM Modulation Monitors

Manufacturer	Belar Electronics	Bonton Electronics	Harris	TFT
Model Number	AMM-3 (AMM-2B)	8200 Analyzer'	AM-90	753/754
RF frequency range	200kHz-160MHz	100k-2GHz (2.5GHz opt)	450kHz-30MHz	500kHz-4MHz
Off-air RF input level	100 μ V w/ pre-amp	-47dBm/2.3mV		100 μ V
Direct input level	5Vrms 50 Ω	10mVrms AM band	1Vrms 50 Ω	1-10Vrms 50 Ω
Internal AGC circuit	Yes	Auto level set	Yes	Yes
Modulation range	+199%/-99% (\pm 133%)	To 99%	-100/+140%	-100/+125%
Input attenuator	Yes	Yes	No	Yes
Peak mod indicators	Program (adj)	Peak hold function	Programmable	Adjustable
Peak indicator counter	No	No	No	No
Peak flasher accuracy	0.5% 25kHz (2%)	1% of peak reading	\pm 1% 1kHz	\pm 2% 400kHz
AF output level	+10dBm	1Vrms 600 Ω	10dBm	0dBm
AF output connection	Unbalanced	Balanced	Bal/unbal	Xfmr/active bal/unbal
AF mono response	\pm 0.5dB 20-25k		-0.5dB 20-20k	\pm 0.5dB 20-25k
Distortion mono	0.25% 25kHz	<0.01%	0.15%	0.05% 10kHz
S/N ratio mono	75dB	0.05% residual AM	75dB unwtd 100% mod	75dB unwtd
Display type	Analog meter	Digital displays	Bar graph	Analog meter
Oscilloscope output	Yes	For detected signals	Yes	No
Remote meter output	Yes	No	Yes	Yes
Internal calibrator	Yes	Yes for AM/FM/ Φ M	Yes	Yes
Frequency counter	No	RF and audio	No	Std 753/opt 754
Counter accuracy		\pm 1ppm/year		\pm 2Hz/year
ATS compatible	Yes	IEEE-488 bus	Yes	Yes
Carrier failure alarm	Yes		Yes	Yes
Modulation failure alarm	No		No	No
Carrier frequency alarm	No		No	No
AM stereo capable	No		No	No
Reader Service Number	1368	1369	1370	1371

'Equipment designed for analysis of AM, FM and Φ M modulation in various types of transmitter systems

FM Modulation Monitors

Manufacturer	Belar Electronics Lab	Marconi Instruments	QEI Corporation	Rohde & Schwarz	TFT
Model Number	FMM-2	TF-2304 (2305)	691	FKD/FKDL	Model 844
Frequency selector	Crystal	Auto-tune (PLL)	Pre-selector switch	Tuned PLL	Pre-selector/crystal
Off-air input level	100 μ V w/ opt. pre-amp	5mV	3.16mV		200 μ V
Direct input level	1Vrms 50 Ω	50mV 50 Ω (13mV 50 Ω)	0.2-10Vrms 50 Ω	0.5-2Vrms 50 Ω	1-10Vrms 50 Ω
Internal AGC circuit	No	Yes	No	Yes	Yes
Modulation range	\pm 133%	\pm 150kHz \pm 600kHz)	\pm 133%	77.5kHz (2.5kHz/LED)	-100%/+133%
Input attenuator	Yes	20dB (protected 1W)	Yes	No	Yes
AF response (meter)	\pm 0.1dB/50-75k	\pm 0.5dB/50-9k	\pm 0.2dB/30-75k	\pm 0.5dB/40-65k	\pm 0.5dB 30Hz-120kHz
Peak mod adjustment	199% programmable	No (Yes)	To 199% adjustable	No	Adjust to 199%
Peak indicator counter			Yes		No
Peak flash accuracy	2%	\pm 3% (0.5%)	\pm 2% 5kHz	5%	\pm 2%
Residual AM monitor	Internal	None	Internal		
AF output level	+10dBm	0dBm (+12dBm adj.)	10dBm	6dBm	0dBm
AF output connection	Active bal	Active unbal	Xfmr	L & R bal, 600 Ω	Unbalanced
AF response	\pm 0.01dB/50-15k	μ 3dB/20-15k (note 1)	\pm 1dB/30-15k	\pm 0.5dB/40-65k	\pm 0.5dB 30-120k
AF distortion mono	0.01% 50-15k	0.5% 20-15k (0.15%)	0.05% 30-15k	<0.5% 30-15k	0.1% 50-120k
AF S/N ratio mono	90dB unwtd		75dB wtd 100% mod	>68dB wtd/unwtd	80dB unwtd
Composite output level	1.5Vrms	(50m Vrms IF)	2Vrms 100% mod	+6dBm \pm 40kHz dev	5Vrms 10k Ω
Display type	Analog movement/LEDs	Meter (LCD digital)	Analog movement	2 32-LED bar graphs	Analog meter & LEDs
Oscilloscope output	Yes	Yes (IF output)	Yes	No	Yes
Remote meter output	Yes	Yes (No)	Yes	Yes	Yes
Internal calibrator	Yes	Yes (No)	Yes		Yes
Frequency counter	No	Yes (No)	Yes	No	No
Counter accuracy		\pm 10Hz	\pm 0.1Hz		
ATS compatible	Yes		Yes	Yes	Yes
Carrier failure alarm	Lamp/relay closure	No	Indicator	Status lamp	Relay closure
Modulation failure alarm	None	No	Indicator	For pilot	Relay closure
Stereo monitor preference	FMS-2	N/A	Integral unit	Integral circuit	Integral circuitry
SCA monitor preference	SCM-1/SCM-2	N/A	Single/dual options	Integral	TFT-730A & 845
		Also usable for AM modulation metering	Single & dual opt		
Reader Service Number	1372	1373	1374	1375	1376

TV Aural Modulation Monitors

Manufacturer	Belar Electronics Labs		TFT Inc.	
Model Number	TVM-1	TVM-100L/-100H	Model 850	701 (702)
RF frequency range	Single channel	Any TV channel	Any TV channel	Any TV channel
Off-air RF input level	100µV (RFA-3 pre-amp)	100mV-5Vrms composite	20µV 50Ω	250µV 75Ω
Direct RF input level	.....	.....	2-10V 50Ω	.....
Input attenuator	Yes	.....	Yes	Yes
Internal AGC circuit	Yes	.....	No	Yes
Modulation range	±133% ±25kHz dev	133% (100% ±73kHz)	±100% for ±25kHz	±100% for ±25kHz
Meter frequency response	±0.5dB 50-75k	±0.01dB 30-50k	±0.2dB 50-120k	±0.2dB 50-15k
Peak mod indicators	Adjustable	Adjusts 1-199%	Adjustable	Adjustable
Peak counter	No	No	No	No
Peak flash accuracy	1% all frequencies	±1%	±1%	±1%
Residual AM monitor	Internal	.....	Internal	None
AF output level	+10dBm	+10dBm/5Vrms 10Ω	+6dBm	+6dBm
AF output connection	X1mr bal	Bal or unbal	Active bal	Active bal
AF response mono	±0.5dB 50-15k	±0.01dB 30-50k	±0.2dB 50-15k	±0.2dB 50-15k
AF distortion mono	0.1%	0.01%	0.1% 1kHz	0.25%
AF S/N distortion mono	70dB below 100%	80dB	78dB de-emphasized	75dB de-emphasized
Composite output level	1V 2kΩ	1.5Vrms/Pro/SAP/SCA	3Vrms 75Ω	.....
Display type	Analog meter	Analog meter & LEDs	Meter & LEDs	Analog meter
Oscilloscope output	Yes	Yes	Yes	No
Remote meter output	Yes	Yes	Yes	Yes
Internal calibrator	Yes	Yes	Yes	Yes
Frequency counter	No	No	No	To 10MHz (not 702)
Counter accuracy	.....	.....	.....	±1Hz
ATS compatible	Yes	Yes	Yes	No
Carrier failure alarm	None	At 90% carrier	Relay closure option	Shunt to ground
Carrier frequency alarm	None	No	None	Shunt to ground
Modulation failure alarm	None	No	Relay closure option	Shunt to ground
Stereo monitor preference	.....	TVM-200 (210/220)	Integral	.....
SCA monitor preference	SCM-1/SCM-2	SCM-1/SCM-2	TFT 855 (SAP+ Pro)	.....
.....	.....	.....	TFT 851 composite	.....
.....	.....	.....	input only	.....
.....
Reader Service Number	1377	1378	1379	1380

Vectorscopes

Manufacturer	B&K Precision	Electronic Visuals*		Hiradastechnika	Hitachi Denshi
Model Number	1270	EV4021	EV8061	TR-1867/H024	V-089
Display size	6-in cert	8x10cm	8x10cm	8x10cm	3.5-inch
Graticule type	Internal	Internal	Internal	External	External
Waveform or modes	No	Waveform	XYZ display only	No	.....
Instrument control system	Manual	Manual	Manual	Manual	No
Control interface to	None	No	.....	No	No
Color standards	NTSC	NTSC/PAL(-M)	NTSC/PAL/PAL-M	PAL/SECAM	NTSC
Integral calibrator	Yes	No	No	Freq counter	Yes
Composite video inputs	A/B	A & B	No	One	A & B
Component video inputs	No	No	R-Y & B-Y	.....	No
Subcarrier input	Yes	Yes	No	Yes	Yes
Composite sync input	Yes	.....	No	.....	No
Display reference to	A or B	A/B/ext	.....	Int or ext	A or B
Diff phase	.....	1°	.....	2°	.....
Diff gain	.....	1%	.....	2%	.....
VITS line selector	No	No	No	No	No
Luminance measurements	None	No	I & Q	Y & T	No luminance
Packaging	Bench/rack	Bench/rack	Bench case/1/2-rack	Bench/rack	Portable 14 lb
Operating time	ac only	.....	.....	.....	>2hrs
.....	.....	*In US see Broadcast	.....	.....	.....
.....	.....	Video Systems Ltd.	.....	.....	.....
Reader Service Number	1381	1382	1383	1384	1385

Manufacturer	Leader Instruments	Philips T&M	System Video	Tektronix	
Model Number	LVS-5850	PM5567	Model 1255	R520A Series	1420 Series
Display size	8x10cm	8x10cm	10x10cm	5-inch	5-inch
Graticule type	Generated	Internal	Internal	Int/ext	Internal
Waveform or modes	No	No	X-Y display	No	No
Instrument control system	No	No	Manual	Manual	Manual
Control interface to	No	Manual	None	No	None
Color standards	NTSC/PAL	NTSC/PAL	NTSC/PAL(-M)	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)
Integral calibrator	No	Yes	Yes	Yes	No
.....	.....	A & B	A & B	.....	.....
Composite video inputs	A & B	A & B	Yes	A/B/alternate	A/B
Component video inputs	No	No	.....	No	No
Subcarrier input	Yes	SC or black	Yes	Yes	Yes
Composite sync input	No	No	Yes	Yes	No
Display reference to	A or B	A/B/ext	A/B/ext	A/B/external	A/B/external
Diff phase	1°	10°	2°	10°	10°
Diff gain	1%	20%	2%	10%	10%
VITS line selector	Through WFM	No	Lines 15-21	Lines 15-21	No

Vectorscopes

Luminance measurements	No luminance	No luminance	No luminance	Y/I/Q/R/G/B	None
Packaging	Bench/rack 13.2 lb	Bench/rack	Bench/rack 22 lb	Bench/rack	Bench/rack
Operating time	.....	.....	.....	ac only	ac only
Reader Service Number	1386	1387	1388	1389	1390

Manufacturer	Tektronix	Thomson CSF	Videotek		
Model Number	1720	TTV8300	VSM-60		
Display size	5.25-inch	8x10cm	8x10cm		
Graticule type	Internal	.....	Internal		
Waveform or modes	Audio phase	Waveform	None		
Instrument control system	µP	Manual	Manual		
Control interface to	1730 waveform	None	None		
Color standards	NTSC/PAL	SECAM	NTSC/PAL(-M)		
Integral calibrator	.....	Yes	Yes		
Composite video inputs	A/B/alternate	Yes	A/B/alternate		
Component video inputs	.....	No	No		
Subcarrier input	Yes	Yes	Yes		
Composite sync input	Yes	Yes	No		
Display reference to	.....	.....	A/B/external		
Diff phase	.....	.....	20°		
Diff gain	.....	.....	20%		
VITS line selector	Yes	.....	No		
Luminance measurements	No	.....	None		
Packaging	Bench/rack/port	Bench/rack	Bench/rack/port		
Operating time	ac only	ac only	ac only		
Reader Service Number	1391	1392	1393		

Waveform Monitors, Video

Manufacturer	B&K Precision	Electronic Visuals*			Leader Instruments
Model Number	1265	EV4011	EV4042	EV4061	LB05869L (5861)
Display dimensions	8x10cm	8x10cm	8x10cm	8x10cm	7.6x9.5cm
Graticule type	Internal	External	External	External	Internal
Programmable control of	NTSC	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)/SECAM	NTSC (and PAL)
Integral calibrator	Yes	.....	Yes	Yes	Yes
Vertical response types	Flat/chroma	Chroma	Flat/chroma/L-P	Flat/L-P	Flat/IRE
	D-G/IRE	L-P	D-G/linearity	Chroma	D-G/chroma
Horizontal timebase settings	2H/2V	H/2H/2Hmag	H/2H/2Hmag	H/2H/2Hmag	2H/2Hmag
	2Vmag	V/2V/2Vmag	V/2V/2Vmag	V/2V/2Vmag	2V/2Vmag
Magnification factors	10X	None	.....	No	No
RGB/YRGB parade display	Yes	No	Yes	Yes	Yes
dc restore clamp position	Back porch	Back porch	Back porch	Back porch	Back porch
VITS line selection	Lines 13-22	No	Lines 7-22	No	14-21 (13-22)*
Programmable instrument	No	No	No	No	No
Remote control format	No	No	No	No	Blanking out
Composite video inputs	Yes	Yes	A/B	A/B	A & B
Component video inputs	No	No	No	No	No
Line strobe output	No	No	No	No	.....
Test probe input	No	No	No	No	No
Vectorscope function	No	No	No	Yes	No
Oscilloscope function	No	No	No	No	No
Stereo audio phase measurement	No	No	No	No	No
Waveform comparison feature	No	No	No	No	No
Instrument packaging	Bench/rack	Bench/rack	Bench/rack	Bench/rack	Rack mount
Operating weight with battery	.....	.....	.....	.....	.....
Operating time with battery	ac only	ac only	ac only	ac only	.....
Reader Service Number	1394	1395	1396	1397	1398

Call (214) 381-7161



Continental Electronics

a Division of Varian Associates, Inc. PO Box 270879 Dallas, Texas 75227 Ph: (214) 381-7161 Telex: 73-398



varian

AM & FM transmitters from 1 to 60 kW; Shortwave to 500 kW; FM antennas; Studio & Related Equipment

Circle (146) on Reply Card

Waveform Monitors, Video

Manufacturer	Magni Systems	Phillips T&MI	System Video Ltd.	Tektronix
Model Number	1520/25	1527/25	1250 Series	
Display dimensions	8x10cm	8x10cm	10x10cm	8x10cm
Graticule type	Int/ext	Int/ext	Internal	Internal
Programmable control of	NTSC	NTSC	NTSC/PAL	NTSC/PAL
Integral calibrator	Yes	Yes	Yes	No
Vertical response types	Flat/chroma D-G/D-φ/L-P	Flat/L-P D-G/D-φ 2H/2V	Flat/L-P/chroma Linearity/IRE V/2V H/2H	Flat/L-P 2H/2Hmag 2V/2Vmag 10X No
Horizontal timebase settings	2H/2V	2H/2V	V/2V/2Vmag H/2H	2H/2Hmag 2V/2Vmag 10X No
Magnification factors	5X	5X	10X/20X	10X No
RGB/YRGB parade display	No	No	Yes	No
dc restore clamp position	Back porch	Back porch	Back porch/sync	Back porch
VITS line selection	No	No	No	None
Programmable instrument	No	No	All functions	No
Remote control format	No	No	Other	No
Composite video inputs	A/B	A/B	A & B	A & B
Component video inputs	No	No	No	No
Line strobe output	No	No	.....	No
Test probe input	No	No	1MΩ impedance	No
Vectorscope function	Yes	Yes	No	No
Oscilloscope function	Note 1	SC/H phase	No	Burst phase
Stereo audio phase measurement	No	Signal source	No	No
Waveform comparison feature	No	No	No	Yes
Instrument packaging	Bench/rack	Bench/rack	Algebraic A-B	No
Operating weight with battery	.....	.....	Rack mount	Bench/rack
Operating time with battery	ac only 1) Sync & test signal source.	ac only Signal source	ac only	20 lb 4hr 12Vdc
Reader Service Number	1399	1400	1402	1403

Manufacturer	Tektronix	Videotek			
Model Number	1730	1480 Series	1750 Series	1740 Series	TSM-60
Display dimensions	5.25-in	8x10cm	8x10cm	8x10cm	8x10cm
Graticule type	Internal	Int/ext	Internal	Int/ext	Internal
Programmable control of	NTSC/PAL	NTSC/PAL(-M)/SECAM	NTSC/PAL	NTSC/PAL(-M)	NTSC/PAL(-M)
Integral calibrator	Yes	Yes	Yes	Yes	Yes
Vertical response types	Flat/L-P Chroma	Flat/chroma IRE/D-G/L-P	Flat/IRE Chroma	Flat/IRE Chroma	Flat/IRE D-G/chroma
Horizontal timebase settings	H/2H/2Hmag 2V/2Vmag	H/2H/2Hmag V/2V/2Vmag	H/2H/2Hmag V/2V/2Vmag	H/2H/2Hmag V/2V/2Vmag	H/2H/2Hmag 2V/2Vmag
Magnification factors	.....	5X/10X/20X/25X/50X	2X/10X/20X/50X	10X/20X	20X
RGB/YRGB parade display	Yes	Yes	Yes	Yes	Yes
dc restore clamp position	Back porch	Back porch/sync	Back porch/sync	Back porch/sync	Back porch
VITS line selection	Any line	Groups of 16	Internal	Internal	Lines 14-21
Programmable instrument	Limited	No	All functions	All functions	No
Remote control format	No	No	No	No	Other
Composite video inputs	A & B	A/B	A/B	A & B	A/B
Component video inputs	No	No	No	No	No
Line strobe output	Yes	Yes	Yes	No	No
Test probe input	No	Yes	No	No	No
Vectorscope function	No	No	Yes	Yes	No
Oscilloscope function	No	Video only	SC/M phase	No	No
Stereo audio phase measurement	No	No	No	No	No
Waveform comparison feature	Yes	Yes	No	No	No
Instrument packaging	Bench/rack	Bench/rack	Bench/rack	Bench/rack	Bench/rack
Operating weight with battery	.....	.....	No	30 lb	.....
Operating time with battery	.....	ac only	ac only	3hr w/ 12Vdc	ac only
Reader Service Number	1404	1405	1406	1407	1408

TV Demodulators

This signal demodulation equipment is applicable to signal quality monitoring.

Manufacturer	Barco Industries	Heucke	Phillips T&MI	Rohde & Schwarz	Tektronix
Model Number	VSD 1000 BG	Model 326	PM5560M	EKF2D (EKF2)	1450-1
Service band (EIA)	VHF/UHF	VHF/UHF/IF	EIA IF/VHF/UHF	IF/VHF/UHF (CATV)	IF/VHF/UHF
Service band (CCIR)	I/III/IV/V	I/III/IV/V	I/III/IV/V	I/III/IV/V	I/III/IV/V
Channel selector	Fixed & PPL-tuned	Crystal tuned	Thumb-wheel PLL	Tuned & crystal	Fixed & crystal
RF input impedance	50/75Ω	50Ω/75Ω	50Ω	50Ω/75Ω	50Ω
RF direct input level range	.....	0.12mV to 1.6V	0.12mV to 1.6V	20mV-1.5V	80mV to 5V
RF off-air input level range	-30dBmV/ +30dBmV	0.12mV to 1.6V	100mV ±6dB AGC	250μV-300mV	80mV to 5V
IF input level range	10dBmV/40dBmV	0.12mV to 1.6V	70mV 50Ω ±3dB	5mV-100mV	80μV to 22mV
Input level indicator	LEDs	LCD & screen display	Visual/IF meters	Meter	LEDs
Inter-carrier input	No	.....	Yes	.....	Yes 50Ω
Split carrier mode	No	.....	Yes	.....	Yes
Zero-carrier ref	Internal	Internal & external	Internal	Internal or external	Internal & external
Envelope detect	Yes	Yes	Yes	Yes	Yes
Synchronous detect	Yes	Yes	Yes	Yes	Yes
Quadrature detect	No	No	No	.....	Yes
Aural signal reject	No	Yes	Yes	Yes	Yes
SAW filter design	Yes	.....	Nyquist filter	.....	Yes
# of video outputs	3-75Ω	2-75Ω	.....	2-75Ω	2-75Ω
Aural deviation port	.....	16mV/kHz 30Ω	+6dBm ±25kHz dev	0-50kHz	50mV/kHz 600Ω
AF line output	+6dBm	6dBm	+6dBm (1.55V) ±25kHz	+6dBm ±30kHz	.....

SPEED RANGE
LOW NOISE
PRICE ACCURACY



THIS AUDIO ANALYZER HAS IT ALL!

BOONTON

The new Boonton 1120 does have it all. Like a frequency range from 10 Hz to 140 kHz that is standardized to an internal 1 ppm reference. Residual noise of less than 10 μ V. And measurements of distortion, and ac and dc levels, at a rate of five readings per second. IEEE-488 interface is standard, as is the ability to store and recall 99 complete panel setups. Choose from a wide selection of filters, including CCITT, CCIR, CCIR/ARM, and "A," "B" & "C"-weighted.

See us at Northcon, Booth 979

- Distortion in dB, %, and SINAD
- AC decade ranges from 3 mV to 300 V
- DC decade ranges from 3 V to 300 V
- Differential input/output
- Dual displays for source and measurement
- Sophisticated log/linear sweeps

All this capability comes with another important "plus" ... a price of less than \$5,500! Contact your local representative or Boonton directly for all the details.

Boonton Electronics Corp.
 791 Route 10, Randolph, NJ 07869
 Telephone (201) 584-1077

TV Demodulators

AF speaker output	8Ω	4Ω w/headphone out	None	Yes	Yes
Video clamp position	Back porch	Sync tip	OIRE active or VBI	.....	Various points
ATS compatible	.....	.....	Yes	.....	.....
Carrier failure alarm	Yes	Yes	No	No	.....
Modulation failure alarm	No	No	No	No	.....
Stereo aural system	German system	.....	.....	.....	BTSC system
Remote control	Yes	IEEE-488	Yes/24-pin	Yes	No
.....	.....	Related units 323 &	.....	.....	.....
.....	.....	324, P22 CRT, Meets	.....	.....	.....
.....	.....	CCIR B/G M I L D K,	.....	.....	.....
.....	.....	Integral videotext	.....	.....	.....
.....	.....	and signal level	.....	.....	.....
.....	.....	metering.	.....	.....	.....
Reader Service Number	1409	1410	1411	1412	1413

Manufacturer	Telemet
Model Number	3713-A1 (-A2)
Service band (EIA)	VHF (UHF)
Service band (CCIR)	I/III/IV/V
Channel selector	Fixed channel
RF input impedance	50/75Ω
RF direct input level range	50mV to 10V
RF off-air input level range	5mV to 1V
IF input level range	.....
Input level indicator	LEDs
Inter-carrier input	No
Split carrier mode	Quasi-parallel
Zero-carrier ref	Internal & external
Envelope detect	Yes
Synchronous detect	Yes
Quadrature detect	Yes
Aural signal reject	Yes
SAW filter design	No
# of video outputs	5 at 75Ω
Aural deviation port	On LED display
AF line output	+8dBm
AF speaker output	8Ω & headphone out
Video clamp position	.....
ATS compatible	.....
Carrier failure alarm	Yes
Modulation failure alarm	Yes
Stereo aural system	Yes
Remote control	No
Reader Service Number	1414

Videotek	
DM-4RA	DM-40RA
VHF/UHF	VHF/UHF/CATV 1-125
I/III/IV/V	I/III/IV/V
PPL-tuned	PLL-tuned
75Ω	75Ω
No	No
<15μV to 100μV	<15μV to 100μV
Internal	Internal
LEDs	None
No	No
No	No
None	None
No	No
Yes	Yes
Yes	Yes
No	No
Yes	Yes
2 75Ω	2 75Ω
No	No
0dBm	0dBm
Yes	Yes
None	None
No	No
No	No
No	No
No	Yes
1415	1416

TV Test Systems

Manufacturer	Magni Systems
Model Number	Model 2015
Control computer	MS.DOS PC
Video signal generator	.....
System control	.....
Programmable signal system	Yes
Standards supported	NTSC/PAL/HDTV/CAV
External data store	Yes
Auto logging	No
Waveform plotting	Yes
Parameter limits	.....
Out-of-limits alarm	.....
Carrier failure alarm	.....
Modulation failure alarm	.....
Measurements per	Any reference
Tests made on	Any line
Reader Service Number	1417

Marconi Instruments
TF2914A Analyzer
.....
TF2913
Yes
No
NTSC/PAL
Possible
Yes
.....
Yes
Defined by TF2915
Aural & printer
.....
NTC-7/FCC
Individual lines
1418

Pesa Electronics
SWAT
Proprietary
Uses program video
.....
.....
NTSC/PAL
Printer or PC
RS-232 link
.....
Yes
Yes
As programmed
As programmed
CCIR/RS-170A
Total signal
1419

Philips T&M I
PM5578
Proprietary
External
Yes
.....
NTSC/PAL
Possible
Yes
On CRT only
RS-232
Set via jumpers
Yes
VITS low LED
CCIR/NTC-7
Lines 17/18 2-field
1420


Rohde & Schwarz
UVF Video Analyzer
Proprietary
Bar and dot only
Yes
.....
PAL
.....
Yes
Yes
IEC-625/IEEE-488
EEPROM/user defined
Blinking LED
No
CCIR-569-1
Individual lines
1421

Manufacturer	Tektronix
Model Number	1980 ANSWER
Control computer	Proprietary
Video signal generator	External (1910)
System control	Manual
Programmable signal system	No
Standards supported	NTSC
External data store	Yes
Auto logging	Yes
Waveform plotting	Yes
Parameter limits	User defined
Out-of-limits alarm	Printer
Carrier failure alarm	No
Modulation failure alarm	No
Measurements per	FCC/NTC-7/CCIR-569
Tests made on	Any one VBI line
.....	Meets RS-170A
Reader Service Number	1422

Thomson-CSF
TTV8400 THOM-C.A.T.
Apple II
TTV8410 Prodigé
Yes
Yes
NTSC/PAL
Floppy disk
Yes
Yes
Yes
User defined
Printer & CRT
None
CCIR-569
1-line 1-field
.....
1423


Non-ionizing radiation frequencies

Frequency	Designation	Use
3000GHz		
300GHz	No designation	Not allocated
30GHz	EHF extremely high frequency	Satellite, microwave relay, radar, amateur, radio navigation
3GHz	SHF super high frequency	Satellite, microwave relay, radar
300MHz	UHF ultra high frequency	Public service, UHF-TV, taxi, amateur, microwave relay
30MHz	VHF very high frequency	VHF-TV, FM broadcast, amateur, diathermy
3MHz	HF high frequency	CB, amateur, diathermy, int'l. broadcast
300kHz	MF medium frequency	Radio navigation, amateur, AM & int'l. broadcast
30kHz	LF low frequency	Radio navigation, maritime communications
3kHz	VLF very low frequency	Very long range communications, navigation, audible sound
300Hz	VF voice	Voice, audible sounds
30Hz	ELF extremely low frequency	Audible sounds, power lines, submarine communications



Mica Capacitors

LARGE STOCK



VACUUM CAPACITORS

JENNINGS

SURCOM ASSOCIATES, INC.

305 Wisconsin Avenue
Oceanside, California 92054
(619) 722-6162

Circle (112) on Reply Card

FREE CATALOG

on interfacing your
RTS or Clear-Com hardware
with a full duplex
Swintek WIRELESS HEADSET

When you're
really serious...



Directly interfaces with three pin XLR hardware patch for power and dual channel operation.
User net for a complete VHF MARK 200D/C-S including two transceivers and Beyer headset... **\$1995.00**

Manufactured in the United States in all metal cases. Demo units available on request.

Swintek

TELECOMMUNICATIONS DIVISION
587 DIVISION STREET / CAMPBELL, CA 95008
(408) 378-8091 / TELEX 4970334 SWINTEK SUVL

Circle (113) on Reply Card



YOU CAN'T MISS IT!

Inovonics' "TVU" puts your audio level metering where it commands attention: *on the video monitor.*

A stereo level bar graph is keyed over the picture and may be positioned anywhere on the screen. Switchable between VU (with Peak Flasher) and PPM display characteristics, "TVU" provides high resolution and complete scale annotation.

Circuitry is transparent to picture video and accepts both balanced program lines and semi-pro inputs. "TVU" is self-contained in a small, mount-anywhere box chassis with rack-mount option.

"TVU" only \$500.00

Inovonics Inc.
1305 Fair Ave., Santa Cruz, CA 95060
(408) 458-0552 TLX: 325670



Circle (98) on Reply Card

FCC POWER DENSITY LIMITS (EFFECTIVE 1-1-86)
 AM BAND (535kHz-1.605kHz) 100mW/cm²
 FM BAND (88MHz-108MHz) 1mW/cm²
 VHF TV (54MHz-216MHz) 1mW/cm²
 UHF TV (470MHz-806MHz) 1.6 to 2.7mW/cm²
 SHF BAND (1.5GHz-100GHz) 5mW/cm²

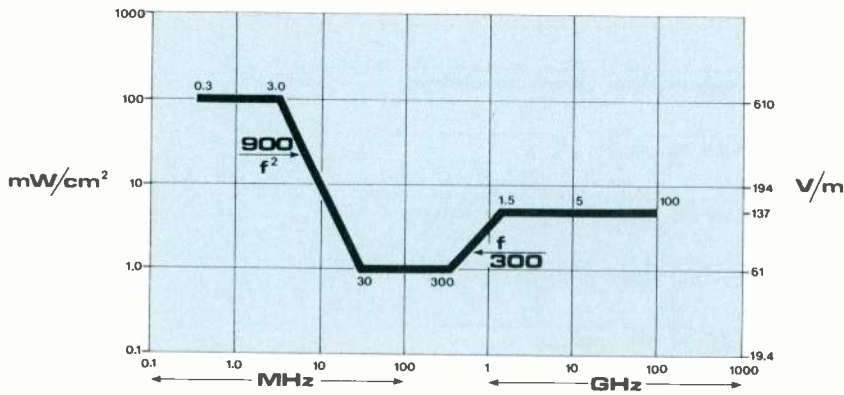


Figure 1. For compliance with ANSI C95.1-1982, the electromagnetic radiation level encountered by an individual must fall below the heavy line at any frequency. For quick reference, particular frequency segments are noted.

Characteristics of TV Systems Worldwide

System Design	TVL	Fields/frames	Channel BW MHz	Color SC MHz	Vis/Aur sep MHz	Vestigial sideband	Visual mod	Aural od
B	625	50/25	7	4.43	5.5	0.75	Neg	FM
C	625	50/25	8	4.43	6.5	0.75	Neg	FM
G	625	50/25	8	4.43	5.5	0.75	Neg	FM
I	625	50/25	8	4.43	6	1.25	Neg	FM
K	625	50/25	8	4.43	6.5	0.75	Neg	FM
L	625	50/25	8	4.43	6.5	1.25	Pos	AM
M	525	60/30	6	3.58	4.5	0.75	Neg	FM
N	625	50/25	6	3.58	4.5	0.75	Neg	FM

Systems B, G and I are PAL; systems D, K and L are SECAM; system M NTSC; system M and N are PAL-M.

U.S. TV Channels

(All frequencies in MHz)

Channel Number	Visual Carrier	Aural Carrier	Channel Number	Visual Carrier	Aural Carrier	Channel Number	Visual Carrier	Aural Carrier
VHF (Bands I/III)								
A-2	55.25	59.75	A-22	519.25	523.75	A-46	663.25	667.75
A-3	61.25	65.75	A-23	525.25	529.75	A-47	669.25	673.75
A-4	67.25	71.75	A-24	531.25	535.75	A-48	675.25	679.75
A-5	77.25	81.75	A-25	537.25	541.75	A-49	681.25	685.75
A-6	83.25	87.75	A-26	543.25	547.75	A-50	687.25	691.75
A-7	175.25	179.75	A-27	549.25	553.75	A-51	693.25	697.75
A-8	181.25	185.75	A-28	555.25	559.75	A-52	699.25	703.75
A-9	187.25	191.75	A-29	561.25	565.75	A-53	705.25	709.75
A-10	193.25	197.75	A-30	567.25	571.75	A-54	711.25	715.75
A-11	199.25	201.75	A-31	573.25	577.75	A-55	717.25	721.75
A-12	205.25	209.75	A-32	579.25	583.75	A-56	723.25	727.75
A-13	211.25	215.75	A-33	585.25	589.75	A-57	729.25	733.75
UHF (Bands IV/V)								
A-14	471.25	475.75	A-34	591.25	595.75	A-58	735.25	739.75
A-15	477.25	481.75	A-35	597.25	601.75	A-59	741.25	745.75
A-16	483.25	487.75	A-36	603.25	607.75	A-60	747.25	751.75
A-17	489.25	493.75	A-37	609.25	613.75	A-61	753.25	757.75
A-18	495.25	499.75	A-38	615.25	619.75	A-62	759.25	763.75
A-19	501.25	505.75	A-39	621.25	625.75	A-63	765.25	769.75
A-20	507.25	511.75	A-40	627.25	631.75	A-64	771.25	775.75
A-21	513.25	517.75	A-41	633.25	637.75	A-65	777.25	781.75
			A-42	639.25	643.75	A-66	783.25	787.75
			A-43	645.25	649.75	A-67	789.25	793.75
			A-44	651.25	655.75	A-68	795.25	799.75
			A-45	657.25	661.75	A-69	801.25	805.75

Ad index

	Page Number	Reader Service Number	Advertiser Hotline		Page Number	Reader Service Number	Advertiser Hotline
A.F. Associates Inc.	80	52	...213/466-5066	Comrex Corp.	72	49	...617/443-8811
Acoustics Systems.....	138	103	...512/444-1961	Continental Electronics, Div. of Varian.....	257	145	...214/381-7161
ADM Technology, Inc.	IFC	1	...313/524-2100	Continental Electronics, Div. of Varian.....	253	144	...214/381-7161
Alamar Electronics USA, Inc.	116	83	...408/866-9373	Continental Electronics, Div. of Varian.....	263	146	...214/381-7161
Allen Avionics Inc.	125	92	...516/248-8080	Continental Electronics, Div. of Varian.....	243	141	...214/381-7161
Alpha Audio.....	142	110	...804/358-3852	Convergence Corp.	119	87	...714/250-1641
Amber Electro Design Inc.	36	20	...514/735-4105	Cottonwood Communications, Inc.	130		800/331-8333
Amek Consoles Inc.	IBC	2		Datum Inc.	195	46	...714/533-6333
Amperex Electronic Corp.	66-67	45	...800/227-1613	Delta Electronics	123	90	...703/354-3350
Ampex Corp. (MTD).....	76	153	...415/367-2911	Di Tech Inc.	35	19	...516/667-6300
Anton/Bauer Inc.	115	82	...203/929-1100	Dolby Labs Inc.	28-29	14	...415/558-0200
Aphex Systems Ltd.	40	24	...818/765-2212	Dynair Electronics Inc.	65	44	...619/263-7711
Aristocart Div.	46	30	...604/687-2844	E E V, Inc.	141	108	...914/592-6050
Arrakis Systems, Inc.	21	11	...303/224-2248	Emcor Products	41	25	...507/289-3371
Asaca/Shibasoku Corp. America	57	40	...800/423-6347	ESE.....	103	72	...213/322-2136
Audio Accessories	106	75	...603/446-3335	ESE.....	101	69	...213/322-2136
Audio Digital	34	18	...800/423-1082	ESE.....	99	66	...213/322-2136
Audio Precision	30	15	...800/231-7350	Fidelipac Corp.	75	152	...609/235-3900
Audio Technologies Inc.	252	68	...215/443-0330	For-A Corp. of America	215	135	...213/402-5391
Audio-Video Engineering Co.	98	64	...516/546-4239	Fostex Corp. of America	39	23	...213/921-1112
Audiomedia Associates....	134		...504/586-0140	Frezzolini Electronics Inc.	90	61	...201/427-1160
Auditronics, Inc.	205	126	...901/362-1350	Fujinor Inc.	121	89	...914/472-9800
Barco	151	116	...408/370-3721	Gentner Engineering Co., Inc.	50	34	...801/268-1117
Belar Electronics Laboratory Inc.	210	129	...215/687-5550	Gentner Engineering Co., Inc.	48	32	...801/268-1117
Bird Electronic Corp.	140	106	...216/248-1200	Gentner RF Products Div.	84	56	...801/268-1117
Bogner Broadcast Equipment Corp.	251	47	...516/997-7800	GML America Inc.	185	123	...703/790-0101
Boonton Electronics Corp. .	265	147	...201/584-1077	Grass Valley Group, Inc.	10	151	...916/273-8421
Robert Bosch Corp.	93-96	94	...801/972-8000	Gray Engineering Laboratories	136	100	...714/997-4141
Broadcast Equipment Sales & Eng. Inc.	138		...601/857-8573	Hannay Reels	47	31,231	518/797-3791
Broadcast Services Co.	210	132	...806/372-4518	Hewlett Packard	89	60	...800/556-1234
Broadcast Video Systems Ltd.	54	38	...416/697-1020	Hitachi Denshi America Ltd.	3	4	...800/645-7510
C.O.A.R.C.	140	105	...518/672-7202	HM Electronics	73	50	...619/578-8300
Camera Mart, Inc.	128	59	...212/757-6977	Hnat-Hindes Inc.	106	74	...203/935-9066
Canon USA Inc., Broadcast Lens	58-59	41	...516/488-6700	Hnat-Hindes Inc.	249	70	...203/935-9066
Capitol Magnetics	82	54	...213/462-6252	Holzberg Inc.	139		800/242-7298
Centro Corp.	127	93	...619/560-1578	Hotronic, Inc.	181	121	...408/292-1176
Centro Corp.	213	134	...619/560-1578	Howe Audio	38	22	...800/525-7520
Cetec Gauss	221	48	...213/875-1900	Hughey & Phillips	100	67	...213/848-1104
Cipher Digital Corp.	45	29	...301/695-0200	ICM Video	118	86	...405/232-5808
Circuit Research Labs, Inc.	37	21	...800/535-7648	Ikegami Electronics Inc.	165-172		...201/368-9171
Clear-Com Intercom Systems	85	57	...415/861-6666				

Ad index

	Page Number	Reader Service Number	Advertiser Hotline		Page Number	Reader Service Number	Advertiser Hotline
Ikegami Electronics Inc.	172A,172B		201/368-9171	RF Specialties	146		806/372-4518
Inovonics, Inc.	267	98	408/458-0552	Richardson Electronics Inc.	51	35	800/323-1770
Intergroup Video Systems Inc.	161	118	800/874-7590	Rupert Neve, Inc.	197	156	203/744-6230
Intl. Tapetronics Corp./3M	23	12	800/447-0414	Sencore	139	104	800/843-3338
JBL Professional	217	136	818/893-8411	Sescom, Inc.	210	211	800/634-3457
Jensen Transformers, Inc.	83	55	213/876-0059	Sharp Electronics Corp.	79	51	201/529/8731
JVC Company of America ..	177	120	800/582-5825	Sharp Electronics Corp.	81	53	201/529-8731
Kaitronics Corp.	175	119	415/697-9102	Shively Labs	42	26	207/647-3327
Kintek Inc.	102	71	617/894-6111	Sims Vibration Engineering	98	65	206/362-0700
Lea Dynatech Inc.	247	142	213/944-0916	Solid-State Logic	49		212/315-1111
Leader Instruments Corp.	5	5,6	800/645-5104	Solutec Ltd.	140	107	514/521-5464
Leitch Video of America, Inc.	105	73	804/424-7290	Sony Corp. of America (Broadcast)	112-113		
Lenco Electronics	17	9	314/243-3147	Sony Corp. of America (A/V & Pro Audio)	12-13	81	
Lerro Electrical Corp.	25		215/223-8200	Sound Technology	9	150	408/378-6540
Lerro Electrical Corp.	237	139	215/223-8200	Spectrum Communications	108	77	215/631-1710
Lightning Eliminators & Consultants	127	97	213/946-6886	Spencer Broadcast, Inc.	130		800/221-6941
Logitek Electronic Systems	31	16	800/231-5870	Stainless, Inc.	91	63	215/699-4871
MCG Electronics, Inc.	61	42	516/586-5125	Standard Tape Laboratory, Inc.	210	131	415/786-3546
Magna-Tech Electronics Co., Inc.	209	127	212/586-7240	Stanton Magnetics	122	91	212/445-0063
Magni Systems, Inc.	43	27	503/626-8400	Steinberg Electronics, Inc.	144		800/523-0894
Midwest Communications Corp.	1	3	800/543-1584	Studer Revox America Inc.	19	10	615/254-5651
Miller Fluid Heads (USA) Inc.	109	79	818/841-6262	Surcom Associates Inc.	267	112	619/722-6162
Minolta Corp.	55	39	201/825-4000	Swintek Telecommunications Div.	267	113	408/378-8091
Mitsubishi International Corp.	7	7	415/651-9931	Switchcraft Inc.	225	137	312/792-2700
Moseley Associates Inc.	231	138	805/968-9621	Symetrix, Inc.	124	58	206/624-5012
Nakamichi USA Corp.	111	80	213/538-8150	Tascam division TEAC Corp. of America	198	157	213/726-0303
National Video Service	136	101	415/846-1500	Tech Labs, Inc.	116	84	201/944-2221
Nautel	44	28	902/823-2233	Tektronix Inc.	239	158	800/452-1877
Nova Systems, Inc.	153	43	203/677-5252	Tektronix Inc.	240	159	800/452-1877
Odetics, Inc.	191	124	800/243-2001	Tex AR	201	125	412/856-4276
Omicron Video	142	109	818/700-0742	Thomson Video Equipment ..	137	102	
Opamp Labs Inc.	210	130	213/934-3566	Thomson-CSF Broadcast ..	135	99	203/965-7000
Orban Associates Inc.	27	200	800/227-4498	Thomson-CSF/LGT	133	96	
Orban Associates Inc.	27	201	800/227-4498	Total Spectrum Manufacturing, Inc.	117	85	914/358-8820
Orban Associates Inc.	27	202	800/227-4498	UREI	217	136	818/893-8411
Orcad Systems Corp.	100	143	503/640-5007	Utah Scientific Inc.	145	115	800/453-8782
Osborne, Alan	52	36	805/495-8420	Varian	131	95	415/592-1221
Otari Corp.	15	8	415/592-8311	Varian	271	148	415/592-1221
Pacific Recorders and Engineering Corp.	102	114	619/438-3911	Videotek, Inc.	157	117	602/997-7523
Paco Electronics	120	88	213/747-6540	Ward-Beck Systems Ltd. ...	BC		416/438-6550
QEI	53	37	609/728-2020	Western Electronics Products Co	210	128	714/492-4677
QEI	107	76	609/728-2020	Western Group	108	78	213/384-2181
Quantel	148	154	415/856-6226	Yamaha International Corp.	143	111	
RAKS	33	17	201/438-0119				

The ingredients of Varian's new S-Tube bring super-high efficiency.

Varian's new "S-Tube" klystron operates at super-high efficiency—translating to significant savings in electric utility costs for UHF-TV broadcasters. The new S-Series, 5-cavity klystron provides significant improvement in operating efficiency through a unique configuration of tuning and cavity loading.

Efficiency-tuned for 10% improvement.

The new S-Series klystrons are tuned to maximize efficiency while maintaining useful gain. The Q of the second cavity is reduced by external loading and the output cavity is optimized by use of a variable visual coupler. These tubes will provide efficiency improvement of up to 10 percentage points over current high efficiency types when used under equivalent conditions.

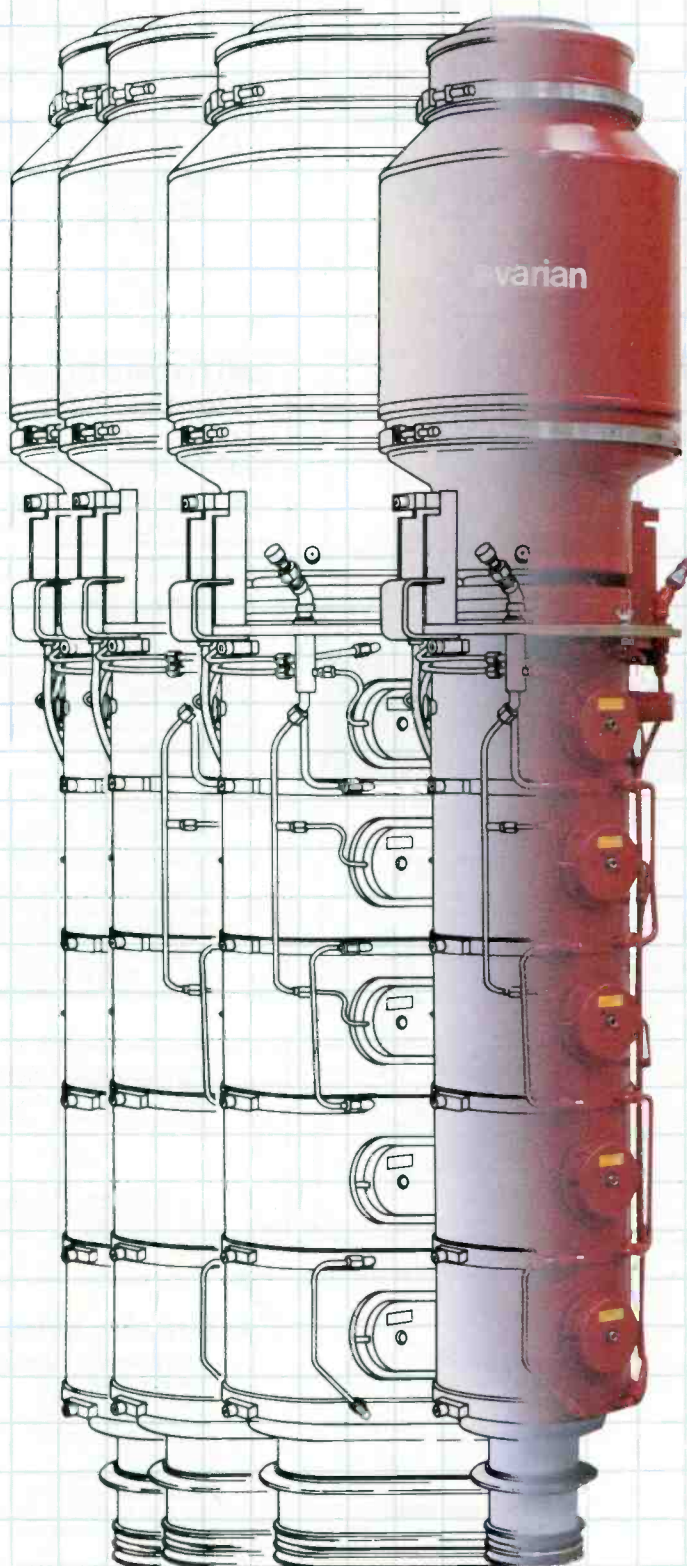
Interchangeable with Varian H-tubes.

The most practical aspect of the new S-Series tubes is the complete interchangeability with the Varian VA-953H-Series tubes, providing broadcasters maximum flexibility in planning new equipment acquisitions.

More information on Varian's new S-Tube is available from Varian Microwave Tube Division, or any Electron Device Group worldwide sales organization.

Varian Microwave Tube Division
611 Hansen Way
Palo Alto, California 94303
Telephone: 415-424-5675

Varian AG
Steinhauserstrasse
CH-6300 Zug, Switzerland
Telephone: 042-23 25 75



Professional services

VIR JAMES P.C.
CONSULTING ENGINEERS
Applications and Field Engineering
Computerized Frequency Surveys
3137 W. Kentucky Ave.—80219
(303) 937-1900
DENVER, COLORADO
Member AFCCE & NAB

STEIGER, HURRAY & ASSOCIATES INC.
CONSULTING ENGINEER SERVICES
6816 Westview Drive
Cleveland, OH 44141
(216) 526-7187

EVANS ASSOCIATES
CONSULTING TELECOMMUNICATIONS ENGINEERS
AM-FM-TV-CATV-ITFS-LPTV SATELLITE
216 N. Green Bay Road
Thiensville, Wisconsin 53092
Phone: (414) 242-6000 Member AFCCE

FCC ON-LINE DATABASE
dataworld[®]
Allocation/Terrain Studies
AM • FM • TV • LPTV • ITFS
P.O. Box 30730
Bethesda, MD 20814
(301) 652-8822 1-800-368-5754

D. L. MARKLEY & Associates, Inc.
CONSULTING ENGINEERS
206 North Bergan
Peoria, Illinois 61604
(309) 673-7511
Member AFCCE

Radiotechniques
RADIO CONSULTING ENGINEERS
STATION DESIGN AND SERVICE
ELECTRONIC PRODUCT DESIGN
Edward A. Schober, P.E.
402 Tenth Avenue, Haddon Heights, NJ 08035
(609) 546-1841

TEKNIMAX
TELECOMMUNICATIONS
DENNIS R. CIAPURA
PRESIDENT
11385 FORESTVIEW LN.
SAN DIEGO, CA 92131 (619) 695-2429

SMITH and POWSTENKO
Broadcasting and Telecommunications Consultants
2033 M Street N.W., Suite 600
Washington, D. C. 20036
(202) 293-7742

BLAIR BENSON
Engineering Consultant
TV Systems Design and Operation
23 Park Lane
Norwalk, CT 06854
203-838-9049

LAWRENCE L. MORTON ASSOCIATES
21671 SUPERIOR LANE
LAKE FOREST, CALIFORNIA 92630
LAWRENCE L. MORTON, E.E.
AM • FM • TV
APPLICATIONS • FIELD ENGINEERING
ANTENNA BROADBANDING FOR AM STEREO
(714) 859-6015

T & G OPTICS, INC.
71-01 INGRAM STREET
FOREST HILLS, NY 11375
COMPLETE REPAIR SERVICE FOR COLOR TELEVISION
CAMERA BEAMSPLITTER OPTICS, LENSES, COATINGS,
MULTIPLEXER MIRRORS, FILTERS AND PROJECTORS:
WRITE OR CALL GERALD PINCUS (718) 544-8156 twenty
four hour service with pleasure.

Robert J. Nissen
THE NISSEN GROUP, INC.
Communications Technology Consultants
32 Ridge Drive • Port Washington, New York 11050
(516) 944-5477

BROADCASTING CONSULTANTS AND ENGINEERS
• FCC Applications and Field Engineering
• Frequency Searches and Coordination
• Tower Erection and Maintenance
• Facility Design and Construction
Contact:
KENNETH W. HOEHN
23400 Michigan Avenue
Dearborn, MI 48124
Teletech Inc.
Communications Engineering Specialists
(313) 562-6873

SELLMEYER & KRAMER, INC.
CONSULTING ENGINEERS
J.S. Sellmeyer, P.E., S.M. Kramer, P.E.
AM FM TV MDS ITFS LPTV CATV
APPLICATIONS • FIELD ENGINEERING
P.O. Box 841 Mckinney, TX 75069
(214) 542-2056

ERIC NEIL ANGEVINE, P.E.
consultant in acoustics
specializing in broadcast studio acoustics
910 Lakeridge Drive Stillwater, OK 74075
405-624-6043 405-372-3949

ATT: CHIEF ENGINEERS
broadcast video maintenance
LUNAR VIDEO LTD.
FAST TURNAROUND ON ENG. EFP, EDIT
SYSTEMS, MONITORS, TEST EQUIP. SONY, JVC,
PANASONIC, TEKTRONIX—UPS & AIR FREIGHT.
PUDEL DAILY.
CALL COLLECT
136 E. 26th St, NYC (212) 686-4802

Consultation Services
Lightning • Power Conditioning • Grounding
Over 40 years experience, work guaranteed
Roy Carpenter
President
Lightning Eliminators and Consultants
13007 Lakeland Rd. Santa Fe Springs, CA 90670
(213) 946-6886 TWX 910 586-1381

MEDIA COMMUNICATIONS, INC.
COMPLETE ENGINEERING NEEDS
Allocations • AM, FM, LPTV
FCC Information
P.O. Box 37732/Shreveport, LA
71133-7732
Phone (381) 746-4332

Advertising sales offices

CHICAGO, ILLINOIS
Tom Nilsen
Phone: (312) 887-0677
(312) 887-0684
15 Spinning Wheel Rd.
Ste. 430
Hinsdale, IL 60521
NEW YORK, NEW YORK
Joe Concert
Phone: (212) 682-6630
(212) 682-6631
Josh Gordon
Phone: (212) 687-5076
(212) 687-5077
630 Third Ave., Eighth Floor
New York, NY 10017

SANTA MONICA, CALIFORNIA
Herbert A. Schiff
Phone (213) 393-9285
Jason Perlman
Phone (213) 458-9987
Chris Woodbury
Phone (213) 451-8695
Schiff & Associates
501 Santa Monica Blvd., Ste. 504
Santa Monica, CA 90401

NORWOOD, AUSTRALIA
Hastwell, Williamson, Rouse Pty. Ltd.
P.O. Box 419
Norwood 5067, Australia
Phone: 332-3322
Telex: AA87113

LONDON, ENGLAND
Nicholas McGeachin
Suite 460, Southbank House
Black Prince Rd.
London SE1 7SJ
Telex: 295555LSPG
Telephones: 01-582-7522
01-587-1578

TOKYO, JAPAN
Haruki Hirayama
EMS, Inc.
Sagami Bldg., 4-2-21, Shinjuku
Shinjuku-ku, Tokyo 160, Japan
(03) 350-5666
Cable: EMSINC PERIOD
Telex: 2322520 EMSIN CJ



©1986. All rights reserved.

Service/Parts Centers

The following list includes primary parts and service locations for advertisers in this issue. The companies welcome calls regarding service problems and where possible will provide you with a service location convenient to you.

AF Associates
100 Stonehurst Court
Northvale, NJ 07647
201-767-1000

Acoustics Systems
Box 3610/415 E. St. Elmo Rd.
Austin, TX 78764
512-444-1961

ADM Technology
1626 E. Big Beaver Road
Troy, MI 48084
313-524-2100

Alamar Electronics USA
36 Railway Ave.
Campbell, CA 95008
408-866-9373

Allen Avionics
224 E. 2nd St.
Mineola, NY 11501
516-248-8080

Alpha Audio
2049 W. Broad St.
Richmond, VA 23220
804-358-3852

Amber Electro Design
4810 Jean Talon West
Montreal (Que)
Canada H4P 2N5
514-735-4105

Ampex MTD
401 Broadway
Redwood City, CA 94063
415-367-3809

Anton/Bauer
1 Controls Drive
Shelton, CT 06484
203-929-1100

Aphex Systems
13340 Satcoy St.
North Hollywood, CA 91605
818-765-2212

Aristocart
505 Burrard St.
Vancouver, BC,
Canada V7X 1M6
604-687-2844

Arrakis Systems
204 N. Link Lane, #3
Fort Collins, CO 80524
303-224-2248

Allied Broadcast
(Richmond, IN)
317-962-8596

Asaca Shibasaki
12509 Beatrice St.
Los Angeles, CA 90066
213-827-7144
800-423-6347

Audio Accessories
Mill St.
Marlow, NH 03456
603-446-3335

Audio Digital
Box 1301
Solana Beach, CA 92075
6619-481-5999

Audio Precision
Box 2209
Beaverton, OR 97075
800-231-7350

Audio Technologies/ATI
328 Maple Ave.
Horsham, PA 19044
215-443-0330

Audio-Video Engineering
65 Nancy Blvd.
Merrick, NY 11566
516-546-4239

Audiomedia Associates
Box 29264
New Orleans, LA 70189
504-586-0140

Audtronic
3750 Old Getwell Road
Memphis, TN 38118
901-362-1350

BTS Broadcast Television Systems
(A Joint Co. of Bosch & Phillips)
900 Corporate Drive
Mahwah, NJ 07430
201-529-1550
(Salt Lake City, UT)
801-972-8000
(Darmstadt, W. Germany)

Barco Industries
170 Knowles #212
Los Gatos, CA 95030
408-370-3721
(Kortrijk, Belgium)
Phone: 56/21.11.24
Telex: 85842

Belar Electronics Lab
Lancaster Ave. at Dorset
Devon, PA 19333
215-687-5550

Bird Electronics
30303 Aurora Road
Cleveland, OH 44137
216-248-1200
Ojai, CA
805-646-7255

Bogner Broadcast Equipment
401 Railroad Ave.
Westbury, NY 11590
516-997-7800

Boonton Electronics
791 State Highway 10
Randolph, NJ 07869
201-584-1077

Robert Bosch/Video Equipment
See BTS Broadcast TV Systems
801-972-8000

Broadcast Eqpt. Sales & Eng.
Box 20331
Jackson, MI 39209
601-867-8573

Broadcast Video Systems
1050 McNicoli Ave.
Aglincourt, Ontario,
Canada M1W 2L8
416-497-1020

COARC
Box 2, Route 217
Mellenville, NY 12544
518-672-7202

The Camera Mart
456 West 55th Street
New York, NY 10019
212-757-6977

Canon Broadcast Optical
One Canon Plaza
Lake Success, NY 11042
516-488-6700
(Dallas, TX)
214-620-2641
(Chicago, IL)
312-833-3070
(Costa Mesa, CA)
714-979-6000
(Mississauga, Ont.
Canada)
416-678-2730

Capitol Magnetics
6902 Sunset Blvd.
Hollywood, CA 90028
213-461-2701

Centro
9516 Chesapeake Drive
San Diego, CA 92123
619-560-1578

Cetec Gauss
9130 Glenoaks Blvd.
Sun Valley, CA 91352
213-875-1900

Cipher Digital Corp.
10 Kearney Road, #21
Needham, MA 02194
617-449-7546

Circuit Research Labs
2522 West Geneva Drive
Tempe, AZ 85282
800-535-7648
602-438-0888

Clear-Corn Intercom Systems
1111 17th St.
San Francisco, CA 94107
415-861-6666

Comrex Corp.
60 Union Ave.
Sudbury, MA 01776
617-443-8811

Continental Electronics
(Div. of Varlam)
Box 270879
Dallas, TX 75227
214-327-4532 parts
214-327-4533 service

Convergence Corp.
1641 McGaw
Irvine, CA 92714
714-250-1641
(New York, NY)
212-765-1333

Cottonwood Communications
774 Main St./Box 526
Los Alamos, CA 93440
805-344-3335

Datum, Inc
1363 S. State College Blvd.
Anaheim, CA 92806
714-533-6333

Delta Electronics
5730 General Washington Dr.
Alexandria, VA 22312
703-354-3350

Di-Tech Inc.
48 Jeffyn Blvd.
Deer Park, NY 11729
516-667-6330

Dolby Labs
731 Sansome St.
San Francisco, CA 94111
415-392-0300

Dynair
5275 Market St.
San Diego, CA 92114
619-263-7711

EEV
7 Westchester Plaza
Elmstord, NY 10523
914-592-6050
(Chelmsford, England)
0245-261777

ESE Inc.
142 Sierra St.
El Segundo, CA 90245
213-332-2136

Emcore Products
1600 Fourth Ave. N.W.
Rochester, MN 55901
507-289-3371

Fidellpac
Box 808
Moorestown, NJ 08057
609-235-3900

For-A Corp.
49 Lexington St.
W. Newton, MA 02165
617-244-3223
(Los Angeles, CA)
213-402-5391

Fostex Corporation of America
15431 Blackburn Ave.
Norwalk, CA 90650
213-921-1112
[Studio Sound Technology]
(Little Ferry, NY)
201-440-8220
(Music Dealers Service)
(Chicago, IL)
312-282-8171
(Musical Instrument Service)
(Memphis, TN)
901-327-0964

Frezzaolini Electronics
7 Valley St.
Hawthorne, NJ 07506-2084
201-427-1160

Fujinon Optical
672 White Plains Road
Scarsdale, NY 10583
914-472-9800
(Carson, CA)
213-532-2861
(Carrollton, TX)
214-385-8902

GML America
8150 Lessburg Pike #910
Vienna, VA 22180
903-790-0101
(Reading, England)
Phone 0734 584948
Telex: 847109

Gentner Engineering
540 W. 3560 South
Salt Lake City, UT 84115
801-268-1117

Gentner RF Products
Box 32530
San Jose, CA 95152
408-926-3400

Grass Valley Group
Box 1114
Grass Valley, CA 95945
916-273-8421

Gray Engineering
504 W. Chapman Ave. #P
Orange, CA 92668
714-997-4151

HM Electronics
9675 Business Park Ave.
San Diego, CA 92131
619-578-8300

Hannay Reels
600 E. Main St.
Westerlo, NY 12193
518-797-3791

Hewlett-Packard
Consult phone directory

Hitachi Denshi America
175 Crossways Parkway West
Woodbury, NY 11797
516-921-7200

Hnat Hinds Inc.
42 Elaine St.
Thompson, CT 06277
203-935-9066

Holzberg Inc.
Box 323
Sea Bright, NJ 07760
201-530-8555

Hotronic Inc.
1210 S. Bascom Ave #128
San Jose, CA 95128
408-292-1176

Howe Audio
2300 Central Ave. #E
Boulder, CO 80301
303-444-4693
800-525-7520

Hughey & Phillips
3050 N. California St.
Burbank, CA 91504
213-849-1104

ICM Video
Box 26330
Oklahoma City, OK 73126
405-232-5808

ITC/3M
2425 S. Main St.
Bloomington, IL 61702-0241
800-447-0414
309-828-1381 AK, HI, IL
(Maruno Electronics)
(Toronto, Canada)

416-255-8231
(3M France, Cergy, France)
(3M Deutschland, Nouis, W. Ger.)
(FWO Bauch, Borehamwood, UK)
Centec, N. Sydney, Australia)

Ikegami Electronics (US)
37 Brook Ave.
Maywood, NJ 07607
201-368-9171

Inovonics
1305 Fair Ave.
Santa Cruz, CA 95060
408-458-0552

Intergroup Video Systems
Box 1495
Gainesville, FL 32602
904-373-6783

JBL/UREI
8500 Balboa Blvd.
Box 2200
Northridge, CA 91329
818-893-8411

JVC Company of America
41 Slater Drive
Elmwood, NJ 07407
201-794-3900
800-582-5825 Information
(Compton, CA)

213-537-6020
(Elk Grove Village, IL)
312-364-9300
(Houston, TX)
713-694-0666
(Norcross, GA)
404-447-0877

Jensen Transformers
10735 Burbank Blvd.
North Hollywood, CA 91601
213-876-0059

Kaitronics Corp.
1540 Gilbreth Road
Burlingame, CA 94010
415-697-9102

Kintek Inc.
224 Calvary St.
Waltham, MA 02154
617-94-6111

LEA/Dynatech
12516 Lakeland Road
Santa Fe Springs, CA 90670
213-944-0916

Leader Instruments
380 Oser Ave.
Hauppauge, NY 11788
516-231-6900
800-645-5104

Leitch Video
10 Dyas Road
Don Mills, Ontario,
Canada M3B 1V5
(Chesapeake, VA)
804-424-7920

Lenco Electronics
300 N. Maryland St.
Jackson, MO 63755
314-243-3147

Lerro Electrical Corp.
3125 N. Broad St.
Philadelphia, PA 19132
215-223-8200

Lightning Eliminators & Consultants
13007 Lakeland Road
Santa Fe Springs, CA 90670
213-946-6886

Logitek Electronic Systems
3320 Bering Drive
Houston, TX 77057
713-782-4592
800-231-5870

MCG Electronics
12 Burt Drive
Deer Park, NY 11729
516-586-5125

Magna-Tech Electronics
630 Ninth Ave.
New York, NY 10036
212-586-7240

Magni Systems
9500 S. W. Gemini Drive
Beaverton, OR 97005
503-244-9980

Midwest Communications Corp.
One Spertl Drive
Edgewood, KY 41017
606-331-8990

(Nashville, TN)
615-331-5791
(St. Louis, MO)
314-225-4655
(Miami, FL)
305-592-5355
(Cleveland, OH)
216-447-9745
(Virginia Beach, VA)
804-464-6256

Miller Fluid Heads (USA)
2819 W. Olive Ave.
Burbank, CA 91505
818-871-6262
Telex: 283223

Minolta Corp.
101 Williams Drive
Ramsey, NJ 07446
201-825-4000

Mitsubishi International
46305 Landing Parkway
Fremont, CA 94538
415-651-9931

Moseley Associates
111 Castilian Drive
Santa Barbara Research Park
Goleta, CA 93117
805-968-9621

Nakamichi USA Corp.
19701 S. Vermont Ave.
Torrance, CA 90502
213-538-8150
(Atlanta, GA)
404-325-7676
(New York, NY)
212-989-4240
(San Diego, CA)
619-281-1292
(Denver, CO)
303-778-0780
(Hilo, HI)
808-935-7146
(Houston, TX)
713-695-9400

National Video Service
2150 Rheem Drive, Bldg. G
Pleasanton, CA 94566
415-846-1500

Nautil
RR #1, Tantallon
Halifax County, Nova Scotia
Canada B0J 3J0
902-823-2233

Rupert Neve
Berkshire Ind. Park
Bethel, CT 06801
203-744-6230
(Hollywood, CA)
213-874-8124
(Nashville, TN)
615-385-2727
(Royston, Herts. England)
Phone: (0763) 60776
Telex: 81381

Nova Systems
20 Tower Lane
Avon, CT 06001
203-677-5252

Odetics Inc.
1515 S. Manchester Ave.
Anaheim, CA 92802
714-772-1000

Omicron Video
22251 Roscoe Blvd.
Canoga Park, CA 91304
818-700-0742

Opamp Labs
1033 N. Sycamore
Los Angeles, CA 90038
213-934-3566

Urban Associates
645 Bryant St.
San Francisco, CA 94107
415-957-1067

Orcad Systems Corp.
1049 SW Baseline St. #500
Hillsboro, OR 97123
503-640-5007

Alan Osborne Associates
756 Lakeland Road, Bldg. J
Westlake Village, CA 91361
805-495-8420

Otari Corp.
2 Davis Drive
Belmont, CA 94002
415-592-8311

Pacific Recorders & Engineering
2070 Las Palmas Drive
Carlsbad, CA 92008
619-438-3911

Paco Electronics
714 West Dlymptic Blvd. #1439
Los Angeles, CA 90015-1439
213-747-6540

Phillips TV Systems
(see BTS Broadcast TV Systems)
201-529-1550

QEI Corp.
Box D
Williamstown, NJ 08094
609-728-2020

Quantel
3290 West Bayshore Road
Palo Alto, CA 94303
415-856-6226
(Stamford, CT)
203-856-4104
(Newbury England)

RAKS
201 Route 17, #300
Rutherford, NJ 07070
201-438-0119

RF Specialties
Box 8316
Amarillo, TX 79114
806-372-4518

Richardson Electronics
One Branca
East Rutherford, NJ 07073
800-323-1770

Sencore
3200 Sencore Drive
Sioux Falls, SD 57107
605-339-0100

Sescom Inc.
1111 Las Vegas Blvd. N.
Las Vegas, NV 89101
702-384-0993

Sharp Electronics
Sharp Plaza
Mahwah, NJ 07430
201-529-8731

Shively Labs
36 Harrison Road
Bridgton, ME 04009
207-647-3327

Siemens
(see Rupert Neve)

Sims Vibration Engineering
17724 15th Ave., N.E.
Seattle, WA 98155
206-362-0700

Solid State Logic
Begbroke, Oxford
England OX5 1RU
44-8675-4353
Telex: 837400 SSL OXG
(New York)
212-315-1111
(Los Angeles, CA)
213-463-4444

H.A. Solutec Ltd.
4350 Iberville St.
Montreal, Quebec
Canada H2H 2L8
514-524-6893

Sony Communications Products
1600 Queen Anne Road
Teaneck, NJ 07666
201-833-5200
(San Jose, CA)
406-946-9219: emergency
(Kansas City, MO)
800-222-7669

Parts assistance:
800-538-7550
213-467-4430 S. CA
408-946-9640 CA

Sound Technology
1400 Dell Ave.
Campbell, CA 95008
408-378-6540

Spectrum Communications
1055 W. Germantown Pike
Norristown, PA 19403
215-631-1710

Spencer Broadcast Inc.
316 E. El Camino Drive
Phoenix, AZ 85020
800-221-6941

Stainless Inc.
3rd & Montgomery St.
North Wales, PA 19454
215-699-4871

Standard Tape Laboratory
26120 Eden Landing Road #5
Hayward, CA 94545
415-786-3546

Stanton Magnetics
Terminal Drive
Plainview, NY 11803
718-445-0063

Steinberg Electronics
2520 N. Broad St.
Philadelphia, PA 19632
215-233-9400

Studer Revox America
1425 Elm Hill Pike
Nashville, TN 37210
615-254-5651
(Van Nuys, CA)
213-780-4243
(Walnut Creek, CA)
415-930-9866
(Barrington, IL)
312-526-1660
(New York, NY)
212-255-4462
(Dallas, TX)
214-943-2239
(Regensdorf, Switzerland)
01-840-2960

Surcom Associates
305 Wisconsin Ave.
Oceanside, CA 92054
619-722-6162

Swintek Telecommunications
587 Division St.
Campbell, CA 95008
408-378-8091

Switchcraft
5555 N. Elston Ave.
Chicago, IL 60630
312-792-2700

Symetrics
109 Bell St.
Seattle, WA 98121
206-624-5012

TASCAM/Teac Pro Products
7733 Telegraph Road
Montebello, CA 90640
213-726-0303

(Los Angeles, CA)
213-726-0303
(Arlington Heights, IL)
312-640-6181
(Little Ferry, NJ)
201-641-5600
(Aiea, HI)
808-487-3588
(Atlanta, GA)
404-458-2880

Tech Labs
500 Tenth St.
Palisades Park, NJ 07650
201-944-2221

Tektronix
Box 500, MS 58-694
Beaverton, OR 97077
503-627-2230
(Los Angeles, CA)
818-999-1711
(Santa Clara, CA)
408-496-0800

(Denver, CO)
303-799-1000
(Atlanta, GA)
404-449-4770
(Chicago, IL)
312-259-7580
(Boston, MA)
617-861-6800
(Long Island, NY)
718-895-8010
(Dallas, TX)
214-550-0525
(Washington, DC)
301-948-7151

Texas
616 Beatty Road
Monroeville, PA 15146
412-856-4276

Thomson Video
17, rue du Pett Albi
F-95000 Cergy
St.-Christophe France
Phone: (1) 34.20.70.00
Telex 204780 F

Thomson-CSF Broadcast
37 Brownhouse Road
Stamford, CT 06902
203-965-7000

Thomson/LGT (US)
Box 506
Colmar, PA 18915
215-822-0777
(Chateau, France)
Phone: (1) 30.71.92.60
Telex: 696833 F

Total Spectrum Manufacturing
20 Virginia Ave.
West Nyack, NY 10994
914-358-8820
UREI:
(See JBL/UREI)

Utah Scientific
1685 W. 2200 South
Salt Lake City, UT 84119
801-973-6840

Varian Associates
301 Industrial Way
San Carlos, CA 94070
415-592-1221
(Chicago, IL)
312-825-6686
(Dallas, TX)
214-235-2285
(Los Angeles, CA)
818-967-3834
(New York/New Jersey)
201-276-9050
(Tampa, FL)
813-446-8513
(Washington, DC)
301-850-5010

Videotek
243 Shoemaker Road
Pottstown, PA 19484
215-327-2292

Ward-Beck Systems Ltd.
841 Progress Ave.
Scarborough, Ontario
Canada M1H 2X4
416-438-6550
Telex: 065-25399

Western Electronics Products
107 Los Molinas
San Clemente, CA
714-492-4677

Western Group
3250 Wilshire #10111
Los Angeles, CA 90010
213-354-2181

Yamaha International
Box 6600
Buena Park, CA 90622
714-522-9134

Buyers' Guide/ Spec Book

BROADCAST engineering

IMPORTANT - Do you wish to receive or continue receiving your free subscription? Check one Yes No

Grid of numbers for reader service card, columns 1-20, rows 1-100.

Form fields: Your signature is required, Date, Name, Station or Co., Co. Address, City, State, Zip, Phone.

SEND ME MORE INFORMATION about products or services I have circled. SAVE TIME: Use peel-off address label for faster service.

Grid of numbers for reader service card, columns 1-20, rows 101-200.

RB6

Buyers' Guide/ Spec Book

BROADCAST engineering

IMPORTANT - Do you wish to receive or continue receiving your free subscription? Check one Yes No

Grid of numbers for reader service card, columns 1-20, rows 1-100.

Form fields: Your signature is required, Date, Name, Station or Co., Co. Address, City, State, Zip, Phone.

SEND ME MORE INFORMATION about products or services I have circled. SAVE TIME: Use peel-off address label for faster service.

Grid of numbers for reader service card, columns 1-20, rows 101-200.

RB6

Which advertisement in this issue was of the most interest to you?

Advertiser's Name _____
Circle Number _____

Comments on this issue:

PLACE
FIRST
CLASS
POSTAGE
HERE

BROADCAST
engineering

Buyers' / Spec Guide / Book

P.O. Box 12902
Overland Park, KS 66212-0902

Which advertisement in this issue was of the most interest to you?

Advertiser's Name _____
Circle Number _____

Comments on this issue:

PLACE
FIRST
CLASS
POSTAGE
HERE

BROADCAST
engineering

Buyers' / Spec Guide / Book

P.O. Box 12902
Overland Park, KS 66212-0902

Buyers' Guide/
Spec Book

BROADCAST

engineering

IMPORTANT - Do you wish to receive or continue receiving your free subscription? Check one Yes No

Your signature is required _____ Date _____
 Please print or type:
 Name _____
 Station or Co. _____
 Co. Address _____
 City _____ State _____ Zip _____
 Phone () _____

SEND ME MORE INFORMATION about products or services I have circled.
 SAVE TIME: Use peel-off address label for faster service.

501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900
901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940
941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020
1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060
1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100
1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140
1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180
1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220
1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260
1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300
1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340
1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380
1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420
1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460
1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	1498	1499	1500

Buyers' Guide/
Spec Book

BROADCAST

engineering

IMPORTANT - Do you wish to receive or continue receiving your free subscription? Check one Yes No

Your signature is required _____ Date _____
 Please print or type:
 Name _____
 Station or Co. _____
 Co. Address _____
 City _____ State _____ Zip _____
 Phone () _____

SEND ME MORE INFORMATION about products or services I have circled.
 SAVE TIME: Use peel-off address label for faster service.

501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860

Which advertisement in this issue was of the most interest to you?

Advertiser's Name _____
Circle Number _____

Comments on this issue:

PLACE
FIRST
CLASS
POSTAGE
HERE

BROADCAST
engineering

Buyers' / Spec Guide / Book

P.O. Box 12902
Overland Park, KS 66212-0902

Which advertisement in this issue was of the most interest to you?

Advertiser's Name _____
Circle Number _____

Comments on this issue:

PLACE
FIRST
CLASS
POSTAGE
HERE

BROADCAST
engineering

Buyers' / Spec Guide / Book

P.O. Box 12902
Overland Park, KS 66212-0902

The modular system for a transitional world . . .



BC1115 Mono Mic-Line
Input Module

MTS, SAP, AFV, S-buss are now standard terms in today's audio world. Broadcasting techniques and systems are changing daily. Not since the introduction of color have the production, post-production and broadcast facilities faced such rapid changes in technology, and in day-to-day operational methods. Each facility and operator has a different requirement for systems and hardware.

Audio consoles for broadcast from other manufacturers have just been adaptations of their On-air or record consoles, or maybe they offered some custom modules to try to match a specific need. Obviously, this is not the best way — especially in a dynamically changing environment.

AMEK has applied their years of experience as console system builders to the problem.

The result is the BCII, AMEK's response to the needs of the contemporary broadcaster. The BCII is modular, both inside and out, with 3 different frame sizes offering up to 32 modules in any combination (16 positions in a 19" rack), offering almost limitless configurations. Stereo and mono inputs, electronically balanced in and out, and standard features such as AFV, 6 busses and the famous AMEK EQ sound set the AMEK BCII apart.

Keeping with AMEK's open-ended systems approach, the BCII is factory or field fittable with VCAs (mono or stereo), and all of the logic and control functions appear on "D" connectors with full CMX® and S-buss support available. The BCII gives you AMEK quality in a user customizable system at an affordable price. The BCII is truly the modular system for our transitional world.



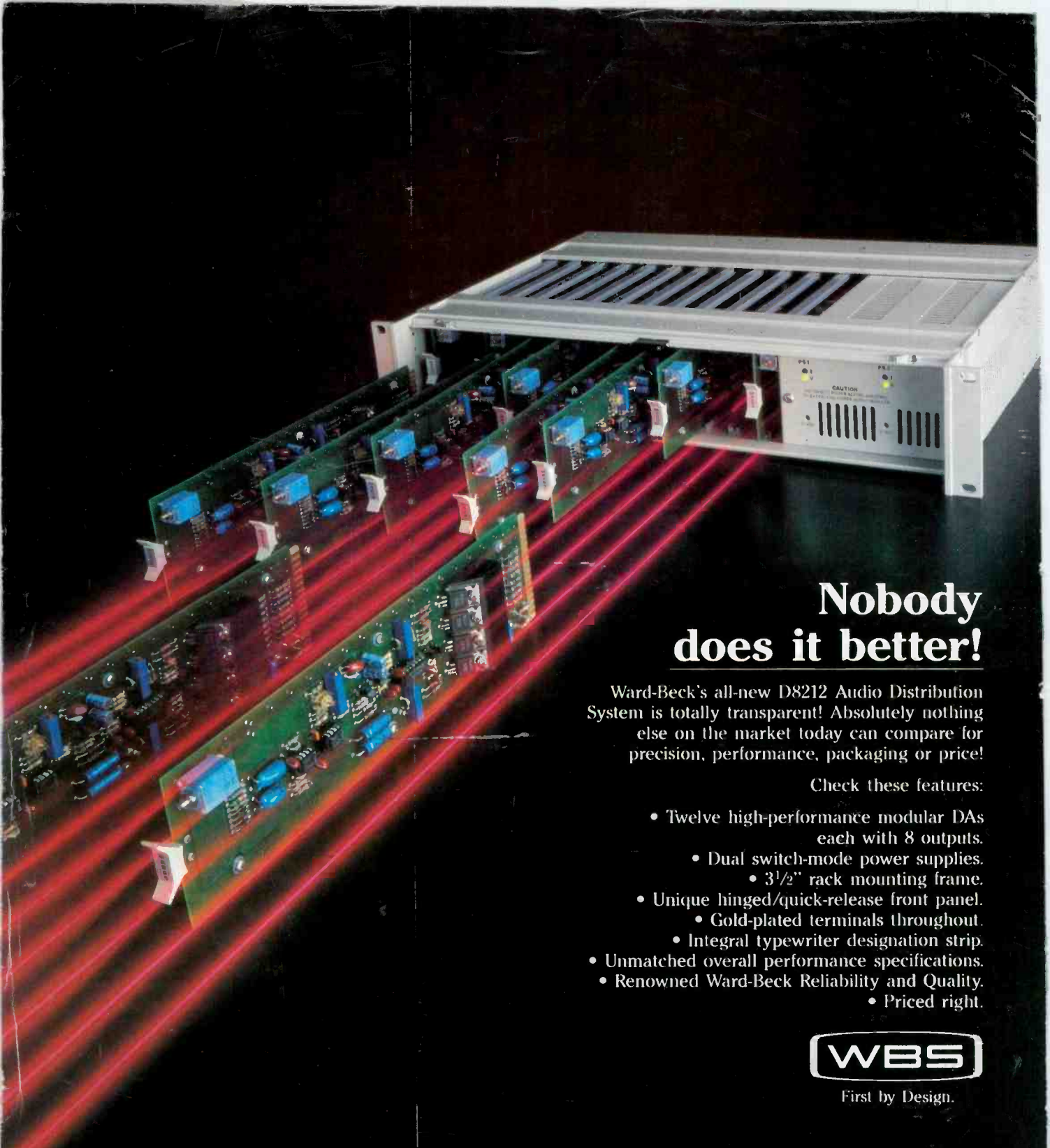
AMEK
BCII 8/4/2

Distributed by:

AMEK CONSOLES INC., 10815 Burbank Blvd., North Hollywood, CA 91601 Tel: 818-508-9788 Telex: 662526 AMEK USA
AMEK SYSTEMS AND CONTROLS LTD, Islington Mill, James St., Salford M3 5HW U.K. Tel: 061-834-6747 Telex: 668127 AMEK G

AMEK

Circle (2) on Reply Card



Nobody does it better!

Ward-Beck's all-new D8212 Audio Distribution System is totally transparent! Absolutely nothing else on the market today can compare for precision, performance, packaging or price!

Check these features:

- Twelve high-performance modular DAs each with 8 outputs.
- Dual switch-mode power supplies.
 - 3 1/2" rack mounting frame.
- Unique hinged/quick-release front panel.
 - Gold-plated terminals throughout.
 - Integral typewriter designation strip.
- Unmatched overall performance specifications.
- Renowned Ward-Beck Reliability and Quality.
 - Priced right.



First by Design.

The Ward-Beck D8212 System – An Investment in Quality!

